Computer Applications

COMPUTER APPLICATIONS

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LOUIS: The Louisiana Library Network

Computer Applications is a cloned version of Intro to Microsoft Office by Abigail Rusu, Andrea Long, Heather Maye, Jennifer Evans, and Amy Ledgerwood.

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PREFACE

The Creation of This Book

This textbook was created as part of the Interactive OER for Dual Enrollment project, facilitated by LOUIS: The Louisiana Library Network and funded by a $2 million Open Textbooks Pilot Program grant from the Department of Education. This project supports the extension of access to high-quality post-secondary opportunities to high school students across Louisiana and beyond. This project features a collaboration between educational systems in Louisiana, the library community, Pressbooks technology partner, and workforce representatives. It will enable and enhance the delivery of open educational resources (OER) and interactive quiz and assessment elements for priority dual enrollment courses in Louisiana and nationally. Developed OER course materials will be released under a license that permits their free use, reuse, modification and sharing with others.

The target audience for this project and this textbook are dual enrollment students. Dual enrollment is the opportunity for a student to be enrolled in high school and college at the same time. A dual enrollment student receives credit on both their high school and college transcripts for the same course.

Review Statement

This textbook and its accompanying course materials went through at least two review processes:

- Peer reviewers, coordinated by Jared Eusea, River Parish Community College, used an online course development standard rubric for assessing the quality and content of each course to ensure that the courses developed through Interactive OER for Dual Enrollment support online learners in that environment. The evaluation framework reflects a commitment to accessibility and usability for all learners.
    - Reviewers
        - Vianka Miranda
        - Rebecca Bogie
        - Pamela Simek
- The Institute for the Study of Knowledge Management in Education (ISKME) collaborated with LOUIS to review course materials and ensure their appropriateness for dual enrollment audiences. Review criteria were drawn from factors that apply across dual enrollment courses and subject areas, such as determining appropriate reading levels, assessing the fit of topics and examples for high school

DE students; applying high-level principles for quality curriculum design, including designing for accessibility, appropriate student knowledge checks, and effective scaffolding of student tasks and prior knowledge requirements, addressing adaptability and open educational practices, and principles related to inclusion and representational social justice.

- Reviewers
  - Esperanza Zenon
  - Melody Boeck

WORD PROCESSING

WORD PROCESSING

Learning Objectives

1. Type letter text
2. Apply styles and set grammar and spelling options
3. Select and insert text
4. Copy, cut, and paste text
5. Check spelling and grammar
6. Insert synonyms
7. Use format painter
8. Apply advanced font settings
9. Create document footers
10. Save documents as PDF files
11. Find and replace
12. Bulleted and numbered lists
13. Set paragraph indents
14. Modify line and paragraph spacing

LEARN IT

A **word processor** is software or a device that allows users to create, edit, and print documents. It enables you to write text, store it electronically, display it on a screen, modify it by entering commands and characters from the keyboard, and print it. Of all computer applications, word processing is the most common.

Word processing has evolved into much more than words typed on a piece of paper. It is a means to communicate with others and create content for websites, graphic design, **blogs**, and publications of all types.

Modern word processing software and applications are integrated into the cloud. If you save your documents to your cloud-based storage, you can retrieve them from any device and continue to work with and share your documents.

Common Word Processing Software:

- Microsoft Word
- WordPerfect
- Google Docs
- Office 365
- Apple Pages

Since Microsoft Word is widely used in industry, and we are using Microsoft Windows, we will focus on Word going forward. There are many similarities across word processing software, so the skills we are learning can be translated to other software and apps. The following "Practice It" assignments are designed to be completed using Microsoft Word in Office 365 on a PC with Windows 10 or higher.

WORD PRACTICE 1

Prefer to watch and learn? Check out this video tutorial:

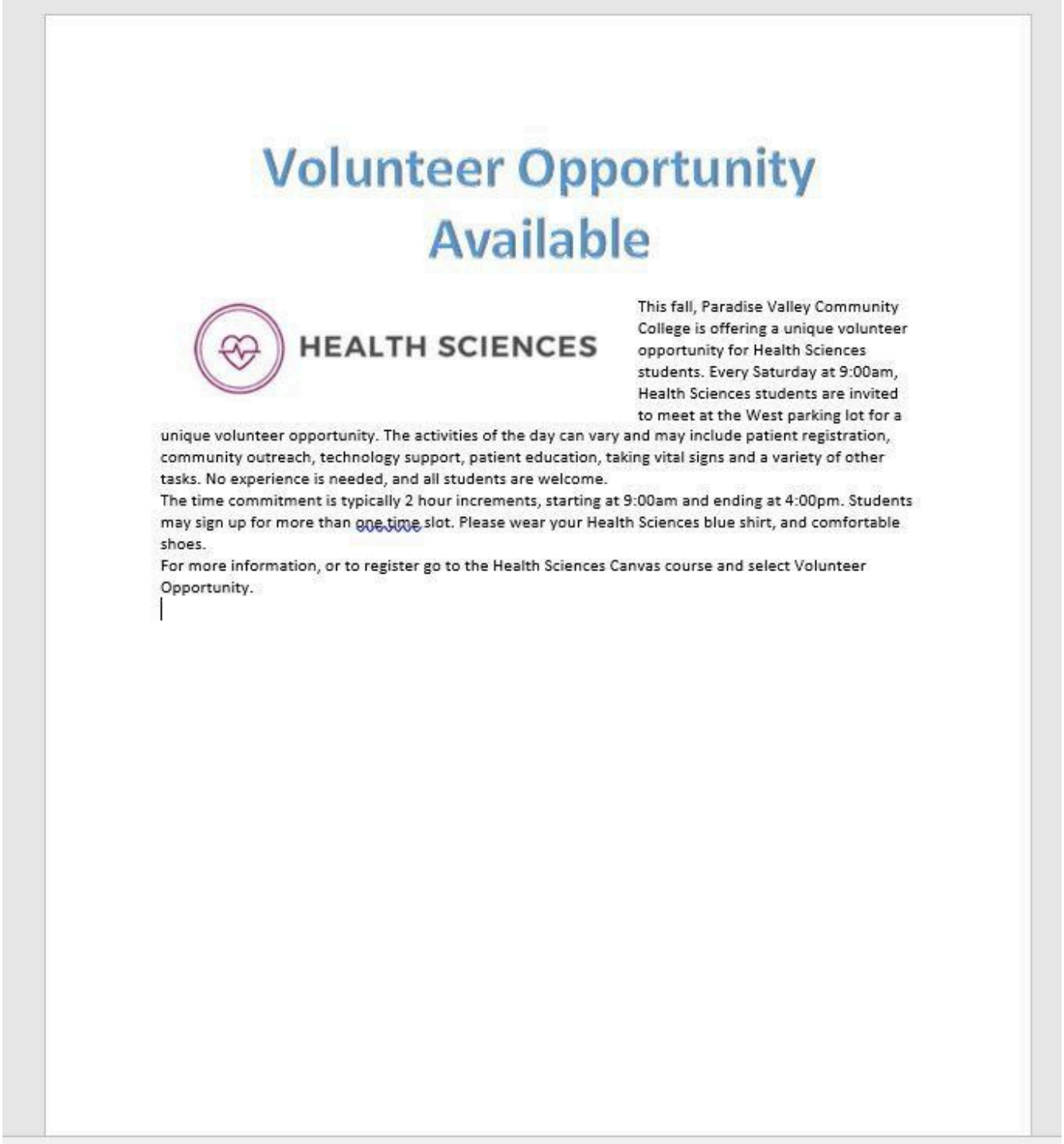
One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=147#oembed-1

Complete the following Practice Activity and submit your completed project.

For our first assignment in Word, we will create a flyer to be printed or posted online. The flyer will advertise a volunteer opportunity for Health Sciences students at Paradise Valley Community College. Key skills in this practice are inserting text, pictures, and textboxes and formatting text and footers.

- Start Word. Click Blank Document.
- Show **formatting marks** by navigating to the Home Tab, Paragraph Group, and selecting the Show/Hide icon. This is a **Toggle Button**. This means it has two modes, on and off. To turn it on, click it once; to turn it off, click it again.
- Show the ruler by navigating to the View tab, Show Group, and selecting the Ruler checkbox. A checkbox is a type of input control. A checkbox value is only included in the submitted data if the checkbox is currently checked. In other words, when the box is checked, the value is included.
- Navigate to the File Tab to enter **Backstage View**. In Backstage View, select File, then Save As. Click the Browse button. In the **Save As dialog box**, navigate to your flash drive and Word folder. In the Name field, type Yourlastname_Yourfirstname_Word_Practice_1 as the file name, and then save.
- Type *Volunteer Opportunity Available* and press Enter twice.
- Type the following text: *This fall, Paradise Valley Community College is offering a unique volunteer opportunity for Health Sciences students*. Press spacebar.
- Navigate to the Insert Tab, Text Group, and choose the Object arrow. Then choose Text from File. In the Insert File dialog box, browse to your Word data files folder. Select the file Text_Word_Practice1. The text will automatically update your document.
- Select all of the text in the document. On the Home Tab, Font Group, ensure the Font is Calibri and Font size is 11.
- Select the title *Volunteer Opportunity Available*, including the paragraph mark. On the Home Tab, Font Group, select the arrow next to Text Effects and Topography. In the third row, third column, apply the Fill: Blue, Accent color 5; Outline: White, Background color 1; Hard Shadow: Blue, color 5 text effect.
- With the title still selected, change the font size to 36.
- On the Home Tab, Paragraph Group, choose Center to align the title centered on the page.
- On the Home Tab, Font Group, change the font color to Blue, Accent 1 for the title.
- With the title still selected, on the Home Tab, in the Font Group, choose the arrow next to the Text Effect and Typography icon. Apply a Shadow and under Inner, click Inside: Right text effect.
- Position the insertion point at the beginning of the paragraph that begins with This Fall.
- On the Insert tab, Illustrations group, choose Pictures. Navigate to your data files folder and choose the HSPicture_Word_Practice1 image.
- Be sure the picture is selected, and apply the Square text wrapping option.
- Using the sizing handle at the lower right-hand corner of the picture, drag up and to the left until the bottom of the graphic is aligned at approximately 3.5 inches on the vertical ruler.
- Click Undo to return the picture to its original size. The Undo icon is located in the **Quick Access Toolbar** in the upper left-hand corner.
- On the Picture Tools, Format Tab, in the size group, change the shape width to 4″.
- On the Quick Access Toolbar, click the Save icon. Then, compare your document to the image below.

Note: You may want to toggle Show/Hide to off so that you can see how the document will look when printed or posted online.



- Ensure the picture is still selected. Display the Layout dialog box by selecting the Layout Options shortcut menu, then choose See more. In the Layout dialog box for the picture, make sure the Position Tab is selected.
- Set the horizontal alignment to Left, relative to Margin.

- Set the vertical alignment to Top, relative to Line. Select OK to close the dialog box.
- With the picture selected, apply the Soft Edges 10 Point picture effect. This is on the Picture Tools Format Tab, Picture Styles group, under Picture Effects, Soft Edges.
- With the picture selected, on the Picture Tools, Format tab, in the Adjust Group choose the Artistic Effects arrow. Apply the Pastels Smooth artistic effect. Deselect the picture.
- On the Design Tab, in the Page Background Group, select Page Borders. Add a page border selecting
    - Shadow setting
    - Triple Lines style
    - Blue, Accent 1 color
    - Whole document
- Position the insertion pointer at the blank paragraph below the title and press Enter four times.
- On the Insert Tab, in the Illustrations Group, choose Shapes. Insert a Rounded Rectangle shape at the left margin at approximately 1.5 inches on the vertical ruler. Click once to insert a 1-inch-by-1-inch Rounded Rectangle, or use the drag-and-drop feature.
- On the Drawing Tools, Format Tab in the Size Group, change the shape height to approximately 1.8 and the shape width to 6.4.
- Select the Rectangle shape and type the following text: *For more information, please contact Grace Smith at 602-787-6714. Or, email info@paradisevalley.edu*
- Italicize the text, change the font to Calibri, and increase the font size to 16.
- With the text still selected, explore the **mini-toolbar** by clicking the Font Color button arrow, and under Theme Colors, click on Blue, Accent 5, Darker 50%.
- With the shape still selected, go to the Drawing Tools, Format Toolbar, the **Shape Styles** Group. Select the arrow next to **Shape Outline** and under Theme Colors, click on Blue, Accent 5, Darker 50%. Change the weight to 3 pt.

Compare your document to the image below.

Note: It is OK if your document does not look exactly like the screenshot below. This is your first attempt at practicing a new skill. You will have the opportunity to make final adjustments, using the skills you learned, at the end of this practice.

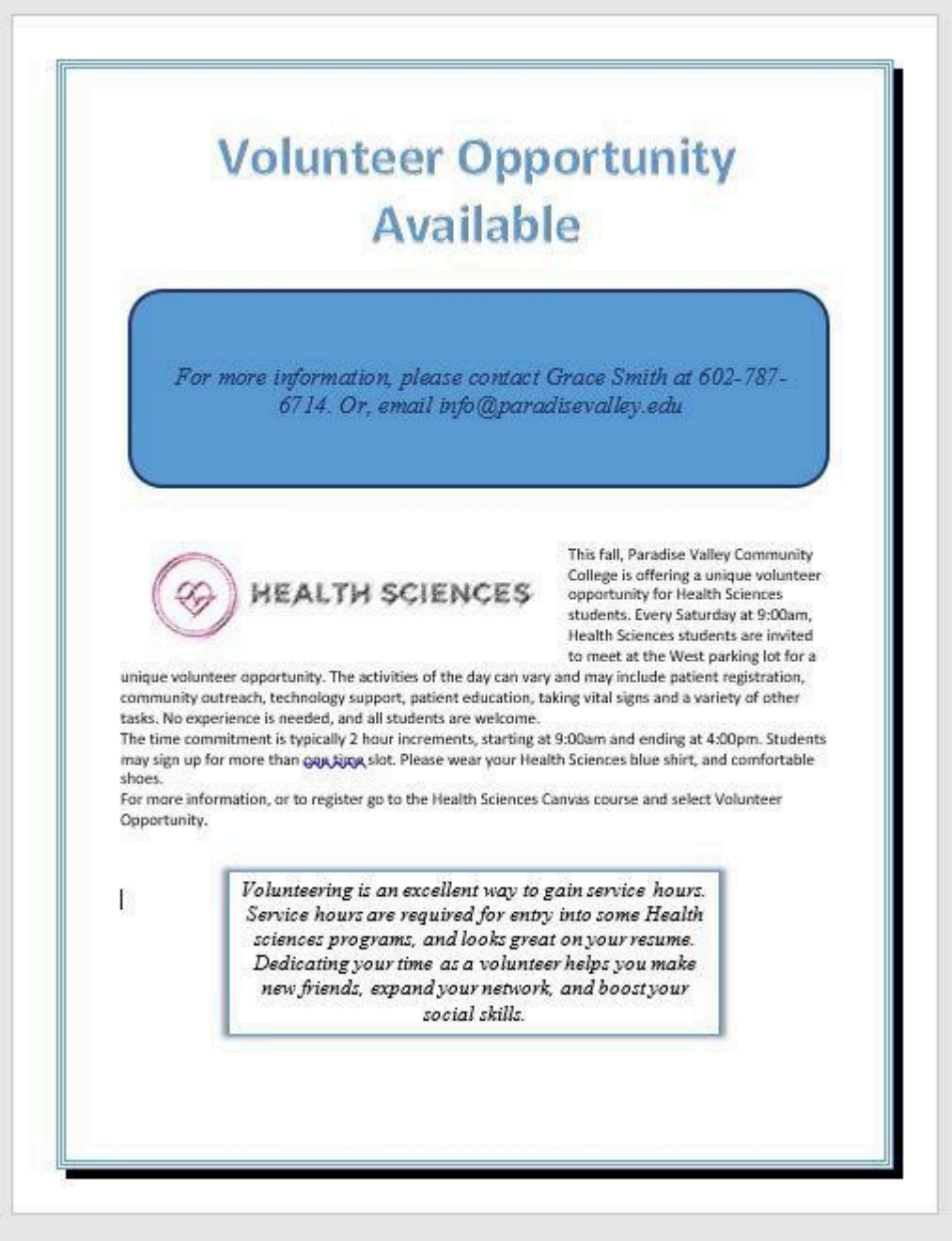
- Using the **keyboard shortcut** CTRL+END, navigate to the end of your document. If your keyboard does not have these keys, click to put your insertion point after the period after opportunity. Hit enter 3 times.
- Your insertion point should be approximately at the 7″ mark on the horizontal ruler. On the Insert Tab, in the text group, click the arrow next to the **textbox** and draw a textbox at approximately the 1″ mark on the vertical ruler. Draw a textbox by dragging down to create a textbox that is approximately 1.5 inches high by 4.5 inches wide. Type the following in the textbox: *Volunteering is an excellent way to gain service hours. Service hours are required for entry into some Health Sciences programs, and it looks great on*

your resume. Dedicating your time as a volunteer helps you make new friends, expand your network, and boost your social skills.

- Select and drag the textbox, by clicking and holding on the outer edge, until the horizontal green **alignment guide** displays above the first blank paragraph mark and the vertical green alignment guide displays in the center of the page. To be more precise,
  - In the Layout dialog box on the Position Tab for the textbox set the horizontal alignment to Centered, relative to Margin.
  - Set the Vertical alignment by typing .75 in the Absolute position box and selecting Below Paragraph.
- On the Size Tab, type 1.5 in the Absolute Height box and 4.5 in the Absolute Width box. Then click OK.

Note: For a reminder on how to set up the precise layout, review the steps above.

- With the textbox still selected, on the Drawing Tools, Format Tab, in the **Shape Styles** group, Apply the Colored Outline—Blue, Accent 1 shape style.
- Under **Shape Effects**, apply the Offset Center outer shadow shape effect to the textbox.
- Select the text in the textbox, change the font size to 14 italics, and center the text.
- Save the document. Compare your document to the image below.



Volunteer Opportunity Available

For more information, please contact Grace Smith at 602-787-6714. Or, email info@paradisevalley.edu

HEALTH SCIENCES

This fall, Paradise Valley Community College is offering a unique volunteer opportunity for Health Sciences students. Every Saturday at 9:00am, Health Sciences students are invited to meet at the West parking lot for a unique volunteer opportunity. The activities of the day can vary and may include patient registration, community outreach, technology support, patient education, taking vital signs and a variety of other tasks. No experience is needed, and all students are welcome.

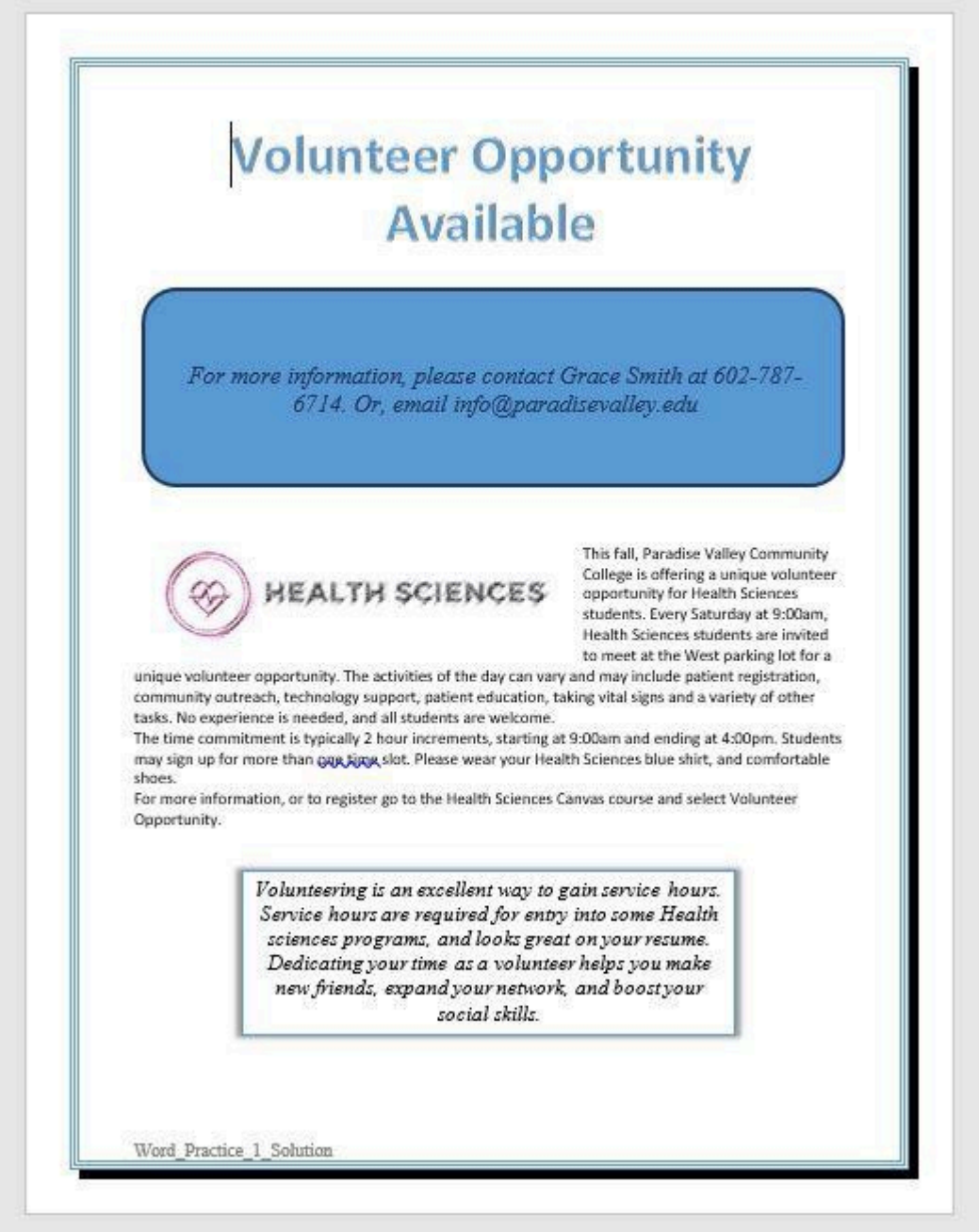
The time commitment is typically 2 hour increments, starting at 9:00am and ending at 4:00pm. Students may sign up for more than one time slot. Please wear your Health Sciences blue shirt, and comfortable shoes.

For more information, or to register go to the Health Sciences Canvas course and select Volunteer Opportunity.

Volunteering is an excellent way to gain service hours. Service hours are required for entry into some Health sciences programs, and looks great on your resume. Dedicating your time as a volunteer helps you make new friends, expand your network, and boost your social skills.

- On the Insert Tab, in the Header & Footer Group, choose Edit Footer. On the Header & Footer Design Toolbar, in the Insert Group, choose Document Info. Use Document Info to insert the file name in the footer. Select the File Name **Field**. The File Name should display in the lower right-hand footer of the document. Do not type it in; rather use the Document Info Field.
- In Backstage view, click on Show All Properties, and type the following:
  - In the Tags box: trainee, flyer, internship
  - In the Subject box: your course name and section number
  - In the Author box: your first and last name

- Turn off formatting marks. As a reminder, formatting marks are on the Home Tab, Paragraph Group.
- Take a moment to compare your document to the image below and make any modifications based on what you have learned.
- Using Find and Replace (Home tab, Editing, Replace), change all instances of PVCC and Paradise Valley to SPSCC or South Puget Sound.



- Zoom in to view the document in a larger size. Zoom is located in the lower right-hand corner of the Word window.
- Save again, and ensure you have your file saved in a safe location. Take note of that location because you

will need to find your file to upload it for grading.
- Submit the file for grading per your instructor's instructions.

WORD PRACTICE 2

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=147#oembed-2

Complete the following Practice Activity and submit your completed project.

For Word Practice 2, we will use Word to create a document to inform potential applicants of a trainee program at South Puget Sound Community College's Fine Arts Division. Key skills in this practice are creating lists, tab stops, and **SmartArt**.

- Start Word and open Starter_Word_Practice2 from your Data files folder. Save the file as Yourlastname_Yourfirstname_Word_Practice_2 in your Word folder. Show the formatting marks and turn on the ruler.
- On the Layout Tab, in the Page Setup Group, Choose the arrow under Margins. Choose Custom Margins. In the Page Setup Dialog Box, change the left and right margins to 1″.
- On the Insert Tab, in the Header and Footer group, choose **Footer**, then Edit Footer. In the Header and Footer Toolbar, Design Tab, in the Insert Group, choose the arrow under Document Info. Add the file name to the footer.

Note: Another way to get to the Footer is to double-click in the lower margin portion of the document. To exit

the footer, double-click anywhere above the footer or below the header. It is preferable to find white space to click in.

- Starting at the top of your document, select all the text in the document. On the Home Tab, in the Paragraph group, select Align left.
- Move your insertion point to the top of the document.
- Select the title only: SPSCC (change PVCC to SPSCC if necessary) Fine Arts Division. Using the **mini-toolbar**, change the font size of the title text to 36.
- Using the technique you just learned, change the font of the second paragraph "Trainee Program" to 24.
- Select the first two paragraphs, and center align them. Compare the first page in your document to the screenshot below.

Note: Another way to select the two paragraphs is to use the CTRL key on your keyboard. This is especially helpful when the sections are nonadjacent.

- Select the entire document. On the Home Tab, Paragraph group, select the arrow next to Line and Paragraph Spacing. Change the line spacing for the entire document to 1.5 and save the document.
- Set the **indentation** for the paragraph that begins, "Our trainee program's primary…" to First Line Indent. This is done by launching the Paragraph dialog box on the Home Tab. In the Paragraph dialog box, on the Indents and Spacing Tab, under Indentation, set the Special Box to First Line by .5″. Click OK. Notice on the ruler, a marker has been set at the .5″ mark.
- In the next paragraph, which begins, "As a trainee," drag the First Line Indent marker to the 0.5 mark on the Horizontal ruler.
- Using either method, apply a first line indent of .5″ to the paragraph beginning with "Here is a partial…"
- Select the entire document. Launch the Paragraph dialog box on the Home Tab. In the Paragraph dialog box, on the Indents and Spacing Tab, change the After Paragraph Spacing for the entire document to 6 pt. Click OK.
- Select the two subheadings, "Requirements" and "Upcoming Trainee Programs" and change the Before Paragraph Spacing for the selection to 12 pt. To select two nonadjacent headings, use the CTRL key on your keyboard. Select the first heading, hold down the CTRL key, and then select the second heading.
- Select the paragraph starting with Educational and the next 2 paragraphs and apply **bullets**. Bullets are located on the Home Tab, Paragraph Group, Bullets. Choose the first bullet option.
- Select the three trainee positions and apply bullets. Use the same bullet style that you applied in the previous step.
- Apply the same bullets to all four paragraphs that have October meeting dates.
- Position the insertion point at the end of the paragraph starting with "Our requirements" following the colon and press Enter one time.

- If necessary, on the ruler, drag the first line indent marker to the left so that it is positioned directly above the lower button and type the following lines:
  - "Be enrolled in an accredited video program," and press Enter.
  - "Be available during the entire production process," and press Enter.
  - "Submit three faculty letters of recommendation."
- Select and format all three lines as a **bulleted list**.
- Select all four of the October meetings. Use the mini-toolbar and select the check mark symbol as a bullet.
- Use **Format Painter** and change the bullets for the two bulleted lists on Page 1. The Format Painter is on the Home Tab, Clipboard group. To use the format painter, select the area first. Then, click the format painter icon once to activate it. Then, select the area that you would like to "paint." This will apply the format you originally selected.

Note: If you double-click the format painter, it will "hold" the format so that it can be applied to multiple selections.

- Select the bulleted list of October meeting dates on Page 2.
- Ensure the **tab indicator** to the left of the horizontal rule is set to Left Tab. You can verify this by hovering your mouse over the tab indicator. If you click once, it will change the indicator.
- Using the horizontal ruler, set a left tab at the 4-inch mark. The Left Tab is set by clicking once on the 4-inch mark on the horizontal ruler. You will see the Left Tab indicator show up on the ruler.
- Drag the new tab marker at 4 inches to 4.5 inches on the Horizontal ruler, and then double-click it to launch the Tabs Dialog Box.

Note: If the Tabs Dialog box does not display, launch the Paragraph Dialog Box, then click Tabs.

- In the Tabs Dialog Box, ensure the 4.5″ tab stop is highlighted. Change alignment to Left.
- In the **Tab Stop** Position, replace the 4.5 with 3.5.
- Select the 3 **leader** option. Select set.
- Clear the 4.5″ tab stop position by selecting it, then clicking Clear. Repeat this process with all tab stops until the only one displayed is the 3.5″. Select OK to close the Tabs Dialog Box. Compare your bulleted, leader list to the image below.

- In the bulleted list with dot leaders, position the insertion point at the end of the line starting with Filming and ending with Studio A. Enter a new blank bullet item, type Set Creation Press Tab, and type October 11, 7:00 p.m., Cafeteria. Save your work.
- At the top of the document, move the insertion point to the blank space above "Trainee Program" and hit enter one time.
- On the Insert Tab, Illustrations group, insert a Circle Process **SmartArt** graphic. This is under the Process grouping.
- In the first blue circle of the SmartArt graphic, type Apply.
- In the placeholder in the middle row, type Interview. Notice how the SmartArt shape automatically resizes the text you enter for the best fit.
- In the third circle, type Learn.
- Click the outer border of the SmartArt to ensure the entire graphic is selected.
- On the SmartArt Toolbar, Format Tab, Size group, change the SmartArt height to 2 and the width to 6.5.
- With the SmartArt still selected, on the Smart Art Toolbar, Design Tab, in the SmartArt Styles Group, change the color to Colorful—Accent Colors.
- Ensure the SmartArt is still selected, on the SmartArt Toolbar, Design Tab, in the SmartArt Styles Group Apply the 3D Cartoon SmartArt style.
- Scroll to the end of the document, or use the shortcut keys CTRL+END. Press Enter and drag the first line indent back to the left margin.
- On the Insert Tab, Media Group, choose Online Video.
- In the Search Box next to **YouTube**, type "PVCC Fine Arts" to search for a video to embed. Select the video, and then click Insert. If you do not have the YouTube search box, you can find PVCC Fine Arts on YouTube by following this link: https://www.youtube.com, and searching for PVCC Fine Arts.
- With the embedded video selected, on the Picture Tools, Format Tab, in the Size group, change the Height and Width of the picture to 2″.
- On the Home Tab, Paragraph Group, Center the video icon.
- Save your document, and compare it to the screenshot below.
- Submit the file for grading per your instructor's instructions.

WORD PRACTICE 3

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=147#oembed-3

Complete the following Practice Activity and submit your completed project.

For Word Practice 3, we will use Word to create a resume that will be used to apply for a Help Desk position at the SPSCC Help Desk. Key skills in this practice are creating and modifying tables and sharing documents online.

- Launch Microsoft Word. Click Blank Document.
- Show formatting marks and show the ruler.
- Save the document as Yourlastname_Yourfirstname_Word_Practice_3 in your Word Folder.
- On the Insert Tab, in the Header and Footer group, Choose **Footer**, then Edit Footer. In the Header and Footer Toolbar, Design Tab, in the Insert Group, choose the arrow under Document Info. Add the file name to the footer. Exit the footer.

- At the top of your document, Insert a 2 X 4 **table**. To insert a table, navigate to the Insert Tab, Tables Group, and drag your cursor in the grid to create a table with two columns and four rows.
- Beginning with the first **cell** in the table, type each of the following, pressing Tab at the end of each item:
  - PROFESSIONAL OBJECTIVE [Press Tab]
  - Desire a Help Desk Assistant position where I can use my expertise in providing desktop and application support to users. [Press Tab]
  - QUALIFICATIONS [Press Tab]
  - A results-oriented help desk specialist experienced in providing in-depth customer support. [Press

Enter]
    - Demonstrated ability in diagnosing problems. [Press Enter]
    - Extensive end-user training experience. [Press Enter]
    - Capable of working with a diverse customer base. [Press Enter]
    - Experienced in different operating systems and applications. [Press Tab]
- In the third row, type WORK EXPERIENCE and press Tab.
- Using the Insert Text from File function, insert the text from Text_Word_Practice3.

Check to see if the **Resume Assistant** displays on the Review tab. If not, go to the next step. If so, click Resume Assistant and add the role Help Desk Assistant, add the technology industry, and then click a related service. Scroll down to view more resumes, interesting articles and a link to get started on LinkedIn. Close the Resume Assistant.

- Remove the blank line at the end of the inserted text.
- In the fourth row, in the column to the left, type EDUCATION AND CERTIFICATIONS and press Tab.
- Type the following, pressing Enter at the end of each line except the last one:
    - University of Youngstown, Youngstown, OH
    - Bachelor of Science degree in Computing, 2020
    - Microsoft Certified Solutions Expert (MCSE)
    - CompTIA A+
    - CompTIA Network+
    - CompTIA Security+

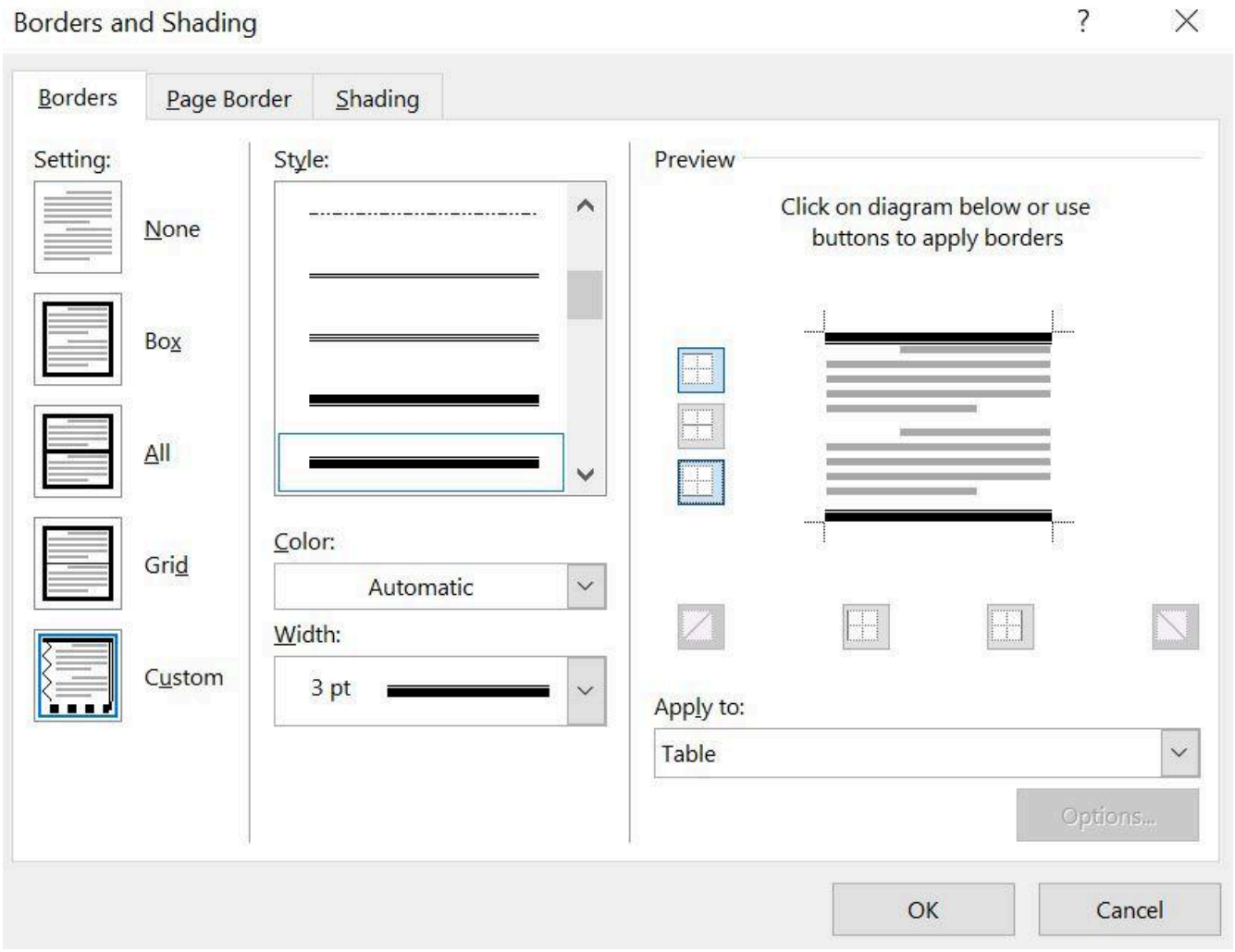
- Select all the text in the cell to the right of QUALIFICATIONS, apply bullets, and decrease the indent. The bullets and decrease indent are located on the Home Tab, Paragraph Group.
- Use the Format Painter to copy the bullets and decrease the indent to the description of the work experience.
- In the text next to EDUCATION AND CERTIFICATIONS, apply bullets to the list. Increase the indent for the Bachelor of Science Degree.
- Drag the table vertical border between the two columns until the white arrow is at approximately 1.5 inches on the horizontal ruler.

- Select the text in the first column. Ensure all of the text in the first column is left aligned.
- On Table Tools, Layout Tab, Cell Size group, using the Width box down spin arrow, set the column width to 1.4 for the first column.
- Click Auto-fit and select Auto-fit Window.
- Use the **one-click Row/Column insertion** button to insert a new row above EDUCATION AND CERTIFICATIONS.
- In the left cell of the new row, type TECHNICAL SKILLS and press Tab. If necessary, turn off the bullets.
- In the second column, type the following, pressing Enter at the end of each line, except the last one:
  - Platforms: Windows 10, MacOS, Unix
  - Applications: Microsoft Office 365, Norton/McAfee Anti-Virus, Norton Internet Security, Photoshop
  - Strong knowledge of LAN and WAN technologies
  - Solid knowledge of Oracle Help Desk system
- In the top row of the table change the top and bottom cell margins to 0.04. Cell margins are on the Table Tools Layout Tab, Alignment Group. Remove any extra spaces or lines in the first row of the table.
- At the top of the document, insert a row above the first row. On the Table Tools Layout Tab, in the Rows & Columns Group, choose Insert Above.
- Select the entire first row that you just added. On the Table Tools Layout Tab, Merge the two cells in the top row.
- In the first row of the table type:
  - Matt Smith [Press Enter]
  - (867) 555-1012 [Press Enter]
  - 1254 Success Way Phoenix AZ 85320 [Press Enter]
  - msmith@pacifica.net[Press Tab]

Note: Pressing Tab would move to the next cell, whereas pressing CTRL + Tab moves within the cell.

- Select Matt Smith and use the mini-toolbar to bold and italic and change the font size to 14.
- Select all of the text in the first row, and set Spacing Before and After to 0 pt. Remove any extra line spacing.
- With all of the text still selected in the first row, center all of the text.
- Beginning in the second row, italicize and bold all of the headings in the left-hand column.
- In the cell to the right of WORK EXPERIENCE, italicize and bold the job title “Help Desk Technician.”
- In the cell to the right of EDUCATION AND CERTIFICATIONS, bold University of Youngstown. Change the Spacing After to 12 pt. for the line beginning with Bachelor.

- In the cell to the right of WORK EXPERIENCE, select Help Desk Technician and set the spacing to 12 pt. after.
- Select the entire table and remove all the borders. There are a few ways to do this:
  - Click the crosshair indicator in the upper left-hand corner of the table
  - Start at the top of the table and click and drag to select the entire table
  - Use the shortcut key CTRL + A
- On the Table Tools, Design Tab, in the Border Group, select No Border.
- With the table still selected, in the Table Tools, Design Tab, in the Border Group, select Borders and Shading. In the Borders and Shading dialog box, apply the thick upper line and thin lower line table style to the top of the table and the thin upper line and thick lower line to the bottom of the table.



- In the line beginning with Matt Smith, change the Spacing Before to 12 pt.
- In Backstage View, display the print preview under Print. If necessary, exit Backstage View and make modifications. Compare your documents to the image below.
- In Backstage View, under Info, show advanced properties and type in the keywords box "resume."

- Type your course name and section number in the Subject box and be sure your name is in the Author box.

Note: For this activity, you will have to use a second account or work with a partner who is available to view your presentation.

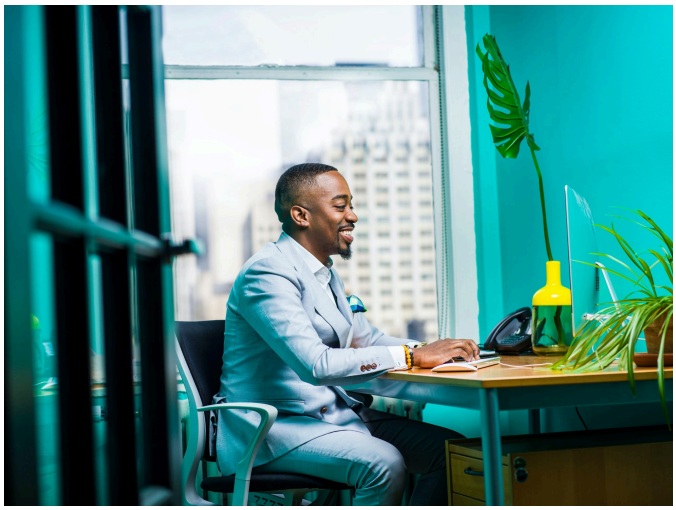
- In Backstage View, click Share, **Present Online**.
- Share the document using Present Online. Select one of the two methods for using the link or sending the link to your partner or instructor.
- Click Start Presentation, and when you are finished, end the presentation. Save the document and before closing Word, verify where your document is saved. Close Word.
- Submit the file for grading per your instructor's instructions.

WORD PRACTICE 4

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=147#oembed-4

Complete the following Practice Activity and submit your completed project.



For Word Practice 4, we will use Word to create a **cover letter** to accompany your resume that you created in Word Practice 3. Key skills in this practice are creating a **letterhead**, finding and replacing text, drag and drop, table styles, and editing and checking your document.

- Start Word and display a new blank document. Display the formatting marks and rulers.
- Save the file as Yourlastname_Yourfirstname_Word_Practice_4 in your Word folder.

Note: On the Design Tab, in the Document Formatting group, you will see Styles. Click the down arrow to view the Default and No Paragraph style and examine the screen tips. Leave the Default style set.

- Type the following, pressing Enter once after each line.

Matt Smith
1531 New York Avenue, New York, NY 37201
(919) 555-1221 msmith@hire.net

Note: If the email address automatically converts to a hyperlink, remove it by right-clicking and selecting Remove Hyperlink.

- Select the name Matt Smith and change the font to 18 and apply bold.
- Select the second and third paragraphs that contain the address and contact information. Change the font to 12, apply bold, and Align right.
- With the second and third paragraphs selected, change the line spacing options to single, and check the box to not add a space between paragraphs of the same style.
- Click in the first paragraph with the name, and insert a solid 2 ¼ pt. single line border below the

paragraph. To launch the borders and shading dialog box, go to the Home tab, Paragraph group, click the arrow next to the borders icon, and launch borders and shading at the bottom of the list.

- Using Document Info, add the file name to the footer.
- Move the insertion point to the blank line below the letterhead and press Enter three times. Ensure the alignment is set to align left.
- Using Insert Date & Time, insert the date using the third date format and press Enter four times. Insert Date & Time is located under the Insert tab, Text Group, Date & Time.
- Type the following address, pressing Enter after each line, except the last line:

  Mr. Stephen Shell, Human Resources Manager
  MBIM
  352 Crosslove Way
  Borderline, KY 40505

- Press Enter two times.
- Right-click on the word Borderline. Choose the first option to correct the word to Borderline.
- Select the entire **inside address**. Change the Spacing After for the inside address to 0, and remove the space before and after the paragraph if necessary.
- Type Dear Mr. Shell: and press Enter two times.
- Type exactly as shown:

  I am writing to express my interest in a position at your company. My enclosed resume details specific information regarding my background.

- Press Enter two times.
- Using the Text From File command, insert the text from the Text_Word_Practice_4 file.
- Press Enter one time and type:

  Sincerely, [press Enter four times]
  Matt Smith

Note: If you were going to print and deliver the resume and cover letter, you would want to type "Enclosure" below your signature.

- Select the text beginning with the date and through the end of the document and change the spacing after to 0.
- Position the insertion point at the beginning of the document. On the Home Tab, in the Editing Group, choose Find. The Navigation Pane will open on the left-hand side.
- In the search document box, type "background" and hit Enter. Notice how this word is now highlighted in your document, and a preview displays below in results.
- Click the arrow next to the search document box, and click replace. The Find and Replace dialog box will appear. In the "Replace with" box, type "experience." Replace the first instance, and then close the dialog box.
- In the paragraph that begins "As shown on," select and drag the word skills to the right of the word unique. Use the drag-and-drop technique by selecting the text, holding down the mouse or cursor, and moving the text to the new location.
- In the paragraph that begins with "You can contact," drag the first sentence to the end of the paragraph. Use the drag-and-drop technique by selecting the text, holding down the mouse or cursor, and moving the text to the new location.
- Position the insertion point in the blank paragraph above the paragraph beginning with "You can contact me."
- On the Insert tab, tables group, Insert a 2 x 3 table.
- In the first cell of the table, type Communication Skills.
- Complete the table using the following information:

Communication Skills	Excellent Listener, Stress Management and Emotion Control
Technical Skills	Operating Systems, Applications, Networking
Education	Bachelor of Science

- Ensure the table is selected. To autofit the contents of the table, on the Table Tools Layout tab, in the cell size group choose Autofit, contents.

- On the Table Tools Design tab, on the Table Styles group, apply the Grid Table 4—Accent 2 table style. Ensure the Header Row checkbox is not checked.
- Center the table between margins.
- On the Review tab, in the Proofing group, choose Spelling & Grammar.
- Beginning at the top of the document, perform a **spelling and grammar check**, correcting all errors. Ignore spelling errors related to names. Delete any repeated words.
- In the paragraph that begins "As shown on," use the Thesaurus to change *shown* to *presented*. Select the word *shown*, right-click, and select synonyms. If the word presented does not display, launch the thesaurus for other options.
- Save your document and display Backstage view.
- In Backstage view, show all properties. Type cover letter in the Keywords box, your course name and section number in the Subject box, and be sure your name is shown in the Author box.
- View the Print Preview in Backstage View. The document should fit on one page. If not, make adjustments to ensure your cover letter is one page. Compare your document to the image below.

Matt Smith

1531 New York Avenue, New York NY 37201
(919) 555-1221 msmith@hire.net

March 4, 2022

Mr. Stephen Shell, Human Resources Manager
MBIM
352 Cross Love Way
Borderline, KY 40505

Dear Mr. Shell:

I am writing to express my interest in a position at your company. My enclosed resume details specific information regarding my experience.

As presented on my resume, I have unique skills that qualify me for this position. In college, I earned a place on the Dean's List multiple semesters and have earned recognition for my work at the Puma Press. Through education and work experience, I believe that I exceed in the following areas:

Communication Skills	Excellent Listener, Stress Management and Emotional Control
Technical Skills	Operation Systems, Applications, Networking
Education	Bachelor of Science

I learn quickly and am a team player. One of my strongest attributes is that I communicate well, and stay calm during stressful situations. I strive in a fast paced, dynamic environment.

I am available for an interview at your convenience. You can contact me by email at erusso@tse.net or by telephone at (615) 555-1384.

Sincerely,

Matt Smith

Word_Practice Solution.docx

- Submit the file for grading per your instructor's instructions.

WORD PRACTICE 5

Prefer to watch and learn? Check out this video tutorial:

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Complete the following Practice Activity and submit your completed project.

For Word Practice 5, we will use Word to create a research paper. Key skills in this practice are formatting a research paper, footnotes and endnotes, citations and bibliographies, and advanced properties.

- Start Word, and open the file Starter_Word_Practice5 from your data files folder on your flash drive. Save the document as Yourlastname_Yourfirstname_Word_Practice_5 in your Word Folder.
- Select all of the text in the document. For the entire document, change the line spacing to 1.5 and the Spacing After to 0 pt.
- Create a blank paragraph at the top of the document. After placing the insertion point in the blank paragraph, type the following, pressing Enter at the end of each line except the last:
  - Emily Sophia
  - Dr. Michelle Carter
  - HTM Research Capstone
  - April 20, 2020
  - Technology and Your Health
- Center the text in the last typed line: Technology and Your Health.
- On the Insert Tab, Header & Footer group, select Header, then Edit Header. In the Header on the first page, type Sophia and then spacebar.

- On the Header & Footer toolbar, Design tab, in the Header & Footer Group, choose Page Number. Add a Simple Plain Number page number in the current position and right-align the header.
- Select all the text beginning with "The Idea of" to the end of the document. With the text selected, on the Home Tab, Paragraph Group, click the arrow next to the Line and Paragraph Spacing icon and choose Line Spacing Options. Under Indentation, apply the First line indent. Confirm that the By: box is set for 0.5″. Click OK. Deselect the text and notice how the first line of every paragraph is indented by half an inch.
- On the Insert Tab, Header & Footer group, Edit the Footer. Use Document Info to add the filename to the footer. Double-click in the white space in the document to exit from the Footer view.
- In the paragraph that begins with "Self-quantifying," position the cursor in the second line of the paragraph to the right of the period after "self-trackers" on page 2.
- On the References Tab, Footnotes group, choose Insert **Footnote**. Notice how the insertion point moves to the bottom of the page, and a "1" is inserted. To add the footnote, type "The Department of Health & Human Services is researching methods to improve healthcare." A footnote indicator was automatically added to self-trackers[1].
- Select the entire text of the footnote at the bottom of the page, including the "1." Right-click within the gray highlighted area, and choose Style. Choose Modify to modify the current style. Modify the style of the footnote at the bottom of Page 2 by
    - Changing the font size to 9
    - On the bottom left side under Format, choose Paragraph. Set the First Line indentation to .05″
    - Select Double line spacing
    - To apply your changes and back out of these screens, select, OK, OK, and Apply.
- On the References Tab, in the Citations & Bibliography group, in the Style Window, set the bibliography style to **MLA 7th Edition**.
- Position the insertion point to the right of the period at the end of the paragraph that begins "To see how" on Page 2. To add a **citation**, go to the References Tab, Citations & Bibliography group, and choose Insert Citation, Add a new Source. Add the following book citation:
    - Author: Henderson, Robert
    - Title: Living with Technology
    - Year: 2016
    - City: Chicago
    - Publisher: Grant Publishing
    - Medium: Print
- Click OK to add the citation. Notice how an in-text citation automatically populated at the end of the paragraph.
- Select the in-text citation, and right-click and choose Edit Citation. Edit the citation by typing 4 in the Pages box.

- Type a period to the right of the citation and delete the period to the left of the citation.
- On Page 2, at the end of the paragraph that begins "He found that drinking," position the insertion point after the letter *e* in *ignore* and to the left of the period and add the following book citation:
  - Author: Johnson, Ralph A. and Mary Martin
  - Title: Impact of Technology on Mental Health
  - Year: 2015
  - City: New York
  - Publisher: The IT Press
  - Medium: Print
- Edit the citation by typing 25 in the Pages box.
- At the end of the next paragraph that begins "Many of the 250," position the insertion point after the letter *e* in *balance* and to the left of the period and add the following website citation:
  - Author: Jones, B. E.
  - Name of Web Page: NIH 2014-April Brief
  - Year: 2017
  - Month: April
  - Day: 29
  - Year Accessed: 2018
  - Month Accessed: May
  - Day Accessed: 15
  - Medium: Web
- At the end of the document, insert a manual page break. On the Layout tab, Page Setup Group, choose Page Breaks, Page.
- On the new blank page, set the paragraph indentation to None.
- On the References Tab, Citations & Bibliography Group, choose the arrow next to Bibliography and select the text Insert Bibliography.
- Above the first line of the bibliography (you may need to hit Enter to create space for the title), type Bibliography.
- Select the title Bibliography. Change the font to Arial Black, the font size to 14, the font color to Black, Text 1, and then center the text.
- Select the three references but not the blank paragraph and change the paragraph line spacing to 2.0 and the spacing before and after to 0 pt. Select OK.
- On the References Tab, in the Citations & Bibliography group, select Manage Sources to launch the Source Manager. Using the Source Manager, in the Master List, change the H in Henderson to B. Click Yes to any messages that populate, then click OK.
- Select the three sources under Bibliography. Right-click in the gray box, and choose Update Field. Notice this updates the citations and bibliography to reflect this change.

- In Backstage View, add the following document properties:
  - Document title: Technology and Health
  - Keywords: technology, research paper
  - Comments: Draft of class report
  - Subject box: your course name and section number
  - Company: SPSCC HTS Program
  - Manager box: Dr. Michelle Carter
  - Author: your first name and last name

Note: Use the Summary tab on the Advanced Properties dialog box, to display the document properties and the Statistics tab to show document statistics.

- Select Quantified Self on page 1, fourth paragraph, and click Smart Lookup on the Review Tab. If necessary, click Got It, and show any additional information source. Choose one or two sites to view, and then close the Smart Lookup Pane.
- Move to the top of the document and display the document in Read Mode by going to the View tab, in the View Group choose Read Mode.
- Click Tools from the upper left corner. Click Find and in the search box type Benderson. Notice how the results display in the Navigation Pane and are also highlighted in the text of the document.
- Click View in the upper left-hand corner.

Click Edit Document to return to Print Layout view. Close the Navigation Pane if necessary.

- Take a moment to Save your file, and ensure you know the location where it is stored. Most likely this is in your Word Folder on your flash drive.
- In Backstage View, select Save As Adobe PDF, then Save. Your file location should default to the same location. If not, make note of where your file is being saved. It may take a few minutes to convert your document to a PDF. View your file once it is converted, and then close it.
- Using Windows Explorer, open a new folder and navigate to where your PDF file is saved. Do not open your file. Instead, right-click on the file icon, choose Open with, Word 2016. The PDF file will start to convert back to Word. Click OK. Take note of any changes that might have occurred during the file conversion process.
- Submit the file for grading per your instructor's instructions. Be sure to submit your Word Document, not the PDF file.

WORD PRACTICE 6

Prefer to watch and learn? Check out this video tutorial:

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Complete the following Practice Activity and submit your completed project.

For Word Practice 6, we will use Word to create a **newsletter** for Health Sciences students at SPSCC. Key skills in this practice are formatting text as columns, editing pictures, and inserting **screen clips**, symbols, and **special characters**.

- Start Word and open Starter_Word_Practice6. Save the file as Yourlastname_Yourfirstname_Word_Practice_6 in your Word folder.
- Using Document Info, insert the file name in the footer.
- Select the first paragraph that begins with Paradise Valley and change it to South Puget Sound and apply Bold text and change the font color to Blue-Gray, Text 2.
- With the title still selected, go to the Home Tab, Paragraph Group, select the arrow next to Borders and choose Borders and Shading to launch the Dialog Box. Add a Blue-Gray, Text 2Darker 25%, 2¼ pt. solid line bottom border.
- Select all the text beginning with Health Sciences Newsletter down to the end of the document excluding the final paragraph.
- On the Layout Tab, Page Setup Group, Set the columns to two. Compare your screen to the image below:

Paradise Valley Community College 18401 N. 32nd Street
Phoenix, AZ 85032

Health Sciences Newsletter
December

Winter Scholarship Fundraiser

Donations are still being accepted for the annual Winter Gala dinner and silent auction. This is our biggest fundraiser of the year, benefiting the Student Emergency Fund. Bring your items to Sylvia Haines, Director of Programs, no later than December 10. Her office is in the Q building. We expect a large turnout for this event, so please be sure to make your reservations by calling Stacy Lu at (930) 555-1243 between the hours of 9:00 AM –noon and 1:00 PM – 5:30 PM before the deadline.

Volunteer of the Year Announcement

Joan Stephens, an energetic volunteer for our Health Sciences Student Athletes, is the recipient of the volunteer of the year award. Please stop by the J Building to sign a congratulatory card for her. Cards may also be sent to:

Joan Stephens c/o Volunteers USA

109 Heather Avenue

Phoenix, AZ 85100

December Birthdays

Date	Name
11	Mary Margolis
17	Antonio Ramirez
18	Lydia Zimmerman
20	Eleanor Robinson
27	Stefan Richards

Volunteers Needed

We still need peer leaders for the following sessions. Please contact Abigail Gardner if you can help.

Registration 101: Navigating the Process. A session for new students.

When: March 27 at 4 p.m.

Where: Black Mountain Campus

Communicating with your Instructors: A class for students to learn the most effective way to send and receive messages and work with attachments.

When: April 3 at 6:30 p.m.

Where: Main Campus

When you are finished with our newsletter, please pass it on to someone else to read or recycle it

Solution_Word_Practice6

- With the two columns of text still selected, change the spacing after to 6 pt. and Justify the text.
- Position the insertion before December Birthdays and insert a column break on the Layout tab, breaks group, and select column. This will ensure the column of December Birthdays is a new column.
- Position the insertion point at the end of the document in the empty space after the paragraph that begins with "When you are finished..."
- On the Insert tab, Illustrations Group, Select Pictures. Browse to where your data files are stored and insert the Health Sciences Logo named Word_Practice_6_Image1.
- With the picture selected, on the Picture Tools, Format toolbar, set
  - The picture height to 2.0".
  - The text wrapping layout to Top and Bottom.

    - The horizontal alignment to Centered, relative to Column.
    - The vertical alignment to Bottom, relative to Margin.
    - Select OK.
- With the picture selected, on the picture tools, Format toolbar, in the Size group, choose the arrow under Crop.
- Using the Cropping handles on the picture, crop the picture by using the far right crop handle, dragging to the left until only the circle heart logo is visible. Everything in the gray area will be cropped. The cropped image should look something like this:

- With the image still selected, choose layout options. Use the Text Wrapping tab to change the layout text wrapping to Square. Choose more. Under options, choose **Lock Anchor**.
- Use the Position tab to set the horizontal alignment to Centered, relative to Page.
- With the image still selected, zoom to 200%.
- On the Picture Tools, Format Toolbar, Adjust Group, choose the arrow next to Corrections. Under **Sharpen/Soften**, choose Sharpen 50%.
- Under Color, choose Saturation 400% for the **Color Saturation**.
- Under Corrections, set the Brightness/Contrast to Brightness: +20% Contrast +20%.
- With the picture still selected, set the Zoom back to 100%.
- Resize the picture to 2.17″ for the height and 2.65″ for the width.
- With the picture still selected, on the Picture Tools, Format toolbar, in the Size Group, choose the arrow next to Arrange. Choose the arrow next to rotate and then choose Flip Horizontal.
- Near the top of the document in the left column, delete the word December. Position the insertion point in the blank paragraph under Health Sciences Newsletter.
- Open a new web browser window and navigate to https://www.paradisevalley.edu/degrees-certificates/health-sciences, change this to https://www.spscc.edu/degrees-cetificates/health-sciences.
- Redisplay the newsletter, and ensure the insertion point is in the paragraph below Health Sciences Newsletter. On the Insert tab, click Screenshot, and then click **Screen Clipping**. Drag from the upper left corner of the browser below the address bar to the lower right corner above the taskbar. Your screen clip may vary based on the resolution and web browser utilized.
- With the Screen Clip selected, resize height to .8″ and the width to 3.12.

- With the picture still selected on the Picture Tools Format tab, choose **Quick Styles** and select the first Style: Simple Frame White.

Note: After inserting the screen clip, you may need to readjust the position of the logo at the bottom of the document. Since the Text Wrapping is set to Square, you can manually adjust it by selecting and dragging it.

- Near the top of the document, select the text Winter Scholarship Fundraiser and
  - Change the font color to Blue Gray Text 2.
  - Apply Bold.
- With the text still selected, launch the Font dialog box. Under effects, choose the checkbox next to **small caps**.
- Using **Format Painter**, apply the same formatting to each of the heading paragraphs. To use the Format Painter, select the text. Then select the Format Painter icon on the Home Tab, Clipboard Group. Then select the text that you would like to apply formatting to.
- In the paragraph under the heading Winter Scholarship Fundraiser, delete the comma and space between Sylvia Haines and her title and insert an **em dash**. This is a **special character** located on the Insert Tab, Symbols Group, Symbol, More Symbols, Special Characters, Em Dash.
- Select the title of the document that begins with Paradise and ends with 85032. Change this content to South Puget Sound Community College and insert the college's address from the SPSCC website.
  - Apply a Blue Gray Text 2, 1½ pt. shadow border.
  - Apply a Blue Gray Text 2 Lighter 60% shading.
  - Center the text.
- Position the insertion point in the second column, towards the bottom of the document under Main Campus. On the Insert Tab, Text Group, select the arrow next to **Word Art**. In the second row, the second column choose the Word Art Style Gradient Fill-Blue, Accent 1, Reflection.
- With the Word Art still selected, use the drag and drop technique to position it so that it is centered in the column. Ensure the font size of the WordArt is 28. In the WordArt type: We appreciate you!
- On the Design Tab, Choose Page Borders. In the Page Borders Dialog Box, choose the Box Border, the style with a thick upper line and thin bottom line, Automatic color, 3pt width, to the whole document.
- In Backstage view, add "newsletter, March" to Keywords, course name and section number to Subject, and make sure your name displays as Author.
- Save the document and compare it to the image below. Make any adjustments before submitting per your instructor's instructions.

MASTER ACTIVITY 1

Complete the following Master Activity and submit your completed project.

Google Docs

During the first chapter, you should have already created a Google Account. You will need to be logged into your Google account to complete this assignment. Since Google docs is web based, it changes frequently. The steps outlined here may be slightly different from what you see on your screen. If you do not already have a Google account, you will need to create one. Go to http://google.com and in the upper right corner, click Sign In. On the Sign In screen, click Create Account. On the Create your Google Account page, complete the form,

read and agree to the Terms of Service and Privacy Policy, and then click Next step. On the Welcome screen, click Get Started.

- From the desktop, open your browser, navigate to http://google.com, and then sign in to your Google account. In the upper right corner of your screen, click Google apps, and then click Drive. If you are already logged into your South Puget Sound Google Apps Account, click Apps, then Drive.
- To create a folder in which to store your web projects, click New, and then click Folder. In the New folder box, type BPC110 and then click Create to create a folder on your Google Drive. Double-click your folder to open it.
- In the left pane, click New, and then click Google Docs to open a new tab in your browser and to start an Untitled document. At the top of the window, click Untitled document and then, using your own name as the file name, type Lastname_Firstname_WordMaster1 and then press Enter to change the file name.
- To the right of the file name, point to the small file folder to display the ScreenTip Move to. Click the file folder and notice that your file is saved in the BPC110 folder.
- Click in your document to close the Move to folder dialog box and to position the insertion point at the top of the document. Type Internship Opportunity and then press Enter two times. Type: Interviews will be held Friday and Saturday, January 14 and 15 in the Career Services Office.
- Select all of the text. Click the Font size arrow, and then click 24. With the text still selected, click Center.
- Select the title Internship Opportunity and then click Text color. In the first column, click the last color, and then apply Bold.
- Select Enter two times to create empty space after the text. Click Insert, and then click Image, then Search the Web. In the search box type Social Media and insert any image that represents social media.
- Click the picture to select it, and then point to the square sizing handle at the upper left corner of the picture. Drag down and to the right until the sizing handle aligns with approximately 3 inches on the ruler.
- If necessary, scroll up to view the image and the text above it. Click directly under the picture and insert a 2 x 2 table by selecting the Insert Tab, then Table. Type Join our team as a social media coordinator in the first cell of the table. Select the entire first row of the table, right-click, and choose Merge. Then, center the text. In the second row of the table in the first cell, type: Interviews will be conducted on the spot.
- In the last cell, type: We are hiring two interns!
- Select all of the text in the table, change the font size to 14, and change the color to any color that coordinates well with your image.
- If necessary, select the **ellipses** in the Toolbar (three dots) to view the table border width, and select zero so that no borders are displayed.

- Click Insert, Headers and Footers, and then Footer.
- In the Footer, choose the arrow next to options. Enter a page number and center it on the page.
- Click Tools, Spelling and Grammar, Spelling and Grammar Check. Verify Spelling and Grammar are correct.
- Take a moment to preview your document, and make any adjustments as necessary. Ensure your document fits to one page only.
- Your document will be saved automatically. Submit as instructed by your instructor

MASTER ACTIVITY 2

Complete the following Master Activity and submit your completed project.

In this activity, you are working for an employment agency and have been asked to fix a resume before sending it to potential employers. Follow the guidelines below to correct the resumes, ensuring it is professional, organized, and easy to read without changing the content.

- From your data files, open the file Starter_Word_Master2. Rename the file as Lastname_Firstname_Word_Master2.
- Merge the first two cells in the first row of the table.
- Center the text in the first row.
- Change the font, font color, and font size of the text in the first row.
- Change the font of the remaining text to ensure it coordinates with the heading.
- Apply bullets, indenting, and modify the Font to the text in the second column to make it easier to read.
- Resize the table, and ensure the resume fits to one page only.
- Hide table borders.
- Apply a border to the first row only, to ensure the name and contact information stand out.
- Ensure font, font size, and paragraph spacing are consistent.
- Run spelling and grammar check and make all necessary corrections.
- Submit as instructed by your instructor.

MASTER ACTIVITY 3

Complete the following Master Activity and submit your completed project.

In this activity, you will research a topic that is interesting to you and write a one-page, three-paragraph research paper. If you have a research paper from another course, you may use that for this assignment. Your research paper must include the following elements:

- A running header in MLA seventh edition style
- At least two footnotes
- At least two citations
- A bibliography (this should be on a separate page, for two pages total)

Use PDF reflow to save your research paper as a PDF file

Submit as instructed by your instructor.

CHALLENGE IT

Complete the following Challenge and submit your completed project.

In this challenge activity, you will complete a project that incorporates all the key skills learned in the Word unit. As the Director of Career Services, you have been asked to prepare and present documents to the Board of Directors regarding an upcoming National Convention. You have been asked to prepare

- A letter to the board explaining the upcoming convention
- A newsletter to employees with information on the convention
- An essay on why internships matter
- A Resume for the Keynote Speaker
- An online Flyer to advertise the event

- Open the Word document Starter_Word_Challenge. Be sure that the rulers and formatting marks display.
- Rename your file as Lastname_Firstname_WordChallenge and save it.
- On the letter on Page 1, select the first paragraph—Paradise Valley Community College, Career Services—and increase the Font Size to 28 pt. Change the Font Size of the next four paragraphs—the address lines and website—to 12 pt.
- Select the first five paragraph lines that you just formatted, change the Font to Arial, and then with the text selected, display the Borders and Shading dialog box. Create a 6 pt., Automatic-colored border on the left side of the selected text.
- In the paragraph that begins "If you have any," select the second sentence and move it to the beginning of the paragraph. Adjust spacing as necessary so that there are no extra blank spaces at the end of the paragraph. Remove any extra spaces as necessary to ensure the letter fits on one page.
- On Page 2, in the newsletter, select the second paragraph of text, which begins with "All Employee Newsletter." Display the Borders and Shading dialog box, and then add an Automatic-colored, 3 pt. line below the paragraph.
- Starting with the paragraph that begins "All Employee Newsletter," select all of the text from that point to the end of the page, including any paragraph marks for that page only. Do not select the Page Break.

Change the Spacing After to 6 pt., format the text in two columns, and apply the Justify alignment.

- At the top of the first column, select the paragraph Annual National Convention Special Edition. From the Font dialog box, change the Font Size to 20, apply Bold, and add the Small caps effect. Then Center the paragraph. Apply the same formatting to the other headings on the newsletter.
- On the same page, in the blank line above the last paragraph of the newsletter, insert the picture from your downloaded files "Word_Challenge_Step8."
- Set the Height of the picture to 1.2″ and the Width of the picture to 3.2″ and apply the first Picture Style, Simple Frame, White.
- Under the image, type:

  For more information, please visit our website at www.maricopa.edu. Click on the link for the Annual National Convention. Here you will find additional information on the agenda, which will be updated daily. You can also message conference organizers with any questions you might have prior to and during the conference. Housing, meals, and additional safety protocols will be announced here.

- At the bottom of the newsletter, insert an online recycling image using the Bing image search, and center it at the bottom of the page.
- Ensure the headings on the newsletter are 20 pt., and the text underneath is 12 pt.
- Apply a page border to the newsletter only using the following:
  - Box
  - Thick upper line, thinner lower line
  - Automatic Color
  - 3 pt
- Ensure the page border is applied to the newsletter only
- In the blank paragraph at the top of Page 3, insert a 2 × 3 table. In the first cell of the table, type the following four lines, pressing ENTER after each line:
  - Jana Jones
  - 123 Maple Drive
  - Ajo, AZ 81657
  - www.janajoneskeynote.com
- In the second row of the table, in the first cell, type Career Highlights, and then press Tab.
- In the second cell of the second row, insert the text from the downloaded file Text_Word_Challenge.docx and then press BACKSPACE to remove the blank line at the bottom of the inserted text. If necessary, ensure there is a blank line after each entry.
- In the third row of the table, in the first cell, type Education, and then in the cell to the right, type Ms. Jones' educational information as follows, pressing ENTER after each line:
  - Northern Arizona University

    - Ph.D. in International Women's Studies
    - University of Florida
    - M.S. in Organizational Psychology
    - University of Indiana
    - B.S. in Psychology
- Insert a new row at the bottom of the table. In the first cell of the new row, type Professional Experience, and then in the cell to the right, type the following, pressing ENTER after each line:
    - Women in IT Corporation
    - NASA Consulting Agency
    - National Science Foundation
    - National Council on STEAM
- Apply Bold to each of the headings: Career Highlights, Education, and Professional Experience.
- Drag the vertical border between the two columns to the 1.5-inch mark on the horizontal ruler.
- In the first row, merge the two cells, and then Center the text. Select the name Jana Jones, increase the Font Size to 24 pt., apply Bold, and then add 24 pt. space before the text. Select the web address and add 18 pt. space after the text. Select the address and web address and increase the font size to 14.
- Create a bulleted list, using solid round black bullets, for the items to the right of Career Highlights and also for the items to the right of Professional Experience. Decrease both bulleted lists one time. Ensure both bulleted lists are set to 2.0 line spacing and remove any extra lines if necessary.
- Apply Bold to the name of each university, and then apply 12 pt. spacing after to the name of each college degree.
- Select the headings Career Highlights, Education, and Professional Experience and apply small caps and font size 14 pt.
- Select the table, and then remove all borders. From the Borders and Shading dialog box, add a 3 pt. solid border to the top and bottom of the table.
- Near the top of Page 4, in the paragraph that begins Internships, position the insertion point to the right of the period following world, and then insert the following footnote: A recent study from Georgetown University found that, on average, college graduates earn $1 million more in earnings over their lifetime.
- Modify the footnote style by changing the Font Size to 11 pt., Calibri; add a First Line Indent of 0.5″; and set Line spacing to 2.0 (double).
- In the paragraph that begins According to, position the insertion point to the left of the period at the end of the paragraph. Using MLA format, add the following website citation:
    - Indeed
    - June 5, 2020
- On Page 6, in the blank line after Internships matter, insert a page break. In the blank line below the Works Cited title, insert the built-in Bibliography. Center the Bibliography title and delete Works Cited. If necessary, insert another page break, which will be page 7.

- On Page 7, select the title National Convention and center it, bold, Font size 28, and apply small caps.
- Select the two paragraphs below the title that begin Friday and Saturday, and then change the Spacing After to 0.
- Select the three paragraphs below the title—the dates—and then from the Borders and Shading dialog box, apply a Box border using theme color Blue, Accent 1 (fifth column, first color), and a 3 pt. border. Click the Shading tab, and add Shading using theme color Blue, Accent 1, Lighter 80% (fifth column, second color). Ensure the text is centered.
- Click after the period after the word *experience* and hit enter. Insert an online video from YouTube about Internships. Change the Height of the picture to 3″, the Width to 4″, and then set the wrapping to Square. If necessary, drag the video image to the right until it aligns with the right margin.
- Apply the Simple Frame White Picture Style.
- At the bottom of the flyer, click in the second blank paragraph below the last paragraph of text. Insert a Basic Cycle SmartArt. Click the outer rectangle surrounding the SmartArt to select it, and if necessary, change the wrapping style to Square. On the Format tab, set the Height of the SmartArt graphic to 1.4″ and the Width to 5″. Add the following text, in order, to the three shapes:
  - Register
  - Attend
  - Succeed!
- To the SmartArt graphic, change the colors to Colorful-Accent Colors 2-3 and apply the White Outline style.
- Your final document should be 7 pages. Ensure your file is saved.
- Run spelling and grammar check and make all necessary corrections.
- Submit as instructed by your instructor.

WORD PROCESSING: CHECK YOUR UNDERSTANDING

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://louis.pressbooks.pub/computerapplications/?p=670#h5p-3

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://louis.pressbooks.pub/computerapplications/?p=670#h5p-4

WORD PROCESSING: GLOSSARY

Definition of terms used in this chapter:

Alignment guide	a green vertical or horizontal line that displays when you are moving or sizing an object to assist with proper placement
Artistic effects	formats applied to images that make pictures resemble sketches or paintings
Blank document	a starting point for creating a new document in Microsoft Word
Blog	a regularly updated website or web page, typically one run by an individual or small group, that is written in an informal or conversational style
Bullet	text symbol such as a small circle that precedes each item in a list
Bulleted list	a list of items in no particular order that are preceded by a bullet for emphasis and organization
Format painter	allows you to copy formatting from one item and apply it to another
Cell	the intersection of a row and column in a table
Checkbox	a small box that can be clicked to indicate a check is turned on or off to indicate an on or off response
Cover letter	a letter of introduction that highlights key points in the resume that follows
Ellipses	informally called dot-dot-dot (...), a series of dots that indicates an intentional omission of a word, sentence, or whole section from a text without altering its original meaning. When selected, additional options appear.
Em dash	a punctuation symbol that indicates an explanation or emphasis
Field	placeholders that store and display data, and can perform simple tasks like returning the page number or current date and time
Footer	the bottom margin of each page
Formatting marks	characters that display on the screen but do not print, indicating where the Enter key, the Spacebar, and Tab key were pressed, also called non-printing characters
Indentation	specifies the distance between where the lines in a paragraph start in relation to the left or right margins
Inside address	the name and address of the person or business who received the letter, positioned below the dateline
Keyboard shortcut	one or more keys used to perform a menu function or other common functions
Layout options	picture formatting options that control the manner in which text wraps around a picture or other object
Leader	the space between tab stops can show a line, dots, or dashes to line up information and guide the reader
Letterhead	the heading at the top of a sheet of letter paper that typically includes name and address or company logo

Lock anchor	a feature in Word that allows you to move your image to any position on the same page as the anchor paragraph which forces the object to stay in that position
Mini toolbar	appears whenever you right-click text in Word, Excel, or PowerPoint and provides a quick-access version of the Font group on the Home tab, plus a few extra buttons from other groups
Newsletter	a printed or electronic report containing news regarding updates for an organization or business and is sent to interested parties
One-click row/column insertion	a feature in Word tables that allows users to insert a new row or column by pointing to the desired location and then clicking once
Page border	a decorative border that appears outside the margins on each page and can be solid, dashed, or an artistic style
Pictures	images or graphics that are stored locally on a computer or flash drive and can be uploaded to a document to add visual interest
Present online	a Word feature that allows you to share your documents online using a web browser
Quick access toolbar	located above the Ribbon (top-left) and provides access to commonly used features and commands, such as Save and Undo/Redo, and is customizable
Quick styles	an efficient way to add effects to a picture such as a shape, border, and other effects
Resume	a formal document that provides an overview of professional qualifications for an employment opportunity
Resume assistant	a feature in Word where you can see suggestions from LinkedIn to enhance your resume
Save As dialog box	allows the user to specify the drive, directory, and name of a file to save their file
Screen clipping	allows you to capture an image from your screen
Shape effects	a grouping of coordinating effects that can be applied to a shape including shadows, glows, reflections, soft edges, bevels, and three-dimensional (3-D) rotations
Shape outline	allows you to change the outline color, weight (thickness), and style of the outline surrounding a shape
Shape styles	allows you to apply preset colors and effects to quickly change the appearance of your shape
Shapes	Lines, arrows, stars, banners, ovals, rectangles, and other basic shapes with which you can illustrate an idea, a process, or a workflow
Sharpen/ Soften	a way to enhance picture details or make pictures more appealing by removing unwanted blemishes on a picture

Small caps	an attractive font in which no lowercase letters are used, yet the height of lowercase letters is maintained
SmartArt	a graphical tool that adds visual interest
Special character	normal characters that don't appear on standard keyboards; but once inserted into a Word doc, they look the same as keyboard characters
Spelling and grammar check	identifies spelling and grammatical errors and provides suggestions for correction
Square text wrapping	the manner in which text displays around an object
Tab indicator	a button to the left of the ruler that provides tab marker options
Tab stop	the horizontal position which is set for placing and aligning text on a page
Table	an arrangement of information organized into rows and columns
Tags	any word, phrase, or number string related to the file that may help you locate the file later
Textbox	a moveable, resizable container for text or graphics
Text effects and typography	decorative formats, such as shadows or colors that make text stand out
Toggle button	a button that can be turned on and off by clicking it once to turn it on and clicking again to turn it off
WordArt	gallery of text styles that you can add to your publications to create decorative effects, such as shadowed or mirrored (reflected) text
Word processing	the act of using a computer program to create, edit, and print documents
Word processor	software or a device that allows users to create, edit, and print documents
YouTube	a free video-sharing website

OPERATING SYSTEMS

OPERATING SYSTEMS

Learning Objectives

1. Accessing websites
2. Accessing and managing folders
3. Setting up your 365 and MS Office account

LEARN IT

Mainly, there are two kinds of software—application software and system software. Application software allows us to use a computer or computing device in many ways, such as creating a Microsoft Word document, creating a PowerPoint presentation, creating an Excel file, creating and querying a database, sending emails, browsing the internet, etc. Software such as Microsoft Office, Google Docs, antivirus programs, WhatsApp, Facebook, Twitter, and various apps that we install on our iPhones and Android phones are examples of application software.

An **operating system** (OS) is a system software. It is the most important software that runs on a computer or a computer system. In essence, an operating system allows us to operate a computer, thus the name "Operating System." It manages the computer system's memory and processes, as well as all of its software and hardware. It also allows us to communicate with the computer without knowing how to speak the computer's language. Without an operating system, a computer is useless.

The computer's operating system (OS) manages all of the software and hardware on the computer. Most of

the time, there are several different computer programs running at the same time, and they all need to access the computer's central processing unit (CPU), memory, and storage. The operating system coordinates all of this and resolves conflicts to make sure each program gets what it needs. For example, if two processes (users) send two documents to print on a network printer, the operating system makes sure that one of them is printed while the other is queued because the printer can print only one document at a given time. It won't be neat to print a mix of two documents!

Examples of operating systems are Windows, Macintosh, iOS, Android, Linux, etc. The Disk Operating System (DOS) is the oldest operating system, which was introduced by Microsoft in 1981 to operate IBM computers. Windows operating system is built around the DOS. You can access the DOS on your Windows computer by using the command line. Operating systems usually come pre-loaded on any computer we buy. Many people choose the computer they buy based on the operating system, but it is possible to upgrade or even change operating systems. The operating system consists of many smaller programs, stored as system files, which transfer data to and from the disk and transfer data in and out of the computer's memory. Other functions performed by the operating system include hardware-specific tasks: for example, when a key is pressed or when the mouse is clicked, the operating system translates it into appropriate actions such as displaying on the screen or starting a program.

Most operating systems use a graphical user interface, or **GUI** (pronounced goo-ee). A GUI lets you use your mouse to click icons, buttons, and menus. Everything is clearly displayed on the screen using a combination of graphics and text. We can think of Windows as the GUI for the Disk Operating System.

Functions of an operating system include

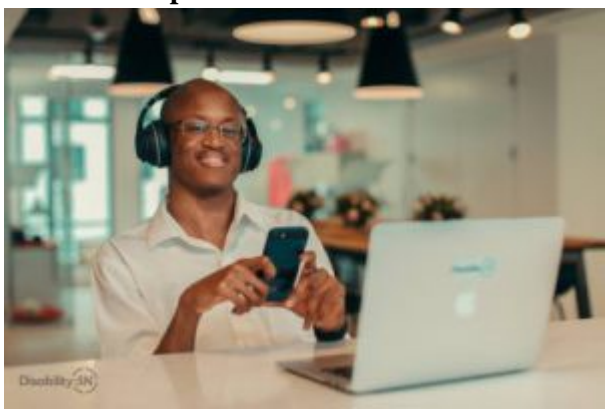
- Booting
  - Booting is the process of turning on the computer and powering up the system.
- Memory management
  - This is the process of controlling and coordinating the computer applications and allocating space for programs.
- Loading and execution
  - Your OS will load, or start up, a program and then execute the program so that it opens and runs.
- Data security
  - The OS is responsible for keeping data safe inside your computer. It sets up security features to prevent cyber attacks.
- Disk management
  - This manages all the drives installed in a computer like hard drives, optical disk drives, and flash drives. Disk management can be used to divide disks, format drives, and more.
- Process management
  - Your OS has to allocate resources to different processes on the machine, enable the processes to share information, protect them, and synchronize them.

- Device controlling
  - Your OS will allow you to open or block access to devices like removable devices, CDs/DVDs, data transfer devices, printers, USBs, and others.
- Print controlling
  - Simply put, your OS takes control of the printers that are connected to the computer and the materials that need to be printed.
- User interface
  - A user interface or UI refers to the part of the OS that allows an interface between the user and the computer. The user can communicate with the computer by typing, clicking the mouse, or using any other input devices, such as a pen, joystick, microphone, or camera. The computer responds to the user by displaying information on the screen, by executing a program, by playing a movie or song, or by printing a file.

Common operating systems are

- Microsoft Windows
- Linux
- Apple iOS
- Google Android

Mobile vs. computer



All computing devices use an operating system. Mobile devices, like smartphones and tablets, may use different operating systems than computers or laptops. Computer and mobile OSs are different because they are developed for different uses. Computer systems will have to store lots of complex data, have a different user interface, and be prepared for printing, removable disks, a mouse, and a keyboard. They feature a desktop and a control panel for users to manage all of their information. Computer operating systems have been around longer and therefore are more familiar.

Mobile devices also feature a desktop and control panel but are different from a computer desktop and control panel. Their user interface is much more about simple moves, things you can do with your fingers

or voice, and a simple interface. However, with the rapid advancements in computing technology, such distinctions are diminishing. Mobile OSs also allow the user to watch movies, browse the web, manage calendars, and play games. Examples of mobile operating systems include Apple iOS and Google Android. **Touchscreen interfaces**, like those used on smartphones and mobile devices, are becoming increasingly popular and newer operating systems are touchscreen compatible.

Since Microsoft Windows holds the vast majority of the business market share, we will primarily focus on Microsoft going forward.

Windows 10

Windows 10 is an operating system developed by Microsoft Corporation that works with mobile computing devices as well as with traditional desktop and laptop PCs.

The major tasks of Windows 10 are to

- Manage your computer's hardware—the printers, scanners, disk drives, monitors, and other hardware attached to it.
- Manage the application software installed on your computer—programs like those in Microsoft Office and other programs you might install to edit photos and videos, play games, and so on.
- Manage the data generated from your application software. Data refers to the documents, worksheets, pictures, songs, and so on that you create and store during the day-to-day use of your computer.
- Most importantly, provide an interface between the user and the computer.

The Windows 10 operating system continues to perform these three tasks and additionally is optimized for touchscreens: for example, tablets of all sizes and convertible laptop computers. Windows 10 works equally well with any input device, including a mouse, keyboard, touchscreen, and **pen**—a pen-shaped stylus that you tap on a computer screen.

Windows 10 operating system manages **programs** and applications that run on a computer. A **program** is a finite sequence of instructions that a computer uses to accomplish a task. A computer program that helps you perform a task for a specific purpose is referred to as an **application**. As examples, there are applications to create a document using word processing software, to play a game, to view the latest weather report, to edit photos or videos, or to manage financial information.

As we learned earlier, an operating system is a specific type of computer program that manages the other programs on a computing device such as a desktop computer, a laptop computer, a smartphone, a tablet computer, or a game console. You need an operating system to

- Use application programs.
- Coordinate the use of your computer hardware such as a keyboard, mouse, touchpad, touchscreen, game controller, or printer.
- Organize data that you store on your computer and access data that you store on your own computer

and in other locations.

Windows 10, uses a graphical user interface—abbreviated as GUI. A graphical user interface uses graphics such as an image of a file folder that you click to activate the item represented. A GUI commonly includes the following:

- A **pointer**—any symbol that displays on your screen in response to moving your mouse and with which you can select objects and commands.
- An **insertion point**—a blinking vertical line that indicates where text will be inserted when you type or where an action will take place.
- A **pointing device**, such as a mouse or touchpad, to control the pointer.
- **Icons**—small images that represent commands, files, applications, or other windows.
- A **desktop**—a simulation of a real desk that represents your work area; here you can arrange icons such as shortcuts to programs, files, folders, and various types of documents in the same manner you would arrange physical objects on top of a desk.

In **Windows 10**, you also have a Start menu with tiles that display when you click the Start button in the lower-left corner of your screen. The tiles serve as an inter-connected dashboard for all of your important programs, sites, and services. On the Start menu, your view is tailored to your information and activities. The Windows 10 Start menu is a table of contents for all the apps (programs), folders, and contacts you use often. In Desktop mode, all the app icons appear in an alphabetical list on the left side of the screen, and they can be made to appear on the right side as tiles. To open the Start menu—which contains all your apps, settings, and files—do either of the following:

- On the left end of the taskbar, select the Start icon.
- Press the Windows logo key on your keyboard.

Depending on your desktop configuration, you may see a search box with "Type here to search." This is one way to access Cortana. **Cortana** is a voice-enabled virtual assistant developed by Microsoft to help Windows 10 users initiate requests, complete tasks and anticipate future needs by surfacing relevant data in a personal context.

The hardware of your computer such as the central processing unit (CPU), memory, and any attached devices such as a printer are collectively known as resources. The Windows operating system keeps track of the status of each resource and decides when a resource needs attention and for how long. Application programs enable you to use your computer. Examples of application programs are programs such as Word and Excel found in the Microsoft Office suite of products, Adobe Photoshop, and computer games. The operating system ensures all of these programs work together in the most efficient way possible and without conflict.

One of the most often used functions of the operating system is data management, or the managing of your files and folders. Much like the importance of keeping your paper documents and file folders organized so that you can find information when you need it, organizing your computer files and folders groups your files so that you can find information easily. This is a critical computing skill. After all, are files useful if you cannot find them?

On a single computer, Windows 10 can have multiple user accounts. This is useful because you can share a computer with other people in your family or organization and each person can have his or her own information and settings—none of which others can see. Each user on a single computer is referred to as a user account. Take a moment to think about the user account you will be using for this class. If you are working from campus, what will your user account be? Compare that to your user account on your personal computer.

In addition to your user account, the **Windows 10 display** may look different depending on the computer you are using. Windows 10 displays are configurable. For example, your college may choose to use its school colors or logo on the display. The basic functions and structure of Windows 10 are not changed by such variations in the display. You can be confident that the skills you will practice in this instruction apply to Windows 10 regardless of available functionality or differences between the figures shown and your screen. Therefore, it is important to not let visual differences in the display distract you. Moreover, the skills learned here will also assist you in using future versions such as Windows 11. Using a different (updated) version of software is akin to driving a different car. Once you learn to drive a particular car, you can also drive any other car. It is simply a matter of familiarizing yourself with new controls.

Your screen will more closely match the computers on campus, and your instructors, if you set your screen resolution to 1280 × 768. At other resolutions, your screen will closely resemble, but not match exactly. To view your screen's resolution, on the desktop, right-click in a blank area, click Display settings, and then click the Resolution arrow. To adjust the resolution, select the desired setting, and then click OK.

As mentioned earlier, Windows 10 allows you to create a **Microsoft account** and then use that account to sign in to *any* Windows 10 computer on which you have, or create, a user account. By signing in with a Microsoft account you can:

- Download apps from the Microsoft Store
- Get your online content—email, social network updates, updated news—automatically displayed in an app when you sign in

Get your internet favorite settings

To enjoy and get the full benefit of Windows 10, Microsoft Office, Skype, and free OneDrive cloud storage, if you have not already done so, create a Microsoft account. This can be completed with the link provided by your instructor.

A primary function of any operating system is managing the location of files and folders. A **location** is any disk drive, folder, or other place in which you can store files and folders. A **file** is information stored on a computer under a single name. A **folder** is a container in which you store files. Where you store your files depends on how and where you use your data. For example, for your class, you might decide to store your work on a removable **USB flash drive** so that you can carry your files to different locations and access your files on different computers. A USB flash drive is also referred to as a pen drive.

If you do most of your work on a single computer, for example, your home desktop system or your laptop computer that you take with you to school or work, then you can store your files in one of the folders on your hard drive provided by your Windows operating system—Documents, Music, Pictures, or Videos. If you use multiple computers, a flash drive might be a better option to store your files.

OneDrive is Microsoft's free cloud storage for anyone with a free Microsoft account. **Cloud storage** refers to the online storage of data so that you can access your data from different places and devices. Cloud computing refers to applications and services that are accessed over the internet, rather than to applications that are installed on your local computer. The internet is a vast network of computers spread worldwide. Besides being able to access your documents from any device or location, OneDrive also offers AutoSave, which saves your document every few seconds, so you do not have to. On a Windows system, AutoSave is available in Word, Excel, and PowerPoint for Office 365 subscribers. Changes to your document are saved to the cloud as you are working, and if other people are working on the same file—referred to as real-time co-authoring—AutoSave lets them see your changes in a matter of seconds.

Office 365 is the cloud version of stand-alone Microsoft Office 2016/2019. If you have an Office 365 subscription—one of the versions of Microsoft Office to which you subscribe for an annual fee or download for free with your college.edu address—your storage capacity on OneDrive is a terabyte or more, which is more than most individuals would ever require. Students at many colleges and universities can download Office 365 for free.

Because many people now have multiple computing devices—desktop, laptop, tablet, smartphone—it is common to store data in the cloud so that it is always available. **Synchronization**, also called syncing (pronounced SINK-ing) is the process of updating computer files that are in two or more locations according to specific rules. So, if you create and save a Word document on your OneDrive using your laptop, you can open and edit that document on your tablet in OneDrive. When you close the document again, the file is properly updated to reflect your changes. Your OneDrive account will guide you in setting options for syncing files to your specifications. You can open and edit Office files by using Office apps available on a variety of device platforms, including in iOS, in Android, in a web browser, and in Windows.

It is important to note that if you are using a computer issued by your college (either on campus or a checked-out laptop), or a computer issued by your employer, you may not be able to sign in using your personal Microsoft account. This is because sign-in requirements will vary, because those computers are controlled by the organization's IT (Information Technology) professionals who are responsible for maintaining a secure computing environment for the entire organization.

Microsoft Office runs efficiently on Microsoft Windows. Which makes sense because they are both Microsoft!

As of April of 2020, Office 365 became known as **Microsoft 365**. According to Microsoft, it is "an evolution of Office 365 that builds on the foundation of Office by infusing new artificial intelligence and

more cloud-powered experiences." Microsoft Office 365 is available for free to students at many colleges and universities.

Office 365 is a cloud-based subscription service that receives continuous updates. Due to this, you may encounter some variations between what appears on your screen and what is shown in this text. Microsoft Office 365 is fully installed on your PC or Mac; no internet access is necessary to create or edit documents. When you are connected to the internet, you will receive monthly upgrades and new features, so you always have the latest versions of Office apps as soon as they are available. Your subscription gives you continuous free access to the latest innovations and refinements. It is important to note that Microsoft Access and Publisher do not run on a Mac. However, you can install Windows on Mac and then run Microsoft Access and Publisher on Windows.

The programs in Office 365 and in Microsoft Office 2019 are considered to be desktop applications. A desktop application is a computer program that is installed on your PC and that requires a computer operating system such as Microsoft Windows to run. A desktop app typically has hundreds of features and takes time to learn. We will focus on apps for Windows 10 and higher, as that is the recommended configuration going forward.

PRACTICE ACTIVITY 1: CREATING A MICROSOFT ACCOUNT AND SAVING A FILE

Prefer to watch and learn? Check out this video tutorial:

Complete the following Practice Activity and submit your completed project.

- If you already have Microsoft Office installed, you can skip these steps:
  - To set up your Microsoft Account, follow the link provided by your instructor.
  - Sign into Microsoft Office. If you already sign in to a Windows PC or tablet, or you sign in to Xbox Live, Outlook.com, or OneDrive, use that account to sign in to Office. To create a new Microsoft account, in your browser, search for "sign up for a Microsoft account."

NOTE: This Activity is for Windows PC users. Mac users refer to the document Creating a Folder for File

Storage on a Mac. Mac users can refer to the document Creating a Folder for File Storage on a Mac available in Canvas, or your instructor can provide this document to you.

- In this Activity, you will create a File and store it in a Folder. This example will use the Documents folder on the PC at which you are working. If you prefer to store it on your OneDrive or on a USB flash drive, you can use similar steps. It is a good idea to have a conversation with your instructor on the pros and cons of storage locations. Take a moment to decide where you want to store your files for this course. If necessary, insert your flash drive or other removable storage device.
- Launch Microsoft Word and choose a new blank document. This can be done in any of the following ways: 

  1. In the "Type here to search" box, enter "Word"
  2. Look for a tray icon with a blue W
  3. Look for a desktop shortcut for Word

- At the top of your screen, in the title bar, notice that Document1—Word displays. The Blank option on the opening screen of an Office program displays a new unsaved file with a default name—Document1, Presentation1, and so on. As you create your file, your work is temporarily stored in the computer's memory until you initiate a Save command, at which time you must choose a file name and a location in which to save your file.
- In the upper left corner of your screen, click the File tab to display Backstage view, and then on the left, if necessary, click Info.

  Backstage view is a centralized space that groups commands related to file management; that is why the tab is labeled File. File management commands include opening, saving, printing, or sharing a file. The Backstage tabs—Info, New, Open, Save, Save As, Print, Share, Export, and Close—display along the left side. The tabs group file-related tasks together. Here, the Info tab displays information—info—about the current file, and file management commands display under Info. For example, if you click the Protect Document button, a list of options that you can set for this file that relate to who can open or edit the document displays. On the right, you can also examine the document properties. Document properties, also known as metadata, are details about a file that describe or identify it, such as the title, author name, subject, and keywords that identify the document's topic or contents.

On the left, click Save As, and notice that, if you are signed into Office with a Microsoft account, one option for storing your files is your OneDrive. You have to be signed in to your Microsoft account to see OneDrive.

- When you are saving something for the first time—for example, a new Word document—the Save and Save As commands are identical. That is, the Save As command will display if you click Save or if you click Save As.

NOTE: After you name and save a file, the Save command on the Quick Access Toolbar saves any changes you make to the file without displaying Backstage view. The Save As command enables you to name and save a new file based on the current one in a location that you choose. After you name and save the new document, the original document closes, and the new document—based on the original one—displays.

- To store your Word file in the Documents folder on your PC, click Browse to display the Save As dialog box. On the left, in the navigation pane, scroll down; if necessary click > to expand This PC, and then click Documents.
- In the Save As dialog box, you must indicate the name you want for the file and the location where you want to save the file. When working with your own data, it is good practice to pause at this point and determine the logical name and location for your file. Your instructor will provide additional guidance on where to save your files and the file name. For this assignment, name your file your lastname_firstname.
- In the Save As dialog box, a toolbar displays, which is a row, column, or block of buttons or icons, that displays across the top of a window and that contains commands for tasks you perform with a single click.
- On the toolbar, click New folder. In the file list, Windows creates a new folder, and the text New folder is selected.
- Type OFTEC 108 instead of BPC110 and press Enter. In Windows-based programs, the Enter key confirms an action. In the file list, double-click the name of your new folder to open it and display its name in the address bar.
- A screenshot window depicts the Save As dialog box with the new folder name displayed in the Address bar.
- In the lower right corner of the Save As dialog box, click Cancel. In the upper left corner of the Backstage view, click the Back arrow.
- In the upper right corner of the Word window, click Close. If prompted to save your changes, click Don't Save. Close any other open windows or programs.

PRACTICE ACTIVITY 2: CREATING A FOLDER STRUCTURE

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=87#oembed-1

Complete the following Practice Activity and submit your completed project.

- In this activity, we will use Windows to create a folder structure to store your files for class. It is important to keep your files organized so that you can find them when you need them. Saving, accessing, and uploading files is critical to your success in this course. This assignment will assist you in keeping your files organized throughout this course.
- Using Windows, create the file structure on your flash drive as indicated by your instructor. Your top folder should be OFTEC 108.
- There are a few different ways to create a new folder in Windows.
  - In File Explorer, click the new folder icon in the upper left-hand corner
  - Use the shortcut key CTRL+Shift+N
  - Right-click the white area of the File Explorer Window, and select New, Folder
- Your completed file structure should look something like this:

Note: Some students like to put a number in front of the folders so that they display in chronological order. Other students like to abbreviate the unit and chapter names. The file structure is for you, so use names and logic that make sense to you.

Helpful Hints:

- After you type the name of the folder, press enter.
- Use the File Explorer Navigation Pane to expand each file folder. If the arrow, or carrot, is pointing down, the file is expanded. This will allow you to see the folder contents.
- To rename a folder, right-click on the folder. In the shortcut menu, choose Rename. Start typing the new name, and then hit Enter on your keyboard.

- To delete a folder, right-click on the folder. In the shortcut menu, choose Delete.

MASTER ACTIVITY 1

Complete the following Master Activity and submit your completed project.

Using Windows 10, explore data management options such as files and folders and cloud storage. Practice safely saving and moving your files. In a Word document, explain the following:

Which data management tool works best for you and why?

How did you organize your files and why did you choose this organization?

MASTER ACTIVITY 2

Complete the following Master Activity and submit your completed project.

Using Windows 10, explore each of the following:

- A **pointer**—any symbol that displays on your screen in response to moving your mouse and with which you can select objects and commands.
- An **insertion point**—a blinking vertical line that indicates where text will be inserted when you type or where an action will take place.
- A **pointing device**, such as a mouse or touchpad, to control the pointer.
- **Icons**—small images that represent commands, files, applications, or other windows.
- A **desktop**—a simulation of a real desk that represents your work area; here you can arrange icons such as shortcuts to programs, files, folders, and various types of documents in the same manner you would arrange physical objects on top of a desk.

Using the snipping tool or any other screen-capturing tool, take a snip of each of the above and paste it into a Word document with a label. Take care to not include any personal or confidential information.

Note: To take a screenshot using Windows 10, press PrtScn on your keyboard. This copies the entire screen to the clipboard. You can also press Alt + PrtScn. This copies the active window to the clipboard, which you can paste into another program. If you do not have PrtScn on your keyboard, press the Windows key + Shift + S. You can also use the "Type here to search" box to search for Snipping Tool. This is an App that is free with Windows 10 and allows you to capture any image on your screen.

MASTER ACTIVITY 3

Complete the following Master Activity and submit your completed project.

Using Cortana or the Windows "Type here to search" box, locate the following apps on your computer:

- Word
- Excel
- Access
- PowerPoint
- Snipping Tool

Launch each app and explore.

CHALLENGE IT

Complete the following Challenge and submit your completed project.

Using the Windows 10 search box, explore Windows' settings. Take care not to change a configuration you do not want to change. Take note of what might be configurable on a campus or work computer versus your personal computer. Why might this be? Is there another way to get to these settings?

Windows settings to explore might be:

- Display settings, including brightness
- Focus Assist
- Power and Sleep
- Tablet Mode
- Devices, such as Bluetooth
- USB

OPERATING SYSTEMS: CHECK YOUR UNDERSTANDING

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://louis.pressbooks.pub/computerapplications/?p=679#h5p-1

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://louis.pressbooks.pub/computerapplications/?p=679#h5p-2

OPERATING SYSTEMS: GLOSSARY

Definition of terms used in this chapter:

Application	A computer program that helps you perform a task for a specific purpose
Backstage View	A centralized space for file management tasks such as opening, saving, printing, or sharing a file
Booting	Booting is the process of turning on the computer and powering up the system
Cloud-based	Subscription service that receives continuous updates
Cloud Computing	Applications and services that are accessed over the internet
Cloud Storage	Online storage of data including files and folders that allow access from different places and devices
Cortana	Microsoft's "personal assistant" in Windows 10
Data	The documents, worksheets, pictures, songs, and so on that you create and store during the day-to-day use of your computer
Data Management	The management of files and folders for organization
Data Security	The OS is in charge of keeping data safe inside your computer and computer programs. It sets up security features that keep unwanted cyber attackers at bay.
Desktop	Simulation of a real desk that represents your work area
Desktop Apps	A computer program that is installed on your PC and requires a computer operating system such as Microsoft Windows to run
Desktop Mode	A Windows 10 view where app icons appear in an alphabetical list on the left side of the screen; they can be made to appear on the right side as tiles
Device Controlling	Your OS will allow you to open or block access to devices like removable devices, CDs/DVDs, data transfer devices, printers, USBs, and others
Disk Management	This manages all the drives installed in a computer like hard drives, optical disk drives, and flash drives. Disk management can be used to divide disks, format drives, and more
File	Information, such as a document, stored on a computer under a single name
File Name	The name of the file. It is good practice to use an underscore "_" rather than other special characters when naming a file
Folder	A spot to store and organize files on a computer
GUI	An acronym that stands for Graphical User Interface: Graphics such as an image of a file or folder that you click to perform an action
Icons	Small images that represent commands, files, applications, or other windows
Insertion Point	Blinking vertical line that indicates where text will be inserted when you type or where an action will take place
Loading and Execution	Your OS will load, or start up, a program and then execute the program so that it opens and runs

Location	Any disk, drive, folder, or another place on your computer in which you can store files and create folders
Memory Management	This is the process of controlling and coordinating the computer applications and allocating space for programs
Microsoft 365	A version of Microsoft Office that includes Word, Excel, Access, and PowerPoint to which you subscribe for an annual fee. Microsoft 365 may be free to you as a student.
Microsoft Account	A user account with which you can sign into any Windows 10 computer on which you have, or create, an account
OneDrive	Microsoft's free cloud storage for anyone with a Microsoft account
Operating System	A computer program that manages the other programs and devices on a computer
Pen	A pen-shaped stylus that you can use on touchscreen computers
Pointer	Any symbol that displays on your screen in response to moving your mouse and with which you can select objects and commands
Pointing Device	A mouse or touchpad that is used to control the pointer
Process Management	Your OS has to allocate resources to different processes on the machine, enable the processes to share information, protect them, and synchronize them
Program	A set of instructions that a computer uses to complete a task
Printing Controlling	Simply put, your OS takes control of the printers that are connected to the computer and the materials that need to be printed
Resources	The physical components of your computer such as the CPU, memory, and other attached devices like a USB or printer
Start Menu	A menu in Windows 10 that displays as a result of clicking the Start or the Windows icon and displays installed programs and tiles
Synchronization	Also called syncing, this is the process of updating computer files that are in two or more locations according to specific rules.
Touchscreen Interfaces	Often used on mobile devices, tablets, and some laptops, a display device that allows the user to interact with a computer by touching areas on the screen
USB Flash Drive	Also called a removable storage device, used to save and transfer information from one computer to another
User Account	A single user on a computer
User Interface	A user interface or UI refers to the part of the OS that allows a user to enter and receive information. This can be done with typed commands, code, and so forth
Windows 10	An operating system developed by Microsoft Corporation that works with mobile computing devices and also with traditional desktop and laptop PCs

Windows 10 Display	The configurable pages in Windows 10

PRESENTATION SOFTWARE

PRESENTATION SOFTWARE

Learning Objectives

1. Define functions of presentation graphics programs as used in business.
2. Design, create, and execute an artistic presentation that includes graphics and animation.

LEARN IT

Presentation software is designed to allow the user to present information in an engaging way with text, pictures, sound, and video. It is a way to communicate ideas in a powerful, organized manner. It utilizes sequences of slides that accompany a spoken presentation. The presentation may also be recorded and posted online. The slides are consolidated in virtual files called slide decks. Communication skills are necessary for many careers. Presentation software can help to deliver a message

online or in-person to a large audience or small group. The goal is to create a presentation that will leave a lasting impression on the audience, and not distract them from the message you are delivering. The ultimate goal is to create dynamic, interesting presentations that engage your audience.

Common presentation software programs:

Presentation Software	Type	Key Features
Microsoft PowerPoint	App	Available across many platforms including mobile devices for ease of use Arguably the most commonly used presentation software in business Powerful and easy to use Integrates well with Microsoft Office
Apple Keynote	App	Included with most Apple devices Real-time collaboration Use Apple Pencil on your iPad to create diagrams or illustrations that bring your slides to life
Google Slides	App	Integrates with other Google Apps Unique audience Q&A feature Advanced web publishing features

Going forward, we will focus primarily on Microsoft PowerPoint.

Since Microsoft PowerPoint is widely used in business, and we are using Microsoft Windows, we will focus on this presentation software. There are many similarities across presentation software, so the skills we are learning can be translated to other systems. Some of the tasks in PowerPoint may seem familiar because they were used in other applications. The following Practice It assignments are designed to be completed using Microsoft PowerPoint in Office 365 on a PC with Windows 10 or higher. You may need to download the Professional version of Office 365 (which is free to students) to access all features.

POWERPOINT PRACTICE 1

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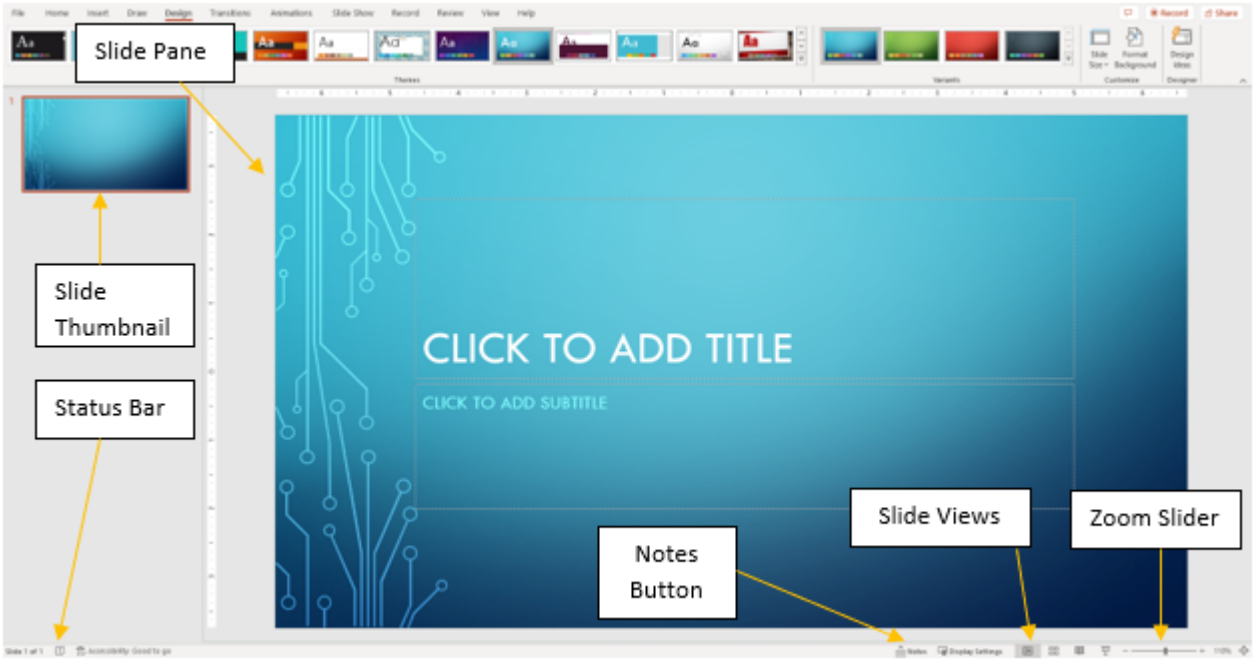
One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=753#oembed-1

Complete the following Practice Activity and submit your completed project.

We will use PowerPoint to create a presentation that welcomes individuals to coding. We will build upon this presentation over the next 3 practice assignments. Key skills in this practice include creating and editing a new presentation, entering text, adding slides, presentation themes, bullets, adding and formatting pictures, transitions, and printing a presentation.

- Start PowerPoint and select the Design tab. Under Themes, select the Circuit theme. If the Circuit theme is not visible, use the search to locate it.
- Select File, Save As, Browse, and then navigate to your PowerPoint folder on your flash drive or other location where you save your files. Name the **presentation** as Yourlastname_Yourfirstname_PowerPoint_Practice_1.
- Take a moment to view the PowerPoint window:

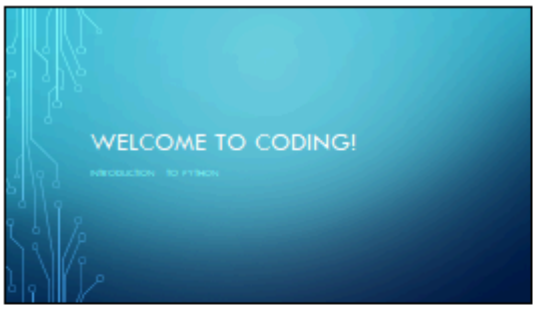


- Notice that the **layout** of slide 1 is Title and Content. This is a common layout for the **Title Slide**. All

text, graphics, videos, or anything that is on a slide must be in **a placeholder**. In the "Click to add title placeholder," type *Welcome to Coding!* In the subtitle placeholder type *Introduction to Python*.

- On the Design tab, in the Themes group, ensure under Variants, Blue colors are selected.
- Although we only have our title slide added, most presentations have several slides. When creating your presentation, keep in mind the attention span of your audience, and the allotted amount of time. For this presentation, we have been allotted 10 minutes and will create 5 slides.
- On the View tab, in the Presentation Views, notice that **Normal view** is selected. This is the most common view when creating your presentation. Other views are
  - **Outline View**
  - **Slide Sorter**
  - **Notes Pages**
  - **Reading View**
  - **Slide Show**
- On the Home tab, in the Slides group, select the arrow next to New Slide and choose the Title and Content layout. In the "Click to add title" placeholder type: Student Life.
- With slide 2 still active, on the Home Tab, in the Slides Group, select the arrow next to Layout and select Two Content. Notice how the layout of slide 2 changed.
- In the first content placeholder on the left, type the following, pressing Enter after each line:
  - Coding develops problem-solving skills
  - Coding nurtures creativity
  - Coding makes math more fun and engaging
  - Coding promotes learning by doing
  - Coding enables computational thinking
- Format the text as a bulleted list, with the default bullet. Change the font size of the text to 28.
- In the second placeholder, use the placeholder shortcut to insert a stock image. In the Insert Pictures dialog box, use the search bar and search the word Coding. Choose any picture, then return and insert it into the placeholder.
- With slide 2 still active, on the Transitions tab, select Fade.
- On the Home tab, in the Slides Group, select New Slide and choose the Title and Content layout. For the title, type: Coding Jobs. In the Content Placeholder, type the following bulleted list:
  - Computer Programmer
  - Web Developer
  - Software Application Developer
  - Computer Systems Analyst
  - Computer Systems Engineer
  - Front and Back End Developer
- Resize the text to 28 pt and use the default bullet.

- With slide 3 still active, on the Insert tab in the Illustration group, select the arrow next to Shapes. Under Stars and Banners add the Explosion: 8 points shape to the right of the bulleted list. Click and drag the shape onto the slide.
- Inside the shape type: All High Paying Jobs.
- On the Home tab, in the Slides Group, select New Slide and choose Blank Layout. Ensure slide 5 is active.
- On the Insert tab, in the Text Group, select the arrow under **WordArt**, and select Word Art in the first row, first column Fill: White, Text color 1; Shadow. Type the text: Any Questions?
- Change the font size of the WordArt to 72.
- Change the font color to orange from the standard colors.
- Select the File tab to display Backstage view. Select Print to view the **Print Options**. Although PowerPoint slides are meant for presentations, there is the option to print slides for the presenter and participants. Under Setting, click Print All Slides.
- Under Slides, select 6 slides Horizontal. Notice how the data and page number display on the slide in **Print Preview**.
- Save your presentation and take note of where it is located. There should be a total of 4 slides in your slide deck. Compare your presentation to the image below and make any modifications if needed. Close out of PowerPoint and submit your entire presentation per your instructor's instructions.



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POWERPOINT PRACTICE 2

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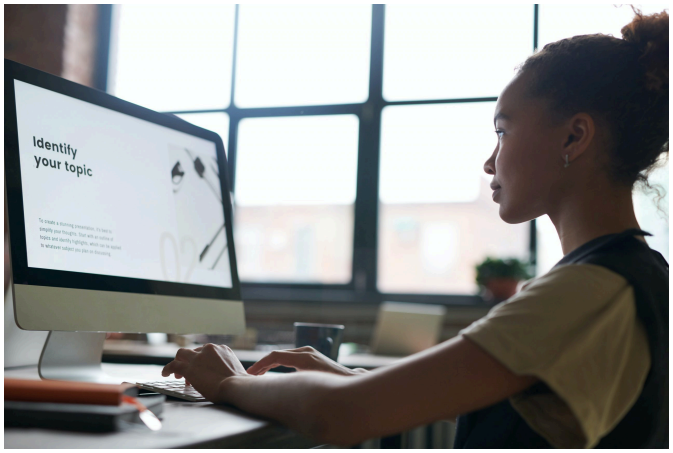
One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=753#oembed-2

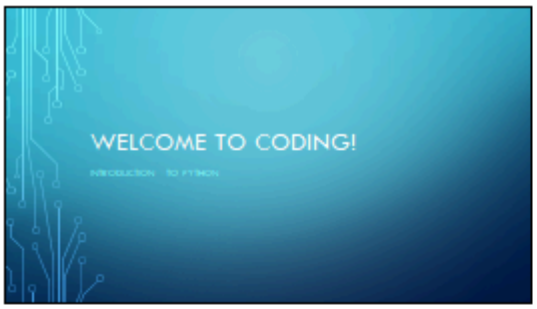
Complete the following Practice Activity and submit your completed project.



We will continue to work with the PowerPoint presentation we started in PowerPoint Practice 1. You have been asked by the Dean to add additional content to the presentation regarding Computer Science courses that require coding. Key skills in this practice include how to enhance a presentation, insert and format images, manage slides, add speaker notes and animations, and apply effects.

- Start PowerPoint; notice how it opens in Backstage View. Under Open, browse to locate your PowerPoint_Practice_1, and select Open.
- Select File, Save As, Browse, and then navigate to your PowerPoint folder on your flash drive or other location where you save your files. Name the presentation as Yourlastname_Yourfirstname_PowerPoint_Practice_2.
- There should be 4 slides in your slide deck. Ensure your presentation is in normal view.
- With a slide selected, on the Home tab in the slides group, select New Slide and then **Duplicate Selected Slides**.
- With slide 4 active, change the title to Coding Courses.

- In the Content Placeholder, type the following bulleted list:
  - Introduction to Programming I
  - Introduction to Programming II
  - Data Structures
  - Algorithms
  - Database Management Systems
  - Programming Languages
- Delete the shapes from the slide.
- At the bottom of the screen, click Notes.
- Type the following Presenter Notes: Remember other courses that may not require coding.
- With slide 4 active, move slide 4 above slide 3 in the thumbnail pane making slide 4 become slide 3, and vice versa.
- With slide 3 still active, on the Insert tab, in the Pictures group, select **Online Pictures**. In the Insert Pictures dialog box, in the search box, type *coding course* and then press enter. Choose any image you like that represents technology. Insert the image of your choice under the last bullet on slide 3. If necessary, resize the picture so that it fits on the slide without overlapping with the text.
- Select the image you just added. On the **Animations** tab, in the animation group, select the Wheel entrance effect. Once the animation is applied, notice the number 1 appears next to the image to indicate this is the first animation that will play.
- On the Animations tab, in the advanced animation group, turn on the **Animation Pane** by clicking it one time. The Animation Pane will open on the right side of the screen. Click the down arrow next to the first animation, Picture 1, and select **Effect Options**. In the Wheel dialog box, select the Effect tab, and under Sounds choose Applause. Click the speaker icon to hear the applause and ensure your volume is turned up, but not too loud. Select OK to hear the applause sounds you just applied. Close the Animation Pane.
- Save your presentation and take note of where it is located. There should be a total of 5 slides in your slide deck. Compare your presentation to the image below and make any modifications if needed. Close out of PowerPoint and submit your entire presentation per your instructor's instructions.



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POWERPOINT PRACTICE 3

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=753#oembed-3

Complete the following Practice Activity and submit your completed project.

We will continue to work with the PowerPoint presentation from PowerPoint Practice 2. After submitting your presentation to the Dean, she has asked you to make a few enhancements that incorporate multimedia. Key skills in this practice include screenshots, embedding videos, recording audio, and background images.

- Start PowerPoint; notice how it opens in Backstage View. Under Open, browse to locate your PowerPoint_Practice_2, and select Open.
- Select File, Save As, Browse, and then navigate to your PowerPoint folder on your flash drive or other location where you save your files. Name the presentation as Yourlastname_Yourfirstname_PowerPoint_Practice_3.
- Select slide 4 in the thumbnail pane. With slide 4 active, on the Home Tab, in the Slides Group, select New Slide and select Layout and Content.
- There should be 5 slides in your slide deck. Ensure your presentation is in normal view and select slide 5. In the title placeholder type: Why Learn Coding?
- In the content placeholder below the title, click the icon to insert an online video. To insert an online video, you can also use the Insert tab, Media group, video, online video. It may take a few moments for the Insert Video screen to load.
- Use the Search YouTube box by typing in Why Learn Coding? and then selecting the search icon or pressing enter on your keyboard. Scroll through the videos to find the video titled Why Learn Coding? If that video is not available, you can select a different one. Double-click the video or select Insert to add the video to slide 5.
- With the video selected, on the Video Tools, Format tab, resize the video so that it has a height of approximately 5″ and a width of approximately 9.4″. Move the video so that it is centered on the slide if necessary.

- On the Playback tab, select Play to watch the video.
- Another way to add an online video to a PowerPoint slide is by **embedding** it. Using your web browser, navigate to www.youtube.com. In the search window, type, Why Learn Coding? Locate the video Why Learn Coding? Select the Share icon, and then select embed. Copy the embed code.
- In PowerPoint, on slide 5, select the Insert tab, Media group, Video, Online Video. In the box next to From a Video Embed Code, paste the code you copied from YouTube and then press Enter. It may take a few moments for the video to preview. If necessary, right-click on the video, and then select Preview. You can put the video in the presentation either way.
- Select slide 5 in the thumbnail pane. With slide 5 active, on the Home Tab, in the Slides Group, select New Slide and select Layout and Content.
- With slide 6 still active, on the Insert tab, in the Pictures group, select **Online Pictures**. In the Insert Pictures dialog box, in the search box, type: computer languages. Choose any image you like that represents technology. Insert the image of your choice. If necessary, resize the picture so that it fits on the slide without overlapping with the text.
- Select slide 6 so that it is the active slide. On the Insert tab, Media group, select the arrow under **Audio** and select Record Audio. Record a short audio clip (about 20 seconds) and tell me what language you would like to learn.
- After recording your audio and playing it back, name it Coding. Then, close the Record Sound audio dialog box. Notice a speaker icon displays on slide 6. Move this icon to the upper left-hand corner of slide 6. Click the speaker once to play the audio.
- On slide 6, in the Notes pane, add the following note: Remember to play the audio.
- Select slide 1 so that it is the active slide. On the Design tab, customize group, and select Format Background. Under Fill, select the button next to Picture of texture fill. Under insert picture Online Picture, search for any coding picture and select Insert. Be sure to not select Apply to All, as we only want the **background image** applied to the title slide.
- Close the Format Background dialog box by clicking the x in the upper right-hand corner.
- Save your presentation and take note of where it is located. There should be a total of 9 slides in your slide deck. Compare your presentation to the image below and make any modifications if needed. Close out of PowerPoint and submit your entire presentation per your instructor's instructions.

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MASTER ACTIVITY 1

Complete the following Master Activity and submit your completed project.

All about me using Google Slides

You will need to be logged into your Google account to complete this assignment. Since Google Slides is **web based**, it changes frequently. The steps outlined here may be slightly different from what you see on your screen. If you do not already have a Google account, you will need to create one. Go to **http://google.com** and in the upper right corner, click Sign In. On the Sign In screen, click Create Account. On the Create your Google Account page, complete the form, read and agree to the Terms of Service and Privacy Policy, and then click Next step. On the Welcome screen, click Get Started.

For this assignment, we will use Google Slides to create an "All About Me" Presentation that highlights:

- Hobbies
- Family and pets
- Work
- Major
- 1-, 5-, and 10-year goals

- From the desktop, open your browser, navigate to http://google.com, and then sign in to your Google account. In the upper right corner of your screen, click Google apps, and then click **Slides**.
- Select the **template gallery** to browse **templates**. Take a moment to view General templates.
- Select the back arrow to go back to the main Slides page. Select the plus sign to start a new Blank presentation. If necessary, hit ESC on your keyboard to show the toolbar.
- In the Themes dialog box, select the Simple Dark theme.
- Name your presentation Yourlastname_Yourfirstname_PowerPoint_Master1, and save it in your Google Drive or other location as indicated by your instructor.
- With Slide 1 selected, enter your name as the title, and for the subtitle type All About Me.
- On the Slide tab, select New Slide to insert a new blank slide. Type My Hobbies as the slide title. In the textbox below, create a bulleted list with at least 5 hobbies. The bulleted list is found on the main menu,

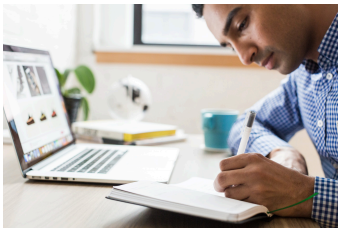
format, in Google Slides.

- On the main menu, select the plus button to add another new slide with the same layout as the previous slide.
- Type My Family and Pets for the slide title. In the textbox below the title, create a bulleted list with information on your family and pets.
- On the main menu, select the arrow next to the plus button to add a new slide with the title and two-column layout, then type My Work and Major for the title. In the textbox to the left create a bulleted list that contains at least 3 bullets about your work life. In the textbox to the right create a bulleted list that contains at least 2 bullets about your major or future career.
- On the main menu, select the arrow next to the plus button to add a new slide with the Section Title and Description layout, then type My Goals for the title, and delete the subtitle textbox. In the textbox to the right, create a numbered list with the following:
    - My one-year goal is to...
    - My five-year goal is to...
    - My ten-year goal is to...
- Complete each sentence with your own personal goals.
- Select slide 1 so that it is the active slide. Ensure the entire slide is selected, not the textbox. On the main menu, select background. In the background dialog box, next to Image, select Choose image. Select the option for Google image search. Find an image that represents you, and add it to the background for the title slide.
- If necessary, change the text color, or move the text so that it stands out against the new background image. To change the text color, select the textbox, and on the main menu, select text color.
- Select slide 2 so that it is the active slide. On the main menu, select the Insert Image button, and select Search the Web. Search for an image that describes your hobbies, and then insert it into slide 2. If necessary resize the image by selecting it and using the resize handles.
- With the image selected, choose Animate on the main menu. Add an Object Animation to Fade in on click. Play the animation to preview it and close the Motion dialog box if necessary.
- Select slide 3 so that it is the active slide. In the empty space next to the bulleted list, add a shape from the Insert tab, then Shapes. Choose any shape to compliment slide 3, and add it to your slide. Then, add text and a fill color to the shape.
- Select slide 4 so that it is the active slide. On the Insert tab, select video, and use the YouTube search to embed a video related to your future career. **Trim** the video so it is 3 minutes or less. If necessary, close the Format video dialog box.
- Select slide 5 so that it is the active slide. Select the textbox with your goals listed. On the main menu, select a light blue fill color for the textbox. Then, select a darker blue Border Color, with a border weight of 8px. Ensure the solid borderline is selected.
- On the Tools tab, run spell check and make any corrections.

- In the upper right-hand corner, select the arrow next to Present, and then select Present from the beginning. Use the arrows on your keyboard to navigate each slide of the slide deck. When completed, press the ESC key on your keyboard.
- Make any final adjustments to your slide deck, and submit per your instructor's instructions.

MASTER ACTIVITY 2

Complete the following Master Activity and submit your completed project.



In this assignment, you are working as a Clinical Educator for a local healthcare company. You have been asked to make enhancements to a presentation that will be shared with employees on how to properly wash their hands. You have been asked to make the following enhancements to the presentation:

  - Change the slide deck theme Droplet Third Variant
  - Insert and edit an online video demonstrating proper handwashing
  - Add a chart
  - Add speaker notes
  - Add professional quality images to add visual interest to the presentation
  - Add transitions and animations
  - Add sources
  - Correct bulleted list and fonts
  - Run spelling and grammar
- From your data files, open the file Starter_PowerPoint_Master2. If necessary, **enable content**. In Backstage view, under File, Save As, save the database as Lastname_Firstname_PowerPoint_Master_2 in your assignment files folder.

- Change the slide deck theme to Droplet, with the third color variant. The color variant should be light blue. Ensure the theme and variant are applied to all slides in the deck.
- On slide 3, ensure the hand washing video from YouTube is enabled. If not, insert an online video from YouTube from a reputable source that demonstrates the WHO proper handwashing technique.
- Format the video so that the Height is approximately 5″ and the Width is approximately 9″.
- With slide 4 active, insert a new slide with the Title and Content Layout. For the title, type Statistics. In the content placeholder below the title, select the Insert Chart icon and select Clustered Column.
- Enter the following data for the clustered column chart.

	Reduction of Illness
GI	31%
Respiratory	21%

- On slide 5, select the vertical value axis and format the axis so that the minimum bounds is 0.0 and maximum bounds is 0.4.
- Apply Quick Style 6 to the clustered column chart and delete the chart legend.
- Insert a textbox below the chart, and enter the following text: Source: Am J Public Health. 2008 Aug;98(8):1372-81. doi: 10.2105/AJPH.2007.124610. Epub 2008 Jun 12.
- On slide 5, enter the following speaker note:

  > This data is based on the research study, *Effect of hand hygiene on infectious disease risk in the community setting: a meta-analysis,* and Improvements in hand hygiene resulted in reductions in gastrointestinal illness of 31% and reductions in respiratory illness of 21%.

- Select slide 2. Delete all of the text starting with "This helps prevent…" and all of the text following it. Remove the bullet from the first paragraph that begins with "Cleaning hands at key times…" and change the font size to 24.
- Under the paragraph, insert an online picture that represents the importance of handwashing. The image selected should be professional. Resize the image and center it under the paragraph. Apply the Drop Shadow Rectangle Quick Style to the picture.
- Select slide 4. With all of the text selected, remove the bullets (do not delete the text). Insert an online picture that represents FAQ, or Frequently Asked Questions. Insert the image in the upper right-hand corner next to the title. Resize the image if necessary so that it fits to the right of the title.
- With slide 6 active, enter the following bulleted text in the textbox below CDC.gov:
  - Centers for Disease Control

    - Federal Government
    - Clean hands save lives
- With slide 6 active, enter the following bulleted text in the textbox below WHO.INT:
    - World Health Organization
    - The International Health Authority on Handwashing
    - Infection, Prevention and Control
- With slide 6 active, replace the text *Marcopa.gov* with *thurstoncountywa.gov*. Enter the following bulleted text in the textbox below thurstoncountywa.gov:
    - Thurston County Public Health in Washington
    - Local County Health and Wellness
    - Handwashing Toolbox
- Ensure all text that was just added is a bulleted list and left justified.
- With slide 6 still active, insert an online picture that represents the importance of handwashing. The image selected should be professional. Resize the image and center it under the paragraph. Apply the Drop Shadow Rectangle Quick Style to the picture.
- With the picture on slide 6 selected, add the Shape Animation to the picture.
- With slide 1 active, apply the Reveal Transition to all slides in the slide deck.
- Run spelling and grammar check and make any corrections.
- View your slideshow.
- Save your presentation, and take note of where it is located. There should be a total of 6 slides in your slide deck. Compare your presentation to the image below, and make any modifications if needed. Close out of PowerPoint and submit your entire presentation per your instructor's instructions.

MASTER ACTIVITY 3

Complete the following Master Activity and submit your completed project.

In this activity, you will create a presentation regarding your plan of study. Your presentation should include:

- 6 slides in the following order:
  - A title slide with your major or plan of study
  - A slide explaining why you chose this major
  - A slide detailing your graduation timeline
  - A slide with post-graduation plans such as University Transfer, Jobs, Certifications, etc.
  - A slide highlighting your dream job
  - A slide that details your biggest influencers or motivators for completing your plan of study

Your presentation should be professional and collegiate and demonstrate effective presentation strategies. It should include the following elements:

  - Professional quality graphics
  - Transitions and animations
  - A theme
  - A background image on the title slide
  - Proper spelling and grammar
- Review your presentation slideshow view.
- Save your presentation

as YourLastName_YourFirstName_PowerPoint_Master_3, and take note of where it is located. There should be a total of 6 slides in your slide deck. Close PowerPoint and submit your entire presentation per your instructor's instructions.

CHALLENGE IT

Complete the following Challenge and submit your completed project.

In this challenge activity, you will complete a project that incorporates many of the key skills learned in the Presentation Software unit. For this project, you are the Marketing Director for the Arizona Tourism Office. The goal of the presentation is to educate visitors on all of the wonderful things Arizona has to offer. You will create a PowerPoint Presentation with the following:

- Animations and transitions
- Line Graph
- SmartArt
- WordArt
- 7 Themed slides
- Graphics

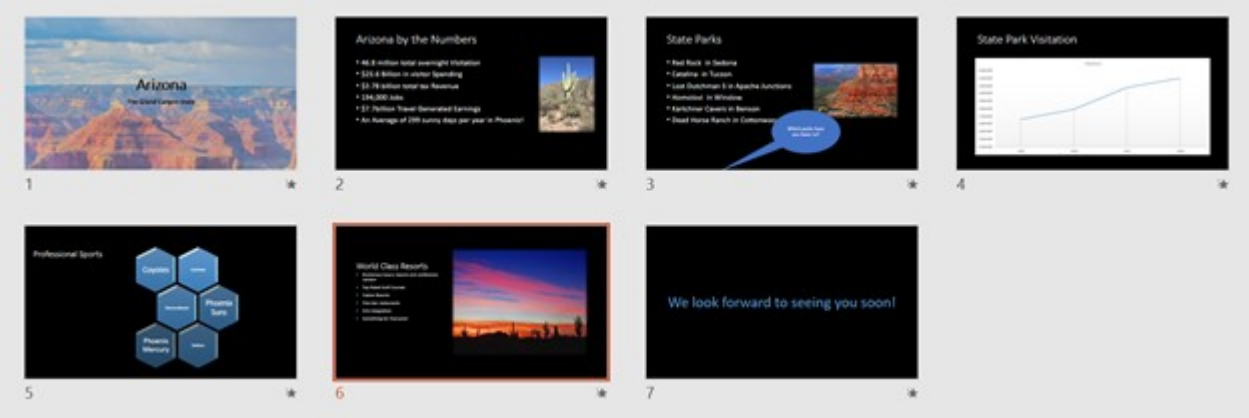
- Open PowerPoint and select Blank Presentation. In Backstage View, save the presentation in your PowerPoint folder, and name it Lastname_Firstname_PowerPoint_Challenge.
- On the Title Slide, in the Title Content Placeholder, add the following text: Arizona.
- In the content placeholder under the title, add the following text: The Grand Canyon State.
- Change the Font Color to Black, Background 1. Bold all of the text.
- Add a background picture to the title slide only. The background image is found in your data files and titled PowerPoint_Challenge_Step3. Change the transparency of the background picture to 25%.
- Change the Theme to Office Theme, with the third variant.
- Using Reuse slides, add slides 2-6 from the presentation in your data files titled PowerPoint_Challenge_Step_5.
- On Slide 2, insert an online picture of a cactus. Resize and reposition the picture so that it fits to the right of the text. Apply the Soft Edge Rectangle Quick Style.

- On Slide 2, show the speaker notes. In the notes pane, add a period after 2019. And then type the following note: Retrieved online on 1/26/2021 at https://tourism.az.gov
- On slide 3, insert the picture from your data files titled PowerPoint_Challenge_Step8. Resize and reposition the image so that it fits to the right of the text. Apply the Soft Edge Rectangle Quick Style.
- On Slide 3, show the speaker notes. In the notes pane, add the following note: The Grand Canyon is also located in Arizona and is a National Park.
- On Slide 3, insert an Oval Callout shape. Resize the shape so that it has a height of about 2.1″ and a width of about 3.4″. The shape should be located in the bottom portion of the slide, it is ok if it covers a portion of the text or picture. Apply the Colored Fill—Blue, Accent 5 Shape Style. In the shape, type: Which parks have you been to? Apply the Float In animation to the shape.
- On slide 4, insert a Line with Markers Chart. Use the following data:

Year End	Visitors
2015	2,660,672
2016	2,788,118
2017	3,076,938
2018	3,191,415

- Apply Quick Style 3 to the Line Chart, and delete the Legend.
- In the speaker notes on slide 4, type the following note: Data provided by the Arizona Office of Tourism in collaboration with Northern Arizona University—The W.A. Franke College of Business.
- On slide 5, insert the alternating hexagon SmartArt. In each shape, enter one sports team per shape, in any order. Delete the Add a picture placeholder, and delete the bulleted list of sports teams. Move the SmartArt to the right of the title. Change the colors of the SmartArt to Transparent Gradient Range—Accent 1. Apply the 3-D polished Quick Style to the SmartArt.
- On slide 6, insert an online picture of a desert sunset. If necessary, resize and reposition the picture so that it fits to the right of the text. Apply the Soft Edge Rectangle Quick Style.
- After slide 6, add a new slide with the Blank Layout. Insert a Fill—Blue, Accent 1 Shadow WordArt with the words: We look forward to seeing you soon!
- Apply the Page Curl transition to all slides in the deck.
- Run spelling and grammar check and make any corrections.
- View the slideshow.

- Save your presentation, and take note of where it is located. There should be a total of 7 slides in your slide deck. Compare your presentation to the image below, and make any modifications if needed. Close out of PowerPoint and submit your entire presentation per your instructor's instructions.



PRESENTATION SOFTWARE: CHECK YOUR UNDERSTANDING

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https://louis.pressbooks.pub/computerapplications/?p=767#h5p-9

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://louis.pressbooks.pub/computerapplications/?p=767#h5p-10

PRESENTATION SOFTWARE: GLOSSARY

Definition of terms used in this chapter:

Animation	a visual or sound effect added to an object or text on a slide
Animation Pane	the pane that displays additional options that can be applied to animations
Audio	sound files that can be recorded and embedded into a presentation
Background image	an image that can be added to the background of a PowerPoint slide and will be automatically resized to fill the entire slide
Clustered column	a type of chart that displays more than one data series in clustered vertical columns; commonly used for direct comparison of multiple series, but they become visually complex quickly
Contiguous	slides that are adjacent to each other in a presentation
Color Variant	a variation on the presentation theme style or color
Crop	a command that removes unwanted or unnecessary areas of a picture
Crop to shape	a command that removes unwanted or unnecessary areas of a picture and forms it into a specified shape
Effect options	additional enhancements such as sound and timing that can be applied to an animation
Embedding	the integration of links, images, videos, gifs, and other content from a variety of digital sources into a presentation
Eyedropper	a tool that captures the exact color from an object on your screen and then applies it to any shape, picture, or text
Fit	a function of the crop command that allows you to resize the picture so that the entire picture displays inside the picture area while maintaining the original aspect ratio
Homepage	the main page of a website
Keep source formatting	maintains formatting options from the source file
Layout	the arrangement of elements in a PowerPoint slide such as title and subtitle, lists, pictures, shapes, charts, tables, and media
Lock aspect ratio	a graphic option in which the ratio between height and width remains constant but the height and width can increase or decrease
Microsoft PowerPoint	a presentation program used to create business, educational, or informal presentations
Noncontiguous	slides that are not adjacent to each other in a presentation
Normal view	the primary editing view in PowerPoint where you write and design your presentations
Notes pages	a printout that contains the slide image on the top half of the page and notes that you have entered on the notes pane in the lower half of the page
Notes pane	a printout that contains the slide image on the top half of the page and notes that you have entered on the notes pane in the lower half of the page
Online pictures	allows you to find and insert online pictures into your presentation from a variety of sources

Outline view	a PowerPoint view that displays the presentation outline to the left of the slide pane
Placeholder	a box on a slide with a dotted border that holds the title, body text, or other content such as charts, tables, and media
Presentation	the process of communicating on a topic to an audience, typically a demonstration, introduction, lecture, or speech meant to inform, persuade, inspire, motivate, or build goodwill or to present a new idea or product
Presentation software	computer software used to display information in the form of a slide show, published to the web, or recorded to watch as a video
Print options	although presentations are not typically printed, this will allow efficient options for when printing is necessary
Print preview	provides a preview of what the presentation will look like when printed
QuickStyles	styles listed in the styles list that can be accessed at any time; can be predefined or created
Reading view	a view in PowerPoint that displays a presentation in a manner similar to a slideshow but in which the taskbar, title bar, and status bar remain available in the presentation window
Remove background	automatically removes unwanted portions of a picture; markers can be used to indicate areas to keep or remove from the picture
Reuse slides	allows you to take slides from an existing presentation and insert them into a new presentation without the need to open the old presentation; also allows you to keep the original formatting or apply the formatting used in your new presentation
Screen clipping	a type of screenshot that allows you to take a quick snapshot of part of the screen and add it into a presentation
Screenshot	a picture of one's computer screen that can be inserted into a presentation
Shape styles	applies preset colors and effects to quickly enhance the appearance of your shape or textbox
Slide decks	a collective group of slides in a presentation
Slideshow	occupies the full computer screen exactly the way your presentation will look on a big screen when your audience sees it
Slide sorter	displays a miniature version of each slide
Slide	a presentation page that can contain text, pictures, tables, charts, and other multimedia or graphic objects
SmartArt	a visual representation of information that you create by choosing from among various layouts to communicate your message or ideas effectively
Smart guides	dashed lines that display on your slide when you are moving an object to assist you with alignment
Speaker notes	helps presenters recall important points, such as key messages or stats, as they give a presentation

Status bar	located at the bottom of the PowerPoint window; shows messages and information about the view, such as the slide number and the current theme template used
Template gallery	thousands of pre-made templates available in Google Slides
Templates	pre-made Google Slides presentations that can be used as-is or modified to fit your needs
Themes	a set of unified design elements that provides a coordinated look for your presentation by applying colors, fonts, and effects
Theme styles	a coordinated group of theme attributes that can be applied to shape styles
Title slide	a slide layout that is commonly used as the first slide in a presentation and contains an introduction to the presentation
Transitions	motion effects that occur in slideshow view when you move from one slide to another during a presentation
Trim	refers to taking off either part of the beginning or end of a media clip
URL	stands for Uniform Resource Locator, also commonly known as a web address
WordArt	a gallery of text styles with which you can create decorative effects, such as shadowed or mirrored text

SPREADSHEETS

SPREADSHEETS

Learning Objectives

1. Demonstrate an understanding of the purposes of spreadsheets and the essentials of mastering the use of spreadsheet applications.
2. Identify the major components of electronic spreadsheets and how they work, including navigation of program menus and ribbon, and screen manipulation.
3. Create, design, and edit spreadsheets and workbooks using formatting techniques.
4. Understand the syntax and apply electronic spreadsheet formulas and functions: including simple calculations; analyze and chart data; and summarize data with pivot tables.
5. Understand the basics of using spreadsheets' statistical functions including average and standard deviation.
6. Apply data analysis techniques like charts and graphs to different data structures including lists and tables.
7. Create basic plots including histograms and dependent vs. independent variables.

LEARN IT

A **spreadsheet** is a file with **cells** in **rows** and **columns**. A spreadsheet helps arrange, calculate, and sort data. Data in a spreadsheet can be numeric values, text, formulas, references, and functions. We will even learn how to embed charts and graphs into a spreadsheet. Spreadsheets are used to visualize data in a meaningful way that

can be used to make complex decisions. Spreadsheets are the most basic tool in data science. Spreadsheets can take raw data, and tell a story with it.

Common Spreadsheet Software:

Software Name	Type	Key Features
Microsoft Excel	Commercial	Runs on Windows and MacPart of Office 365. Recent features include robust formulas and functions, charts, graphs, and sparklines. Arguably the most popular spreadsheet software.
Google Sheets	Online—Part of the free, web-based Google Docs Editors suite	Allows users to create, view, and edit spreadsheets online while collaborating with other users in real-time. Available as a web application supported on most web browsers. Compatible with Google Drive.
LibreOffice Calc	Free and open-source office productivity software suite	Uses the OpenDocument standard, but supports formats of most other major office suites, including Microsoft Office. Official support for Microsoft Windows, macOS, and Linux. It has several unique features, including a system that automatically defines a series of graphs, based on information available to the user.
Apple Numbers	Online—Part of the iWork productivity suite	Runs on the MacOS, iPadOS, and iOS operating systems.

Going forward, we will focus on Microsoft Excel and LibreOffice Calc.

SPREADSHEET PRACTICE 1

There are many similarities across spreadsheet software, so the skills we are learning can be translated to

any other software and apps. The following assignments are designed to be completed using *either* Microsoft Excel in Office 365 *or* LibreOffice Calc on a PC with Windows 10 or higher.

We will use spreadsheet software to perform Data Analysis including complex calculations, analyze data so that we can make intelligent decisions, and create visually interesting charts and graphs that help us understand the data. It is best to use a keyboard and mouse or touchpad rather than a touchscreen when working with spreadsheets.

In a spreadsheet, data is stored in a **cell**. **Cell content** is anything that is stored in the cell and can be either a **constant value** or a **formula**. The most used **values** are **text values** and **number values**. Values can also be a date or time. A text value is also referred to as a label.

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=96#oembed-1

Complete the following Practice Activity and submit your completed project.

For our first assignment, we will create a spreadsheet with monthly expenses. We will go over the activity with both software: Microsoft Excel and LibreOffice Calc. When the instructions for both spreadsheet applications are different, the Microsoft Excel steps will be shown at the left, and the LibreOffice Calc steps at the right. However, most of the instructions are identical.

- We will start with a new blank spreadsheet.

Start Excel. Click **Blank Workbook**.	Start LibreOffice Calc.

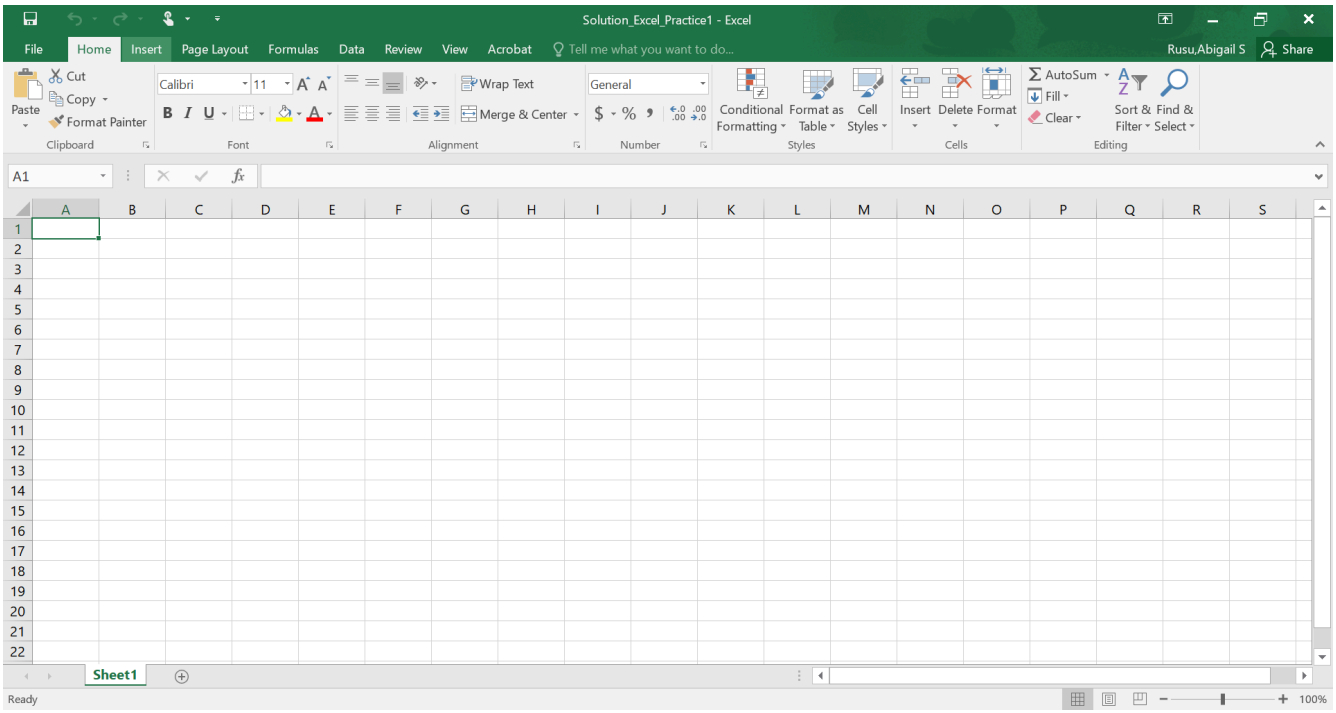
- Select File, Save As, Browse, and then navigate to your folder on your flash drive or other location where you save your files. Name the file depending on the software you are using as

Yourlastname_Yourfirstname_Excel_Practice_1, if you are using Microsoft Excel.	Yourlastname_Yourfirstname_Calc_Practice_1, if you are using LibreOffice Calc.

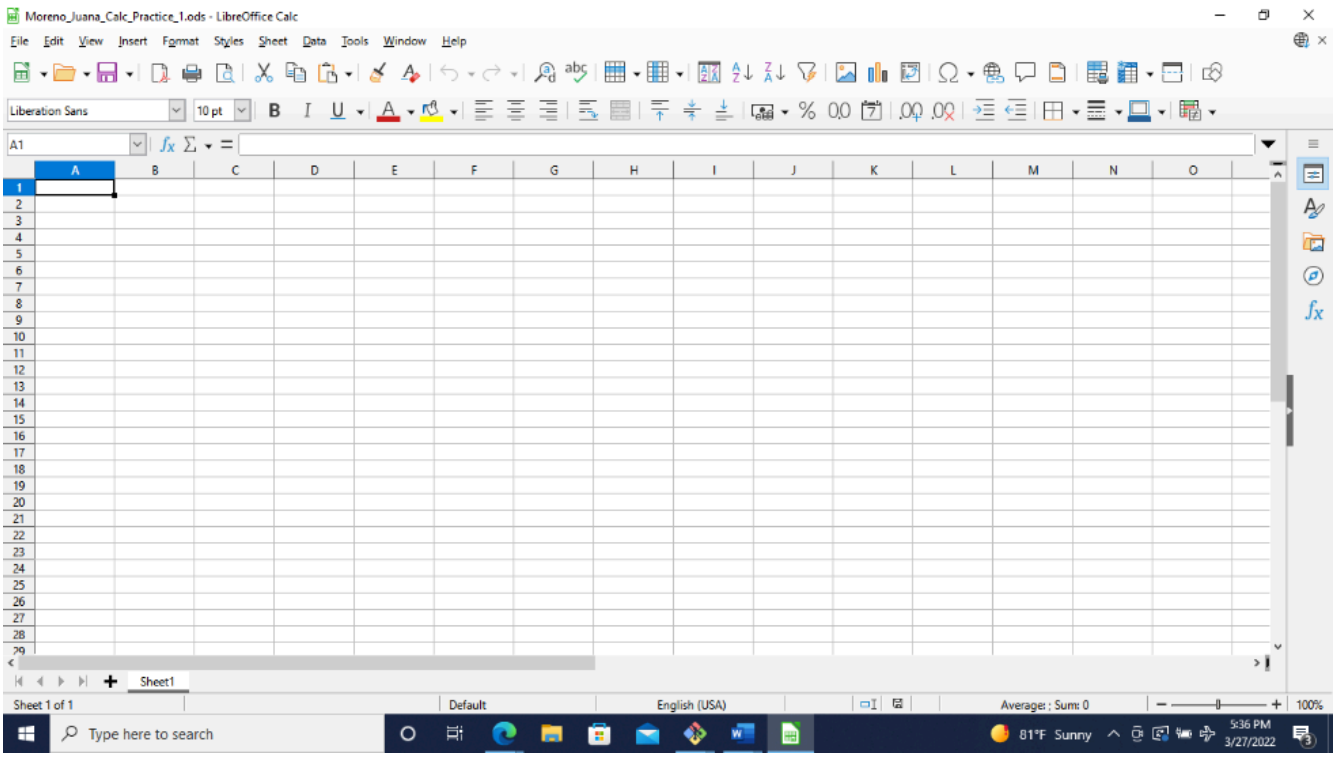
- Take a moment to locate the following components of the spreadsheet window. Notice how **Columns**

are lettered and **Rows** are numbered. The intersection of a row and column is a **cell**. The **active cell** in the image is A1.

- Microsoft Excel



- LibreOffice Calc



- Notice the vertical and horizontal scroll bars. Use the arrows to practice scrolling on the page.
- In cell A1, type My Budget By Month and press Enter.
- In cell A2 Type For the First Quarter and press Enter.
- In the **Name Box**, change A3 to A4 and then Hit Enter. Notice how the active cell changed to A4. The Name Box is the little window just above the spreadsheet in the left corner.
- Starting in cell A4, Type each of the following, pressing Enter after each:
  - Housing
  - Groceries
  - Utilities
  - Misc. Expenses
  - Monthly Total
- In cell B3, type January and press Enter.
- Select cell B3 and use the **fill handle** to drag to cell D3. Notice how the names of the months automatically generate. The fill handle enables **autofill**, which generates and extends a series of values into adjacent cells based on the value of other cells.

- Adjust the column width for column A by dragging the right boundary until all the text is displayed in the cells.
- Select the **range** B3:D3 and center the text.

On the Home Tab, Paragraph Group, choose Center.	On the Formatting Toolbar, choose Align Center

- In cell B4, type 1200 and enter the remaining numbers as shown:

	January	February	March
Housing	1200	1200	1200
Groceries	200	250	275
Utilities	85	80	90
Misc Expenses	20	50	30

- In cell B8, type =b4 + b5 + b6 + b7 and press Tab.
- In cell C8, type =c4 + c5 + c6 + c7 and press Tab.

Note: Using this technique we are manually entering a formula that sums a range of cells. Notice the Formula Bar as you enter your formula. The formula bar displays the Underlying Formula.

- A quicker way to enter a formula is with a **function**. We will use the **SUM function** next. In cell D8, type =SUM(D4:D7) and press Enter. You can also type =SUM(and select the range of cells D4 to D7.
- In cell E3, type Total and then press Enter.
- Click in cell E4; Press Alt + =. This is a **keyboard shortcut** that enters the Sum function. If the keyboard shortcut does not work (this is common due to variations in keyboards), use the technique for using the SUM function described previously.
- With Cell E4 selected, drag the fill handle in cell E4 down through cell E8.
- Click in cell F3, type Trend, and press Enter.
- Click in cell A1 and drag your cursor to the right to select the range A1:F1.

On the Home tab, in the Alignment Group, choose **Merge and Center**.	On the Format Tab, Merge Cells, choose **Merge and Center Cells**.

- The title should be Merged and centered in the range A1:F1.
- Using the same technique, merge and center the title in the range A2:F2.

Apply the Title style to cell A1 and the Heading 1 style to cell A2. Cell styles are on the Home Tab, Styles Group, then choose the arrow next to **cell styles**.	Apply the Heading 1 style to cell A1 and the Heading 2 style to cell A2. Cell styles are on the Styles Tab of the Menu bar.

Apply the Heading 4 style to the ranges B3:F3 and A4:A8.	Apply the Accent 3 style (under the Styles Tab) to the ranges B3:F3 and A4:A8.

- You can select the first range, hold down the CTRL key, and select the second range, then apply the cell style. Or apply, one at a time.

Apply the **Accounting number format** to the ranges B4:E4 and B8:E8. The number format is located on the Home Tab, Number Group. Select the arrow to view a drop-down list of all number formats	Apply the **Currency Format** under the Formatting Toolbar, and choose the Default.

Apply the **Comma number style** to the range B5:E7. This is located on the Home Tab, Number Group. Select the comma.	Apply the Format as Number located on the Formatting Toolbar to the range B5:E7.

Apply the Total number style to the range B8:E8. Cell styles are on the Home Tab, Styles Group. Then choose the arrow next to cell styles.	To the range B8:E8, first apply Bold lettering, then apply Borders and choose top and bottom borders. Both are in the Formatting Toolbar.

- AutoFit column D. Select column D by clicking on the D Column Header. Then, double-click the line between the D and E.

Or, with Column D selected, on the Home Tab, Cells Group, click the arrow next to Format and choose Autofit for the Column.	Or, with Column D selected, on the Menu Bar, choose Format tab, Columns, and Optimal Fit.

Apply the Slice **theme** to the Workbook. On the Page Layout Tab, in the Themes Group, choose Slice. If necessary, adjust the total cells

- Select the range A3:D7.

With the chart selected, under Chart Tools, in the Chart Design Tab, in the Chart Layouts Group, choose the Add Chart Element and ensure the Chart Title is Above Chart. Change the Chart Title to My Budget.	With the chart selected, under Insert, choose Titles. Then, change the Chart Title to My Budget.

On the Insert tab, in the charts group, click Recommended Charts, click All Charts, and select Cluster Column chart.	On the Insert tab, in the Chart group, click Column chart, the leftmost option.

Using Change Colors select Colorful 4. Change colors located on the Chart Tools, Design Tab, under Chart Styles.	To change the chart colors and transparency, double-click each of the columns to open a window menu, and choose Color, the required Palette, and the specific color. Then, in Transparency, choose Gradient, Linear, and one Start value and one End value.

- Drag the chart by clicking and holding any of the chart's outer lines. Move the chart so that the upper left corner is inside cell A10.

Ensure the chart is still selected, and apply Chart styles, Style 6. Chart styles are located on the Chart Tools, Design Tab, under Chart Styles. Click the down arrow to see all the Chart Styles.	You can customize all the elements of your chart separately

- Select the range B4:D4 and insert a Line **sparkline** in cell F4. Be sure to not include the totals in the sparkline range.
- Sparklines are located on the Insert Tab. In the Sparklines group, choose Line. The sparkline will display in cell F4. For the location range, click into cell F4.

With cell F4 selected, on the Sparklines, Design Toolbar, in the Show group choose the checkbox next to Markers.

Apply the Sparkline Style Colorful #4 style. Styles are located on the Sparkline Design toolbar in the Style group. Choose the do

With cell F4 selected, use the fill handle to fill the sparkline to cells F5:F7.

On the Page Layout Tab, Sheet Options Group, click the arrow to launch the Page Setup Dialog Box. Notice how it opens to the Sheet tab. Go to the Margins tab and click the checkbox to center the data and chart horizontally on the page.	On the Menu Bar, Format, click Page Style. Go to Page, Layout Settings, and choose Horizontal Table alignment. Click OK.

Open the Page Setup Dialog Box, go to the Header/Footer tab. Choose Custom Footer and insert the File Name in the left section of the footer.	On the Menu Bar, Format, click Page Style. Choose Footer, and click Footer on. Then, click Edit. And chose the File Name followed by the page number between the options displayed.

- The file name will show in the Print Preview and also when the spreadsheet is printed. This is a **field**, so if the file name is changed, it will automatically update the footer with the new file name.

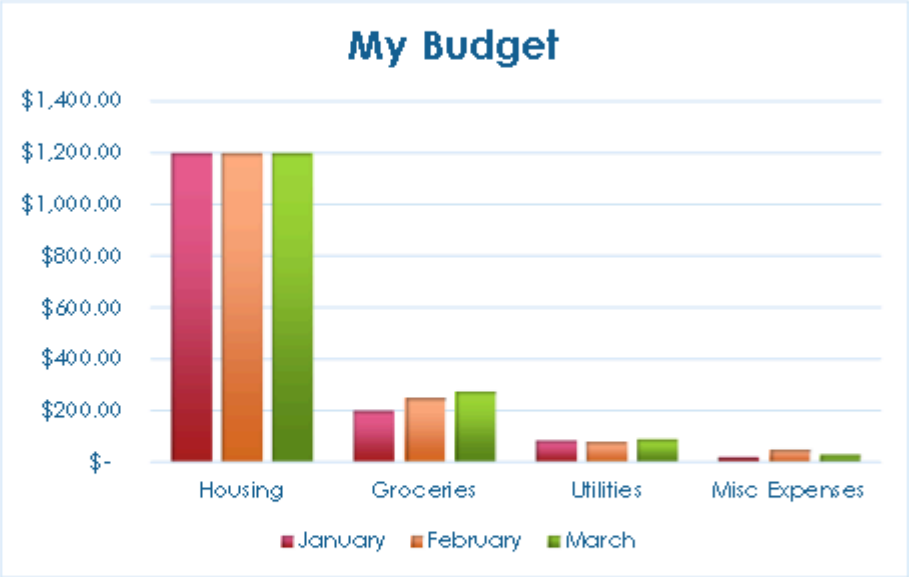
Click File to go to Backstage View. Under Info, choose Properties, and then Advanced Properties. Add the following Properties: Title: Excel Budget Subject: Course name and Section # Author: Your First and Last Name Keywords: Sums, Charts, Budget, Excel	Click Tools, Options under LibreOffice File to go to Backstage View. Under Info, choose Properties, and then Advanced Properties. Add the following Properties: Title: LibreOffice Budget Subject: Course name and Section # Author: Your First and Last Name Keywords: Sums, Charts, Budget, LibreOffice

- Click the back arrow to exit Backstage view. Click the Save shortcut button and ensure your file is saved in a safe location.
- Select the range A2:F5 and then press **Ctrl + F2**. This is the keyboard shortcut that displays **Print Preview**. If you do not have the shortcut key, click File to enter Backstage View, Print, and view the Print Preview.
- Change the print settings option to **Print Selection** and notice how the Print Preview changes. Printing of this assignment is not required, but if you needed to print a copy, you would click Print.
- Exit Backstage view and Save your file.
- On the Formulas tab, in the Formulas Auditing group, Show the Formulas. This is a toggle button, so press it once to show the formulas. Press it again to hide the formulas. Notice how row 8 displays the formula rather than the result when Show the Formulas is turned on.
- On the Page Layout tab, in the Page Setup group, Change to Landscape orientation and Scale the data to fit on one page. This is on the Page Tab of the Page Layout Dialog Box.
- Run spelling and grammar check, compare your file to the image below, and make all necessary corrections.
- Submit as instructed by your instructor.

My Budget By Month

For the First Quarter

	January	February	March	Total	Trend
Housing	$1,200.00	$1,200.00	$1,200.00	$3,600.00	
Groceries	200.00	250.00	275.00	725.00	
Utilities	85.00	80.00	90.00	255.00	
Misc Expenses	20.00	50.00	30.00	100.00	
Monthly Total	$1,505.00	$1,580.00	$1,595.00	$4,680.00	



Solution_Excel_Practice1

SPREADSHEETS: CHECK YOUR UNDERSTANDING

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An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://louis.pressbooks.pub/computerapplications/?p=676#h5p-6

SPREADSHEETS GLOSSARY

Definition of terms used in this chapter:

3D map	a type of map that is three-dimensional and appears to have all three spatial dimensions including length, width, and depth
Absolute	a cell reference that refers to cells by their fixed position in a worksheet; an absolute cell reference remains the same when the formula is copied and is indicated by the $ sign
Accounting number format	an Excel number format that applies a thousand comma separator where appropriate, inserts a fixed U.S. dollar sign aligned at the left edge of the cell, two decimal places, and leaves a small amount of space at the right edge of the cell to accommodate parenthesis for negative numbers
Active cell	the cell surrounded by a black border that is ready to have content typed into it or perform a command
Auto fill	an Excel feature that generates and extends values into adjacent cells based on the values of the selected cells
Average	an Excel function that adds a group of values and then divides the result by the number of values in the group
Blank workbook	a file that data has not been entered into yet and contains one or more worksheets
Cell content	anything typed into a cell
Cell styles	a defined set of formatting characteristics such as font, font size, font color, cell borders, and cell shading
Chart editor	provides options to edit and customize a chart in Google Sheets
Chart sheet	a workbook sheet that contains only a chart
Chart title	a label that describes the chart's purpose
Clear all	when selected, all formats and comments that are contained in the selected cells will be cleared
Clear contents	when selected, clears only the contents in the selected cells while leaving any formats and comments in place
Columns	a vertical group of cells in a spreadsheet, indicated by letters
Comma number style	an Excel number format that inserts a thousand comma separators when needed, with two decimal places, and leaves a space to the right to accommodate parenthesis for negative numbers
Constant value	a set value that does not change and is directly typed into a cell; there are two types: text and number values
COUNTIF	a statistical Excel function that counts the number of cells within a range that meet the given condition and has two arguments—the range of cells to check and the criteria
Ctrl + F2	a keyboard shortcut that displays the print preview

Data analyst	an IT professional whose responsibilities include inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information, informing conclusions, and supporting decision-making
Data labels	a text that describes and identifies data in a chart
Decrease decimal	for numbers already entered in a worksheet, you can increase or decrease the number of decimal places displayed by using the toolbar buttons
F7	a function key that runs spelling and grammar check when pressed
Fill handle	the small square in the lower right-hand corner of a selected cell
Financial analyst	a professional career, undertaking financial analysis for external or internal clients as a core feature of the job
Flash fill	recognizes a pattern in your data and then automatically fills in values when you enter an example of the desired output; can be used to split data from two or more cells or to combine data from two cells
Formula	an equation that performs a mathematical calculation on values in a worksheet
Formula bar	an element in the Excel window that displays the value or formula contained in the active cell, you can edit and enter formulas here
Function	a predefined formula
Function arguments	the values that an Excel function uses to perform calculations or operations
Goal seek	a what-if analysis that finds the input needed in one cell to arrive at the desired result in another cell
Keyboard shortcut	a key or combination of keys providing quick access to a particular function
Label	descriptive words that explain data in a spreadsheet
MAX	an Excel function that determines the largest value in a selected range of values
MEDIAN	an Excel function that finds the middle value that has as many values above it in the group as is below it
Merge and Center	a command that joins selected cells in an Excel spreadsheet into one larger cell and centers the contents of the merged cell
MIN	an Excel function that determines the smallest value in a selected range of values
Multiple operators	a type of Excel formula that contains more than one operator; mathematical order of operations is followed
Name box	an element of the Excel window that displays the name of the selected cell, table, chart, or object

Non-adjacent	cells that are not touching one another; to select non-adjacent rows or columns, hold Ctrl and select the row or column numbers
NOW Function	an Excel function that retrieves the date and time from your computer's calendar and clock and inserts the information into the selected cell
Number values	Constant values consisting of only numbers
Order of operations	the mathematical rules for performing multiple calculations within a formula
Pie explosion	when one slice or all of the slices of a pie chart are pulled away from each other to add emphasis
Print preview	a backstage view feature that displays on the screen what a hard (printed) copy would look like
Print selection	allows you to print a specific selection of cells
Quick Analysis Tool	a button that appears at the bottom right corner of the selected data and lets you instantly create different types of charts, including line and column charts, or add miniature graphs called sparklines
Range	two or more selected cells on a worksheet that are adjacent or nonadjacent
Range finder	an Excel feature that outlines cells in color to indicate which cells are used in a formula; useful for verifying which cells are reinforced in a formula
Rows	a horizontal group of cells in a spreadsheet, indicated with numbers
Sheet1	a new spreadsheet will be created with only one sheet, called Sheet1; additional sheets can be added as you need them
Sparklines	a tiny chart in the background of a cell that gives a visual trend summary alongside your data
Spreadsheet	also known as a worksheet, where data is entered for organization, analysis, and storage in tabular form in rows and columns of a grid and can be manipulated and used in calculations
SUM Function	a commonly used predefined formula that adds all of the numbers in a selected range
Summary sheet	a worksheet where totals from other worksheets are displayed and summarized
Tab	a key on your keyboard that allows you to move to the next cell in Excel
Text values	Constant values that are only text, and oftentimes provide descriptions for Number values; may also be called label
Theme	a predefined set of colors, fonts, lines, and fill effects that coordinate each other
Underlying formula	the formula entered in a cell and visible only on the Formula Bar
What-if analysis	the process of changing the values in cells to see how those changes affect the outcome of formulas in a worksheet

Wildcard	special characters that can be used to take the place of characters in a formula, including ? (any one character) or * (zero or more characters)
Workbook	a file that contains one or more worksheets to help you organize data

DATABASES

DATABASE SOFTWARE 1: AN INTRO TO DATABASES

Database Objects

Jennifer Lavergne

Learning Objectives

1. What is a database?
2. What are database objects?
3. What connects tables?
4. What is database maintenance?
5. How to use MS Access

LEARN IT

A **database** is an organized collection of **data**, generally stored and accessed electronically from a computer system. Data stored in databases might include facts about people, events, things, or ideas. This provides

information, which generates **knowledge**. Databases contain **objects** to store or reference data. The database objects we will focus on are:

- Tables
- Queries
- Forms
- Reports

Good database design is critical and must be planned out before the database is built. One of the first steps in designing a database is to ask "What questions should this database be able to answer?" The goal of the database should be to store data in a way that makes it easier to answer this question.

The database should be **user friendly**. Good database design means that the data should be organized in a way that eliminates duplicate records. **Redundancy** in the data can cause the integrity of the database to be compromised. Another principle of good database design is a focus on accuracy and consistency of the data. Since many different **end users** might update data in a database, care should be taken to ensure data controls are in place to ensure consistency. When working through the projects in this chapter, it is important to pay close attention to the details. For example, spelling and naming conventions must be precise and consistent. Attention to detail is required when working with databases. Since databases are relational, there is a hierarchy that must be followed.

If a mistake is made when creating the database foundation, it will not function properly. The mistake will need to be corrected before continuing on. If you run into a database error, it is best to re-read the previous steps in the assignment and double-check your work. If you are not able to resolve the error, your instructor can help.

We will focus on **relational databases**. These types of databases are more robust than **flat databases**.

Going forward, we will focus primarily on Microsoft Access. If you are using a Mac, you will need a dual boot with Windows to run Microsoft Access.

Since Microsoft Access is widely used in industry, and we are using Microsoft Windows, we will focus on this DBMS going forward. There are many similarities across database systems, so the skills we are learning can be translated to other systems. The following Practice It assignments are designed to be completed using Microsoft Access in Office 365 on a PC with Windows 10 or higher. You may need to download the Professional version of Office 365 (which is free to students) to view Access.

We will use Access to analyze, design, and create a database to extract, sort, calculate, and report business

data. Since Access is used for Data Analysis, it is best to use a keyboard and mouse or touchpad rather than a touchscreen.

In Access, **data** is stored in **tables**. This is the foundation of the database. Tables can be related to one another to create a relational database, which is a robust database. Each table row contains a record, and each table column is a **field**.

For our assignments in MS Access, we will use a database template to become familiar with database structure including tables, forms, queries and reports.

Let's look closer at what exactly **data** and **tables** are in reference to a database. **Data** is the most important part of our database system. Our job is to organize all of the data we collected into logical storage for easy retrieval. As stated before, using data to create knowledge is one of the most important things your database can do. Some examples of data can be your college transcript, a store's sales for a month/year/decade, or your personal profile on social media. Typically, when deciding how to organize your data, we begin by looking for nouns.

If we use college transcripts as an example, we have several nouns we can use to group information around:

- Students—yours and your fellow student's information
- Classes—the classes offered at the university
- Offering—the class you are enrolled in for a given semester and associated grades
- Faculty—the faculty member who taught the offering
- Building—the building your class was taught in
- University—the university you are attending

All of these are examples of possible groupings. There can be more or less depending upon the type and amount of data you have.

After we determine the groupings we like, we can create database **tables** based on these groupings. Tables organize the data into **Columns** and **rows** for easy retrieval and storage. Columns are typically referred to as **fields** and rows are typically referred to as **records**. Here is an example of a student table in a database:

Student

StudentID	FirstName	LastName	City	State	Zip	Major	Class	GPA
123456789	Homer	Wells	Seattle	WA	98121	IS	FR	3.00
124567890	Zarin	Yousefi	Wadena	MN	56482	FIN	JR	2.70
234567890	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.50

A table consists of 4 different parts: The **header**, **body**, **rows**, and **columns**. The header includes the name of the table and each of the column names. In the Student table above, the **header** would be this portion:

Student

StudentID	FirstName	LastName	City	State	Zip	Major	Class	GPA

The **body** of a table contains all of the rows in the table. This is where all of our **data** is stored that is related to this particular table. In the Student table above, the body would be this portion:

123456789	Homer	Wells	Seattle	WA	98121	IS	FR	3.00
124567890	Zarin	Yousefi	Wadena	MN	56482	FIN	JR	2.70
234567890	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.50

The body of a table is separated into horizontal rows. These are also referred to as records. A single row contains all of the information about that item in the table. In the table above, a row contains all of the information about a given student. In your school's database, you have a row in a table with all of your information. This is an example of a single row in the Student table above. This row contains all of Candy Hernandez's information:

234567890	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.50

Keep in mind that a database table normally has thousands to millions of records. This is why it's important to make sure the data you enter into a table is correct. Editing a thousand records by hand would be very time-consuming.

Columns are the vertical storage portion of our tables. A single column/field contains all of some value that is associated with the rows in the table. For example, in the Student table above, the First Name column contains all the first names of the students in the table. The GPA column contains all student's GPAs in the table. Here is the First Name column from the Student table:

FirstName
Homer
Zarin
Candy

In a database, a column should always be guaranteed to contain the expected information. That is, only store first names in the First Name column. Only store city names in the City column. Etc. The most important column of a table is the ID column. It's possible that when you log into your account at school, you use some form of ID or username. It's your unique ID/username that is only assigned to you personally. This is done so that when you want to retrieve your transcript, all you need is your ID/username. This column is called a

Primary Key and is required in every table in a relational database. It is required to always be unique, not used for anything else, and can never be empty. In the Student table above, the StudentID column contains the Primary Key for each record/row in the table. It's desirable to have your database automatically increment a numerical value by one each time a new record is added to the table. So, if our last id was 101, the system would assign an id of 102 to the next record.

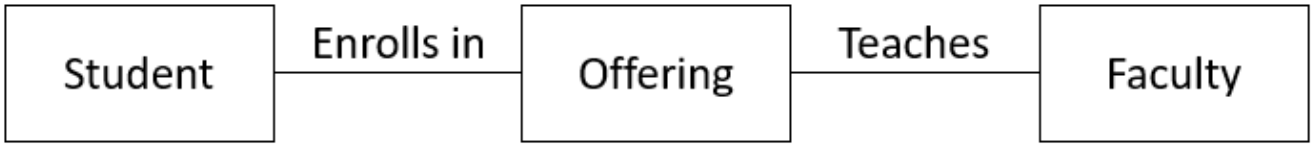
Each column has a data type associated with it. Every value in that column has to have the same datatype. For example, if a column is given the Currency data type, then only monetary values should be stored in that column. We would not store a person's last name in a column reserved for money. Microsoft Access has several built-in data types. The table below lists the data types that are important to know for our Access modules.

Data Type	Usage
Short Text	Alphanumeric data (names, titles, etc.) (formerly known as "Text")
Long Text	Larger paragraphs of alphanumeric data (formerly known as "Memo")
Number	Numeric data.
Large Number	Large numeric data.
Date/Time	Dates and times.
Date/Time Extended	Dates and times with milli- and nano-seconds
Currency	Monetary data, with 4 decimal places
AutoNumber	Unique value generated by Access for each new record; Primary Key
Yes/No	Boolean (true/false) data zero (0) for false, and -1 for true.

For the assignments and examples in this book, we will be using these data types.

RELATIONSHIPS

We have mentioned **relational databases** several times in the previous sections. So why do we call a database **relational**? In a relational database, every table is related in some way to some other table or tables in the database. When we look for **relationships** in our databases, we begin by looking for the verbs. For example: A student enrolls in a class offering. *Enroll* is the verb we are looking for. Also, a faculty member teaches a class. For this example, *teaches* is our verb. These verbs connect, or form relationships, between our databases. In the **relationship diagram** below, the boxes represent a table in the database, and the lines between represent the relationships.



By connecting these tables together using the relationships, we can turn data into information. We can calculate your GPA, the percentage of your degree you have completed, etc. All of this information has to be stored in separate tables, or we would have duplicate entries. Duplicating entries is an inefficient way to use a database.

In the database, we connect tables using the **Primary Key** columns discussed before. Let's look at the Student and Offering tables. The Offering table has its own Primary Key column called Offering ID. Notice, both tables contain the StudentID column.

Student

StudentID	FirstName	LastName	City	State	Zip	Major	Class	GPA
123456789	Homer	Wells	Seattle	WA	98121	IS	FR	3.00
124567890	Zarin	Yousefi	Wadena	MN	56482	FIN	JR	2.70
234567890	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.50

Offering

OfferingID	StudentID	FacultyID	Grade	Semester	Year
1002	123456789	101	A	Fall	2022
1003	123456789	101	B	Fall	2022
1004	234567890	105	A	Fall	2022
1005	123456789	101	B	Spring	2022
1006	234567890	106	A	Spring	2022

If we look at the Offering table, we can see that Homer's ID appears 3 times, and Zarin's 2 times. We can also see when they took the class, the ID of the faculty member who teaches the class, and the grade they were assigned in the class. In a relationship, when a table "borrows" a primary key from another table, we call this a **Foreign Key**. These keys are only used for linking tables together. The Offering table is "borrowing" both the StudentID and the FacultyID columns, so both of these are considered **Foreign Keys**. We usually indicate that the column borrowed references a specific table when the table is created. If we retrieve data based upon Homer's ID, we can create his transcript with the records we retrieve:

Student

StudentID	FirstName	LastName	City	State	Zip	Major	Class	GPA
123456789	Homer	Wells	Seattle	WA	98121	IS	FR	3.00

Offering

OfferingID	StudentID	FacultyID	Grade	Semester	Year
1002	123456789	101	A	Fall	2022
1003	123456789	101	B	Fall	2022
1005	123456789	101	B	Spring	2022

There are several types of relationships, but the most common is a **one-to-many** relationship. This means one record from a table is related to many records in another table. The Offering/Faculty tables relationship is considered one-to-many since only one teacher will teach an offering at a time, but the faculty member could teach many classes each semester. In relational databases, we strive to have only one-to-many relationships, as the other types can cause redundancy issues and data anomalies.

ADDITIONAL RESOURCES

The following are common **relational DBMS**, or database management systems:

- Microsoft Access
- Lotus1-2-3
- DB 4
- SQL Server
- Azure SQL

Examples of non-relational databases for lightweight applications can be seen below:

- Firebase
- MongoDB
- MongoDB

- Apache Cassandra
- Redis
- Couchbase
- Apache HBase

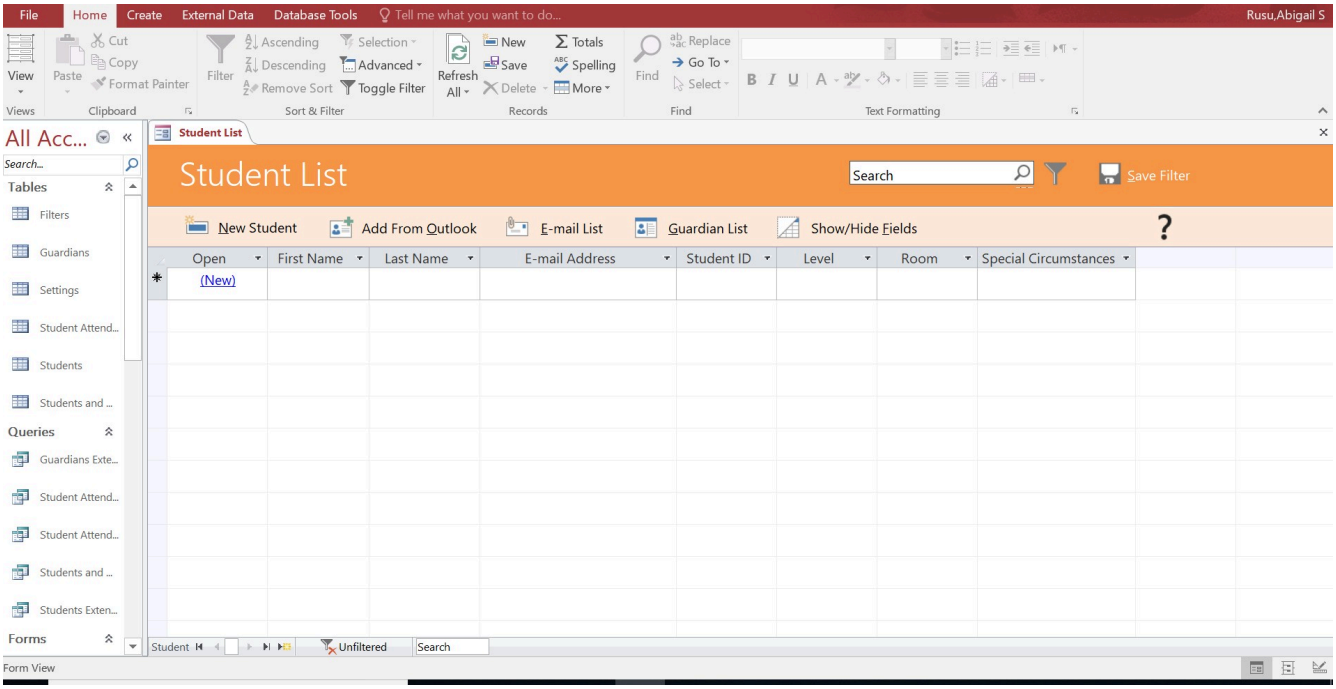
DATABASE PRACTICE 1

Prefer to watch and learn? Check out this video tutorial:

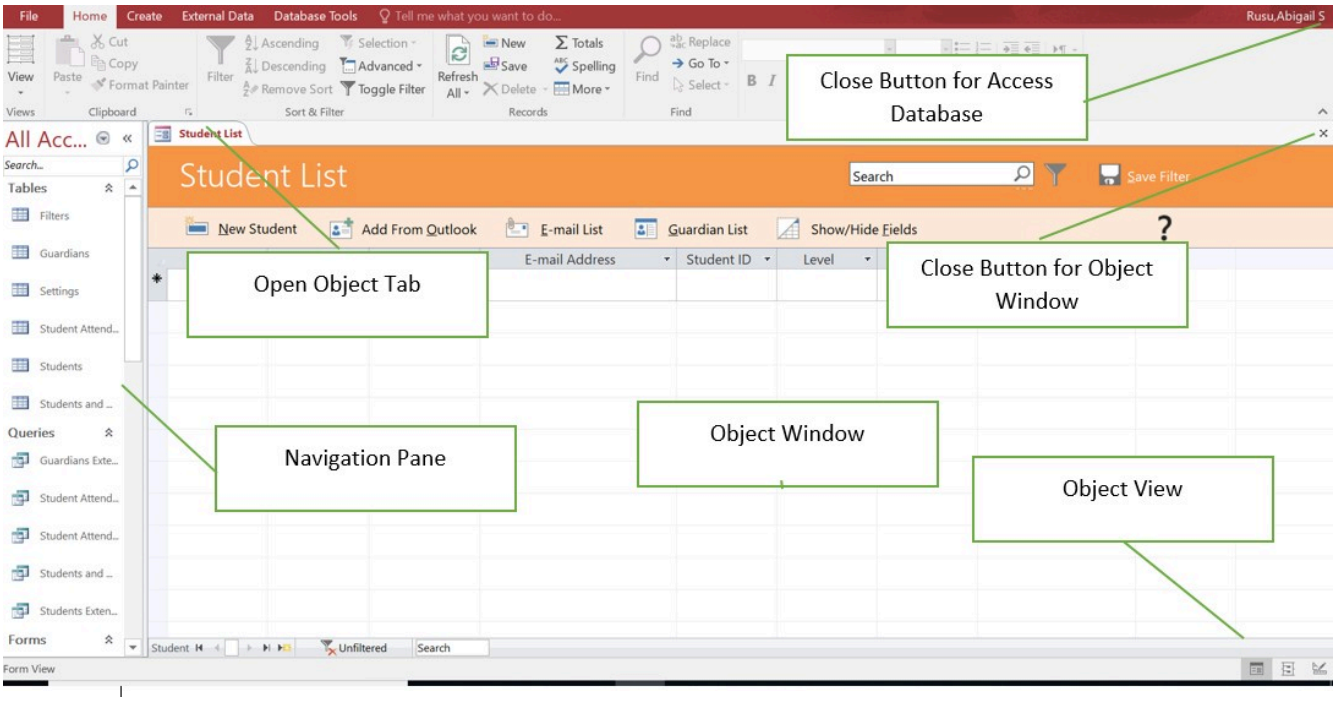
One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=539#oembed-1

Complete the following Practice Activity and submit your completed project.

- Start Access. In the search for online templates box, type Students and then press Enter. If you receive an error message, ensure you are connected to the internet.
- Select the Students template database. Name the database Lastname_Firstname_Access_Practice1. Click the folder icon next to the file name to save the database on your flash drive or in another safe location. After you name the database, click create. Access is different from other software since you must give the file a name before you start entering information.
- It may take a few moments for the database to load. If a Welcome window opens, you can close this. If a yellow bar displays across the top of the database, select Enable Content.



- Once the database is open, take a moment to view the database window.



- In the **navigation pane**, click the shutter bar once to close the Navigation Pane. Click it again to open it. The shutter bar looks like two arrows pointing to the left on the navigation bar.
- In the Navigation pane, click the downward pointing arrow next to All Access Objects. Ensure **Object Type** and All Access Objects are checked.

- Notice how the Student List is the current open Access Object. On the Home Tab, in the Views Group, choose the arrow below Views. Notice how **Form View** is selected. Change the view to **Layout View**, and notice the change in the object window. Then change the view to **Design View**, and notice the change in the object window. Return view to Form View.
- Close the Student List form by clicking the x in the object window. Take care to not close the entire database, rather only close the open object. The database window should be empty.
- From the navigation pane, under tables, double-click the Students Table. On the Home Tab, in the views Group, click the arrow under View. Notice how the table opened in **datasheet view**.
- The ID **field name** has **autonumber** as the **data type**. This means that the ID will be automatically assigned, and you do not have the option to type it in. Ensure you are on the Fields tab under table tools.
- The Last Name field has a data type of **short text**, so you can enter a value here. Under Last Name, type in your last name and then press Tab.
- In the First Name field, type your first name and press Tab. Continue to enter data for the E-mail address, and Student ID. You can make up data for these values. Notice how Level is a drop-down box.
- On the Home Tab, in the Views group, change the table view to **Design view**. Notice the Fields Names and Data Types. These are the two required attributes to add a new field.
- Close the Students table. Notice how a warning to save did not pop up. Changes to tables in Access save automatically. Double-click the Students table to open it and view the data you just entered. Then, close the table.
- From the navigation pane under Queries, double-click the Students Extended query to run it. The query opens in datasheet view and displays the query results. You should see the record you added on the Students table.
- On the Home tab, in the Views group, change the View of the table to Design View. Notice the Students table in the upper portion and the query grid with fields in the bottom section.
- Close the Students Extended table.
- From the navigation pane under Forms, double-click the Student List form to open it. Notice how it opens in Form View.
- You should see the record you added to the Students table.
- Under the first name field, to the left of (New), enter data for First Name, Last Name, and email. You can enter any data.
- On the Home Tab, in the Views group, change the View of the Form to Layout View. Notice the changes in the Object Window. Then change the view to design view and notice the changes in the Object Window. Close the Students List object.
- From the navigation pane under Reports, double-click the All Students report to run it. You should see three student records you added.
- On the Home Tab, in the Views group, change the View of the Report to **Print Preview**. Notice how changes to the report cannot be made in this view. Click the red X to Close Print Preview and return to

Report View.

- Change the view of the report to **Layout View**. Notice how if a field is selected, you can move it and rearrange it within the report.
- Change the view of the report to **Design view**. This is also known as **Developer's view** because it is the most powerful view. Anything can be modified in this view. Close the report without saving changes if prompted.
- To exit out of the database, first close any database objects that are open. It is good database practice to only have one database object open at a time. Select the File tab, and take note of where your database is saved. Then select close. Ensure your database is saved in your Access folder. Then, exit out of Access.
- Submit your entire database for grading per your instructor's instructions.

DATABASE SOFTWARE 1: CHECK YOUR UNDERSTANDING

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://louis.pressbooks.pub/computerapplications/?p=590#h5p-11

DATABASE SOFTWARE 2: DATABASE OBJECTS AND QUERYING A DATABASE

Querying a Database

Jennifer Lavergne

Learning Objectives

1. Creating databases
2. Creating tables in datasheet view
3. Entering data into datasheets
4. Importing data into tables
5. Filtering and sorting datasheets
6. Previewing and printing datasheets
7. Creating queries with the simple query wizard
8. Creating queries in Design view

LEARN IT

INTERACTING WITH A DATABASE: DESIGNING AND CREATING TABLES

Now that we have grouped our data into **tables**, we can begin planning how to add the data into the tables. Important things to decide at this point are:

- plan what columns/fields will be in the table and what we should name them
- plan the data types we plan to associate with each column/field
- plan what data will be added to the tables themselves

Student

StudentID	FirstName	LastName	City	State	Zip	Major	Class	GPA
123456789	Homer	Wells	Seattle	WA	98121	IS	FR	3.00
124567890	Zarin	Yousefi	Wadena	MN	56482	FIN	JR	2.70
234567890	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.50

Let's plan the student table we used in the previous chapter. This table will contain all of the information about the students attending this school. Each row will contain the information for one student. In the table below, we decide what data type we plan to use for the column/fields in the Student table:

Column Name	Data Type
StudentID	AutoNumber
FirstName	Short Text
LastName	Short Text
City	Short Text
State	Short Text
Zip	Number
Major	Short Text
Class	Short Text
GPA	Number

For our ID, we can select the **AutoNumber** data type so that MS Access will automatically update this column for us whenever we add a new record. This is preferable since we don't want to duplicate a **Primary Key** value. Next, we have our First Name, Last Name, City, State, Major, and Class columns. These will all contain a string of letters, making a word. Our word is not likely to exceed 255 characters, so we can use the Short Text data type. Long Text is used more for long descriptions or messages, not a few words. Finally, we have our Zip and GPA columns. These will be numerical, i.e., contain numbers, so we will assign those columns as the Number data type.

When we create the student table, we use the above design to add the fields with these names, and then assign them datatypes. Now let's plan the Offering table. We will once again use the same table from our previous example.

Offering

OfferingID	StudentID	FacultyID	Grade	Semester	Year
1002	123456789	101	A	Fall	2022
1003	123456789	101	B	Fall	2022
1004	234567890	105	A	Fall	2022
1005	123456789	101	B	Spring	2022
1006	234567890	106	A	Spring	2022

This table will contain all of the information about the course offerings offered at this school for a given semester and year. Each row will contain the information for one offering. In the table below, we decide what data type we plan to use for the column/fields in the Offering table:

Column Name	Data Type
OfferingID	AutoNumber
StudentID	Number
FacultyID	Number
Grade	Short Text
Semester	Short Text
Year	Number

Since OfferingID is the **Primary Key** field for this table, we will assign it the AutoNumber data type. Next, we need to address our two "borrowed" fields, also known as our **Foreign Keys**. Since in this table they are not Primary Keys and they must match values in the originating table, we will assign the Number data type to them. We cannot use AutoNumber since we need to match values in a meaningful way. Also, it's possible to have more than one of the same StudentID or FacultyID in the Offering table. One student can take as many class offerings as they want. A faculty member can teach as many offerings as they are allowed to. When

assigning a data type to a **Foreign Key**, make sure you match the data type. AutoNumber creates Number values. So, we can use the Number type to match **Primary Keys** to **Foreign Keys** in this example.

ADDING DATA TO TABLES

Now that we have designed and created our tables, we can add our records. When a **record** is added to a table, it is typically appended to the bottom of the data already inside a table. This happens since the records are added one at a time either by hand or via an outside source. These outside sources can be an Excel spreadsheet, an entry **Form**, a webpage, and more. The records added to the tables from outside sources will be added in order of appearance, with no sorting considered.

A	B	C	D	E	F	G	H	I
StudentID	**FirstName**	**LastName**	**City**	**State**	**Zip**	**Major**	**Class**	**GPA**
123456789	Homer	Wells	Seattle	WA	98121	IS	FR	3
124567890	Zarin	Yousefi	Wadena	MN	56482	FIN	JR	2.7
234567890	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.5

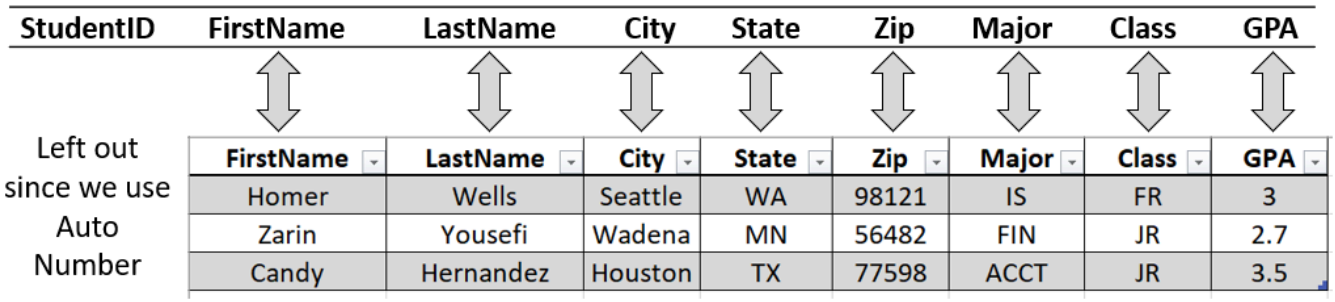
Excel Spreadsheet Example for non-AutoNumber IDs

In our tables with the AutoNumber for our Primary Key fields, we do not need to enter a value for that field. Observe the differences between the Excel spreadsheet example above and below. In the one below, we do not have a column for StudentID. MS Access already knows to auto-populate the StudentID because of the data type we assigned it.

	A	B	C	D	E	F	G	H
1	**FirstName**	**LastName**	**City**	**State**	**Zip**	**Major**	**Class**	**GPA**
2	Homer	Wells	Seattle	WA	98121	IS	FR	3
3	Zarin	Yousefi	Wadena	MN	56482	FIN	JR	2.7
4	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.5

Excel Spreadsheet Example for AutoNumber IDs

It's absolutely vital that, when you create an Excel sheet to import data into a database, the headers of the table in the spreadsheet match exactly the location and names of the corresponding table in the database. In the figure below you can see the lineup between the headers in the database at the top and the headers for each column in the spreadsheet.



When adding to a Foreign Key field, make sure the value you are adding has a match in the originating table's Primary Key field. For example, make sure when adding a StudentID into the Offering table that the StudentID exists in the Student table. Students who are not in our database are not allowed to enroll in a course offering. This would create a data anomaly since we would have a phantom student enrolled in an offering. We also cannot have imaginary faculty members teaching offerings. All FacultyIDs in the Offering table must match a FacultyID in the Faculty table.

QUERYING TABLES

When we say we are querying the database, it means we are asking the database a question. Examples of such questions are:

- How many students are enrolled in the honors program?
- How many students are enrolled in the History, English, or Biology programs?
- How many students have declared Health Sciences as their Field of Interest?
- What is the total amount awarded to students with a scholarship?
- What faculty teach in the honors program and teach History?

Asking a database a question results in information. We can take that information and turn it into **actionable information**. For example, if we ask the database "How many students have declared Health Sciences as their Field of Interest?" and the answer is significantly larger than in previous years, we may need to hire new faculty members. Another example is asking the question "What is the total amount awarded to students with a scholarship?" If the answer is larger than our current budget, we may need to find another revenue stream to cover it. This is actionable information, or information we can make logical changes based upon.

When planning a query for a database, you first need to decide what table or tables you will need. Next, we need to decide what fields we want to return and if we want to do any calculations. Finally, we need to decide if we need to filter the results with conditions. **Conditions** evaluate to true or false depending upon what they are checking. For example, if we only want students who are freshmen, the condition will evaluate true if class = FR, but not for any other classes. Results will only be displayed when the conditions evaluate to true.

Let's plan the query for "What faculty teach History?" First, we have determined that all of the information we need is in the Faculty table. we need to decide what fields we want to display. The query asks for a list of

faculty members who teach History. Do we want their first names? Last names? Etc. Ask your user/professor what needs to be returned. A better query would be: "Display the first and last names of all faculty members who work in the History department."

Faculty

FacultyID	FirstName	LastName	Department	Rank	Hired
1	Ken	Sánchez	History	ASST	2020
2	Terri	Babineaux	English	PROF	2020
3	Betty	Tamburello	History	ASST	2022
4	Roberto	Walters	History	ASST	2022
5	Gail	Erickson	Biology	ASOC	2022

Completing this query will display results using the requested fields and the conditions. First, all faculty who are not in the History department will be ignored. This does not affect the table in the database itself; it's only for the copy of the results we display to the user. In the table below, we show the records that we will not be ignoring.

Faculty

FacultyID	FirstName	LastName	Department	Rank	Hired
1	Ken	Sánchez	History	ASST	2020
3	Betty	Tamburello	History	ASST	2022
4	Roberto	Walters	History	ASST	2022

Finally, we ignore the columns/fields not listed in the query. The request was only for the first and last names. As above, this does not affect the table itself, only the results copy. The table below shows the final results of the query when the columns are ignored.

Faculty

FirstName	LastName
Ken	Sánchez
Betty	Tamburello
Roberto	Walters

This table represents the first and last names of all faculty members who are in the History department. This is not an actual table in the database; it's only a copy we display for results. If you close it, it will go away.

DATABASE PRACTICE 2

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=558#oembed-1

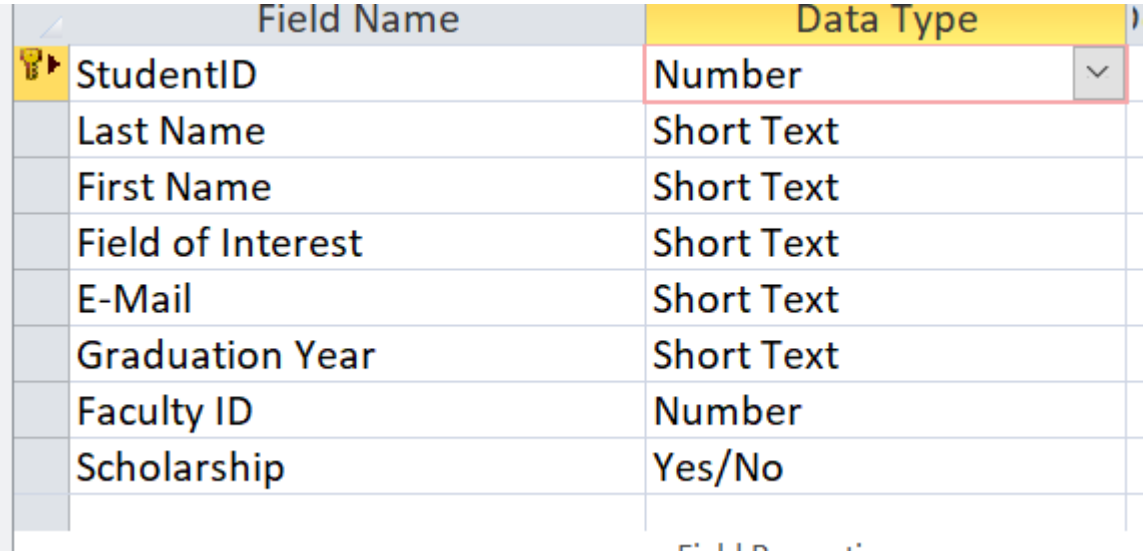
Complete the following Practice Activity and submit your completed project.

For Practice 2, we will create an access database that manages student and faculty data in the Honors program at South Puget Sound Community College. For this practice, we will focus on creating the table structure for the database.

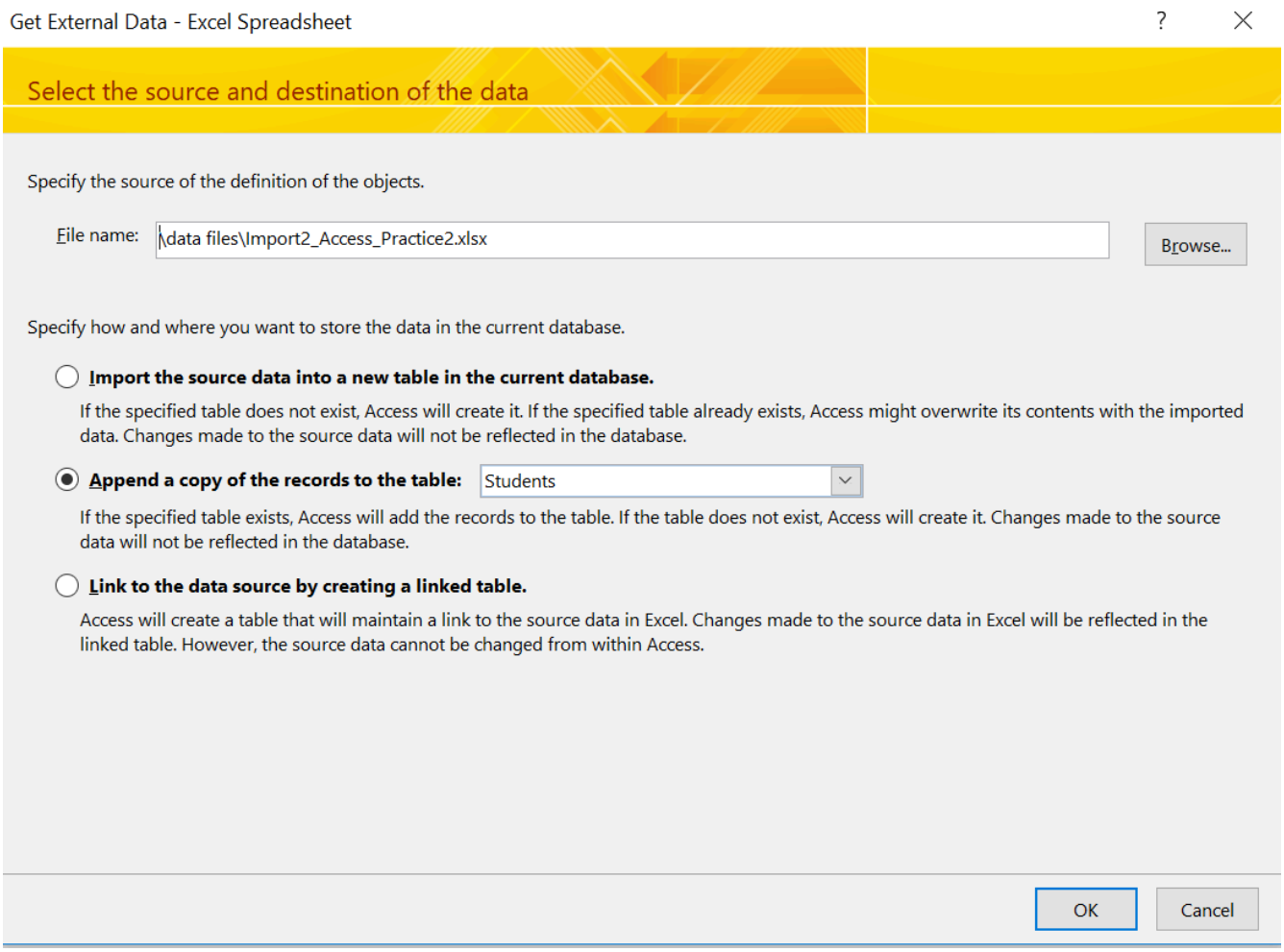
- Open Access, and select Blank Desktop Database. You might have to click on New in the red left-hand pane. Name the database Lastname_Firstname_Access_Practice2, and save it to your flash drive or another safe location. Select Create.
- The database will open with a table named Table1 open in datasheet view. If it does not, you may need to select Create, then Table. We will use this table to track Student data in our database. Click the down arrow next to Click to Add and choose Short text as the data type. Rename Field1 to Last Name and press Enter. Remember that in Access, table names need to be precise.
- Click the arrow next to Click to Add, choose short text as the data type, type First Name and press Enter.
- Choose short text as the next data type, type Field of Interest, and press Enter. Continue to add the following fields and Data Types to the Table.

Field	Data Type
E-Mail	Short Text
Graduation Year	Short Text
Faculty ID	Number
Scholarship	Yes/No

- On the Home tab, under Views, change the View of the table to Design view. When prompted, save the table as Students.
- In Design view, change the ID field to StudentID, and change the **Data Type** to Number.
- Verify that the Field Name and Data Type are entered exactly like this:



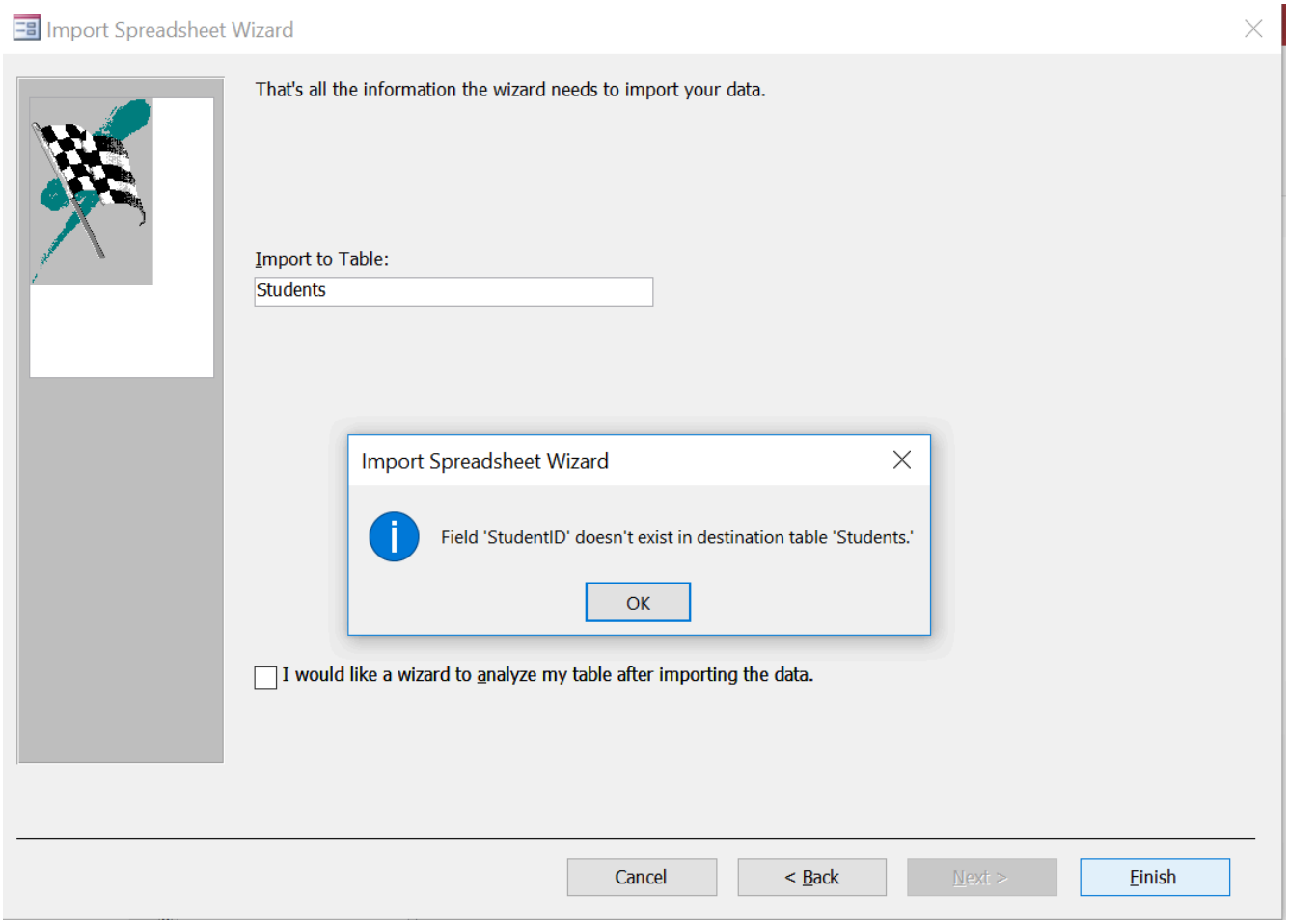
- Save and close the Students Table.
- **Importing** data into a table is a quick and easy way to **populate** a table with data. On the External Data tab, under the Import & Link group, select Excel. You may need to select New Data Source, from File, Excel. In the Get External Data—Excel Spreadsheet Dialog Box, under file Name, select Browse to locate the Import_Access_Practice2 Excel file. This should be saved on your flash drive, or where you save your data files.
- Ensure to **Append** a copy of the record to the table Students is selected and select OK.



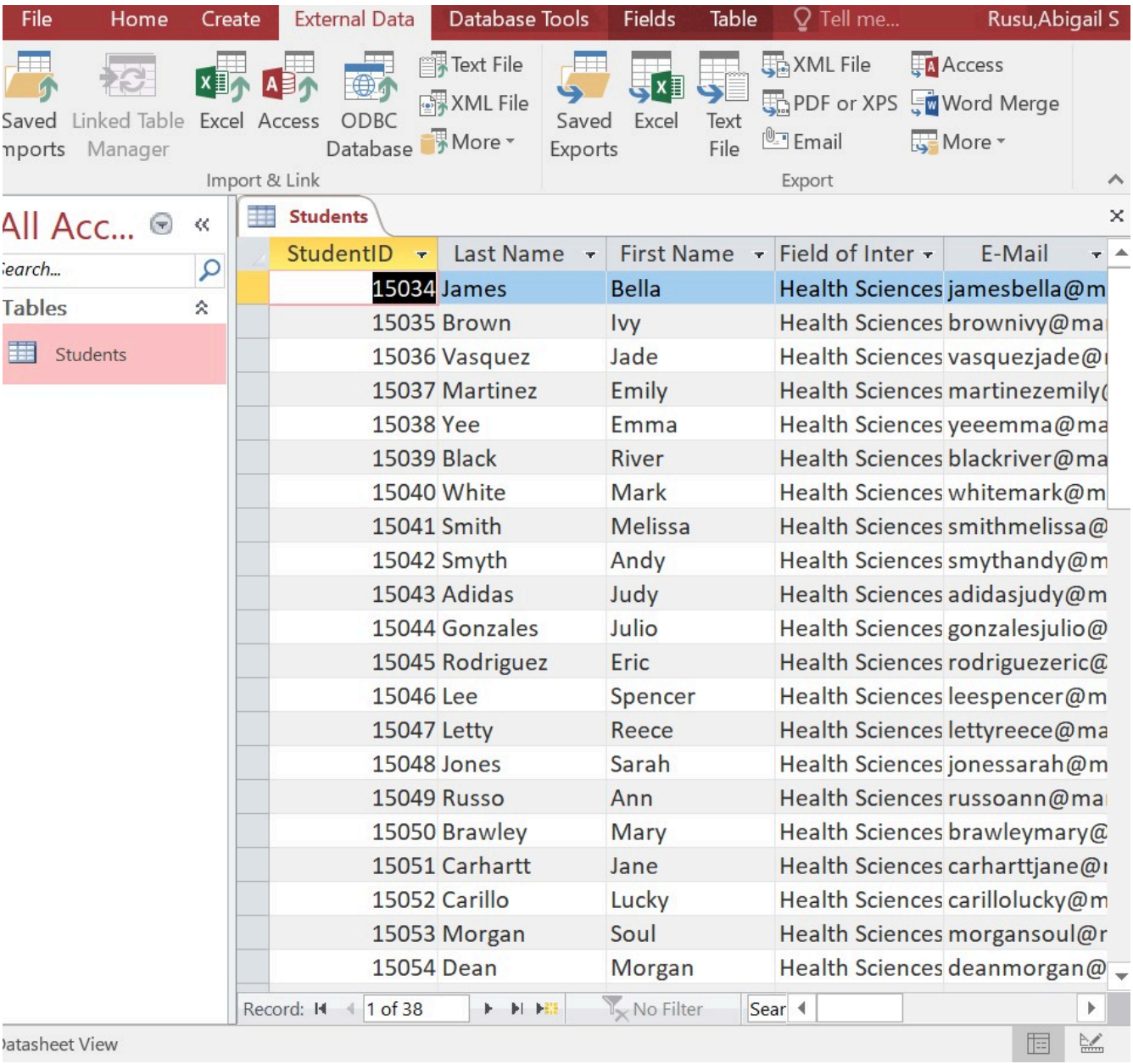
- The Import Spreadsheet Wizard should appear on your screen. If it does not, go back to your database window and ensure all database objects are closed. When running an import, tables and other database objects must be closed.
- On the Import Spreadsheet Wizard, select the checkbox next to First Row Contains Column Headings. If this is grayed out, ensure it is checked. Take a moment to preview the data that will be imported into the Students table. Then, select Next.
- On the next screen, ensure the Import to Table shows Students. Do not check the box next to "I would like a wizard to analyze my table after importing the data." Once the import runs, it is not necessary to save the import steps, as we will not be running this import again.
- If your import was successful, go to the next step. If you received errors, try the following:
    - If you receive an error message, such as the image below, that says a field does not exist, close the import. Open your Students table, and compare your field names and data types to the image of Field Names and Data Types above. Your table fields must be in this order, and be spelled exactly the same. If your field names do not match the expected headers in your Excel import file, the import will fail.
    - If you receive an error message that says the import cannot be completed, ensure all database

objects are closed. Before an import can successfully run, all database objects must be closed.

- If you receive an error message that says your database is in use by another user, close the import. Ensure all database objects are closed. Save the database, and take note of where your database is saved. Close Access. If possible, restart your computer, and then open your database and try the import again.



- To verify the import ran successfully, double-click the Students table to open it from the navigation pane. Verify there are 38 records in the table.



- Close the Students Table and ensure all database objects are closed.
- On the External Data tab, in the Import & Link group, select Excel.
- In the Get External Data—Excel Spreadsheet dialog box next to File name, browse to find the file Import2_Access_Practice2. This should be saved in your data files folder on your flash drive.
- Choose the first option, Import the source data into a new table in the current database, and then select OK.
- On the Import Spreadsheet Wizard, check the box next to First Row Contains Column Headings.
- Take a moment to preview the data that will be imported, but do not make any changes. Select Next.
- Take a moment to look at the next screen, but do not make any changes. Select Next.
- On the next screen, select Choose my own primary key and ensure Faculty ID displays here. Select Next.

- Under Import to Table, type Faculty for the table name, and then select Finish. Do not check the box next to "I would like a wizard to analyze my table after importing the data." It is not necessary to save the import steps.
- In the navigation pane, right-click the Faculty table to open it in Design View. Select the Faculty ID field. Ensure the Data Type is set to Number. Under Field Properties, ensure the Field Size is set to Double.
- With the Faculty table still open, select the Faculty ID field. Notice how there is a little key next to it, and on the Table Tools Design Tab, in the Tools group, Primary Key is selected. This indicates this field is the **primary key**. This is a required field in the table that uniquely identifies a record. Save and close the faculty table.
- Open the Students table in Design view. Notice that StudentID is the primary key. Select the Faculty ID field and ensure the Data Type is set to Number. Under Field Properties, ensure the Field Size is set to Double. Save and close the Students table.
- Ensure all database objects are closed. On the database tools tab, in the relationships group double-click **Relationships**. In the Show Table dialog box, on the Tables tab, double-click Faculty to add the table. Then double-click students to add the table. Close the Show table dialog box.
- In the Relationships window, ensure the Faculty table is first, and the Students table is second. You can resize and move the tables if you would like. This is helpful so that you can see all of the fields in the table.
- Notice on the Faculty table, the Faculty ID is the primary key. Click and hold the Faculty ID table on the Faculty table, and drag it to meet the Faculty ID table on the Students table. This will create a relationship between the two tables. This is what makes this Access database a **relational database**.
- In the Edit Relationships dialog box, ensure the Faculty ID from the Faculty table displays and Faculty ID from the Students table displays. Check all boxes including Enforce Referential Integrity, Cascade Update Related Fields, and Cascade Delete Related Records. Notice the relationship type is **One-To-Many**. Select Create to create the relationship.
- In the Relationships window, the line connecting the two tables is called the **Join Line**. Double-click the join line to view the Edit Relationships window. Select OK to close the window. Close the relationships window.
- In the navigation pane, ensure all database objects are displayed. You should see two tables, the Faculty table and the Students table. It is important that these tables are created, as we will use them in Practice 3.
- To exit out of the database, first close any database objects that are open. Select the File tab, and take note of where your database is saved. Then select close. Then, exit out of Access.
- Submit your entire database for grading per your instructor's instructions.

DATABASE PRACTICE 3

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=558#oembed-2

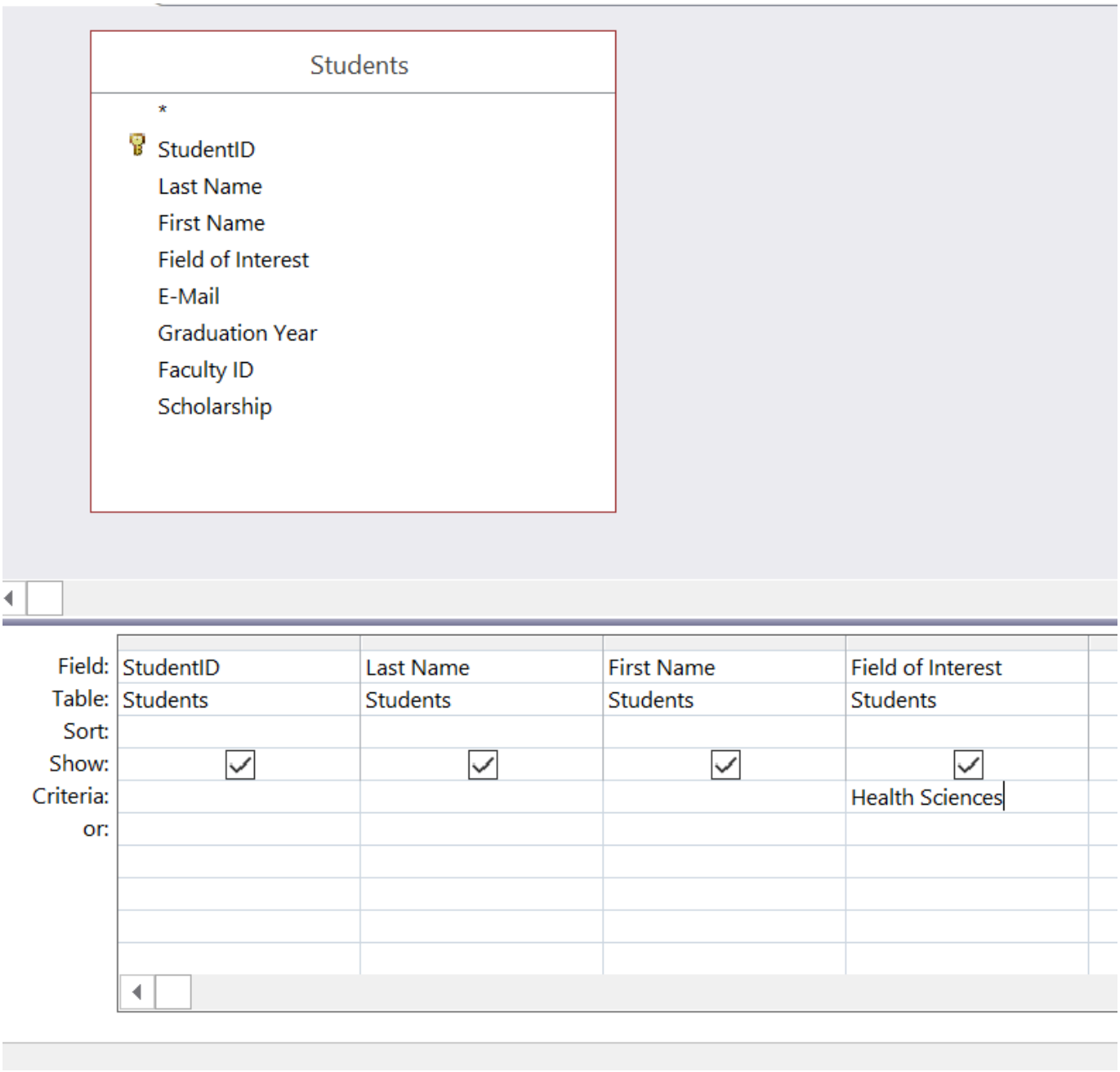
Complete the following Practice Activity and submit your completed project.

For Practice 3, we will continue to work with the same database we started in Practice 2, which manages student and faculty data in the Honors program at South Puget Sound Community College. For this practice, we will focus on creating **queries** for the database. We will create queries that answer the following questions:

- How many students are enrolled in the honors program?
- How many students have declared Health Sciences as their Field of Interest and how many are undeclared?
- What students have been awarded a scholarship?
- What faculty teach in the honors program, and what students are they assigned to?

- Open Access, and under Open, select the database Lastname_Firstname_Access_Practice2. You may need to browse to your flash drive or other location that you saved this database to. In Backstage view, select Save As, and save the database as Lastname_Firstname_Access_Practice3. Ensure the database is saved on your flash drive or another safe location.
- If necessary, select **Enable Content** to show all of the database content.
- Open the Navigation pane, and verify there are two tables, Students and Faculty, with 38 records each.
- Close all open database objects. On the Create tab, in the queries group, select **Query Wizard**. We are going to use the Query Wizard to write a query that will answer the question: How many students are enrolled in the honors program?
- In the New Query Dialog Box, select Simple Query Wizard and then OK.

- In the Simple Query Wizard Dialog Box, under Tables/Queries ensure the Table: Students displays.
- Under Available Fields, Select the following fields. You can double-click the field name to add it to the Selected Fields, or use the >.
    - StudentID
    - Last Name
    - First Name
- Select Next. Title the Query Honors Student List, and select the option to Open the query to view information. Select Finish.
- Notice how the query opened in Datasheet View. At the bottom of the page, view the record count, and take note that there are 38 records. Practice using the arrows to scroll through the records.
- Next to Last Name, select the arrow, and select sort A to Z. This will sort the query by Last Name in ascending order.
- On the Home Tab, in the Views Group, select Design view. Notice how the Students table displays in the top portion of the window, and the Fields display in the lower portion.
- Save and close the Honors Student List query. Notice how in the navigation pane, under Queries, the Honors Student List query displays.
- On the Create tab, in the Queries group, select Query Design. In the Show Table Dialog Box, on the Tables Tab, select Students and then Add. If necessary, close the Dialog Box.
- We will use the Students table to write a query that answers the questions: How many students have declared Health Sciences as their Field of Interest and how many are undeclared? If necessary, resize the Students table so that you can see all of the fields in the table. You can resize it by selecting the outer edge and dragging.
- In the Students table view, double-click StudentID to add it to the **query grid**. You can also drag and drop the StudentID field from the Students table into the query grid to add it.
- Add the following fields to the query grid:
    - Last Name
    - First Name
    - Field of Interest



- In the query grid, under Field of Interest, in the Criteria row, we will add criteria to determine which students have declared Health Sciences as their Field of Interest. Type Health Sciences in the criteria row under Field of Interest.
- Notice the Check Marks in the **Show** row. This indicates whether the field will display when the query is in datasheet view. On the Query Tools Design Tab, in the Results group, select Run. Notice there are 22 students that have declared Health Sciences as their Field of Interest.
- Right-click on Query1 and select Save. In the Save As Dialog Box, save the Query Name as Health Sciences Students and then select OK.
- On the Home Tab, in the Views group, change the View to Design view. We will modify this query so

that it answers the question: How many are undeclared?

- In the Query Grid, under Field of Interest, remove the criteria for Health Sciences and replace it with **Is Null**. This will tell us how many records have a blank or missing Field of Interest.
- Run the query. Notice that 7 students are missing a value for Field of Interest.
- Select the File tab, Save As, then select Save Object As. Then select Save As. In the Save As Dialog Box, change the name of the Query to Students Missing Field of Interest. Ensure it is saved as a query, and then select OK.
- In the navigation bar, notice how the query we just created displays. With the query still open, change the view to Design view. In the query grid, under Field of Interest, in the Show row, remove the checkbox. Save and run the query. Notice how the Field of Interest field no longer displays. Close the query.
- Using the Query Design, we will create a new query that answers the question: What students have been awarded a scholarship? Add the Students table to the Query Design view. Add the following fields to the query grid:
    - Last Name
    - First Name
    - Scholarship
- Ensure all three fields are Shown. Under Last Name, sort ascending. To sort the Last Name Field in ascending order, ensure the query is in Design view, under the Last Name field. The sort should be set to ascending.
- Under Scholarship, in the Criteria row, enter Yes.
- Run the query. Notice there are 20 records, or 20 students that have been awarded a scholarship.
- Save and name the query Scholarships Awarded.
- Close the Scholarships awarded query.
- On the Create tab, in the Queries group, select Query Design. Add the Faculty and Students tables. Notice how the tables are automatically joined. This is because the relationship has already been established. If the tables are not joined, re-visit Practice 2.
- We will create a query that answers the question: What faculty teach in the Honors program, and what students are they assigned to? From the Faculty table, add the following fields to the query grid:
    - Faculty ID
    - Last Name
    - First Name
- From the Students table, add the following fields:
    - Student ID
    - Last Name
    - First Name
- Save the query as Honors Program Faculty and Students. Run the query. Close the query.

- Take a moment to verify you have the following tables and Queries in your database.
  - **Tables**:
    - Faculty
    - Students
  - **Queries**:
    - Health Sciences Students
    - Honors Program Faculty and Students
    - Honors Student List
    - Scholarships Awarded
    - Students Missing Field of Interest
- To exit out of the database, first close any database objects that are open. Select the File tab, and take note of where your database is saved. Then select close. Then, exit out of Access.
- Submit your entire database for grading per your instructor's instructions.

DATABASE SOFTWARE 2: CHECK YOUR UNDERSTANDING

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://louis.pressbooks.pub/computerapplications/?p=699#h5p-12

DATABASE SOFTWARE 3: CREATING REPORTS AND FORMS

Creating Reports and Forms

Jennifer Lavergne

Learning Objectives

1. Use the Form Wizard
2. Format forms in Layout View
3. Create reports using the Report Tool
4. Preview and print reports

LEARN IT

FORMS AND REPORTS

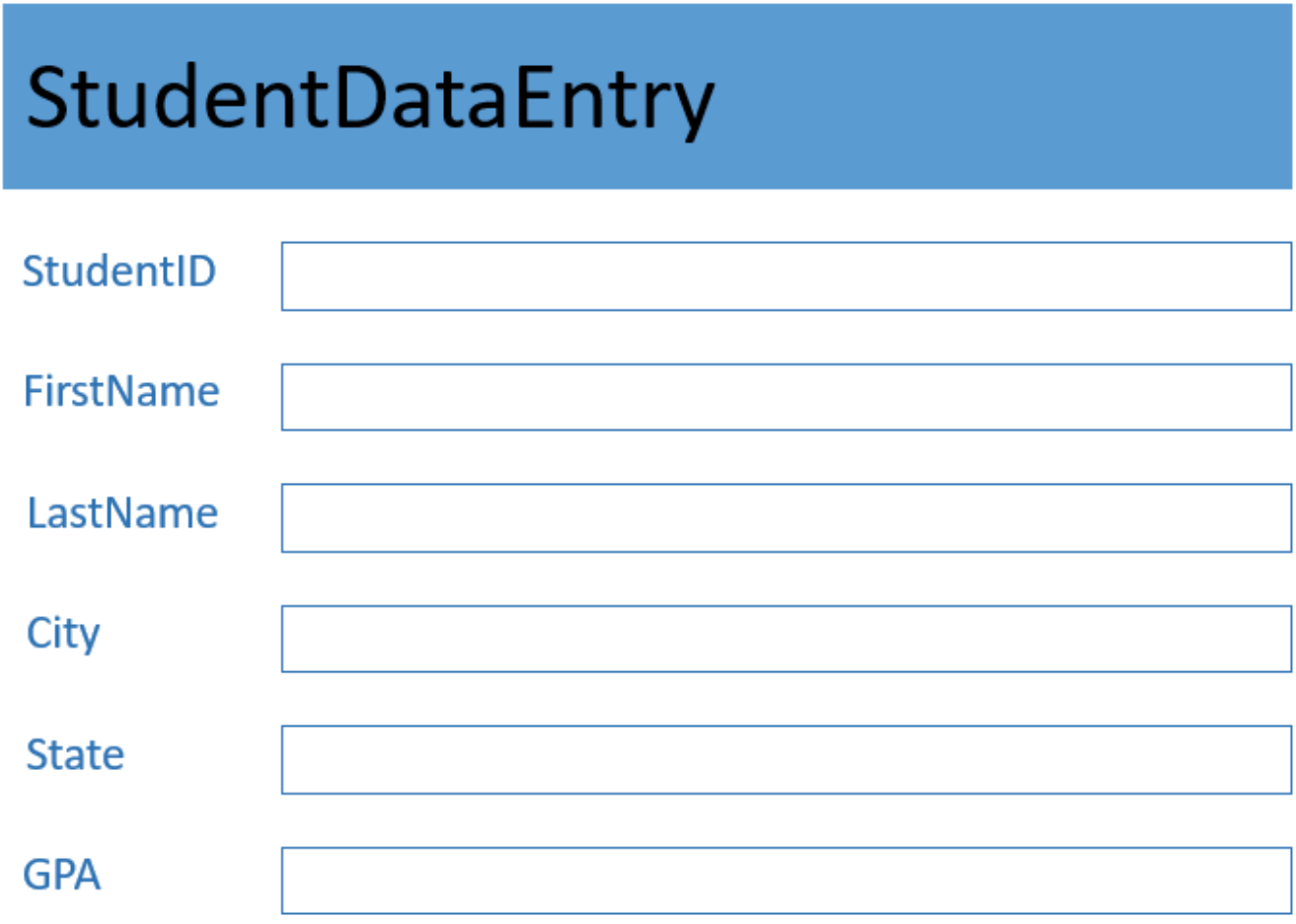
Database software has many tools available that allow a programmer to create **user interfaces** and formatted

documents. The user interfaces, also known as **forms**, allow the user to enter **data** into the database. **Forms** are user friendly and have an easy-to-follow layout so the user knows exactly where each **data** point should go.

Formatted documents are a way to convert data into information. This information then can be displayed in a coherent manner. These are also known as **reports** and can be tailored to a user's preferences.

DATABASE FORMS

The image below shows a basic user interface **form** that will take the user's entries as input. The input will then be stored in the student **table** we saw before.



Student

StudentID	FirstName	LastName	City	State	Zip	Major	Class	GPA
123456789	Homer	Wells	Seattle	WA	98121	IS	FR	3.00
124567890	Zarin	Yousefi	Wadena	MN	56482	FIN	JR	2.70
234567890	Candy	Hernandez	Houston	TX	77598	ACCT	JR	3.50

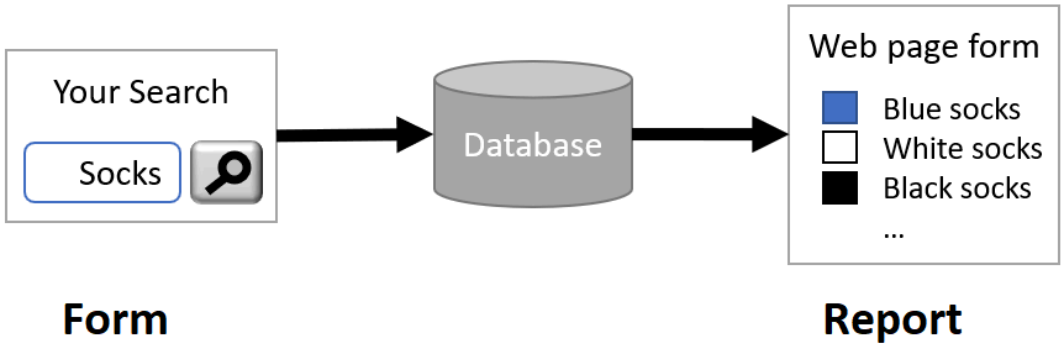
The user enters into each **textbox** the information needed, then submits the **form**. The **database** system then takes the contents of each and maps it to its corresponding **field** in the **database**. We, as the developer, indicate where each textbox's data will be stored. Automating data storage can make data entry less time consuming and error prone.

Student Information		Maps to	**Student Table**
First Name	Zabby	→	FirsName
Last Name	Boudreaux	→	LastName
City	New Orleans	→	City
State	LA	→	State
Zip Code	70032	→	Zip
Major	BIO	→	Major
Class	JR	→	Class
GPA	3.98	→	GPA

Forms allows the user to add **data** to the **database table** without interacting directly with the **table** itself. This is desirable, first and foremost, because we do not want to add anything to our **table** we have not made sure is correct. For example, a user should not be able to add a city name in the zip code **field**. We also might want to make sure the GPA entered is between 0.00 and 4.00. This allows us to ensure the integrity of our **data**. Meaning, when a user looks for a zip code, they are guaranteed to only see zip codes.

DATABASE REPORTS

Once we have entered our **data** in our **table** via our **form**, we can then generate a **report**. A **report queries** the **data** from a **table** or **tables** and formats it in an easy-to-consume manner. Any time you search for something on the internet you are seeing a **report**.



If one searches for socks on a clothing site and then clicks on the search button, the website then sends a **query** for socks to the **database**. The **database** uses the **query** to find all matching **records** with your search and sends them back to the webpage. The page then displays a **report** showing these results, formatted in an intuitive manner. A **report** using our Students table could display all students, all students who are seniors, or all students who are seniors and have a high GPA. It's based upon the user's needs.

As the developer, we have many options for organizing and formatting a **report**. Most **report** creation software offers a plethora of different tools, colors, and options to format a **report** however your user requests it. Below is an example of a **report** with student GPAs sorted in ascending order.

Student GPA Report		
First Name	**Last Name**	**GPA**
Jossef	Goldberg	4.0
Terri	Duffy	3.98
Roberto	Tamburello	3.85
Ken	Sánchez	3.65

Note that it's possible for there to be many more **records** than this in a real-world **report**. In this case it would be useful to decide how many to display at one time and make separate reports for each list. This way the user can "flip" through the 'pages' of the **report** and see a limited number of **records** on each "page."

DATABASE PRACTICE 4

Prefer to watch and learn? Check out this video tutorial:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://louis.pressbooks.pub/computerapplications/?p=573#oembed-1

Complete the following Practice Activity and submit your completed project.

For Practice 4, we will continue to work with the same database that manages student and faculty data in the honors program at South Puget Sound Community College. For this practice, we will focus on creating **reports** for the database. We will create four reports:

- Student Contact Information
- Student Scholarships
- Faculty Contact Information
- Faculty Division Listing

Open Access, and under Open, select the database Lastname_Firstname_Access_Practice3. You may need to browse to your flash drive or other location that you saved this database to. In Backstage view, select Save As, and save the database as Lastname_Firstname_Access_Practice4. Ensure the database is saved on your flash drive or another safe location.

- If necessary, select **Enable Content** to show all of the database content.
- Ensure the navigation pane is open and all database objects are displayed.
- On the Create tab, in the Reports group, notice there are several ways to create a report. We will focus on the following:
    - Report

    - Report Wizard

- In the navigation pane, select the Students table, but do not open it. On the Create tab, in the reports group, select Report. This will create a report with all of the fields on the Students table. We will modify this report to provide Student Contact Information.
- You can close the navigation pane to allow more room to view the report. Notice that the Students report opens in Layout View. The Report Layout Tools contain four tabs:

    - Design
    - Arrange
    - Format
    - Page Setup

- Select the Student ID label. It should be the first column of the report. On the Report Layout Tools, Arrange Tab, in the Rows & Columns group, select Select Column. Then press the Delete key on your keyboard to delete the entire column. Notice how the other columns shift automatically.
- Select the Field of Interest label, then select the entire column. Right-click and select Delete Column.
- Use either one of the techniques you just learned to delete the following columns:

    - Graduation Year
    - Faculty ID
    - Scholarship

- The only remaining columns should be Last Name, First Name, and E-Mail.
- On the Design tab, in the Themes group, select the Office theme. Under Colors, select Blue. Under Fonts, select Arial.
- Scroll to the bottom of the report, and delete the page count textbox.
- At the top of the report, double-click the title Students. Remove the text inside the label and type Student Contact Information.
- Save the report as Student Contact Information and close it. Notice how the report shows up in the Navigation Pane under Reports.
- On the Create tab, in the Reports group, select Report Wizard.
- In the Report Wizard dialog box, under Tables/Queries, select the Query: Scholarships Awarded.

- Select all of the available fields by clicking the double arrow and moving them to the selected fields. Last Name, First Name, and Scholarship should all be in the Selected fields box. Select Next.
- Do not add any grouping levels, and select Next.

- Add an ascending sort on the Last Name field and then an ascending sort on the First Name field and then select Next.
- For the report layout, select Justified, and portrait orientation. Check the box to Adjust the field width so all fields fit on a page. Select Next.
- Title your report Student Scholarships, and preview the report. Select Finish.
- Notice that the report opens in Print Preview. Use the scroll bar at the bottom of the page to scroll through all 6 pages of the report.
- Close the Print Preview. You may also want to close the Navigation pane so that you have more space to work with the report.
- Ensure the report is in Design View. Notice there are several sections to this report:

    - Report Header
    - Page Header
    - Detail
    - Page Footer
    - Report Footer

- In the Report Header section, double-click inside the title Student Scholarships. Remove the text and type Honors Program Scholarship Awardees.
- Turn on the Property Sheet. In the detail section, select the Last Name textbox. Take care not to choose the label. The textbox has a control source of Last Name. With the Last Name textbox selected, on the format tab of the property sheet, change the height to .4″ and press enter.
- Select the First Name textbox. Take care not to choose the label. The textbox has a control source of First Name. With the Last Name textbox selected, on the format tab of the property sheet, change the height to .4″ and press enter.
- In the detail section, select Scholarship and then press delete on your keyboard. Select the checkbox underneath, and press delete on your keyboard.
- Resize the Detail section by selecting the outer box and dragging up about an inch to remove any excess space in the detail section of the report. Save and close the report.

- On the Create tab, in the Reports Group, select Report Wizard. We will use the Report Wizard to write a report that provides Faculty Contact Information. In the Report Wizard dialog box, select the Table: Faculty.
- In the Available Fields, select Last Name, First Name, and E-Mail, and move these to the Selected Fields by using the single arrow, or double-clicking each field. Select Next.

- Do not add any grouping levels, and select Next.
- Add an Ascending sort to the Last Name field, and then an Ascending sort to the First Name field. Select Next.
- Choose the Tabular Report Layout with Portrait orientation. Check the box to Adjust the field width so all fields fit on a page.
- Title the report Faculty Contact Information, and preview the report. Select Finish.
- Take a moment to view the report in Print Preview and scroll through both pages of the report. Close the Print Preview.
- Open the Faculty Contact Information report in Design View.
- In the Report Header, change the title label to Honors Faculty E-Mail Addresses and manually center the title across the report page.
- Resize the Report Header so there is about an inch of extra space under the title.
- In the empty space under the report title, on the Design tab, in the Controls group, select Insert Image. Browse to find the image Access_Practice_4_Puma, which should be located in your data files.
- Click once, or drag and drop to insert the image of the Puma in the Report Header. Center the Puma image under the report title.
- In the Page Header, change the Label that reads E-Mail to say Faculty E-Mail Address*. Be sure to include the asterisk.
- Select and Drag the line below the Report Footer to create about an inch of space in the Report Footer. You can also right-click on the Report Footer, select Properties, and in the Property Sheet change the Height to 1″.
- On the Report Design Tools, Design Tab, in the Controls group, select Label. Click in the Report Footer to add the Label. Inside the Label type: *If a faculty email is missing from this report, please contact HR@spscc.edu.
- Save and close the Faculty Contact Information Report.

- For our final report, we will use the Report Tool to create a report that provides the Faculty Division Listing. Select, but do not open the Faculty table. On the Create tab, in the Report Group, select Report. You may close the Navigation pane to allow more room to work on the report.
- With the report in layout view, on the Report Layout Tools, Design Tab, in the Grouping Totals group, turn on the Group & Sort by clicking it one time. The **Group, Sort, and Total** dialog box will display at the bottom of the page.
- In the Group, Sort, and Total section, select Add a group. In the Select a field box, select Division. Notice how the report now groups faculty based on the division they work in. Click More, and select the option to keep the whole group together on one page. Close the Group, Sort, and Total pane by clicking

the X to Close Grouping Dialog Box. Take care not to remove the group that was just added.

- Select the Faculty ID label, right-click, and select Delete Column. Use the same process to delete the E-Mail column.
- Select the title of the report that reads Faculty. Change the report title to Faculty Division Listing.
- Change the Report View to Design View. In the Report Header, select and delete the auto logo, which looks like an image of a book.
- Right-click on the Report Header, and select Fill/Back Color. Choose a light gray color from the first column. Ensure you can still see the text after the fill color is applied.
- In the Page Header, select the Division Label. On the Report Design Tools, Format Tab, in the Font group, select the arrow next to Background color. Under Theme Colors, select White, Background 1, Darker, 15%. Apply the same background color to the Division textbox in the Division Header.
- In the Page Footer, delete the page number count by selecting it and then pressing delete on your keyboard.
- In the Report Footer, add a label control and then type: "Please e-mail HR@maricopa.edu with any changes to this report." Resize the label control if necessary to ensure all of the words display.
- In layout view, select the Division label, right-click, and select the entire column. Select the right outer edge of the column and drag it to the left until the column is about 2.5″ wide. Another option is to turn in the property sheet, Format Tab, and verify the width is 2.5″.
- Change the view of the report to Print Preview. In the lower right-hand corner, use the zoom scroll bar to zoom in and out of the report. Then, use the Page arrows to view all pages of the report. Ensure extra blank pages will not be printed, and make any modifications to your report as necessary.
- Save the report as Faculty Division Listing and Close all open database objects. Ensure all database objects are closed and the Navigation Pane is open and displays All Access Objects.
- Take a moment to verify you have the following database objects in your database.

    - **Tables**
        - Faculty
        - Students
    - **Queries**
        - Health Sciences Students
        - Honors Program Faculty and Students
        - Honors Student List
        - Scholarships Awarded
        - Students Missing Field of Interest
    - **Forms**
        - Faculty
        - Students

- **Reports**
  - Faculty Contact Information
  - Faculty Division Listing
  - Student Contact Information
  - Student Scholarships

- To exit out of the database, first close any database objects that are open. Select the File tab, and take note of where your database is saved. Then select close. Then, exit out of Access.

Submit your entire database for grading per your instructor's instructions.

MASTER ACTIVITY 1

Complete the following Master Activity and submit your completed project.

Exporting an Access report to Word and editing in Google Docs

As a student at SPSCC, you should already have a Google Account. You will need to be logged into your Google account to complete this assignment.

Since Google Docs is **web based**, it changes frequently. The steps outlined here may be slightly different from what you see on your screen. If you do not already have a Google account, you will need to create one. Go to **http://google.com** and in the upper right corner, click Sign In. On the Sign In screen, click Create Account. On the Create your Google Account page, complete the form, read and agree to the Terms of Service and Privacy Policy, and then click Next step. On the Welcome screen, click Get Started.

For this assignment, we will use Access to export a report to Microsoft Word, upload the Word document to **OneDrive**, and then edit the report in Google Docs.

- From the desktop, open your browser, navigate to http://google.com, and then sign in to your Google account. In the upper right corner of your screen, click Google apps, and then click Drive. If you are already logged into your Google Apps Account, click Apps, then Drive.
- Navigate to where your date files are stored, and open your Practice 4 database. If necessary, enable content.
- Ensure the navigation pane is open, and all access objects are shown. Click once to select the Faculty Contact Information report. Select it, but do not open it.
- On the External Data tab, in the **Export** group, select More, then choose Word.
- In the Export-RTD file dialog box, click Browse, and then navigate to where you save your files. In the File, Save as Dialog, click in the File Name box, type YourLastName_YourFirstName_Faculty_Contact_Information, and then Save. In the Export-RTF File dialog box, select Open the destination file after export operation is complete button and then click OK.
- Notice how Word opens with the exported report data. In Backstage view of the Word doc, verify the location where your Word doc is saved. Under Save As, notice you may have the option to save your document to OneDrive or Sites. Do not save your file here yet; rather, we will upload the Word document through Google.
- Close Microsoft Word, and Close the Access Database.
- From your Google Account, click the Apps Menu, and then click Drive. In Google Drive, click New in the upper left-hand corner, select Folder, and title the folder Access Reports.
- In the upper right-hand corner of your Google Drive window, click Settings, and then on the menu, select settings again. In the Settings dialog box, next to Convert Uploads, ensure the checkbox next to Convert uploaded files to Google Docs editor format is selected. Click Done to close the Settings dialog box.
- Click New in the upper left-hand corner, and then select File Upload. In the File Upload dialog box, navigate to where your files are stored, and locate the Faculty Contact Information Word document. Select the document, and then press upload. Double-click the file to open it in Google Docs.
- In Google Docs, notice how E-Mail has a red wavy line under it. Right-click in E-Mail, and select Add E-Mail to the dictionary.
- Select the entire report title and apply Bold and Underline. This is found on the Format tab.
- Select the column heading Last Name. Apply underline and highlight color yellow. Apply the same format to the column headings First Name and E-Mail.
- Scroll through the email column of the report. For any E-Mail that is missing, type in the email using the convention lastnamefirstnane@spscc.edu. There should be two records that are missing an E-Mail address. Apply the font color red to the email addresses just added.

- At the bottom of the report, delete the comment that starts with "If a faculty email is missing..."
- Close your browser window to exit out of Google Docs.
- Submit or share your Google doc per your instructor's instructions for grading.

MASTER ACTIVITY 2

Complete the following Master Activity and submit your completed project.

In this assignment, you are working as a database administrator **(DBA)** for a healthcare company. Your supervisor has asked you to apply fixes to this database so that it will function as expected. Fixes to the database include:

  - Correct the patient import from Excel so that it will accurately update patient data.
  - Create a user-friendly patient intake form based on the patient table to streamline data entry.
  - Correct the Copay Query so that only those patients that are missing a copay are listed.
  - Create a query that only lists patients in the city of Phoenix.
  - Create a query that only lists patients in the ED and CCU.
- From your data files, open the file Starter_Access_Master_2. On backstage view, under File, Save As, save the database as Lastname_Firstname_Access_Master2 in your assignment files folder.
- Open the Patient Table in Design View. Notice the primary key field, and other fields and their properties. Close the table without making any changes. Import the Excel file Import_Access_Master_2 into the existing Patient table. If the import fails, re-open the Patient table in design view, make corrections to the field name, and re-run the import. Once the import runs successfully, there should be 21 records on the Patient table.
- Create a form based off of the Patient table. The form should:
  - Include all fields from the Patient table
  - Include a theme and colors
  - Include an image in the form header
  - Have a user-friendly format
  - Be titled Patient Intake Form

- Be sure to test out the form by adding a new record to the table and make any modifications as needed.
- Open the Copay query in design view, and add criteria so that only those patients that are missing a copay (copay is 0) are shown in the query results.
- Create a query, with all fields from the Patient table, that displays patients from the city of Phoenix only. Name the query Phoenix.
- Create a query, with all fields from the Patient table, that displays patients with a Unit of CCU or ED. Name the query ED or CCU.
- Close all database objects, close the database, and submit per your instructor's instructions.

MASTER ACTIVITY 3

Complete the following Master Activity and submit your completed project.

In this activity, you will create a course sequencing database in Access for your anticipated plan of study. Your database should include:

- A table with the following fields:
  - Course Code (ex: OFTEC 108)
  - Course Description (ex: Introduction to Microsoft Office)
  - Semester (this will indicate the past or present semester that you plan to take or have completed the course).
  - Letter Grade (if completed)
- A form to enter the data above
- A query that identifies missing Letter Grades
- A query that identifies the upcoming semester's courses
- A report that identifies the upcoming semester's courses (can be built from the query)

The following should also be included:

- A theme for the Form and Report

- A college or program logo for the Form and Report
- The Report must have a page number and current data and time
- Ensure the report prints neatly to one page

CHALLENGE IT

Complete the following Challenge and submit your completed project.

In this challenge activity, you will complete a project that incorporates many of the key skills learned in this unit. For this project, you are a Database Administrator responsible for managing data on student athletes at South Puget Sound Community College.

You will create an Access database from scratch that includes:

- Tables
  - Students
  - Sports
- Queries
  - Student Athlete Scholarships: Which student athletes have a scholarship?
  - Summer Soccer Training: Which student athletes are on the soccer team and are required to train over the summer?
  - Student Athletes in Health Sciences: What student athletes are in the Health Sciences field of interest?
  - Baseball or Softball Student Athletes: What is the field of interest for baseball or softball student athletes?
- Forms
  - Sports

    - Students
- Reports
    - Student Listing

- Open Access and select Blank Desktop Database. Save the database in your data files folder, and name it Lastname_Firstname_Access_Challenge, and create the database.
- Create a new table titled Students, with the following fields and data types. Save and close the table when completed.

StudentID	Short Text
First Name	Short Text
Last Name	Short Text
Field of Interest	Short Text
Sport	Short Text
GPA	Number
Anticipated Graduation Year	Short Text
Scholarship	Yes/No

- Import the Excel spreadsheet data titled Access_Challenge_Import1 and append it to the Students table. Fifty-two records should import into the Students table. Ensure the Student ID is the primary key and close the Students table. Be sure to resolve any import errors before continuing.
- Import the Excel spreadsheet data titled Access_Challenge_Import2 into a new table in the current database. Ensure the first row containing column headings is checked, keep the default field imports, and assign Sport as the Primary Key. Name the new table Sports. Open the Sports table to verify there are 6 records.
- Create a relationship using the Sports and Students tables using the Sport field to join the two tables. Enforce referential integrity and select both cascade options. Save and Close the relationships window, resolving any error or warning messages.
- Create a new query using Query Design that answers the question: Which student athletes have a scholarship? Include all fields from the Students table, include criteria to indicate those students that have a scholarship, and sort the query ascending by Last Name. Do not display the StudentID or GPA fields in the query. Run the query to verify there are 20 records. Save the query as Student Athlete Scholarships. Close the query.
- Create a new query using Query Design that answers the question: Which students are on the soccer

team and are required to train over the summer? Include the following fields from the Students table: First Name, Last Name, Sport. Include the Summer Training field from the Sports table. Include criteria to indicate those students that have the correct sport (soccer) and summer training (yes). Sort the query ascending by the Last name field. Run the query to verify there are 12 records. Save the query as Summer Soccer Training, and close it.

- Create a new simple query using the Query Wizard that answers the question: What student athletes are in the Health Sciences field of interest? Include all fields from the Students table, detail format, name the query Student Athletes in Health Sciences, and modify the query design. Add criteria to only include those students with a field of interest in Health Sciences. Run the query to verify there are 31 records. Save and close the query.
- Create a new simple query using the Query Wizard that answers the question: What is the field of interest for baseball or softball student athletes? Include the following fields from the Students table: First Name, Last Name, Field of Interest, and Sport. Name the query Baseball or Softball Student Athletes and modify the query design. Add criteria to the Sport field to include softball or baseball only. Run the query to verify there are 14 records. Save and close the query.
- Using the Form Wizard, create a form based off of the Sports table. Include all of the Fields from the Sports table, tabular format, and name the form Sports. Open the form to view or enter information. Add a new record to the form with the following information:
    - Sport: Cross Country
    - Summer Training: No
    - GPA Requirement: 3
- In Design view, change the Summer Training label and textbox so that it is about 2″. Resize the GPA Requirement label and control so that you can see the entire label. Apply the organic theme with Blue colors, and Arial font. Save and close the form.
- Using the Form Tool, create a Form based off of the Students table. Apply the organic theme with Blue colors, and Arial font. In Design View, change the title in the form header to Student Athletes, and add the Puma image from Access Practice 4. Resize the image and form header if necessary to ensure both the title and image display. Save the Students Form and close the form.
- Create a report using the report wizard and the Students table. Include the following fields: First Name, Last Name, Field of Interest, Sport, and Scholarship. Add a grouping level based on Field of Interest. Sort ascending by last name, then first name. Apply the Stepped layout, portrait orientation, and adjust the field width so all fields fit on a page. Title the report Student Listing and preview the report. In Design view, apply organic theme with Blue colors, and Arial font. Insert the same image of the Puma from Practice 4 into the Report Header. Resize the image and header if necessary to ensure both the title and image display. Save and close the report.
- Save and close all database objects, and take note of where your database is stored. Close out of Access and submit your entire database per your instructor's instructions.

DATABASE SOFTWARE 3: CHECK YOUR UNDERSTANDING

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://louis.pressbooks.pub/computerapplications/?p=701#h5p-13

DATABASES: GLOSSARY

Definition of terms used in this chapter:

Append	to add on to the end of an object, for example, adding records to the end of an existing table in a database
Arrange tab	a tab in the Access Form or Report Layout toolbar that allows you to make changes to the arrangement of tables, rows, and columns in a form or report
Autonumber	a data type that describes a unique sequential or random number assigned by Access as each record is entered and that is useful for data that has no distinct field that can be considered unique; this data type cannot be manually changed or typed in
Blank form	allows you to create a new, blank form, which you can then customize and format the way you want
Bound	a control that retrieves data from an underlying table or query
Data	facts about people, events, things, or ideas
Data type	classification identifying the kind of data that can be stored in a field such as numbers, text, or dates
Database	an organized collection of facts about people, events, things, or ideas related to a specific topic or purpose
Datasheet view	the Access view that displays data organized in columns and rows similar to an Excel spreadsheet
DBA	stands for Database Administrator, an IT professional whose primary responsibilities include database installation, configuration, design, migration, performance monitoring, security, and troubleshooting, as well as backup and data recovery
Design tab	a tab in the Form or Report Layout toolbar that allows you to make modifications to the design of the form or report
Design view	an Access view that displays the detailed structure of a table, query, form, or report; also known as developer's view; for forms and reports, this may be the only view in which some tasks are performed; only the controls, not the data, are displayed in this view
Detail	the area in a form or report that data is displayed and interacted with; may include textboxes, checkboxes, combo boxes, labels, pictures, and other data editing controls
Developer's view	also known as Design view; the most powerful view in Access
Enable content	Microsoft Office's built-in security feature
End user	the person or people that use the database
Export	also known as a "dump," extracting and saving a database file that can be used for storage, distribution, or importing into another system
Field	a single piece of information that is stored in every record and is represented by a column in a database table
Field name	the description that identifies a field
Flat database	a simple database file that is not related or linked to any other collections of data

Form	a database object that you can use to enter new records into a table or to edit, delete, and display existing records in a table
Form design	allows you to work with the underlying structure of your form
Form footer	the bottom margin of each page of an Access form
Form header	the top margin of each page of an Access form
Form view	the Access view in which you can view, modify, delete, or add records in a table but you cannot change the layout or design of the form
Form wizard	a step-by-step way to create a form
Format tab	a tab in the Report Layout toolbar that allows you to make changes to the formatting of a report, such as Fonts and Backgrounds
Group, Sort, and Total	a pane that displays at the bottom of the report window in Design view in which you can control how information is sorted, grouped, and totaled in a report
Importing	the process of copying data from another file, such as an Excel Spreadsheet, into a separate file, such as an Access table
Information	data that is accurate, timely, and organized in a useful manner
Is Null	criteria used in queries in which searched-for fields are empty
Knowledge	processed information that is useful when making important decisions
Label	a control on a form or report that contains descriptive information, usually a field name or title
Layout view	the Access view in which you can make changes to a form or report while the data from the underlying data and source displays
Navigation pane	an area of the Access window that displays and organizes the names of the objects in a database and allows objects to be opened for use
Object type	a way to sort objects in the navigation pane so they are grouped by type
Objects	the basic parts of a database that you create to store your data and to work with your data; includes tables, queries, forms, and reports
One-To-Many	the most common type of database relationship between two tables, where one record in the first table corresponds to many records in the second table
Page setup	a tab in the Report Layout toolbar that allows you to make changes to the setup of a report to prepare it for printing, such as Page Size and Page Layout
Populate	the action of filling a database table with records
Primary key	a required field that uniquely identifies a record in a table
Print preview	a Report view that displays what the printed report will look like
Property sheet	a list of characteristics, or properties, for fields or controls on a form or report in which you can make precise changes to each property associated with the field or control

Queries	a database object that retrieves specific data from one or more database objects, either tables or queries, and displays the requested data in a datasheet
Query grid	the bottom pane of the Query Design view window in which you specify the fields, sort order, and limiting criteria for the query
Query wizard	a step-by-step way to create four types of queries to use in accessing and modifying the data in your database
Redundancy	in a database, information that is duplicated in a manner that indicates poor database design
Relational database	a sophisticated type of database that has multiple collections of data within the file that are related to one another
Relationship	an association that you establish between two tables based on common fields
Report	also known as the Report Tool, a quick and easy way to create a new report
Report view	the default view used when you double-click a report in the Navigation Pane
Report wizard	a step-by-step way to create a report
Short text	an Access data type that describes text that can be a combination of letters and numbers that are not used in calculations, such as a zip code
Show	a checkbox in the Query Grid that enables fields to be shown or hidden
Tables	a database object that organizes and presents text and data in columns and rows and is the foundation for databases
Textbox	a bound control on a form or report that displays the data from an underlying table or query
Unbound label	a control that does not have a source of data, such as the title in a form or report
User friendly	easy to use and understand, it is a goal to create databases of this kind

ADAPTATION STATEMENT

Computer Applications is a cloned version of Intro to Microsoft Office by Abigail Rusu, Andrea Long, Heather Maye, Jennifer Evans, and Amy Ledgerwood, which was an adaptation of Computer Usage and Applications by Abigail Rusu, published using Pressbooks by Maricopa Millions Grant. Unless stated otherwise, Computer Applications (c) 2022 is licensed under a Creative Commons-Attribution 4.0 International license.

The majority of the original text was kept with some editing for formatting and wording. The original H5P was separated from the text and put into Check Your Understanding sections so that adopters of this book can link to the H5P activities.

The following additions or changes have been made to the database chapters.

Database Software 1: An Intro to Databases

- Kept from original:
  - Learn It section <– turned into Database Overview
  - Access Practice 1 <– turned into Apply Your Knowledge
  - Some images reused
  - Modified objectives
  - Copied out and modified original assignment for end-of-module assessment.
- Written from scratch:
  - Data and Tables section
  - Relationships section
  - Other resources section
- Other:
  - Turned database module into 3 chapters.
  - Highlighted glossary words
  - Added new images

Database Software 2: Database Objects and Querying a Database

- Kept from original:

    - Practice activities 4 and 5—Self-Assessment
    - Master It activities 1–3
    - Challenge It activities
    - Some images reused
    - Modified objectives
    - Copied out and modified original assignment for end-of-module assessment
- Written from scratch:
    - Database interaction overview
    - Other resources examples
    - Other resources
- Other:
    - Highlighted glossary words

Database Software 3: Creating Reports and Forms

- Kept from original:
    - Practice activities 2 and 3—Self-Assessment
    - Some images reused
    - Modified objectives page
    - Copied out and modified original assignment for end-of-module assessment
- Written from scratch:
    - Reports and Forms overview
    - Other resources
- Other:
    - Highlighted glossary words

GLOSSARY

Append

to add on to the end of an object, for example, adding records to the end of an existing table in a database

auto fill

an Excel feature that generates and extends values into adjacent cells based on the values of the selected cells

AutoNumber

a data type that describes a unique sequential or random number assigned by Access as each record is entered and that is useful for data that has no distinct field that can be considered unique. This data type cannot be manually changed or typed in

Backstage View

A centralized space for file management tasks such as opening, saving, printing, or sharing a file

Cell content

anything typed into a cell

Cloud storage

Online storage of data including files and folders that allows access from different places and devices

columns

a vertical group of cells in a spreadsheet, indicated by letters

computer

a device for computing

constant value

a set value that does not change and is directly typed into a cell. There are two types: text and number values

Cortana

Microsoft's personal assistant in Windows 10

data

Facts about people, events, things, or ideas

data type

classification identifying the kind of data that can be stored in a field such as numbers, text, or dates

database

an organized collection of facts about people, events, things, or ideas related to a specific topic or purpose

Datasheet View

the Access view that displays data organized in columns and rows similar to an Excel spreadsheet

Design View

an Access view that displays the detailed structure of a table, query, form, or report. Also known as developer's view. For Forms and Reports, this may be the only view in which some tasks are performed. Only the controls, not the data, are displayed in this view

Enable Content

Microsoft Office's built-in security feature

end users

the person or people that use the database

file

Information, such as a document, stored on a computer under a single name

fill handle

the small square in the lower right-hand corner of a selected cell

flat databases

a simple database file that is not related or linked to any other collections of data

folder

A spot to store and organize files on a computer

formula

an equation that performs a mathematical calculation on values in a worksheet

GUI

An acronym that stands for Graphical User Interface: graphics such as an image of a file or folder that you click to perform an action

Importing

the process of copying data from another file, such as an Excel Spreadsheet, into a separate file, such as an Access table

information

data that is accurate, timely, and organized in a useful manner

knowledge

processed information that is useful when making important decisions

location

Any disk, drive, folder, or another place on your computer in which you can store files and create folders

Microsoft 365

A version of Microsoft Office that includes Word, Excel, Access, and PowerPoint to which you subscribe for an annual fee

mini-toolbar

Appears whenever you right-click text in Word, Excel, or PowerPoint and provides a quick-access version of the Font group on the Home tab, plus a few extra buttons from other groups

Name Box

an element of the Excel window that displays the name of the selected cell, table, chart, or object

objects

the basic parts of a database that you create to store your data and to work with your data; includes tables, queries, forms, and reports

One-To-Many

the most common type of database relationship between two tables where one record in the first table corresponds to many records in the second table

OneDrive

A computer program that manages the other programs and devices on a computer

operating system

A computer program that manages the other programs and devices on a computer

populate

the action of filling a database table with records

Primary Key

a required field that uniquely identifies a record in a table

queries

a database object that retrieves specific data from one or more database objects, either tables or queries, and displays the requested data in a datasheet

query grid

the bottom pane of the Query Design View window in which you specify the fields, sort order, and limiting criteria for the query

Query Wizard

a step-by-step way to create four types of queries to use in accessing and modifying the data in your database

range

two or more selected cells on a worksheet that are adjacent or nonadjacent

Redundancy

in a database, information that is duplicated in a manner that indicates poor database design

relational databases

a sophisticated type of database that has multiple collections of data within the file that are related to one another

relationships

an association that you establish between two tables based on common fields

rows

a horizontal group of cells in a spreadsheet, indicated with numbers

spreadsheet

software for working with data

Synchronization

Also called synching, is the process of updating computer files that are in two or more locations according to specific rules

Tables

textbox

a moveable, resizable container for text or graphics

USB flash drive

Also called a removable storage device, used to save and transfer information from one computer to another

user friendly

easy to use and understand; it is a goal to create databases that are easy to use

APPENDIX A: CHECKLIST FOR ACCESSIBILITY

Organizing Content

- Content is organized under headings and subheadings.
- Headings and subheadings are used sequentially (e.g., Heading 1, Heading 2).

Images

- Images that convey information include alternative text (alt text) descriptions of the image's content or function.
- Graphs, charts, and maps also include contextual or supporting details in the text surrounding the image.
- Images do not rely on color to convey information.
- Images that are purely decorative do not have alt text descriptions. (Descriptive text is unnecessary if the image doesn't convey contextual content information).

Links

- The link text describes the destination of the link and does not use generic text such as "click here" or "read more."
- If a link will open or download a file (like a PDF or Excel file), a textual reference is included in the link information (e.g., [PDF]).
- Links do not open in new windows or tabs.
- If a link must open in a new window or tab, a textual reference is included in the link information (e.g., [NewTab]).
- For citations and references, the title of the resource is hyperlinked, and the full URL is not hyperlinked.

Tables

- Tables are used to structure information and not for layout.

- Tables include row and column headers.
- Row and column headers have the correct scope assigned.
- Tables include a caption.
- Tables avoid merged or split cells.
- Tables have adequate cell padding.

Multimedia

- All audio content includes a transcript. The transcript includes all speech content and relevant descriptions of non-speech audio and speaker names/headings where necessary.
- Videos have captions of all speech content and relevant non-speech content that has been edited by a human for accuracy.
- All videos with contextual visuals (graphs, charts, etc.) are described audibly in the video.

Formulas

- Equations written in plain text use proper symbols (i.e., −, ×, ÷).[1]
- For complex equations, one of the following is true:
  - They were written using LaTeX and are rendered with MathJax (Pressbooks).
  - They were written using Microsoft Word's equation editor.
  - They are presented as images with alternative text descriptions.
- Written equations are properly interpreted by text-to-speech tools.[2]

Font Size

- Font size is 12 point or higher for body text in Word and PDF documents.
- Font size is 9 point for footnotes or endnotes in Word and PDF documents.
- Font size can be enlarged by 200 percent in webbook or ebook formats without needing to scroll side to side.

Learn more about Pressbooks' commitment to Accessibility.

1. For example, a hyphen (-) may look like a minus sign (−), but it will not be read out correctly by text-to-speech tools.
2. Written equations should prioritize semantic markup over visual markup so text-to-speech tools will read out an equation in a way that makes sense to auditory learners. This applies to both equations written in LaTeX and equations written in Microsoft Word's equation editor.