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Office of Disability Services Website: [www.jmu.edu/ods](http://www.jmu.edu/ods)

JMU Accessibility Website: [www.jmu.edu/accessibility](http://www.jmu.edu/accessibility)

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## Important Notes

### Federal Mandates

The Americans with Disabilities Act (42 U.S.C. § 12,101 et seq.) and Section 504 of the Rehabilitation Act (29 U.S.C. §791, et seq.) prohibit discrimination against a person with a disability in the offer or conditions of employment, and in the participation or furnishing of services. **James Madison University is obliged to provide reasonable accommodations to enable qualified individuals with documented disabilities to perform a job, participate in a class, or participate in other university functions.**

### JMU Policy

Policy 1331 Disabilities & Reasonable Accommodations

*...establishes the university's intent that qualified persons with disabilities be provided with reasonable accommodation to ensure equal access and equal opportunities with regard to the university's programs and services.*

Policy 1324 Discrimination and Harassment

*This policy prohibits discrimination against an individual on the basis of age, color, disability, national origin, genetic information, parental status, political affiliation, race, religion, sex, sexual orientation or veteran status.*

### Accessibility: A Growing Concern for Higher Education

According to a 2001 report on disability from the World Health Organization, 56 million people in the U.S. were identified as having a disability. Furthermore, **11% of post-secondary students report having a disability.**<sup>1</sup> Institutions of higher education have a legal and ethical responsibility to ensure accessibility for our students, faculty, staff, and guests. The proliferation of multimedia has outpaced accessibility initiatives, however, leaving many people with disabilities at a disadvantage and many universities open to complaints and lawsuits.

### What are Accessible Materials?

Accessible materials are content such as documents, spreadsheets, slides, emails, and PDF's that are designed or converted in a way that makes them as usable as possible by people with and without disabilities.

### Microsoft Office 2013

This training manual will focus primarily on creating accessible content in Microsoft Office 2013. However, much of the information pertains to creating content with a Universal Design (discussed in the next section) mindset that allows content to be viewed by a multitude of audiences.

## What is a Disability?

A person having a disability is defined as any individual who has a **physical or mental impairment that substantially limits one or more major life activities**, such as walking, hearing, seeing, speaking, learning or caring for oneself.

This training will focus primarily on those who have a visual, auditory, or motor skill (keystroke users) disability and/or a learning disorder. However, much of what is covered will assist those with other needs as well.

**Invisible Disability:** refers to symptoms such as debilitating pain, fatigue, dizziness, weakness, cognitive dysfunctions, learning differences and mental disorders, as well as hearing and vision impairments. These are not always obvious to the onlooker, but can sometimes or always limit daily activities, range from mild challenges to severe limitations and vary from person to person.<sup>2</sup>

**Vision loss:** The term vision loss refers to individuals who reported that they have trouble seeing, even when wearing glasses or contact lenses, as well as to individuals who reported that they are blind or unable to see at all. Nearly 14 million Americans - about one of every 20 people - have low vision.

**Vision Impairment:** A vision impairment can include someone who is completely blind, partially sighted, has low vision, or is color blind. All of these may require additional steps when preparing content to ensure that it is accessible.

**Hearing impairment:** A hearing impairment prevents a person from totally receiving sounds through the ear. The loss may be mild which will make it difficult to hear faint or distant speech. A person with this degree of hearing impairment may use a hearing aid to amplify sounds. Or, the loss may be severe, and the person may not be able to distinguish any sounds.

## What is Universal Design?

The primary goal of Universal Design (UD) is inclusion. Creating content with a goal to make it accessible to a multitude of audiences is at the heart of UD. It is the creation of content and environments that are usable by all, to the greatest extent possible, without the need for modification at a later time. UD is proactive and sustainable.

## What is a Screen Reader?

**Screen reader:** software that interprets what is displayed on a computer screen audibly using a speech synthesizer. Screen readers are audio interfaces that allow a user to listen to the content.

Screen readers allow a visually impaired person the independence that they would not have if they relied on someone to read them material off of the screen.

## How does a screen reader work?

- Screen readers pause for periods, semi-colons, commas, question marks, and exclamation points.
- Screen readers generally pause at the end of paragraphs.
- Screen readers will read a blank return as “blank.”
- Screen readers try to pronounce acronyms and nonsensical words if they have sufficient vowels/consonants to be pronounceable; otherwise, they spell out the letters.
  - NASA is pronounced as a word
  - NSF is pronounced as "N. S. F."
  - URL is pronounced "earl"
  - SQL is not pronounced "sequel" by screen readers even though some humans pronounce it that way; screen readers say "S. Q. L."
- Screen readers will read the alt text of images, if alt text is present. If alt text is not present, some screen readers will ignore the image, others may say “image.” If it is an image on a website, a screen reader may read the file name.<sup>3</sup>

Demonstration: <http://webaim.org/simulations/screenreader-sim.htm>

## What is Alt-Text?

Alternative text, also known as alt text, often appears when you move your pointer over a picture or object on a website. Screen readers can read alt text to users to educate them on what the image, object, or table contains.

Any image that has text in it should have that text as the alternative text. You can place other words in the alternative text, but at minimum it should say the same thing as the image.

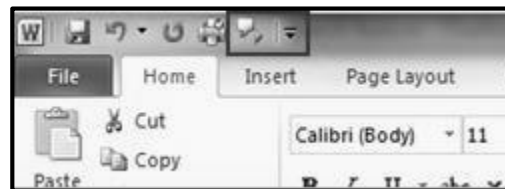
## Microsoft's Built-In Text-to-Speech

In addition to using screen readers, some programs such as Microsoft Office have built-in text-to-speech (TTS) functionality. TTS allows the program to read back written text as spoken word. TTS can be enabled in Microsoft Word, PowerPoint, Outlook, Excel and OneNote.

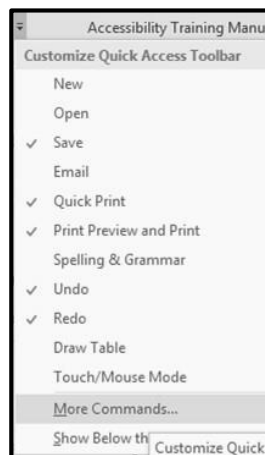
TTS is also helpful to English Language Learners, beginning readers and those who prefer auditory learning. Students with dyslexia can benefit from seeing and hearing text at the same time.

### Enable TTS and add it to the Quick access Tool Bar

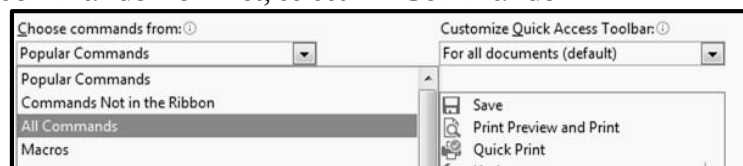
1. Open Microsoft Office program (Word, Excel, PowerPoint, OneNote)
2. Next to the Quick Access Toolbar, click **Customize Quick Access Toolbar**.




3. Click **More Commands**.



4. In the **Choose commands from** list, select **All Commands**.



5. Scroll down to the **Speak** command, select it, and then click **Add**.
6. Click **OK**.
7. When you want to use the text-to-speech command, highlight the word, sentence or paragraph you wish to hear, click the icon on the Quick Access Toolbar. 

## Use of Color

### Don't rely on color to convey your message

Color should be used as an enhancement, not as the primary means of communicating. To make sure everyone can read and understand your documents, **never rely on color alone to transmit information**. This does not mean that you cannot use color. It just means that if you do use color, the content can still be understood if the color is removed. For example, if you are requiring that a field be filled in on a form, include the word ***Required*** rather than just using a red asterisk.

### Color Blindness



Normal Vision



Protanopia



Deuteranopia



Tritanopia<sup>4</sup>

**Protanopia:** the spectrum is seen in tones of yellow and blue with confusion of red and green and reduced sensitivity to monochromatic lights.

**Deuteranopia:** similar to Protanopia in terms of visible spectrum. Marked by confusion of purplish red and green. This is the most common form of color blindness.

**Tritanopia:** the spectrum of colors is seen in tones of red and green.

### Facts on Color Blindness:

- Most color blind people are not really color “blind” but are instead color deficient.
- Color blindness is more prevalent among males because the most common form is caused by a deficiency in the X chromosome.
- 8% of men suffer from a form of color blindness.
- Deuteranopia is by far the most common form of colorblindness, and it affects the vision of red and green colors.<sup>5</sup>

### Pale Blue

As eyes age, the first color that people notice a degradation in is pale blue. This happens because the cones in your retinas that detect color start to lose some of their sensitivity with age, and there's not a lot that can be done about it. A large segment of the population may find it difficult to read document with pale blue.

### Why does color contrast matter?

If text does not have sufficient contrast with its background, it can be difficult to read. This does not only apply to those who have a vision impairment. Anyone viewing content in less-than-ideal conditions, such as poor monitor, reflections, or glare, may not be able to view the text or may have difficulty viewing it.

### **Using a Contrast Checker**

WebAIM's free contrast checker on their website verifies that the colors in a document provide enough contrast to be viewable by a larger audience. If you have questions regarding <http://webaim.org/resources/contrastchecker/>

### **Laser Pens and Color Blindness**

Laser pens are often used in presentations to highlight a particular area of the slide. The most common colors of laser pens are red and green. The most common form of color blindness impacts the ability to see red and green. A color blind person may not see a bright red/green dot on your screen that is easy to track. Instead, they may see a dull grey dot that can easily blend in with the rest of your presentation.

#### **Tips for using laser pens:**

- Hold the pen still on the screen
- Move it slowly
- Speak what you are showing. Do not simply say “here” or “over there.” Instead, say, “on the left side of the screen towards the top.”

## Creating Accessible Files in Word 2013

Microsoft Word is one of the most common word processing programs on the market. It only takes a few simple steps to ensure that a Word document is accessible to everyone. □ Styles

- Alt text/Captions
- Outline format
- Describe hyperlinks with alt text
- Table of Contents

### Design your material with an Outline mindset

A screen reader will provide for a user to scan or read material quickly by tabbing through the headings and hyperlinks if they are setup correctly. To improve accessibility, design material using an outline basis and provide meaningful, distinct names for links that make sense when read out of context. Without page structure, it is difficult for users with disabilities to quickly navigate documents.

Whereas a sighted user can “scan” through a screen of text instantly, a screen reader will read through the text line by line.

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A properly formatted page with **styles** can allow a screen reader to scan through topics or sections much quicker.

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### Styles

Styles create a page structure that screen readers can easily interpret allowing a user to navigate through a document quickly. The default heading styles must be used for this to function, do not simply enlarge a font and/or make it bold to make it appear like a heading style, a screen reader will not recognize it as a heading without one of the Heading styles applied to it.

Heading and paragraph styles help make your document easier to read and provide navigation points for users on a screen reader or those who need a visual cue.



### Add Styles to your document:

Training>CAMMO>Word>Styles.doc

1. Place your cursor in the text that you wish to add a header style to.
2. From the **Home Tab** on the ribbon, select the style you wish to use.



3. A screen reader looks for heading styles in a document and allows a user to easily navigate through the headings.

**Custom Headings:** It is best to use one of the built-in heading styles and not create your own. If you would like to change a style, do so by modifying the built-in styles. A screen reader may have issues understanding a new style but can easily interpret built-in styles.

### Tips for using styles:

- Use headings in the correct order (H1, H2, H3)
- Avoid long headings, whenever possible, headings should be short, descriptive titles.

## Table of Contents

A table of contents assists all users in navigating a longer document. If you have used style headings when creating your document, adding a table of contents requires only a simple click of a button.

### Add a Table of Contents to your document:

1. Create your headings using the built in style headings.
2. Under the references tab select **Table of Contents**.



3. Select a Table of Contents style.
4. Word will automatically create a table of contents based on your Heading Styles.

## Outline View

Using styles to create your content will also assist the creator with managing large documents and may assist all learners with cognitive organization of your material. If you have used styles while creating your document you can easily navigate and arrange the content in outline view.

## Paragraph Styles and Page Breaks

Avoid using blank lines to separate paragraphs or pages in a document. A screen reader will read these as “blank” and the user may think that they have reached the end of the document.

Using Word’s paragraph styles to add space before or after a paragraph and Word’s page/section breaks alleviates this problem.

Add a paragraph break without a blank line:

- Modify a paragraph style to include line breaks
- Add additional spacing from the **Home** tab under **Paragraph** and add space

All of these will allow you to add an extra line break before or after a paragraph without adding a blank line.

**Tip:** To begin a new page, use **page/section breaks** rather than entering multiple blank lines.

## Providing Alt-Text

Alternative text, also known as alt text, often appears when you move your pointer over a picture or object on a website. Screen readers read alt text to users to educate them on what the image, object, or table contains.

Alt text should be included for the following in a document:

- Pictures
- Clip Art
- Charts
- Tables
- Shapes
- SmartArt
- Groups
- Embedded Objects
- Ink (handwriting)
- Video and audio files

Alt text should be accurate and descriptive, but it does not need to include the type of object (image, chart, table, etc.). The screen reader will convey this. All images in Cascade (CMS at JMU) are required to include alt text.

**Writing Alt Text:** Use clear, but concise, descriptions. For example, “a red Ferrari” tells the reader more about the image than “a car.” However, “a 2009 cherry red Ferrari 599 GTB Fiorano displayed in a darkened showroom floor with spot lighting from directly above casting a light shadow on the lower 17% of the car” may be excessive depending on the circumstances. The description should provide the information a person needs to know about the object to make it relevant to the content. A table or chart may have much more description than an image.

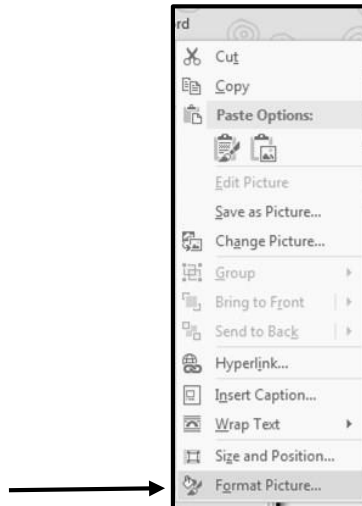
## What is a decorative image?

An image that does not convey important content or is for aesthetic purposes only. Decorative images do not require alt text. A general practice is to put “” on an image that does not require alt text so that a screen reader knows alt text was left out intentionally.

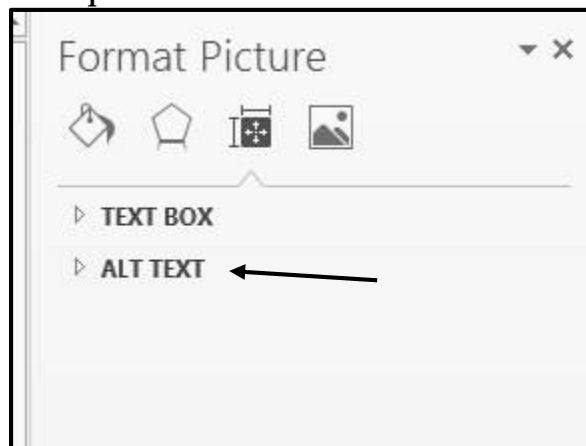
## Adding Alt Text:

Training>CAMMO>Word>Alt Text

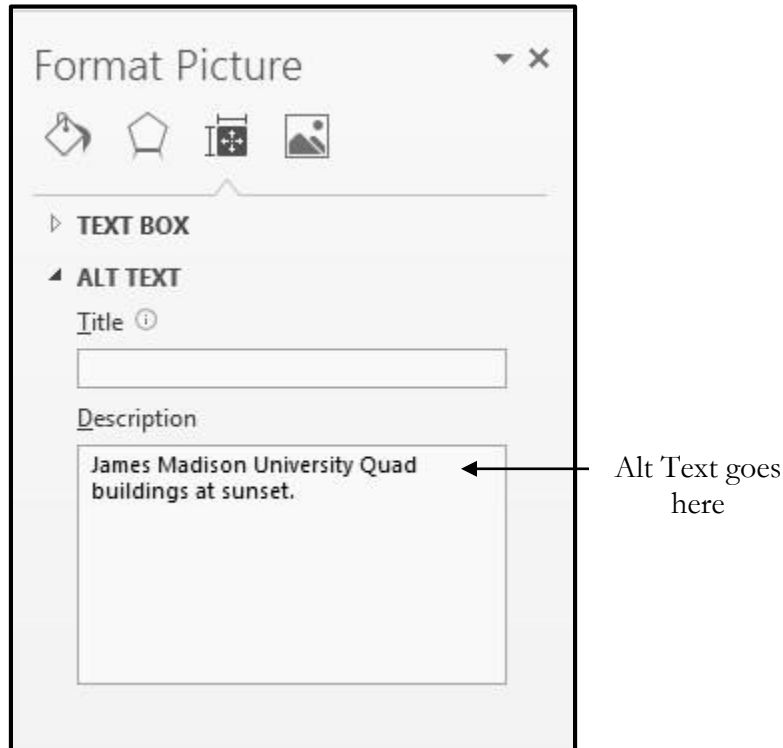
1. Right click the image or object, and then click **Format Picture**. **Note:** For tables, right click and choose **Table Properties**.



2. Select the **Layout & Properties** icon.



3. Choose **Alt Text**.
4. Enter a description into the **Description** text box. You do not need to enter the information into the title box. Information in the Title field will not be saved as alternative text when the file is saved as HTML and is optional.



### Captions vs. Alt Text

In addition to alt text, captions can be added to tables, charts, and images. A caption will typically appear directly below a table, image, chart, or picture. Captions can be indexed by creating a table of captioned items at the end of the document.

### If I have a caption, do I need alt text?

*Alt text* is valuable to a person who is hearing the object described via a screen reader. *Captions* are beneficial for everyone. **Captions do not replace alt text.** Captions are not required for accessibility, but alt text should always be used with an object that provides value outside of being decorative.

For example, if there was a table in your content showing growth of electronics in households from 2010 to 2012 your alt text would define how much growth there is and what the percentages are. Whereas a caption might say *Chart 1.1 Growth of Electronics*. A caption can be viewed more as a title where alt text is a description.

### Hyperlink text

Hyperlink text should provide enough meaningful information that a user will understand where the link is taking them prior to clicking on it. Most screen readers will read aloud “link to” followed by the text you have provided. Meaningful hyperlink text can be added to *text to display* or as a *screen tip*.

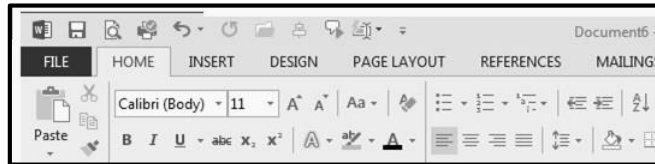
## Accessibility Checker

Microsoft Office 2013 products have a built-in accessibility checker. Accessibility Checker highlights possible accessibility issues in an Office file and tells how to make these issues accessible.

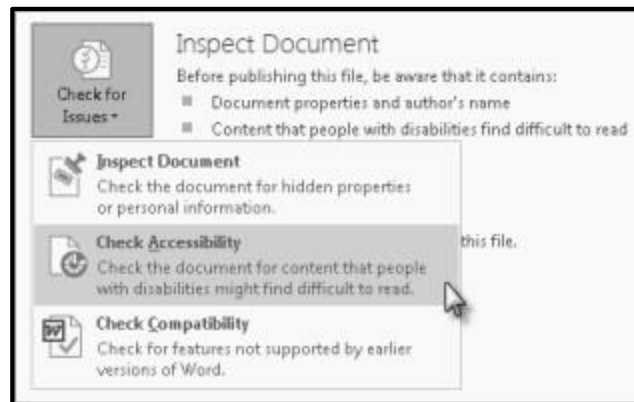
### To check for accessibility in Word 2013:

Training>CAMMO>Word>Accessibility Checker

1. Click **File > Info**.



2. To view and repair the issues in your file, click **Check for Issues > Check Accessibility**.
3. Click a specific issue to see **Additional Information** and steps you can take to change the content.



The Accessibility Checker checks a file against a set of possible issues that people who have disabilities might experience in the file. Each issue is classified as an Error, Warning, or Tip.

- **Error:** An error is for content that makes a file very difficult or impossible for people with disabilities to understand.
- **Warning:** A warning is for content that in most, but not all, cases makes a file difficult for people with disabilities to understand.
- **Tip:** A tip is for content that people with disabilities can understand, but that might be better organized or presented in a way that would improve their experience.

## Creating Accessible PDF's (Portable Document Format)

### Text Based PDF vs Scanned PDF Two

types of PDF's:

- Scanned Image
- Scanned Text

A PDF created as a scanned image may not have readable text. It is similar to taking a digital photograph of a document. In order for a screen reader to recognize the text it needs to be created as a Text Based PDF or have been scanned using optical character recognition. Printing to a PDF is similar to creating a PDF off a scanned image and often times will not be accessible.

A text based PDF can be read by a screen reader as well as picked up by a search engine. When you save a file as a PDF in Microsoft it is saved as scanned text, this is the easiest way to ensure that your PDF is accessible.

A PDF that is text based does not only assist someone using a screen reader it is also helpful to search engines as they are able to pick up the text in the PDF. If your PDF is a scanned image the content cannot be picked up by a search engine.

### Optical Character Recognition (OCR)

OCR is a method of digitalizing printed text so that it is readable by a screen reader. A text document, such as a book, is scanned by an OCR scanner into a digital format. The OCR scanner will then convert the scanned "image" into text that can be read by a screen reader. Many newer scanners have OCR built in. Check your owner's manual to be sure.

### PDF Tags

Tagging adds a layer of information called "semantics" to a PDF document. A tagged PDF will indicate what types of objects are included.

- Headings
- Paragraphs
- Images
- Tables

When you save your file as a PDF, these semantics are identified and labeled by the Office application you are using and added to the file. Assistive technologies, such as screen readers and magnifiers, are then able to access the tagging and use it to present the information to disabled users<sup>vi</sup>

### Creating PDF's in Word 2013

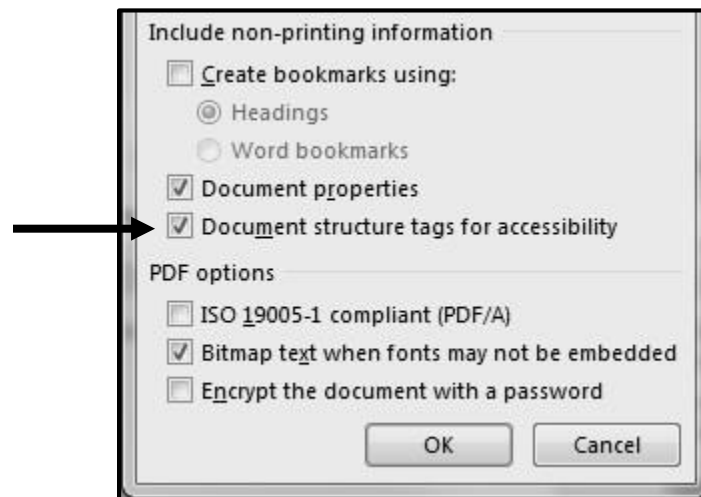
Training>CAMMO>Word>PDFs

The easiest way to ensure that your PDF is accessible is to create the PDF within Office using the following instructions.

1. Click the **File** tab, and then click **Export**.
2. Select the **Create PDF/XPS** icon.



3. Click **Options**.
4. Make sure that the **Document structure tags for accessibility** check box is selected, and then click **OK**.



5. Click **Save**.

### **Creating PDF's from a scanner/copier**

It is always best to create a PDF electronically; however, if you only have a hard copy of a document, a PDF can be created using a scanner with OCR software. Both Copy Centers at JMU have OCR scanners available.

Many images, text that has a shaded background, and text that is in table format is generally difficult for OCR scanners to read. Using an OCR scanner may not produce 100% accessible text.



## Creating Accessible files in Excel

Excel is a spreadsheet program that can be used for storing, organizing, and manipulating data. Excel can easily convert data into tables, charts and graphs, which, if not done properly, may be inaccessible to someone with a disability.

### Provide Alt Text

Training>CAMMO>Excel>Alt Text

1. The first step will vary depending on the type of object selected:

Chart/Picture/Shape/SmartArt	Table	Pivot Table
Right click, click <b>Format</b> , and then choose the <b>layout icon</b> and click <b>Alt Text</b> .	Right-click the table, click <b>Table</b> , and then click <b>Alternative Text</b> .	Right-click, select PivotTable Options, and then click <b>Alt Text</b> .

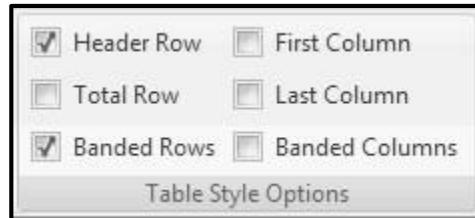
2. Type a description of the image or object into the **Description** text boxes. Do not type the alt text in the **Title Box**.
3. Click **Close**.

## Specify Column Header Information in Excel Tables

In addition to adding alt text that describes the table, having clear column headings can help provide context and assist navigation of the table's contents.

To specify a header row in a block of cells marked as a table, do the following:

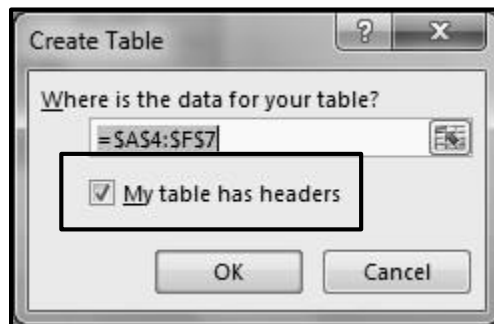
1. Click anywhere in the table.
2. On the **Table Tools Design** tab, in the **Table Style Options** group, select the **Header Row** check box.



3. Add your header information.

To specify a header row in a new block of cells marked as a table, do the following:

1. Highlight the cells you want to include in the table.
2. On the **Insert** tab, in the **Tables** group, click **Table**.
3. Select the **My table has headers** check box.



4. Click **OK**.

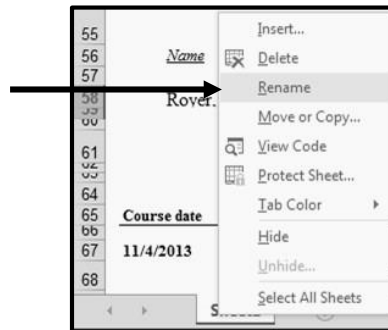
## Naming Worksheets

Providing sheet names make it easier to navigate through a workbook. All worksheets should be named, and any blank sheets in a workbook should be removed.

### To rename a sheet:

Training>CAMMO>Excel>Name Sheets

1. Right-click the sheet tab, and then click **Rename**.



2. Type a brief, unique name that is descriptive of the sheet contents.<sup>7</sup>

In training name your sheets in the following ways:

- **Sheet 1 = 2012 Sales**
- **Sheet 2 = Variance**
- **Sheet 3 = 2013 Projected Sales**

## Accessibility Checker

The Accessibility Checker helps find and fix issues that can make it difficult for people with disabilities to read or interact with a workbook.

### To use the accessibility checker:

Training>CAMMO>Excel>Accessibility Checker

1. Click the **File** tab.
2. Click **Check for Issues**.
3. Click **Check Accessibility**.
4. Errors and warnings will appear in a task pane. You can then review the issues and see which ones need to be fixed.

The Accessibility Checker checks a file against a set of possible issues that people who have disabilities might experience in the file. Each issue is classified as an Error, Warning, or Tip.

- **Error:** An error is for content that makes a file very difficult or impossible for people with disabilities to understand.
- **Warning:** A warning is for content that in most, but not all, cases makes a file difficult for people with disabilities to understand.
- **Tip:** A tip is for content that people with disabilities can understand, but that might be better organized or presented in a way that would improve their experience.

## Creating Accessible PowerPoint Presentations

PowerPoint is a professional presentation tool. Many PowerPoint presentations use a graphical approach that present content in the form of slideshows, which are often accompanied by the oral delivery of the topic. PowerPoint presentations are often made available for students to go through on their own outside of the classroom.

### Ensure that all slides have unique titles

Slide titles are used for navigation and selection by people who are not able to view the slide.

### To add visible titles to your slides, do the following:

Training>CAMMO>PowerPoint>Slide Title

1. On the **Home** tab, in the **Slides** group, click **Reset** to restore slide placeholders for the selected slide.
2. Type a unique name in the **Title** text box.

In training name your sheets in the following ways:

- Slide 1 = CAMMO Training ■ Intro Slide
- Slide 2 = Objectives
- Slide 3 = What is a Disability
- Slide 4 = Screen Readers

### If you do not want the title to be visible on your slide, do the following:

1. On the **Home** tab, in the **Drawing** group, click the **Arrange** menu.
2. Click **Selection Pane**.
3. Click the eye icon next to the text box to toggle its visibility.

### Logical order of material within slides

People who cannot view the slide will hear slide text, shapes, and content read back in a specific order. If objects are not part of the slide template, it is important that they will be read by a screen reader in the order intended.

### To check the order that your slide content will be read back, do the following:

Training>CAMMO>PowerPoint>Slide Order

1. On the **Home** tab, in the **Drawing** group, click **Arrange**, and then choose **Selection Pane**.
2. The **Selection Pane** lists the objects on the slide. Objects will be read back beginning with the bottom list item and ending with the top list item. Correct any out-of-order items using the **Re-order** arrows at the top of the pane or by dragging and dropping them into the correct order.<sup>8</sup>

*Put slide 4 in the correct order.*

## Providing Alt-Text

Alternative text, also known as alt text, appears when the pointer is moved over a picture or object. Alt text is also read to a user who is using a screen reader to educate them on what the image, object, or table contains.

Alt text should be included for the following in your document:

- Pictures  SmartArt
- Clip Art  Groups
- Charts  Embedded Objects
- Tables  Ink (handwriting)
- Shapes  Video and audio files

Alt text should be accurate and descriptive, but it does not need to include the type of object (image, chart, table, etc.). The screen reader will convey this.

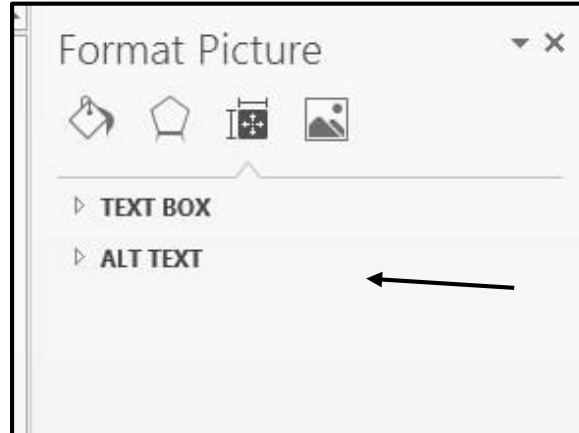
**Tip:** Use clear, but concise, descriptions. For example, “a red Ferrari” tells the reader more about the image than “a car” does.

### Add alt text:

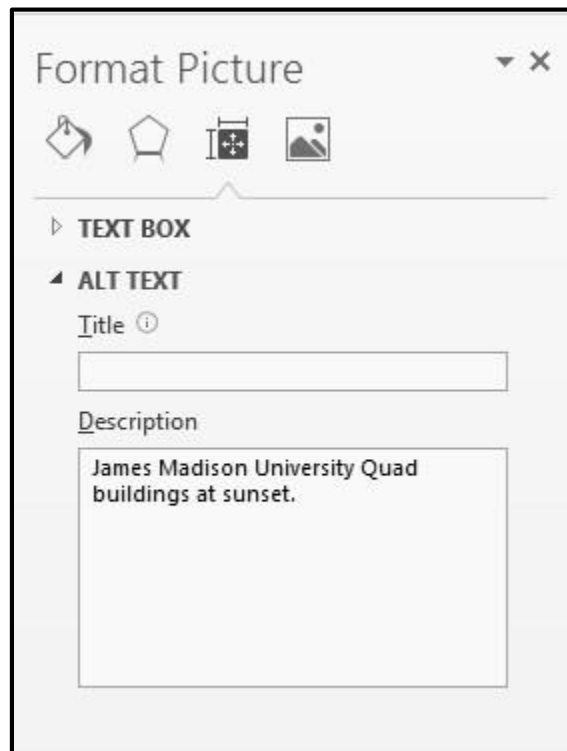
1. Right click the image or object, and then click **Format**.

**Note:** For tables, click **Table Properties**.

2. Select the **Layout & Properties** icon.



3. Enter a description into the Description text box.



4. Click **Close**.

## Additional Information

- Audio can be recorded on a PowerPoint presentation, which may be helpful if the PowerPoint will be accessible online.
- When presenting a PowerPoint, it is important to verbally highlight the important content of the slides. Do not rely solely on the slides to convey the message.
- Avoid putting information in the slide notes field as it is not viewable to a screen reader in many formats including a PDF.

## Accessibility Checker

The Accessibility Checker helps find and fix issues that can make it difficult for people with disabilities to read or interact with a workbook.

### To use the accessibility checker:

Training>CAMMO>PowerPoint>Accessibility Checker

1. Click the **File** tab.
2. Click **Check for Issues**.
3. Click **Check Accessibility**.
4. Errors and warnings will appear in a task pane. You can then review the issues and see which ones need to be fixed.

The Accessibility Checker checks a file against a set of possible issues that people who have disabilities might experience in the file. Each issue is classified as an Error, Warning, or Tip.

- **Error:** An error is for content that makes a file very difficult or impossible for people with disabilities to understand.
- **Warning:** A warning is for content that in most, but not all, cases makes a file difficult for people with disabilities to understand.
- **Tip:** A tip is for content that people with disabilities can understand, but that might be better organized or presented in a way that would improve their experience.



## Creating Accessible Emails in Outlook

One of the unknowns about email is that we never know where they may eventually end up. Therefore, we want to be sure that our emails can be read by anyone, including people with disabilities. Here are some suggestions for making emails readable by the largest possible audience:

### Fonts and Colors

- Always choose a font that is easy to read.
- Use a minimum font size of 12-point.
- Simple black and white emails are sufficient for most email conversations, though some people prefer to send replies in a different color text. Choose a font color that will provide a good contrast, such as dark blue or dark green.
- Avoid using shaded boxes as a background. If you use shaded boxes, be sure that they provide enough contrast to the font color.

### Plain text vs. HTML?

Emails can be written in plain text, rich text, or HTML. This selection is made in the **Format Text** tab.

**Plain text** email will suffice for most small, routine correspondence. The advantages of plain text are that it can be read by any email program, is compatible with all email systems, uses the least amount of processing power and storage space, and is compatible with all assistive technologies. Limitations of plain text are that they do not apply document structure, and the links are limited to full URLs (which are not user-friendly).

**HTML** email is a good choice when you wish to add more formatting and structure to a message. HTML supports semantic headings, images with alternative text, links, and lists. When your emails contain any of these features, HTML is the format to use.<sup>9</sup>

### Which should you use?

There are valid arguments for using both plain text and HTML when sending email. If the email is simple and does not contain images and links, plain text will work fine. However, if an HTML email is created with accessibility in mind, it can be just as good, if not a better, alternative.

### Alt text for images/links

1. Right click the image or object, and then click **Format**.  
**Tables:** right-click on the table and choose **Tables** then choose **Alternative Text**
2. Click **Alt Text**.
3. Type a description of the image or object into the **Title** and **Description** text boxes.
4. Click **Close**.

### Signatures

A regular, text-based signature is recommended in Outlook. Be cautious of the use of colors and difficult-to-read texts such as a hand writing font.

## Closed Captioning

Anytime video is used as part of a class it is recommended that captioning be included. If you require assistance with captioning please contact Office Disability Services.

## YouTube Automatic Captions

Youtube offers an automatic captioning services for their videos. A computer program attempts to decipher what is being said on the video and convert it to text. It is **NOT RECOMMENDED** that you rely on this service. You can upload a script to youtube if you have one or, you can use the automatic captions as a starting point and modify them to make them correct.

## Online Resources

- **Adobe Accessibility Resources** <http://www.adobe.com/accessibility.html>
- **Americans with Disabilities Act website** <http://www.ada.gov/>
- **Apple Accessibility Resources** <http://www.apple.com/accessibility/resources/>
- **IT Training:** <http://www.jmu.edu/computing/ittraining>
- **JMU Web Accessibility Portal:** <http://www.jmu.edu/accessibility>
- **Microsoft Accessibility Resources** <http://www.microsoft.com/enable/>
- **JMU Office of Disability Services:** <http://www.jmu.edu/ods/>
- **Virginia Department for the Blind and Vision Impaired** <http://www.vdbvi.org/>
- **Web Accessibility in Mind Resources** <http://webaim.org/resources/>
- **Web Accessibility Initiative** <http://www.w3.org/WAI/>

Sources used in the material

<sup>1</sup> [http://whqlibdoc.who.int/publications/2011/9789240685215\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf)

<sup>2</sup> <http://invisabledisabilities.org>

<sup>3</sup> <http://webaim.org/techniques/screenreader>

<sup>4</sup>

<http://www.testingcolorvision.com/how-colorblind-people-see.php#sthash.ureeN6kL.dpuf>

<sup>5</sup> <http://www.color-blindness.com/2009/01/06/50-facts-about-color-blindness/> <sup>vi</sup>

<http://office.microsoft.com/en-us/word-help/create-accessible-pdfs-HA102478227.aspx>

<sup>7</sup> <http://office.microsoft.com/en-us/excel-help/creating-accessible-excel-workbooks-HA102013545.aspx>

<sup>8</sup> <http://office.microsoft.com/en-us/powerpoint-help/creating-accessible-powerpoint-presentationsHA102013555.aspx>

<sup>9</sup> <http://governor.state.tx.us/files/disabilities/accessdocs/20-Email.pdf>