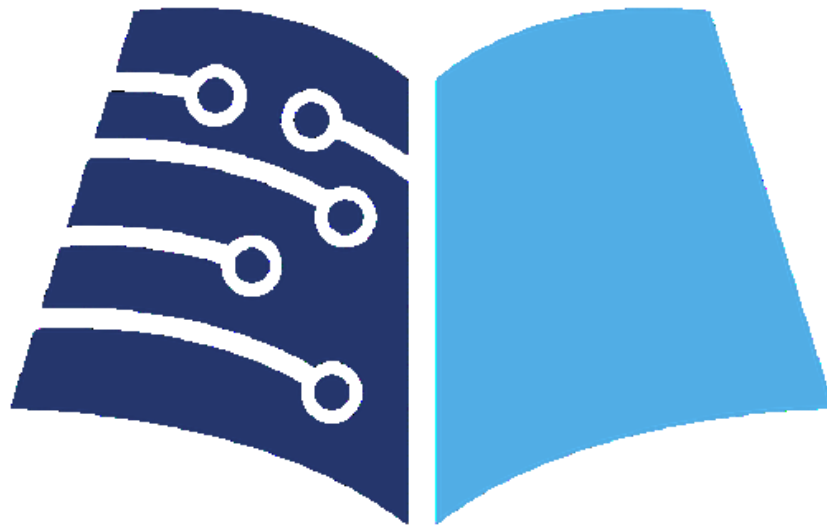




DIGITABILITY

Promoting people with disabilities' employment by enhancing their digital skills and competencies to support a remote working scheme.

Creating Content

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1 Introduction

In completing this Topic You will learn how to make use of the accessibility features in various Office tools (open source and proprietary) and how to create accessible files. Topic is for people with Visual Impairments.

1.1 The Learning Objectives Covered by the Topic

In completing this topic, the learner will be able to:

- Use Office tools to create and access accessible content.
- Use the accessibility features of MAC OS and use them to create content.
- Know some examples of resources for the preparation of accessible educational materials, based on the reference guide.
- Apply theoretical knowledge in practical exercises.
- Test theoretical knowledge and practical skills with tests.

2 MS Office

2.1 Summary of the Sub Subtopic and the Learning Objectives Covered

By the end of the unit, you will have learned:

- To create accessible documents in Word, PowerPoint and Excel.
- To incorporate the latest updates in Microsoft Office accessibility
- To review the accessibility of the generated documents and solve problems.

The contents of the unit are presented:

- Accessibility in Word.
- Accessibility in PowerPoint.
- Accessibility in Excel.
- Accessibility in Paint.
- How to write alternative texts, or make images accessible.

-Other tools that will be useful to know: Accessible Templates, How to run the Microsoft Accessibility Checker.

2.2 Accessibility for People with Visual Impairments

2.2.1 Accessibility in MS Word

Some of the most relevant aspects to take into account to create accessible documents in Word are the following.

Language. The first thing to consider is the language of the text to be included in the document. This practice benefits immersive readers for improving the pronunciation of the text. In addition, the software used will be allowed the function of automatic spelling correction. To indicate the language of the text, you must select or click on the location of the text and go to the top menu and click on "Review". Then, in the "Language" block, select "Set correction language". More information: Check spelling and grammar in another language with Microsoft Word

Typography. List of the most suitable: Sans Serif: Calibri, Century Gothic, Tahoma, Verdana (excluding Arial and Helvetica because they pose differentiation problems between the "i", the "l" and the number 1). These font families are recommended for screen reading (due to the different qualities and definition of the screens).

-Serif: Times New Roman, Georgia. These font families are recommended for reading on paper.

-Slab serif: Arvo, Slab Museum, Rockwell. These font families are recommended when creating section titles.

However, if you want to choose another type of typography, it is recommended to follow the following guidelines.

Other aspects of consideration regarding the type of letter chosen:

- Prominent ascending and descending lines (for example, in the case of ascenders, the vertical line of the letter "d" and in the case of descenders, the vertical line of the letter "y").
- The combination of letters d/b and p/q must not be a mirror of each other. • The capital letter "i", lower case "l" and the number 1 must be clearly distinguishable.
- The space between letters cannot be very narrow.

- The “Kerning” (defined as the raised part that has the shape of the letter) is important since letters like “r” and “n”, in words like “modern” could be changed to “modem”.
- Regarding the size of the font, it is recommended that at least it have a minimum size of 12px, although it will depend on the type of font chosen, becoming recommended, in some situations, a size of 14px. the size of the font should not suffer multiple variations throughout the content of a document.
- The use of design variations such as italics, bold or capital letters should be limited, since they negatively influence reading. The inclination of the letters in italics makes it difficult to read, the thickness of the text must be normal or 5 semi-bold (better than bold) and the use of capital letters must be reduced at the beginning of words such as names, beginning of paragraph or titles.
- Regarding the alignment of the texts, justified text makes reading difficult because spaces are generated between words so that the lines are aligned on the edges. These spaces interrupt reading and can even cause unintentional line breaks. Therefore, it is recommended to align the texts on the left edge of the document. In general, it is considered that the optimal number of characters per line should be between 45 and 75 and allow justification in the event that there are at least 50 characters per line to be readable.

Colour and contrast. In the case of people with colorblindness, reduced vision or even total loss of vision, the choice of text colour is very important for the accessibility of the document. The colour of the background on which the content is written should be taken into account. For example, writing on this document in a light grey would not look as good as if you choose a darker grey. In addition, it must be taken into account that the document can be read on different screens with different levels of light, therefore, it must be noted that a good contrast will avoid visualisation problems. You can check the contrast ratio of text colours online from Contrast Checker or by downloading Colour Contrast Analyser 6

Cover and headers. When including a cover page in your document, keep in mind that the main templates offered by Word are not fully accessible. However, you can find other templates that are. Entering from Get accessible templates or directly from Collection of accessible Office templates you can get templates for the different Office 365 applications. Within Word, in the top menu, in the "Insert" tab, go to "Cover" and select a cover among all those offered by Word. We must bear in mind that not all covers are fully accessible and when fixing those accessibility

problems, the distribution of our cover may be misplaced. For this, simple tables are used, although it is not recommended because the true function of a table is to collect data. However, by using the tables, it will allow us to maintain the layout of our cover. It must be taken into account that the tables must be as simple as possible so that an immersive reader can read them without difficulty. For example, if the "Ion (clear)" template is chosen and its accessibility is checked, objects not aligned to the text will appear as a warning. If you want to keep the cover structure, one of the easiest ways is to include the objects inside a table from which different cell sizes can be given. Before moving the objects within their respective table cells, they must be brought "in line with the text". To do this, by selecting the object to be aligned, the "Design options" option appears, in which "In line with the text" should be marked. When performed on the two objects on this cover, you can see that both have been placed on the left margin of the document, one after the other. Next, a two-row, two-column table is inserted into which both objects must be entered. Subsequently, the objects are placed inside the table. To hide the table, place the pointer over one of the borders and, clicking on the right button, select the "Borders" option and then the "No borders" option. In this way, the errors of the objects disappear, but there will be two new accessibility errors of the table indicating that alternative text is missing and defining the header row. This will be explained in the "Tables" point.

Regarding the headers and footers, the same procedure must be followed as when inserting a table when you want to add images or text in a custom location. It must be taken into account that the table that we include must be as simple as possible and that it can be read in order.

Glossary. A glossary makes it easier for people with some difficulty understanding the text (people who are deaf or people with cognitive impairment) or anyone unfamiliar with the subject. It is recommended to add a glossary of terms to the document and structure it in list format where you must indicate all the words that may entail a certain difficulty.

Boards. If you want to insert a table in the document, you must take into account the possibility that it will be read by a screen reader or by the "immersive reader" mode offered by Word. First of all, the tables are read by rows, so it is necessary to take into account the placement of the cells common to a subject, by columns. Once the table has been created, its ease of navigation must be checked, as previously mentioned. You have to place the pointer in the first cell and go tabulating (TAB key) through the table. It must be verified that the cells follow a reading order from left to right and from top to bottom and that there are no jumps due to vertically merged

cells or multiple cells within the same cell. In the case of having a cell divided into several sections in a row, both cells must be selected and with a right click of the mouse select the option “combine cells” to facilitate reading for the screen reader. The first row of the table should be the header. One way to do this would be to select the header row and in the top menu, go to the “Layout” tab. Once inside, go to the “Data” section and select “Repeat title rows. Another way to do it would be to select the entire row and right-click on it, select the “Table Properties” option. Once inside “Table properties”, go to the “Row” tab and, in the options that are displayed, uncheck “Allow dividing rows between pages” and check the option “Repeat as header row on each page”. Next, you have to go to the “Alternative Text” tab and include a title and description about the data that the table includes.

Images. An image is usually the most visual means of explaining a concept. When including images in a document, it must be taken into account that there are people who cannot see the images and need the help of support products that describe them. In order for them to do so, you must enter a title and descriptive text for each of the images added. Alternative text should be able to replace the function that the image performs within the content. That is, the reader of the document must be able to understand the context of the image, listening to that text instead of seeing the image. Once an image is inserted in the document, you have to right click on it and click on the option “Edit alternative text”. Word will open a right panel called “Alternative Text” where you must include some text that describes the image for a blind person. It must be taken into account that, for a person with visual difficulties, a title and a description according to what is shown in the image will be of great help.

Hyperlinks. When including links or hyperlinks in the document, it must be taken into account that they are well defined and clearly specify the destination to which it leads. When faced with a URL such as <https://www.COCEMFE.es>, the difficulty that a screen reader has because it is a short link may not be appreciated. However, if the URL is long, occupying several lines of the document, the screen reader will read the letters or words that make up the link one by one, complicating the comprehension of its reading. To create a hyperlink correctly, a descriptive text of the hyperlink must be generated. Once the text is created, select it and right click on it and select the “Link” option. At the top of the window that appears, there is the “Text” box with the full URL. Next, you select the URL and type a title that specifies the web address to which the hyperlink leads.

Mathematical formulas. In the event that mathematical formulas need to be included in the document, they should not be included as an image but as mathematical text. Most text editors allow you to include mathematical content. To add a formula using Microsoft Word, go to the top menu and click on "Insert". In the blocks, click on the "Equation" block and indicate the type of mathematical equation that you want to insert.

Accessibility check. If you want to check if the structure of the document meets the minimum requirements for it to be accessible, you can use the Office 365 Word tool. To check the accessibility of the document, the "Review" tab appears in the top menu of Word. Among the blocks that appear, select "Check accessibility". This option generates a block, to the right of the document, with the list of accessibility problems in the document structure. If a problem appears in the results, click on it. The reason for the error and how to solve it is explained at the bottom of the results.

NOTE: It is recommended to keep the option "Keep the accessibility checker running while I work" active to check the accessibility of the document as it is generated.

Transfer the document to pdf. Once the Word document is finalised and the accessibility errors in the document structure checked, it can be converted to PDF format. To do this, from Word, access "File" and in the left menu, on "Save as". Next, you must select the location where you want to save the document in PDF format. Once the location has been selected, if we click on "More options", a pop-up window will appear, in which the following information will be filled in:

- File name: Name of the PDF file (it is not necessary to include the .pdf extension).
- Type: Select "PDF (*.pdf)".
- Authors: Include the authors of the document.
- Tags: Add keywords related to the content of the document, separated by semicolons ";".
- Title: Write the title of the document (it can be different from the name of the file).

In the "Options" button, check that the boxes "Document structure tags for accessibility" and "Create bookmarks using: Titles" are checked. Filling in this series of data favours the indexing of the document, either at the level of a personal computer or for the Internet. The rest of the

options can be left as they appear by default. Once all the data has been filled in, you must click on the "Save" button to generate the document in PDF format.

NOTE: If you use the Adobe Acrobat program, it is recommended to check the accessibility of the document to correct errors during conversion to PDF format

2.2.2 Accessibility in MS Excel

In addition to different more specific requirements, there are general recommendations that must be taken into account when generating textual content:

- To facilitate the understanding of the text, write in clear and simple language, and even include a glossary in the document.
- Do not use serif fonts. Within the sans-serif fonts, the use of "Verdana" is recommended and not "Arial", since the latter does not distinguish between the uppercase Latin i and the lowercase "el". Make sure that the font size is 12 or higher.
- Provide the expanded form or meaning of an abbreviation or acronym the first time it appears in the document.
- The primary language of the document must be specified.
- Provide alternative text for all non-text elements (for example, in graphics and images)
- Apply sufficient contrast (at least 4.5:1) between foreground and background colour combinations in text, in images of text, and also in any information-bearing or functional graphic, such as a button graphic.
- Clearly specify the destination of the links and that they are not too small in size that present difficulties when clicking on them.
 - Use and apply cell styles for different types of text instead of selecting the text and modifying it directly.
 - It is preferable to apply the predefined styles that Excel defines instead of styles created by us. This makes it easier to understand similar content.
- Use of styles consistently, that is, apply the same styles for the same uses within the document, for example, in the case of headings.

- Do not merge or split cells. This practice makes it difficult for supporting products to interpret the cell structure.
- Try not to use floating elements because, in general, they hinder access to their content, generating accessibility problems.
- Do not use colour as the only means of transmitting information. For example, to transmit the increase or decrease of a variable, we do not use only the colour to show it but, in addition to the colour, we add an alternative that can be "textualised", for example, adding the symbol (-) in negative cases or with an icon with its corresponding text alternative.

2.2.3 Accessibility in MS PowerPoint

In addition to different requirements that should be known in more detail, there are general recommendations that must be taken into account when generating textual content:

- To facilitate the understanding of the text, write in clear and simple language, and even include a glossary in the document.
- Do not use serif fonts. Within the sans-serif fonts, the use of "Verdana" is recommended and not "Arial", since the latter does not distinguish between the uppercase Latin i and the lowercase "el". Make sure that the font size is 18 or higher.
- Provide the expanded form or meaning of an abbreviation or acronym the first time it appears in the document.
- The primary language of the document must be specified.
- Provide alternative text for all non-text elements (for example, in graphics and images)
- Apply sufficient contrast (at least 4.5:1) between foreground and background colour combinations in text, in images of text, and also in any information-bearing or functional graphic, such as a button graphic.
- Clearly specify the destination of the links and that they are not too small in size that present difficulties when clicking on them.
- Use of styles consistently, that is, apply the same styles for the same uses within the document, for example, in the case of headings.

- Try not to use floating elements because, in general, they hinder access to their content, generating accessibility problems.
- It is recommended to use a predefined design in order to ensure the correct reading order of all the support elements that we use.
- Do not use colour as the only means of transmitting information. For example, in titles it is recommended to use bold or a larger font size; in the links you can add an underline; in graphics use textures instead of colours.
- Avoid using the colours red, orange and green.
- It is recommended to use a font with a minimum size of 22 points.
- It is recommended to include a title on each slide, even if it is not visible

2.2.4 Accessibility in MS Paint

Microsoft Paint is already fully functional with mouse and multi-touch tablet input, but customers will now be able to use the app to draw with only their keyboard.

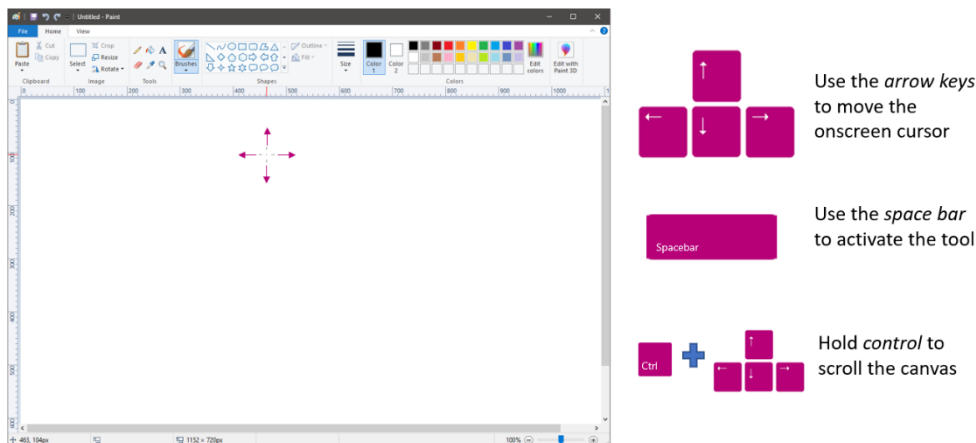


Figure 2-1 Screenshot of the MS Paint window with the accessibility via keyboard 1

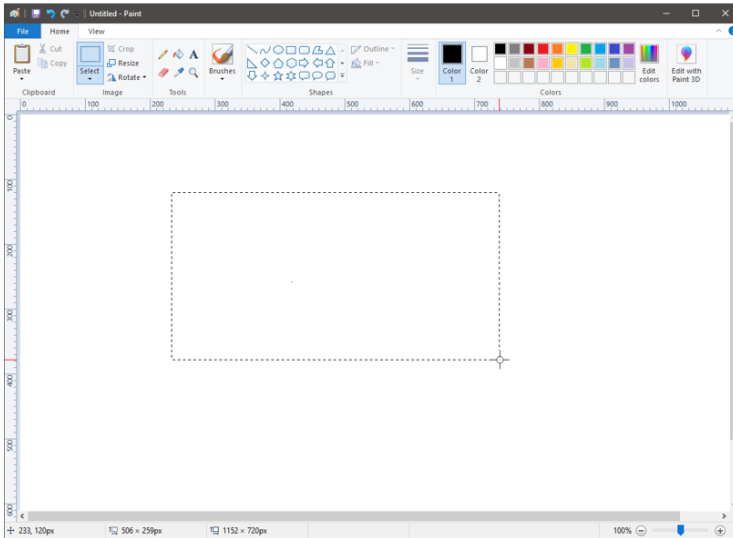
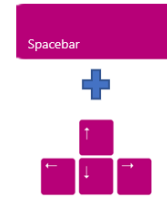
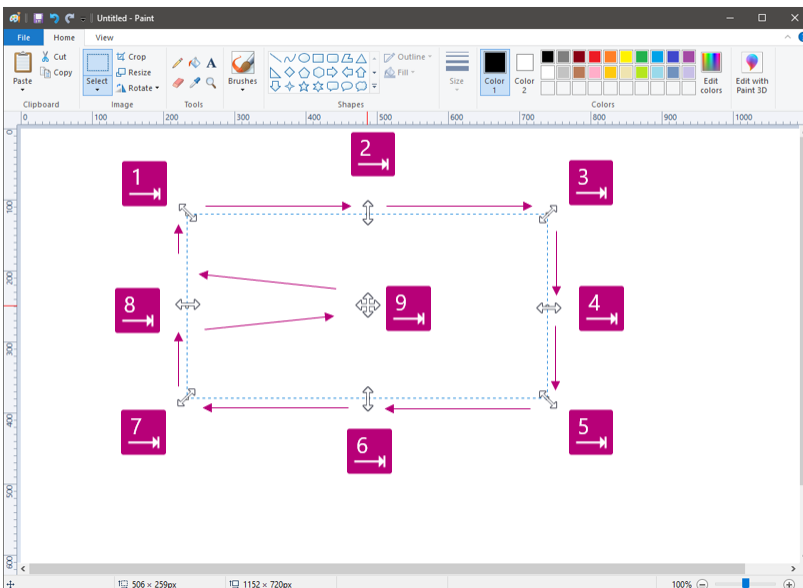


Figure 2-2 Screenshot of the MS Paint window with the accessibility via keyboard space bar



Hold *space bar* and move the cursor to select a part of the canvas



When a selection is made...



Cycle through 9 control points using the *tab* key

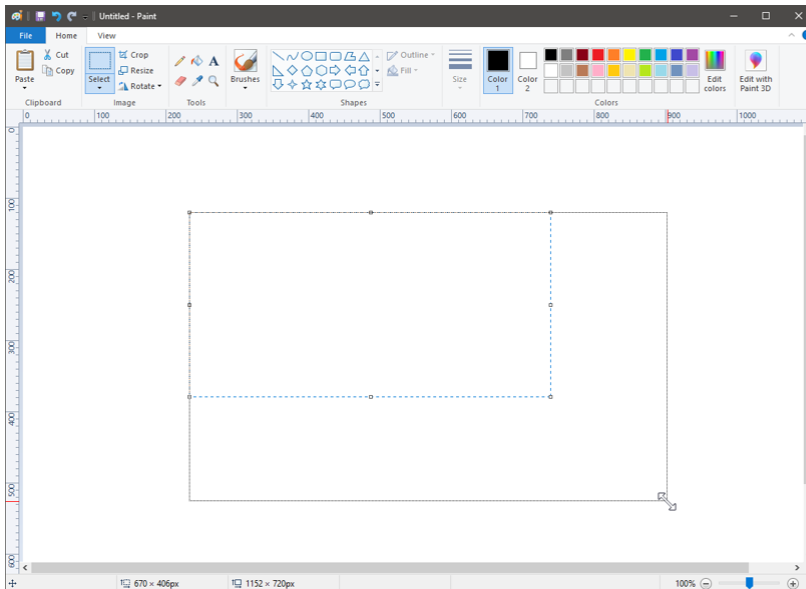


Cycle in counter clockwise order by holding *shift*



Use the *arrow keys* to modify the control point

Figure 2-3 Screenshot of the MS Paint window with the accessibility via keyboard with selected canvas 1



When manipulating a selection...

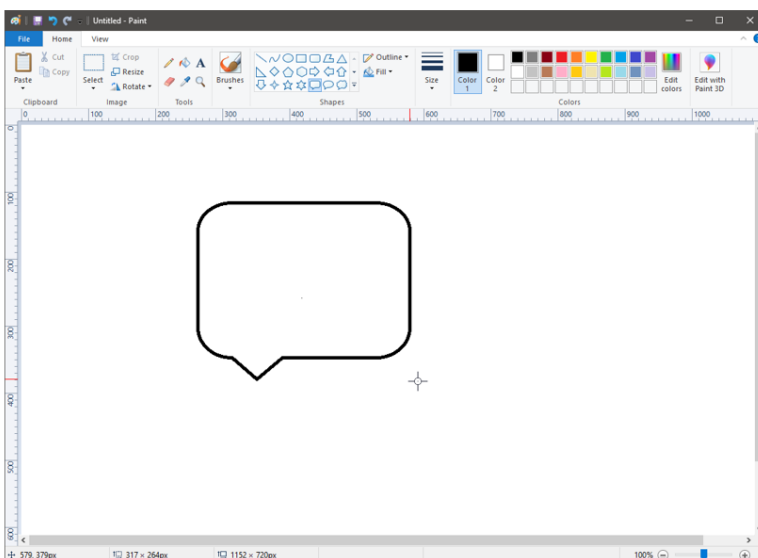


Commit the operation by holding *control* and *space bar* keys

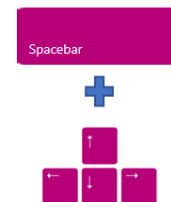


Cancel an operation by pressing the *escape* key

Figure 2-4 Screenshot of the MS Paint window with the accessibility via keyboard with selected canvas 2

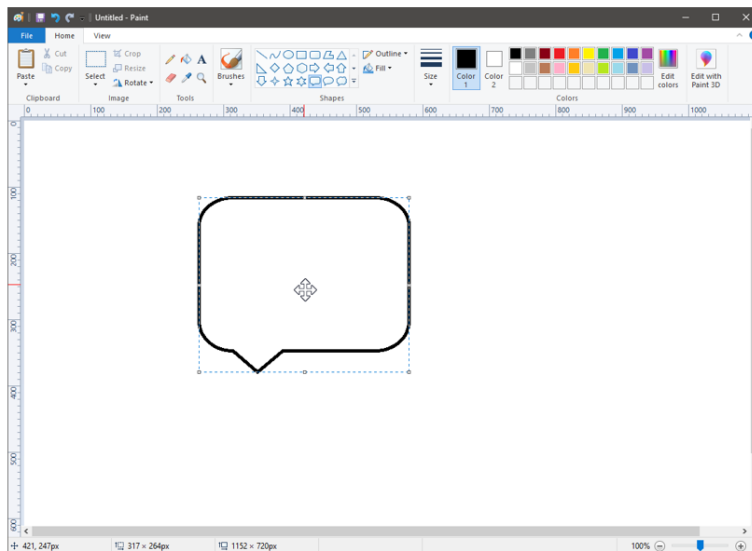


Shape controls behave in the same way as selection controls



Hold *space bar* and move the cursor to select a part of the canvas

Figure 2-5 Screenshot of the MS Paint window with the accessibility via keyboard with shape controls



A selection area will appear after the user releases the *space* key...

All keyboard shortcuts of a selection can now be used. However, note...

Ctrl + Space Places the shape on the screen directly (any control point)

Esc Cancels the operation and erases the shape

Figure 2-6 Screenshot of the MS Paint window with the accessibility via keyboard 2

Along with full keyboard input support, we have made improvements to the way Paint interacts with screen readers, like Windows Narrator, which some users might find improves their overall experience with the app.

2.2.5 Write Effective Alternative Texts

Alternative text (Alt Text) is a textual description of a **visual** in a document or website that helps users of screen readers understand the content of the images. When using a screen reader to view the document or save it to a file format, such as HTML or DAISY (Digital Accessible Information System), alt text appears when you move the pointer over an image in most browsers.

Here we explain how to add alt text in Word, Excel, and PowerPoint to a shape, picture, chart, table, SmartArt graphic, or other object, and show how to make the Alt Text command always available.

You can add the Alt Text command to the Quick Access Toolbar to create a shortcut to it.

STEP 1 In the upper left corner, above the ribbon, click Customise Quick Access Toolbar.

STEP 2 Click More Commands.

STEP 3 Click Commands Not on the Ribbon.

STEP 4 Click Alt Text, then Add.

To use the Alt Text command on the Quick Access Toolbar, before clicking the toolbar button, select the shape, picture, chart, table, SmartArt graphic, or other object, and add alt text.

How to make it really effective?

- Alternative text should be easy to read and understand so that people using reading software can continue with the rest of the message. Try not to be more than one or two sentences.
- Correct punctuation. Because screen readers use punctuation to know where to pause when reading content, it's important to use proper punctuation in alt text.
- Do not use quotes. The ALT attribute added to the raw HTML uses quotation marks to identify where the campaign alt text begins and ends. If more quotes are entered, this could cause errors.
- Repeat the text that appears in the images. It is always better to keep important information in the main text of a message than in an image. However, if an image includes text, repeat that information in the alt text so that people using reading software don't miss it.
- Do not repeat the same image caption. Image captions are read by screen readers and are displayed even when images are locked. That is why it is not convenient to repeat them in the alternative text. Alternative text should provide different information than the image caption.
- Take context into account. Context is the most important thing when it comes to writing alt text for an image. What is the relationship between the image and the content that surrounds it? Ask yourself what information people using reading software will be able to extract from the content around the image.
- Identify decorative images. If an image is purely decorative, briefly indicate this in the alt text so people using reading software can jump right into the rest of the message. For example, writing "Decorative image" is enough.
- Content test. When you're done with your document, test that all the elements you've added alt text to display it correctly. You can use the text reading tool of the Adobe reader program for this.

2.2.6 Other Useful Tools and Knowledge

Checking accessibility in Office apps is very simple if you follow these instructions: [Check accessibility while you work in Office apps - Microsoft Support](#)

There are also accessible templates for Office, which you can get here: [Get accessible templates for Office - Microsoft Support](#)

Screen reader support for Word: [Screen reader support for Word - Microsoft Support](#)

Use Immersive Reader in Word desktop video training: [Use Immersive Reader in Word - Microsoft Support](#)

Use a screen reader to save a document in Word: [Use a screen reader to save a document in Word - Microsoft Support](#)

Finally, in this link you can see how to run the Microsoft Accessibility Checker: [Improve accessibility with the Accessibility Checker - Microsoft Support](#)

2.2.7 Exercises using a screen reader with MS Word

Task 1

Please, correct the editing and make the content accessible.

Grades

Grades will be assigned on a ten-point scale (90 to 100 is an A, 80 to 89 is a B, etc.). Homework, exams, and projects will be weighted as follows:

Homework	Exams			Projects		
	1	2	Final	1	2	Final
15%	15%	15%	20%	10%	10%	15%

Welcome to the course!



Task 2

Please turn on the screen reader on your computer NVDA press ctrl+alt+n or find it in the start menu, jaws press ctrl+alt+j or find it in the start menu.

Task 3

Basic tasks using a screen reader with Word: https://support.microsoft.com/en-us/office/basic-tasks-using-a-screen-reader-with-word-3e47346a-7876-450e-bcbf-0a4fe6576981#bkmk_openwordwin

This task is for people with visual or cognitive impairments who use a screen reader program such as Windows Narrator, JAWS, or NVDA with Microsoft 365 products.

Task 4

Basic tasks to create a presentation in PowerPoint with a screen reader:

<https://support.microsoft.com/en-us/office/basic-tasks-to-create-a-presentation-in-powerpoint-with-a-screen-reader-1ada02d7-2f1c-496e-92fd-6a811547a7c3>

Task 5

Basic tasks using a screen reader with Excel: <https://support.microsoft.com/en-us/office/basic-tasks-using-a-screen-reader-with-excel-6b275296-a377-4608-af7b-1571e2924a7c>

2.2.8 Resources

1. Accessibility in Word: [Make your Word documents accessible to people with disabilities - Microsoft Support](#)
2. Accessibility in PowerPoint: [Make your PowerPoint presentations accessible to people with disabilities - Microsoft Support](#)
3. Accessibility in Excel: [Accessibility best practices with Excel spreadsheets - Microsoft Support](#)
4. Write effective alternative texts: [Everything you need to know to write effective alt text - Microsoft Support](#)
5. Create accessible PDFs: [Create accessible PDFs - Microsoft Support](#)

6. Video: Check the accessibility of your document: [Video: Check the accessibility of your document - Microsoft Support](#)
7. Excel video training: [Excel video training - Microsoft Support](#)
8. PowerPoint for Windows video training: [PowerPoint for Windows training - Microsoft Support](#)
9. Create slides with an accessible reading order video training: [Video: Create slides with an accessible reading order - Microsoft Support](#)

2.3 Brief repository of online tools for the development of accessible materials

Logo	Link
	European standards to facilitate reading and understanding European standards for making information easy to read and understand – Easy-to-Read
	This page allows you to translate a Word document to speech (audio) Convert a File - RoboBraille
	To go from speech to text on the computer TalkTyper - Speech Recognition in a Browser
	PowerTalk 1.2.14 is speech-enabled software for PowerPoint presentations; it's free and automatically speaks any presentation or slideshow. It runs in Microsoft PowerPoint for Windows. PREVENIR LA CEGUERA
	Virtual keyboard robotica.udl.cat

Logo	Link
	Automatic video captioning Subly: Accessibility, Subtitles, Captions (CC), Translation, Audio Description & Transcription (getsubly.com)
	Catalog of ICT solutions for students with NEAE Catalogue of ICT Solutions for students with SESN (ticne.es)
	How to generate information accessible to all people Making information accessible for all European Blind Union (euroblind.org)
	Accessibility by disability: Find products and tools based on your needs: Accessibility help & learning (microsoft.com)

3 LibreOffice Accessibility

3.1 The Learning Objectives Covered by Module

In completing this Module, the learner will be able to:

- Use Libreoffice tools to create and access accessible content.

3.2 Summary of the Sub Subtopic and the Learning Objectives Covered

In Unit #1, you are expected to learn about LibreOffice accessibility options, assistive technologies, how to create accessible files and how to check their accessibility.

In completing this unit, the learner will be able to:

- Use and adjust keyboard shortcuts;
- Use and adjust colours and fonts;
- Learn about supporting assistive technologies;
- Create accessible documents;
- Use documents accessibility checker.

3.3 About LibreOffice

LibreOffice is community-driven and developed software, and is a project of the not-for-profit organisation. LibreOffice is free and open source software.

3.4 Accessibility for People with Visual Impairments

3.4.1 Keyboard Navigation

Keyboard navigation and control is useful for people who cannot see the mouse pointer on the screen or who cannot physically control a mouse on the desk, so a mouse is not very useful.

Full keyboard navigation gives the users the ability to perform all input via a keyboard, without using a mouse or other pointing device.

The features that most notably enhance accessibility include:

- Comprehensive definitions of keyboard shortcuts in the different applications;
- Full keyboard access to toolbars;

- Keyboard-enabled switching between document windows, menus, toolbars, modeless dialogs and floating windows;
- Enhanced keyboard navigation in text documents and online help to navigate and activate hyperlinks;
- Menu and toolbar items for accessing functions which were only accessible via mouse device;
- Disabled menu items are displayed by default;
- You can access help tips via keyboard;
- You can set the duration for the display of help tips;
- Keyboard access for Drawing Objects:
 - Drawing objects can be inserted via toolbar with default position and size;
 - Each handle of a drawing object can be selected and controlled via keyboard separately, so even polygon manipulation is possible;
- Particular attention has been given to accessibility in dialog boxes, including:
 - the toolbar customization dialog;
 - extensive CSV import control for spreadsheets.

3.4.1.1 Exercise – Common navigation without a mouse in the LibreOffice

1. Open every item in LibreOffice's main menu using the **Alt** key followed by a trigger letter in the menu's name. You don't see these trigger letters by default, but they appear when you press the **Alt** key.
 - a. Open the **File** menu, press and hold **ALT+F**. To open the **Format** menu, press and hold **ALT+O**. Once the menu is open, you may release the keys.
 - b. After you open a menu, each item in that menu has a trigger letter, or you can use the **Arrow** keys on your keyboard to navigate to the item and press **Enter**.
 - c. Close a menu without doing anything, press the **Esc** key.
2. Change the font by selecting text and then opening the Format menu and selecting Character to open the Character dialog. You can navigate this dialog using the Tab, Arrows, and Enter keys.
3. Access LibreOffice documentation by pressing **Alt+H** or **F1** from the keyboard.
4. Customise how to interact with LibreOffice by setting your own keyboard shortcuts.
 - a. Go to the **Tools** menu and select **Customise** (or just press **Alt+T** followed by **C**.)

- b. Select the **Keyboard** tab by pressing the **Arrow** key as necessary or click it with the mouse (if you're still using the mouse.).

3.4.1.2 Exercise – Navigation without a mouse in the Writer

1. Try some Writer shortcut keys:
 - c. **F2**: Formula bar
 - d. **Ctrl+F2**: Insert fields
 - e. **F3**: Auto text
 - f. **F5**: Navigator on/off
 - g. **Shift+F5**: Moves the cursor to its position when you last saved the document
 - h. **Ctrl+Shift+F5**: Navigator on, **Go to Page**
 - i. **F7**: **Spelling**
 - j. **F8**: **Thesaurus**

3.4.1.3 Exercise – Navigation without a mouse in the Calc

1. Try some shortcut keys for Calc:
 - a. **Ctrl+Home**: Returns you to cell A1
 - b. **Ctrl+End**: Moves you to the last cell that contains data
 - c. **Home**: Moves the cursor to the first cell in the current row
 - d. **End**: Moves the cursor to the last cell in the current row
 - e. **Shift+Home**: Selects cells from the current cell to the first cell of the current row

3.4.2 Colours and Fonts adjustment

LibreOffice provides many colour and font adjustment possibilities for people with visual impairments. These adjustments are useful for people with cognitive impairments as well.

3.4.2.1 Use of System Colour Schemes, High Contrast

LibreOffice adapts to the colour schemes and contrast display settings of the operating system.

In addition, LibreOffice offers additional settings for colours which are not specified in any system colour schemes, as well as the possibility to overwrite colours from the current colour scheme. You can also create and store your own colour schemes in LibreOffice.

The help system respects the colours from the current colour scheme, but also provides different predefined styles. Users can the formatting of the help content via the XSL transformation file, as well as via the custom style sheet file located in the help directory.

3.4.2.2 Automatic Text Colour

All LibreOffice applications support automatic text colour for documents and use this by default, so the text is always distinguishable from the background colour.

The text will be displayed in the system text colour. If this leads to dark text on a dark background, or bright text on a bright background, the text will switch to black or white (according to whichever provides better contrast).

For reading old or imported documents which use hard-formatted text colours, you can use the option "Use automatic font colour for screen display". All text content as well as table borders and some other elements will be displayed in the automatic font colour.

3.4.2.3 Icons and Bitmaps

LibreOffice has icon sets for small and large toolbar icons in normal and in high contrast mode, so the icons are more easily identifiable in the different modes.

All UI elements displaying a graphic offer an alternative graphic for high contrast mode.

LibreOffice automatically chooses the set of icons and graphics appropriate for the current system settings.

3.4.2.4 High Contrast Mode for Impress and Draw

Impress and Draw offer a high-contrast mode, in which objects are displayed without fill colours or text colours. This mode will automatically be used when high contrast is chosen in the system settings. You can turn off this automatic detection in the LibreOffice options under **Accessibility**.

3.4.2.5 System Font

LibreOffice can use the operating system font for the user interface, so that LibreOffice appears in the same font as your other applications and can be manipulated via the system settings. There is special handling to ensure that dialogs do not become larger than the screen when schemes with large fonts are chosen.

3.4.2.6 Other Legibility Features

- Highlighted toolbar and menu items are easily perceptible;
- There is distinct highlighting of current column and row in spreadsheets;
- You can turn on/off animations for graphics and text.

3.4.2.7 Support for Comfortable Reading of Read-Only Documents

Screen reader users sometimes have difficulty reading read-only documents because they cannot navigate with the cursor through the document. For this, there is the feature "Use text selection cursor in read-only text documents".

3.4.2.8 Exercise – Adjusting LibreOffice Accessibility Settings

1. Adjust accessibility settings.

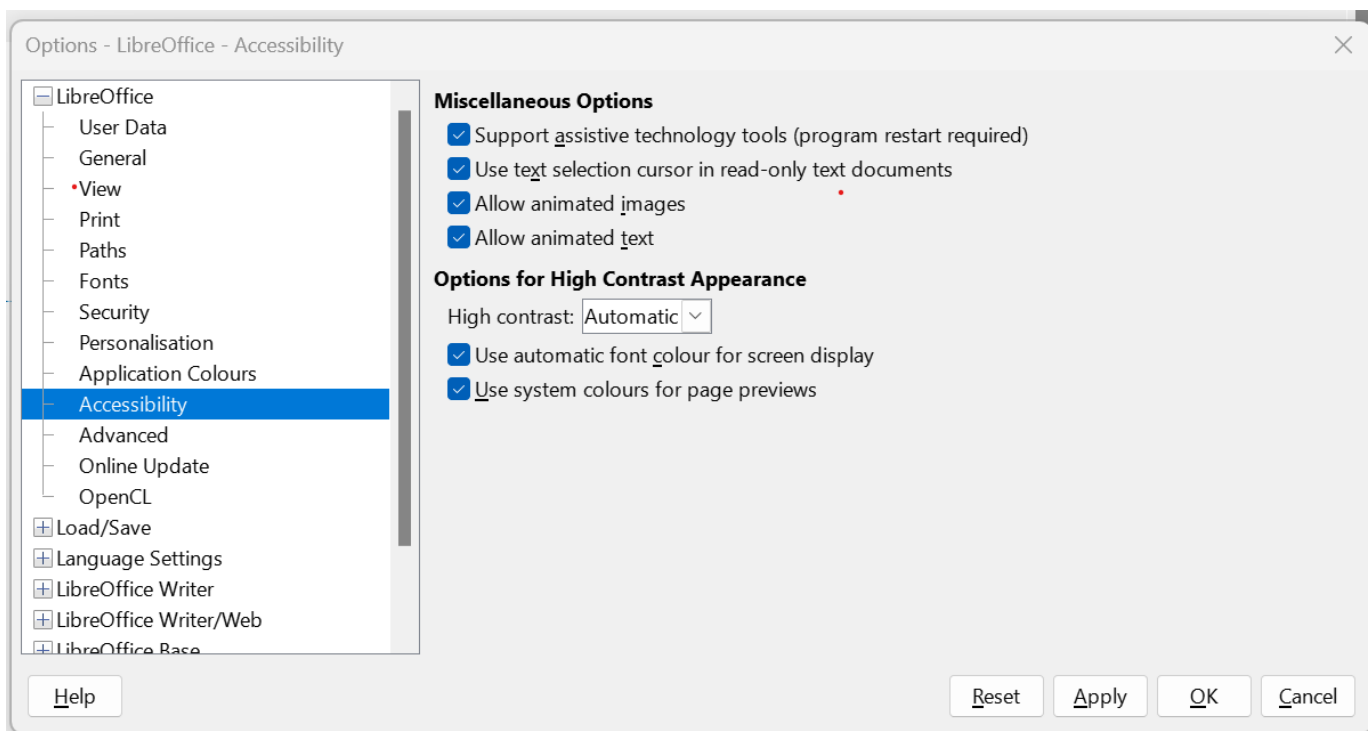


Figure 1. Screenshot of the options window with the accessibility menu.

- a. Go to the **Tools** menu and select **Options**. In the **Options** dialog, expand the **LibreOffice** category in the column on the left and then click **Accessibility**.
- b. Try options:
 - i. **Use text selection cursor in read-only text documents:** This allows screen reader users to move through a read-only document as if you could edit it, limiting what you can actually do to select and copy text.

- ii. **Allow animated images:** Not everyone wants moving images in their documents as they work. You can adjust that here.
- iii. **Allow animated text:** As with images, animated text styles can be fun for some and distracting or confusing to others.
- iv. There are also options for a **high contrast** theme. If you use a high contrast mode on your operating system, LibreOffice automatically detects it and changes its theme to match.

3.4.3 More Accessibility Features

Other features helpful for accessibility are also available:

- **Zoom in or zoom out** in a document;
- Position mouse to default button or center in dialogs;
- **Configuration:**
 - Assign a shortcut key to a command;
 - Show all commands on menus;
 - Change the size of toolbar buttons;
 - menus and toolbars;
 - Display or hide a toolbar;
 - Create a custom toolbar;
- **Task automation:**
 - Correct misspelled words as you type;
 - Quickly set AutoCorrect and Paste options;
 - Add AutoCorrect entries for misspellings and typing errors;
 - Use AutoComplete;
 - Automatically make AutoText entries for frequently-used text.

3.4.4 Assistive Technology

3.4.4.1 API for Supporting Assistive Technologies

Assistive Technology (AT) tools such as screen readers and magnifiers, as well as other tools, connect to LibreOffice using the native accessibility APIs of the corresponding platform (Microsoft Active Accessibility API (MSAA)/IAccessible2 on Windows, AT-SPI2 on GNU/Linux, NSAccessibility on macOS).

LibreOffice UI elements and documents expose all the information about themselves and their contents via those accessibility APIs.

An enormous effort has been made to have UI elements and document contents fully support the accessibility interfaces; for example: providing text with attributes and character bounds information, and sending all the necessary notifications and providing names and descriptions of controls.

Some AT tools send key events to the applications, or simply control the mouse, so it makes no difference for the application if the input comes from a user or from an AT tool.

This way, a lot of AT tools such as simple on-screen keyboards, head mice, eye tracking devices and single switches can be used with LibreOffice.

3.4.4.2 LibreOffice AT support

- Windows, Screen Reader: ZoomText (7.11, 8.12, 9.x); JAWS (6.2, 7.x); NVDA (open source). Available here [NV Access](#)
- Windows, Screen Magnifier: ZoomText (7.11, 8.12, 9.x).
- Windows, On Screen keyboard.
- GNOME, Screen Reader: Orca.
- GNOME, Screen Magnifier: Universal Access ► Zoom.
- GNOME, On Screen keyboard: Universal Access ► Screen Keyboard.
- OS X: VoiceOver.

3.4.4.3 LibreOffice DAISY support

An Extension for exporting ODT to DAISY / DTBOOK is available here: [odt2dtbook LibreOffice Extension](#)

3.4.4.4 AT Support While Giving a Presentation

For making slide shows accessible, people should use the [Presenter Console](#).

3.4.5 How to Create Accessible files

3.4.5.1 Exercise – How to save a tagged PDF

1. Saving a tagged PDF using LibreOffice (PC and Mac).
 - a. Open the original in LibreOffice.

- b. Click **File** from the menu and select **Export as PDF**.
2. In the **PDF Options** dialog box, make sure the **Tagged PDF (add document structure)** and the **Export bookmarks** boxes are selected.
3. Click **Export**.

3.4.5.2 Exercise – How to add headings in the Writer

1. Adding headings in LibreOffice Writer (PC and Mac) Turning text into headings.
 - a. Open the original in LibreOffice Writer.
 - b. Select the text that should become a heading.
 - c. In the **Formatting** bar, open the **Apply Paragraph Style** dropdown and select the appropriate heading level. If you don't see the heading level you are looking for, click **More options**.
 - d. Repeat this for all the text that should become headings.
2. Styling headings in LibreOffice Writer. Customizing the visual appearance of a heading style.
 - a. Open the **Apply Paragraph Style** dropdown. Click the arrow next to the heading style of which you want to change the visual appearance.
 - b. Click **Edit Style** from the menu.
 - c. Make any formatting changes that you would like to make (e.g. Font, font size, etc) in the **Font** and **Font Effects tabs** and click OK. All text which has that heading applied will automatically be updated.
 - d. **Save** the document.

3.4.5.3 Exercise – How to add headings in the Impress

1. Adding titles in LibreOffice Impress (PC).
 - a. Open the original in LibreOffice Impress.
 - b. Click the first slide which contains a title.
 - c. Open the **Properties** menu on the right side. Open the **Layouts** section. As your slide contains a title, choose one of the layouts that best fit the structure of your slide.
 - d. If the already existing title and content show up nicely within the provided title and content boxes, it means the slide uses the layout correctly.

- e. If an empty title and text box show up on top of the already existing text boxes, it means the title and text have to be transferred to these boxes. Transfer the text for the title to the title box, and content to the content boxes.
- f. Repeat these steps for all the slides that appear to have titles and save the document.

2. Adding titles in LibreOffice Impress (Mac).

- a. Open the original in LibreOffice Impress.
- b. Click the first slide which contains a title.
- c. Open the **Properties** menu on the right side. Open the **Layouts** section. As your slide contains a title, choose one of the layouts that best fit the structure of your slide.
- d. If the already existing title and content show up nicely within the provided title and content boxes, it means the slide uses the layout correctly.
- e. If an empty title and text box show up on top of the already existing text boxes, it means the title and text have to be transferred to these boxes. Transfer the text for the title to the title box, and content to the content boxes.
- f. Repeat these steps for all the slides that appear to have titles and save the document.

3.4.5.4 Exercise – How to add alternative descriptions to images in a document in the Writer

1. Adding an image description in LibreOffice Writer (PC).

- a. Open the original in LibreOffice Writer.
- b. Double click the image. The **Image** dialog box shows up.
- c. Click the **Options** tab in the **Image** dialog box.
- d. Enter a brief description for the image in the **Name** field.

2. Adding an image description in LibreOffice Writer (Mac)

- a. Open the original in LibreOffice Writer.
- b. Double click the image. The **Image** dialog box shows up.
- c. Click the **Options** tab in the **Image** dialog box.
- d. Enter a brief description for the image in the **Name** field.

3.4.5.5 Exercise – How to add alternative descriptions to images in a document in the Impress

1. Adding an image description in LibreOffice Impress (PC).
 - a. Open the original in LibreOffice Impress.
 - b. Select the image. Click **Format** in the menu bar and select **Description** from the list.
The **Description** panel shows up.
 - c. Enter a brief description for the image in the **Description** box. If the description is long, a summarized **Title** should also be provided.
 - d. Click **OK** to save your changes.
 - e. Repeat these steps for all images in the document. **Save** the document.
2. Adding an image description in LibreOffice Impress (Mac).
 - a. Open the original in LibreOffice Impress.
 - b. Select the image. Click **Format** in the menu bar and select **Description** from the list.
The **Description** panel shows up.
 - c. Enter a brief description for the image in the **Description** box. If the description is long, a summarized **Title** should also be provided.
 - d. Click **OK** to save your changes.
 - e. Repeat these steps for all images in the document. **Save** the document.

3.4.5.6 Exercise – How to add headers to a table in the Writer

1. Adding headers to a table in LibreOffice Writer (PC).
 - a. Open the original in LibreOffice Writer.
 - b. Ensure the text in the first-row functions as a title and identifies what each column is for. E.g: Week, Topic, Date and so on.
 - c. Right-click the table and select **Table Properties**. Or, select **Table Properties** from the bottom or top menu. The **Table Format** dialog box shows up.
 - d. In the **Table Format** dialog box, select the **Text Flow** tab. Make sure the Repeat heading check box is selected and that at least the first row is filled out.
 - e. Repeat these steps for tables in the document. Save the document.
2. Adding headers to a table in LibreOffice Writer (Mac).
 - a. Open the original in LibreOffice Writer.

- b. Ensure the text in the first row functions as a title and identifies what each column is for. E.g: Week, Topic, Date and so on.
- c. Right-click the table and select **Table Properties**. Or, select **Table Properties** from the bottom or top menu. The **Table Format** dialog box shows up.
- d. In the **Table Format** dialog box, select the **Text Flow** tab. Make sure the Repeat heading check box is selected and that at least the first row is filled out.
- e. Repeat these steps for tables in the document. Save the document.

3.4.5.7 Exercise – How to add headers to a table in the Impress

1. Adding headers to a table in LibreOffice Impress (PC).
 - a. Open the original in LibreOffice Impress.
 - b. Ensure the text in the first row functions as a title and identifies what each column is for. E.g: Week, Topic, Date and so on.
 - c. Right-click the table and select **Table Properties**. Or, select Table Properties from the bottom or top menu. The **Table Format** dialog box shows up.
 - d. In the **Table Format** dialog box, select the **Text Flow tab**. Make sure the Repeat heading check box is selected and that at least the first row is filled out.
 - e. Repeat these steps for tables in the document. Save the document.
2. Adding headers to a table in LibreOffice Impress (Mac).
 - a. Open the original in LibreOffice Writer.
 - b. Ensure the text in the first-row functions as a title and identifies what each column is for. E.g: Week, Topic, Date and so on.
 - c. Right-click the table and select **Table Properties**. Or, select Table Properties from the bottom or top menu. The **Table Format** dialog box shows up.
 - d. In the **Table Format** dialog box, select the **Text Flow tab**. Make sure the Repeat heading check box is selected and that at least the first row is filled out.
 - e. Repeat these steps for tables in the document. Save the document.

3.4.5.8 Exercise – How to set a language in the Writer

1. Setting the document language in LibreOffice Writer (PC).
 - a. Open the original in LibreOffice Writer.
 - b. Determine the main language of the text. When a lot of text is underlined with red squiggly lines, this is often an indication that the language isn't set correctly.

- c. Set the correct document language by clicking on **Tools > Language > For all Text > More....** The **Options - Language Settings - Languages** dialog box shows up.
 - d. Under **Default Languages for Documents**, select the correct document language from the dropdown. If you check **For the current document only**, your choice will only apply to the current document.
 - e. Click **OK** and save the document.
2. Choosing a language for selected text in LibreOffice Writer (PC). Text that is still underlined with red squiggly lines or paragraphs in a different language need their language set separately.
 - a. Select all the text in specific text boxes that need changing.
 - b. Right-click the selected text, and choose **Character...** from the menu.
The **Character** dialog box shows up.
 - c. On the **Font** tab, select the correct language for the selected text and click **OK**.
 - d. Repeat these steps for all the text that needs changing.
 - e. **Save** the document.
3. Setting the document language in LibreOffice Writer (Mac).
 - a. Open the original in LibreOffice Writer.
 - b. Determine the main language of the text. When a lot of text is underlined with red squiggly lines, this is often an indication that the language isn't set correctly.
 - c. Set the correct document language by clicking on **Tools > Language > For all Text > More....** The **Options - Language Settings - Languages** dialog box shows up.
 - d. Under **Default Languages for Documents**, select the correct document language from the dropdown. If you check **For the current document only**, your choice will only apply to the current document.
 - e. Click **OK** and save the document.
4. Choosing a language for selected text in LibreOffice Writer (Mac). Text that is still underlined with red squiggly lines or paragraphs in a different language need their language set separately.
 - a. Click on the **View** tab and select **Outline**. Select the text from all the slides that need changing.

- b. Right-click and choose **Character...** from the menu. The **Character** dialog box shows up.
- c. On the **Font** tab, select the correct language for the selected text and click **OK**.
- d. Repeat these steps for all the text that needs changing.
- e. **Save** the document.

3.4.5.9 Exercise – How to set a language in the Impress

1. Setting the document language in LibreOffice Impress (PC).
 - a. Open the original in LibreOffice Impress.
 - b. Determine the main language of the text. When a lot of text is underlined with red squiggly lines, this is often an indication that the language isn't set correctly.
 - c. Set the correct document language by clicking on **Tools > Language > For all Text > More....** The **Options - Language Settings - Languages** dialog box shows up.
 - d. Under **Default Languages for Documents**, select the correct document language from the dropdown. If you check **For the current document only**, your choice will only apply to the current document.
 - e. Click **OK** and save the document.
2. Choosing a language for selected text in LibreOffice Impress (PC). Text that is still underlined with red squiggly lines or paragraphs in a different language need their language set separately.
 - a. Select all the text in specific text boxes that need changing.
 - b. Right-click the selected text, and choose **Character...** from the menu.
The **Character** dialog box shows up.
 - c. On the **Fonts** tab, select the correct language for the selected text and click **OK**.
 - d. Repeat these steps for all the text that needs changing.
Save the document.
3. Setting the document language in LibreOffice Impress (Mac).
 - a. Click on the **View tab** and select **Outline**. Select the text from all the slides that need changing.
 - b. Right-click and choose **Character...** from the menu. The **Character** dialog box shows up.
 - c. On the **Fonts** tab, select the correct language for the selected text and click **OK**.

- d. Repeat these steps for all the text that needs changing.
 - e. **Save** the document.
4. Choosing a language for selected text in LibreOffice Impress (Mac). Text that is still underlined with red squiggly lines or paragraphs in a different language need their language set separately.
- a. Select all the text in specific text boxes that need changing.
 - b. Right-click the selected text, and choose **Character...** from the menu.
The **Character** dialog box shows up.
 - c. On the **Fonts** tab, select the correct language for the selected text and click **OK**.
 - d. Repeat these steps for all the text that needs changing.
 - e. **Save** the document.

3.4.5.10 Exercise – How to use Accessibility checker in the Writer

1. Checking documents accessibility.
 - a. **Open** the document in the Writer.
 - b. **Choose Tools > Accessibility Check**. This will open either a popup or a sidebar.
 - c. Click **Fix** and a new pop-up will appear, where you can add necessary fixes.
 - d. If you leave the Accessibility Check sidebar (or pop-up) open it automatically will check new additions to the document and inform you of errors.
 - i. With a blank document open the check and it will report the document title is not set. Click Fix and a pop-up will appear where you can set the document title.
 - ii. Add an image to our document. If you've left the Accessibility Check sidebar (or pop-up) open, once you've added the image, you'll find that it automatically checks the new addition and informs you that you've not added the necessary alt text (so screen readers can read a description of the image). Click Fix and a new pop-up will appear, where you can add the necessary descriptive text.
 - iii. When you add new items, the accessibility check will let you know if there are any problems.
 - iv. Alternatively, you can open the completed document, run the check and correct any problems if necessary.

3.5 Resources

1. [Accessibility/Accessibility-dev - The Document Foundation Wiki](#)
2. [How to Create Accessible LibreOffice files - The Document Foundation Wiki](#)
3. [Creating accessible PDF with LibreOffice - Accessibility Consulting - Training & Support \(netz-barrierefrei.de\)](#)
4. [ways LibreOffice supports accessibility | Opensource.com](#)
5. [English documentation | LibreOffice Documentation - LibreOffice User Guides](#)
6. [Accessibility | LibreOffice - Free Office Suite - Based on OpenOffice - Compatible with Microsoft](#)
7. [How to use LibreOffice Accessibility Check to ensure your documents are readable by all | ZDNET](#)

4 Desktop Office. Mac OS Office Apps Accessibility Management

4.1 Summary of the Sub Subtopic and the Learning Objectives Covered

Unit #4 is expected to help adjust accessibility settings for people with visual, hearing, cognitive impairments and physical disabilities.

In completing this unit, the learner will be able to:

- use Pages, Numbers and Keynotes Mac OS X applications as effectively as accessibility could it provide by every type of impairments.

Resources needed: Mac OS X, Pages, Numbers and Keynotes are required as a software.

MacBook (Air or Pro) or Mac PC (Mini, Pro or Studio) is required as a hardware.

4.2 Pages

You can use Pages to create any kind of document you want, from a simple word processing document that is mainly text, to a page layout document with graphics, interesting font treatments and more.

Word processing: Used to create documents that include mainly text, like reports or letters. These documents have a body text area where you type, and the text flows from one page to the next, with new pages created automatically when you reach the end of the page.

Page layout: Used to create documents with a more custom design, like newsletters, books or posters. A page layout document is like a canvas that you add text boxes, images and other objects to, then arrange the objects on the page however you like.

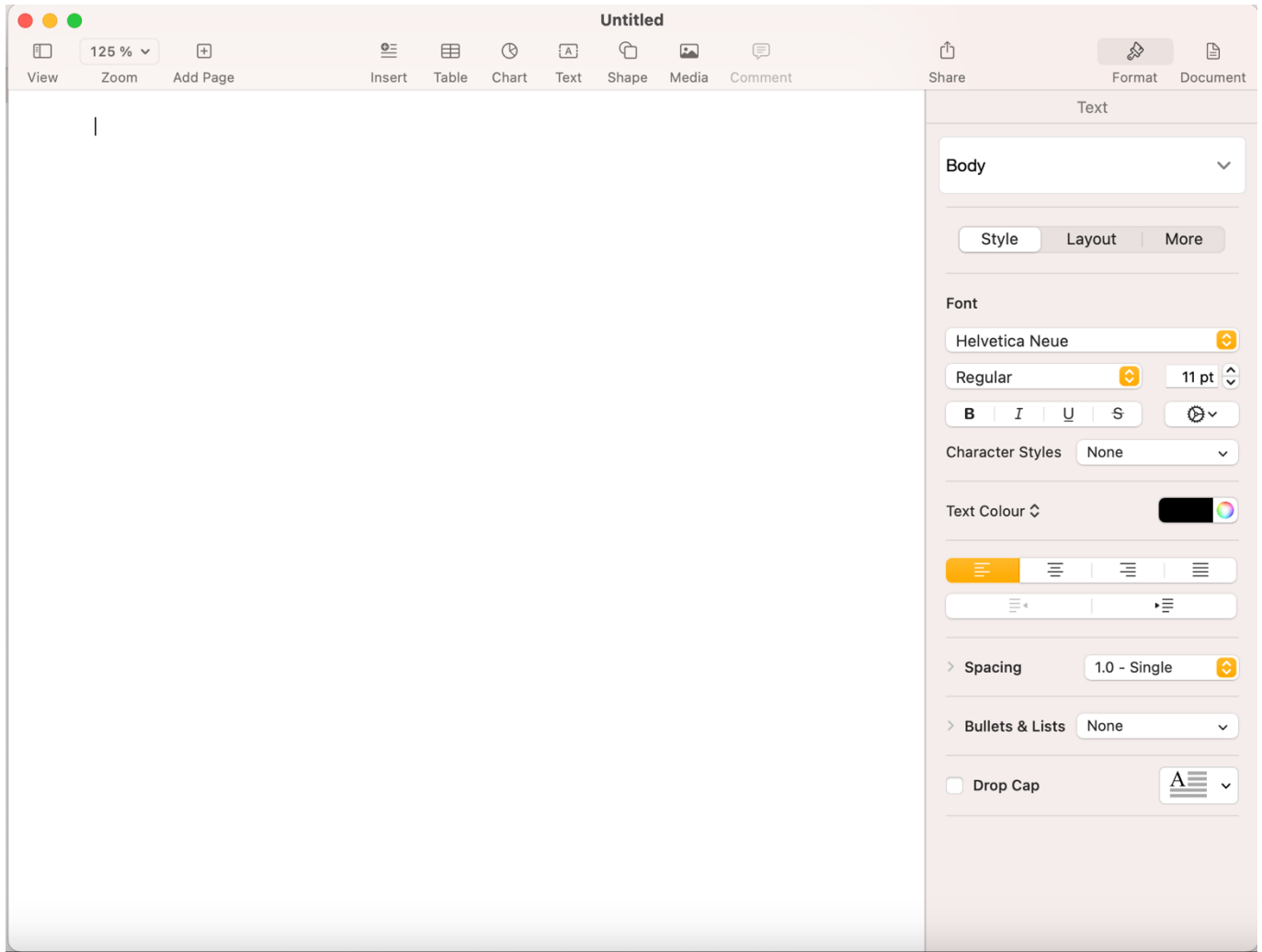


Figure 4.1.1. Pages New Document Layout

4.2.1 Pages Accessibility for People with Visual Impairments

4.2.1.1 VoiceOver in Pages

You can create a Pages document on your Mac using VoiceOver, an advanced screen reader that lets you use your device without seeing the screen. Start with a pre-designed template that includes placeholder data, charts and images, then add your own content. Each template uses coordinated fonts, text styles and colours for a unified look.

Note: VO represents the VoiceOver modifier.

The VoiceOver modifier is a key or set of keys you press with one or more other keys to enter VoiceOver commands. You can set the VoiceOver modifier to be the Caps Lock key or the Control and Option keys pressed at the same time.

To quickly turn VoiceOver on or off [using the Accessibility Shortcuts panel](#), press Option-Command-F5 (or if your Mac or Magic Keyboard has [Touch ID](#), quickly press Touch ID three times), then select or deselect the Enable VoiceOver option.

Use Siri. Say something like: “Turn VoiceOver on” or “Turn VoiceOver off”. [Learn how to use Siri](#).

VoiceOver commands are represented as VO-key, where VO represents the VoiceOver modifier. For example, the VoiceOver command VO-Shift-M means to press the VoiceOver modifier along with the Shift and M keys at the same time.

NB! Each Mac has its own set of keys (as called “shortcuts”) to activate/deactivate VO. You can find this at “System settings”.

To specify which options are available in the panel, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Shortcut on the right. (You may need to scroll down.)



Figure 4.2-1 Example of VO Modifier using Mac keyboard

4.2.1.2 Choose a template

You can choose a template from several categories, such as letters, reports and books. For example, to create a flyer to advertise a special event, you might choose Event Poster Small in the Flyers & Posters category. You choose a template in the template chooser.

- In Pages on your Mac, press VO-M to jump to the menu bar, navigate to File > New, then press Return.
 - The template chooser opens.
- Do one of the following:
 - **Choose from all templates:** Press VO-Left Arrow to navigate to the template chooser collection, then press VO-Shift-Down Arrow to enter it.
 - **Choose a template by category, such as Reports and CVs:** Press VO-Left Arrow to navigate to the table of template categories, then press VO-Shift-Down Arrow to enter it. Press VO-Down Arrow to scroll through the list of categories until you hear the category you want, then press VO-J to jump to the templates in that category.
- To navigate through the template options, press any of the arrow keys, then press Return to choose one.

4.2.1.3 Add your own text

- Document templates include placeholder text for titles, headers, body text and other text elements. You can replace any placeholder text with your own in the document layout area.
- With a document open in Pages on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Document layout area”.
- To select the document layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- To scroll to the page with the text you want to replace, press VO-Up Arrow or VO-Down Arrow, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the text you want to edit (for instance, Header or Body), then press VO-Shift-Down Arrow.

If a text group has multiple lines, press VO-Up Arrow or VO-Down Arrow to scroll through the lines.

- To select the text in the VoiceOver cursor, press VO-Shift-A.
- Type to add your own text.

If you want to edit more text in the same group, press VO with any arrow key to navigate to it. If you want to edit a different text group, press VO-Shift-Up Arrow, then press VO-Right Arrow or VO-Left Arrow to navigate to it.

4.2.1.4 Style text

Templates use coordinated fonts, text styles and colours, but you can change the look of your text in the document layout area.

If you are using a template from the Basics category, such as Blank or Blank Landscape, you can set a default font and font size for all new documents. See [Set a default font and font size for Basic templates.](#)

- With a document open in Pages on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Document layout area”.
- To select the document layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- To scroll to the page with the text you want to style, press VO-Up Arrow or VO-Down Arrow, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the text you want to style, then press VO-Shift-Down Arrow.
- To select the text in the VoiceOver cursor, press VO-Shift-Down Arrow, then press VO-Shift-A.
- To select only some of the text, press and hold Shift-Option while you press the Left Arrow or Right Arrow key. The text to the left or right of the insertion point is selected.
- Press VO-J to jump to the Text tab of the Format sidebar.

Note: If you jump to a different sidebar instead, you can navigate to the Format sidebar using the toolbar. From your current location, press VO-Shift-Up Arrow, then press VO-Left Arrow to navigate to the toolbar. To enter the toolbar, press VO-Shift Down Arrow, then press VO-Right Arrow to navigate to the Format button. Press VO-Space to select it, then press VO-J twice to jump to the Text tab.

- If you jump to a different tab in the Format sidebar, press the Left Arrow or Right Arrow key to navigate to the Text tab, then press VO-Space to select it.
- To change the paragraph style, press VO-Down Arrow to navigate to the Paragraph Styles button, then press VO-Space. Press VO-Right Arrow to navigate to the Paragraph Styles table, then press VO-Shift-Down Arrow to enter it. Press VO-Down Arrow until you hear the style you want, then press VO-Space to choose it.

- You can change other text settings in the Text Formatter scroll area. Press VO-Down Arrow to navigate to the Style button, then press VO-Space to select it. Press VO-Down Arrow to navigate to the Text Formatter scroll area, then press VO-Shift-Down Arrow to enter it. Change any of the following:
 - **Font:** Press VO-Down Arrow to navigate to the Font family button, then press VO-Space. Press the Up Arrow or Down Arrow key until you hear the font you want, then press VO-Space to choose it.
 - **Font size:** Press VO-Right Arrow to navigate to the Font size text field, then type a new font size.
 - **Font style (bold, italic, underline and so on):** Press VO-Down Arrow to navigate to the Font Style group, then press VO-Shift-Down Arrow to enter it. Press the Left Arrow or Right Arrow key to navigate the font styles, then press VO-Space to choose the ones you want.
- To choose options like strikethrough or outline, navigate to advanced options, then press VO-Space.
 - **Text colour:** Press VO-Right Arrow to navigate to the Fill preset picker, then press VO-Space. Press VO with any arrow key until you hear the colour you want, then press VO-Space to choose it.

To learn about advanced colour options, see [Fill shapes and text boxes with colour or an image](#).

- **Alignment:** Press VO-Down Arrow to navigate to the Horizontal alignment group, then press VO-Shift-Down Arrow to enter it. Press the Left Arrow or Right Arrow key to navigate the alignment options, then press VO-Space to choose one.

To learn about aligning text, see [Align and justify text](#).

- **Spacing:** Press VO-Down Arrow until you hear “Spacing” (make sure the disclosure arrow is expanded). Press VO-Right Arrow to navigate to the Line spacing button, then press VO-Space. Press the Down Arrow key until you hear the spacing option you want, then press Return to choose it.

To learn more about spacing, see [Set line spacing](#).

- **List formatting:** Press VO-Down Arrow until you hear “Bullets and lists”. Press VO-Right Arrow to navigate to the Paragraph Styles button, then press VO-Space. Press VO-Right Arrow to navigate to the list styles list, then press VO-Shift-Down Arrow. Press VO-Down Arrow until you hear the list style you want, then press VO-Space to choose it.

To learn more about list formatting, see [Format lists](#).

- Press VO-J to jump back to the text in the document layout area.

4.2.1.5 Add your own media

You can replace the media placeholders in a template to add your own images and video. You do this in the document layout area.

- With a document open in Pages on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Document layout area”.
- To select the document layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- To scroll to the page with the image you want to replace, press VO-Up Arrow or VO-Down Arrow, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the name of the image you want to replace.
- Press VO-Shift-M to open a shortcut menu, then press the Down Arrow key until you hear “Replace Image”. Press Return.
- In the Photos menu, navigate to the image or video you want to add, then press VO-Space to select it.

The image appears on the page where the previous image used to be.

You can also insert your own shapes and other objects by selecting the Insert menu in the toolbar.

To add accessibility descriptions to your images, drawings and videos (which are read by VoiceOver and other assistive technology), see [Add an image description](#), [Add a drawing description](#) or [Add a video description](#).

4.2.1.6 Use VoiceOver to preview comments and track changes in Pages on Mac

You can use VoiceOver to read annotations made by other people collaborating on a document. Annotations are separated by VoiceOver into three groups: comments, highlights and tracked changes. VoiceOver reads comments and identifies the person who made the comment, describes highlights (including the colour of the highlight), and when you select a tracked change, VoiceOver says whether a potential change is an addition or deletion, and lets you preview the change before you accept it.

Preview highlights, comments and tracked changes

- Press VO-U to open the rotor, then use the left and right arrow keys to select Highlights, Comments or Tracked Changes.
- Use the up and down arrow keys to navigate among the items in the document that apply to that menu (for example, to navigate among each comment), then press Return to choose one and jump to that point in the document.

Preview text including tracked changes

You can use the “Preview Change” action to preview the result of a tracked change before you accept or reject it. When you choose this action, VoiceOver speaks the text as it would appear if the tracked change was accepted. This action is available when you have selected a tracked change in the document body.

- Press VO-Command-Space to open the Actions menu.
- Use the up and down arrow keys to navigate to “Preview Change”, then press Return to preview the change.

4.2.2 Exercises (Pages)

Write a short topic about your Hobby/Interest

Please, create a new Pages document named “Pages Exercise”. Turn on VoiceOver for it. Dictate a text about your interest or hobby. Text quantity should be at least one paragraph. That document has to have relevant heading. Insert into Pages document at least one picture (it may be chosen from the internet or from your photo gallery on device). Style the text by these requirements: Arial font, 12 pt Font Size, black paragraph Font Colour and dark blue heading Font Colour, justify text (align to the right and the left), 1.5 line spacing between lines. The picture should be vertically centred in the document. Save all changes made for the “Pages Exercise” Pages document and send it to the teacher by e-mail she or he presented.

4.3 Numbers

Numbers makes it easy to create organised, professional-looking spreadsheets. You begin with a template, then modify it however you like. The templates are designed for specific purposes — like budgets and checklists — to give you a great starting point for your work. Each template comes with predesigned styles for text, tables, shapes and other objects that all look good together, so it is easy to give your spreadsheet a coordinated appearance.

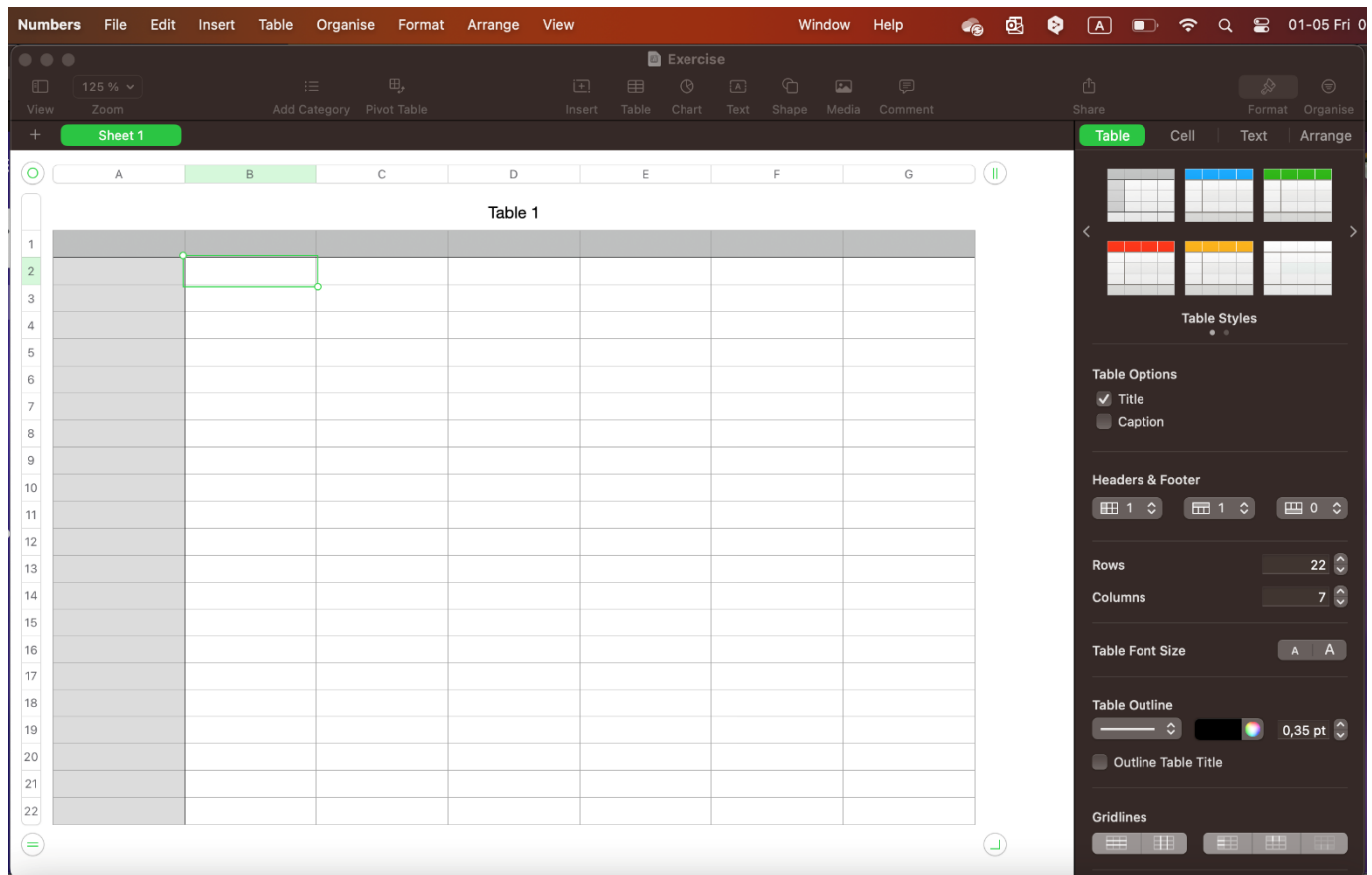


Figure 4.2. Numbers New Sheet Layout

4.3.1 Numbers Accessibility for People with Visual Impairments

4.3.1.1 Voice over in Numbers

You can create and edit Numbers spreadsheets on your Mac using VoiceOver, an advanced screen reader that lets you use your device without seeing the screen. Start with a predesigned template that includes placeholder data, charts and images, then add your own content. Each template uses coordinated fonts, text styles and colours for a unified look.

Note: VO represents the [VoiceOver modifier](#)

How to turn on/off VoiceOver described in “4.4.1. Pages Accessibility for People with Visual Impairments” (p. 3 - 4).

4.3.1.2 Choose a Template

You can choose a template from several categories, such as personal finance, business and education. For example, to create a budget based on income and expenses, you might choose

Simple Budget in the Personal Finance category. You choose a template in the template chooser.

- In Numbers on your Mac, press VO-M to jump to the menu bar, navigate to File > New, then press Return.
- The template chooser opens.
- Do one of the following:
 - *Choose from all templates:* Press VO-Left Arrow to navigate to the template chooser collection, then press VO-Shift-Down Arrow to enter it.
 - *Choose a template by category, such as Personal Finance and Business:* Press VO-Left Arrow to navigate to the table of template categories, then press VO-Shift-Down Arrow to enter it. Press VO-Down Arrow to scroll through the list of categories until you hear the category you want, then press VO-J to jump to the templates in that category.
- To navigate through the template options, press any of the arrow keys, then press Return to choose one.

4.3.1.3 Add or Remove Table Row and Column

All Numbers templates include at least one table. You can change the number of rows and columns in each table to better suit your data. You do this in the Table tab of the Format sidebar.

- With a spreadsheet open in Numbers on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Sheet layout area”.
- To select the sheet layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the name of the table you want to edit.
- *Note:* VoiceOver speaks the number of rows and columns in the table.
- Press VO-J to jump to the Table tab of the Format sidebar, then press VO-Space to select it.
- *Note:* If you jump to the Organise sidebar instead, you can navigate to the Format sidebar using the toolbar. From your current location, press VO-Shift-Up Arrow, then press VO-Left Arrow to navigate to the toolbar. To enter the toolbar, press VO-Shift

Down Arrow, then press VO-Right Arrow to navigate to the Format button. Press VO-Space to select it, then press VO-J twice to jump to the Table tab.

- To navigate to the Table Formatter scroll area, press VO-Down Arrow, then press VO-Shift-Down Arrow to enter it.
- To change the number of rows, press VO-Right Arrow until you hear “Rows”, press VO-Right Arrow again to select the current number of rows, enter the number you want, then press Return.
- To change the number of columns, press VO-Right Arrow until you hear “Columns”, press VO-Right Arrow again to select the current number of columns, enter the number you want, then press Return.

4.3.1.4 Change the Chart Type

Many Numbers templates include at least one chart. If you want to change the chart type to better suit your data — for example, from a column chart to a pie chart — you can do this in the Format menu.

- With a spreadsheet open in Numbers on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Sheet layout area”.
- To select the sheet layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the name of the chart you want to edit.
- Press VO-M to jump to the menu bar, then navigate to Format > Chart > Chart Type.
- In the Chart Type menu, press the Down Arrow key until you hear the type of chart you want to use, then press Return.
- The chart automatically updates in the sheet layout area and VoiceOver speaks the selected chart type to confirm your change.

4.3.1.5 Add your own data to tables and charts

You can replace the template placeholder data for tables and charts with your own data in the sheet layout area.

Chart data and axis labels automatically update when you change the data in a corresponding table. Chart titles do not update automatically, but you can change them manually.

- With a spreadsheet open in Numbers on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Sheet layout area”.
- To select the sheet layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the name of the table you want to edit, then press VO-Shift-Down Arrow to enter it.
- To navigate through the cells in the table, press VO and any of the arrow keys.
- To add or replace cell data, navigate to the cell, then type.

To change the name of a table, navigate to the table in the sheet layout area, then press VO-Space. Press Command-A to select the current name, then type to enter a new one. To change the name of a chart, navigate to the chart in the sheet layout area, then press VO-Shift-Down Arrow to enter it. VoiceOver should speak the title of the chart. Press VO-Space twice, then type the new title.

4.3.1.6 Add your own Media

To add your own images and videos, you can replace the media placeholders in the template. You do this in the sheet layout area.

- With a spreadsheet open in Numbers on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Sheet layout area”.
- To select the sheet layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the name of the image you want to replace.
- Press VO-Shift-M to open a shortcut menu, then press the Down Arrow key until you hear “Replace Image”. Press Return.
- In the Photos menu, navigate to the image or video that you want to add, then press VO-Space.
- The image appears on the sheet where the previous image used to be.

You can also insert your own shapes and other objects by selecting the menus in the toolbar: Insert, Table, Chart, Text, Shape, Media and Comment.

To add accessibility descriptions to your images, drawings and videos (which are read by VoiceOver and other assistive technology), see [Add an image description](#), [Add a drawing description](#) or [Add a video description](#).

4.3.1.7 Add your own text to text boxes

Spreadsheet templates sometimes include placeholder text boxes outside of tables that describe how to use a spreadsheet containing formulas and functions, such as the Personal Budget template or the Shared Expenses template. You can replace this text with your own in the sheet layout area.

- With a spreadsheet open in Numbers on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Sheet layout area”.
- To select the sheet layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the text box you want to edit.
- Type to add your own text.

If you want to edit another text box, press VO-Shift-Up Arrow, then press VO-Right Arrow or VO-Left Arrow to navigate to it.

4.3.1.8 Use VoiceOver to create formulas and autofill cells in Numbers on Mac

To make calculations using data in your table, you can create a formula using the formula editor. VoiceOver speaks the names of functions, definitions and examples for each function, formula errors and more, to make it easier to insert and edit formulas in your spreadsheet.

You can also use autofill mode to quickly fill cells, or a row or column, with the same formula, data or a logical sequence of data — for example, a series of numbers, letters or dates.

VoiceOver indicates when you are using autofill mode.

Insert a Formula

- To open the formula editor, select the cell where you want to insert the formula, then type the equals sign (=).
- Begin typing your expression, such as 4x3 or C2+C3.
- To add a function to your formula, type the name of the function you want followed by an open parenthesis.

You can also type part of the function's name, then use the left and right arrow keys to cycle through the autocomplete options; use the Return key to choose the function you want.

To complete the function, replace each argument placeholder token with the desired argument value.

- When you finish creating your formula, press the Return key.

You can also edit an existing formula. Press VO-Space to bring up the formula editor, make your changes, then press Return.

4.3.2 Exercises (Numbers)

Make a Shopping List

Please, create a new Numbers spreadsheet named "Numbers Exercise". Turn on VoiceOver for it. Create a table, which has to have these column names: "Product Name", "Product Price, €", "Product Quantity", "Subtotal, €".

Table 1 Exercise Numbers

	Product Name	Product Price, €	Product Quantity	Subtotal, €
1.	Milk, 1 l	1,5	3	
2.	Weat Bread, 1 pcs.	0,8	2	
3.	Mineral water, 1,5 l	0,7	2	
4.	Eggs, 10 pcs. in box	2,5	4	
5.	Apples, 1 kg	0,8	2	
6.	Oranges, 1 kg	2,4	2	
7.	Total			

Fill the rows of this table with the data represented in Table 1. Using VoiceOver only please calculate each Subtotal and Total. You will need to use multiply formula creation and AutoSum Formula.

Question: How many (€) will you receive in Total?

Answer: 23,9 €.

4.4 Keynote

You can use Keynote to create beautiful and engaging presentations with fun animations, interesting transitions and professional polish.

To create a Keynote presentation, you always start with a [theme](#), then modify it however you want. Slides in a theme include placeholder images and text styled as headlines and body content.

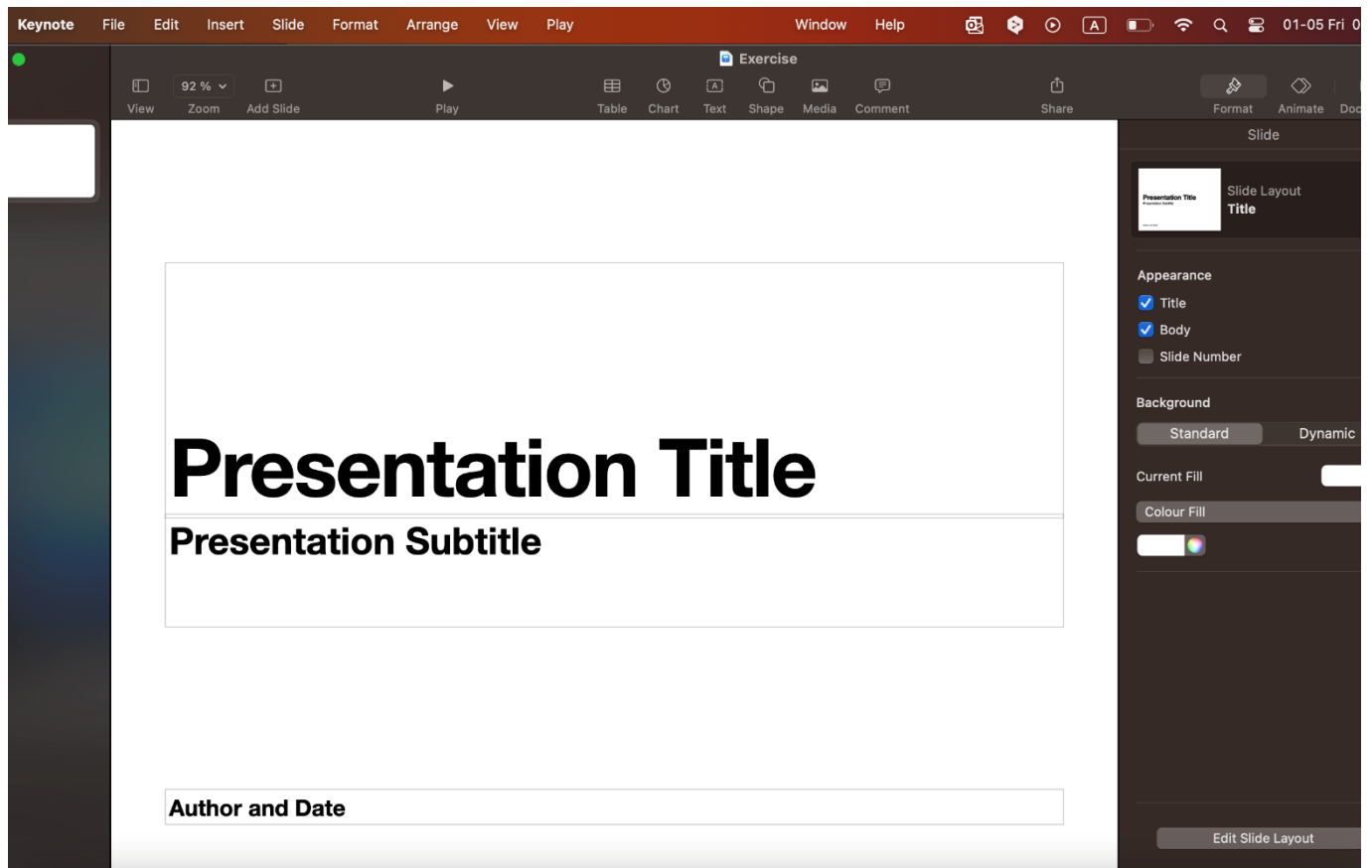


Figure 4.3. Keynote New Presentation Layout

4.4.1 Keynote Accessibility for People with Visual Impairments

4.4.1.1 Use VoiceOver to create a Keynote presentation on Mac

You can create a Keynote presentation on your Mac using VoiceOver, an advanced screen reader that lets you use your device without seeing the screen. Start with a theme — a set of pre-designed slide layouts and elements — then add your own content. Each theme uses coordinated fonts, text styles and colours for a unified look.

Note: VO represents the [VoiceOver modifier](#).

How to turn on/off VoiceOver described in “4.1.1. Keynote Accessibility for People with Visual Impairments”.

4.4.1.2 Choose a Theme

You can choose a theme with standard or wide slide sizes, or a custom theme — a theme you modified and saved to use again later. You choose a theme in the theme chooser.

- In Keynote on your Mac, press VO-M to jump to the menu bar, navigate to File > New, then press Return.
The theme chooser opens.
- To navigate to the theme chooser collection, press VO-Left Arrow or VO-Right Arrow, then press VO-Shift-Down Arrow to enter it.

To choose a wide or standard theme, press VO-Left Arrow or VO-Right Arrow until you hear “Standard (4:3)” or “Wide (16:9)”, then press VO-Space to open the menu. Press VO-Up Arrow or VO-Down Arrow to hear the options, then press VO-Space to select the one you want.

- To navigate through the theme options, press any of the arrow keys, then press Return to choose one.

For example, if you wanted to create a presentation to showcase photographs with a simple black background, you might choose the Photo Essay theme.

4.4.1.3 Change the Slide Layout

You can quickly change the look of a slide by selecting a different slide layout. You do this in the Slide tab of the Format sidebar.

- With a presentation open in Keynote on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content navigator - Slide navigator table”.
- To select the slide navigator, press Return, then press VO-Shift-Down Arrow to enter it.
- Press the Up Arrow or Down Arrow key until you hear the slide you want to edit, then press VO-J twice to jump to the Slide tab of the Format sidebar.

Note: If you jump to a different sidebar instead, you can navigate to the Format sidebar using the toolbar. From your current location, press VO-Shift-Up Arrow, then press VO-Left Arrow to navigate to the toolbar. To enter the toolbar, press VO-Shift

Down Arrow, then press VO-Right Arrow to navigate to the Format button. Press VO-Space to select it. To navigate to the Slide tab, press VO-J three times.

- To hear the current slide layout, press VO-Down Arrow. To select the Slide Layout button, press VO-Space.
- To navigate through the slide layout options, press VO-Right Arrow until you hear “Scroll Area”, then press VO-Shift-Down Arrow. Press VO-Right Arrow or VO-Left Arrow until you find the slide layout you want, then press VO-Space to choose it.

4.4.1.4 Add Your Own Text

Slide layouts include placeholder text boxes with text for titles, subtitles, body text and other text elements. You can replace any placeholder text with your own.

- With a presentation open in Keynote on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Slide layout area”.
- To select the slide layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the text you want to edit (for instance, Title or Body).
- Type to add your own text.

If you want to edit another text box on the slide, press VO-Shift-Up Arrow, then press VO-Right Arrow or VO-Left Arrow to navigate to it.

4.4.1.5 Add Your Own media

You can replace the placeholder media on a slide to add your own images and video. You do this in the slide layout area.

- With a presentation open in Keynote on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content - Slide layout area”.
- To select the slide layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press VO-Right Arrow or VO-Left Arrow until you hear the name of the image you want to replace.

- Press VO-Shift-M to open a shortcut menu, then press the Down Arrow key until you hear Replace Image. Press Return.
- In the Photos menu, navigate to the image or video you want to add, then press VO-Space to select it.

The image appears on the slide where the previous image used to be.

You can also insert your own shapes and other objects by choosing the Insert menu in the toolbar.

To add accessibility descriptions to your images, audio and videos (which are read by VoiceOver and other assistive technology), see [Add an image description](#), [Add an audio description](#), or [Add a video description](#).

4.4.1.6 Play a Presentation

When you play a presentation on your Mac, VoiceOver speaks the text and images on the current slide. The presentation plays in full screen.

To learn how to play your presentation on a separate display, see [Play a presentation on a separate display](#).

- With a presentation open in Keynote on your Mac, press VO-U to open the rotor.
- Press the Left Arrow or Right Arrow key until you hear “Window Spots”, then press the Down Arrow key until you hear “content navigator - Slide navigator table”.
- To select the slide layout area, press Return, then press VO-Shift-Down Arrow to enter it.
- Press the Up Arrow or Down Arrow key until you hear the slide you want to begin with, then press Option-Command-P to play the slideshow.
- To navigate around the slide and hear images and text, press VO and any arrow key.
- To advance through the presentation, do any of the following:
 - Go to the next slide or build: Press the Right Arrow key.
 - Go back a slide or reset the builds on the slide: Press the Left Arrow key.
 - Jump to a different slide: Press any number key to make the slide navigator appear, press Command-A to select the current slide number in the text field, then enter the slide number. Press Return.
- To stop playing the presentation, press Esc.

4.4.2 Exercises (Keynote)

Make a Presentation about your VoiceOver experience used for Pages and Numbers

Please, create a new Keynote presentation named “Keynote Exercise”. Turn on VoiceOver for it. Using only VoiceOver Utility, please create presentation with data represented in “Pages Exercise” and “Numbers Exercise” files. Describe your experience with using VoiceOver Utility for Pages and Numbers too. There have to be at least 5 slides in “Keynote Exercise” presentation, the first one should be a Title slide and the last one should introduce all used sources. At least one slide has to have a picture and another one has to have a table. Style the presentation by these requirements: Arial font, 12 pt Font Size, dark text Font Colour, justify text (align to the right and the left). The picture and the table should be vertically centred in the slides. Choose “Dynamic Waves Light” theme for presentation. Save all changes made for the “Keynote Exercise” presentation and send it to the teacher by e-mail she or he presented.

4.5 Accessibility features on Mac

Some Office Program’s accessibility features are common for each Software installed on MacOS. All of them will be reviewed below.

Get started with accessibility features on Mac

macOS accessibility features can help you with vision, hearing, physical motor activities, speech and more. If you didn’t turn on accessibility features when you set up your Mac, you can do so at any time in Accessibility settings.

4.5.1 MacOS accessibility features for People with Visual Impairments

4.5.1.1 VoiceOver in MAC OS

Use VoiceOver, the built-in screen reader on your Mac, to speak what’s on the screen and the text in documents, web pages and windows. With VoiceOver, you can control your Mac with the keyboard, trackpad gestures or a refreshable braille display. To customise VoiceOver, use VoiceOver Utility. See the [VoiceOver User Guide](#).

How to use VoiceOver with Pages, Numbers and Keynote is described above (1.4.1 Pages, 1.4.2. Numbers, 1.4.3. Keynote). To turn VoiceOver Utility on/off requires the same steps for any Software.

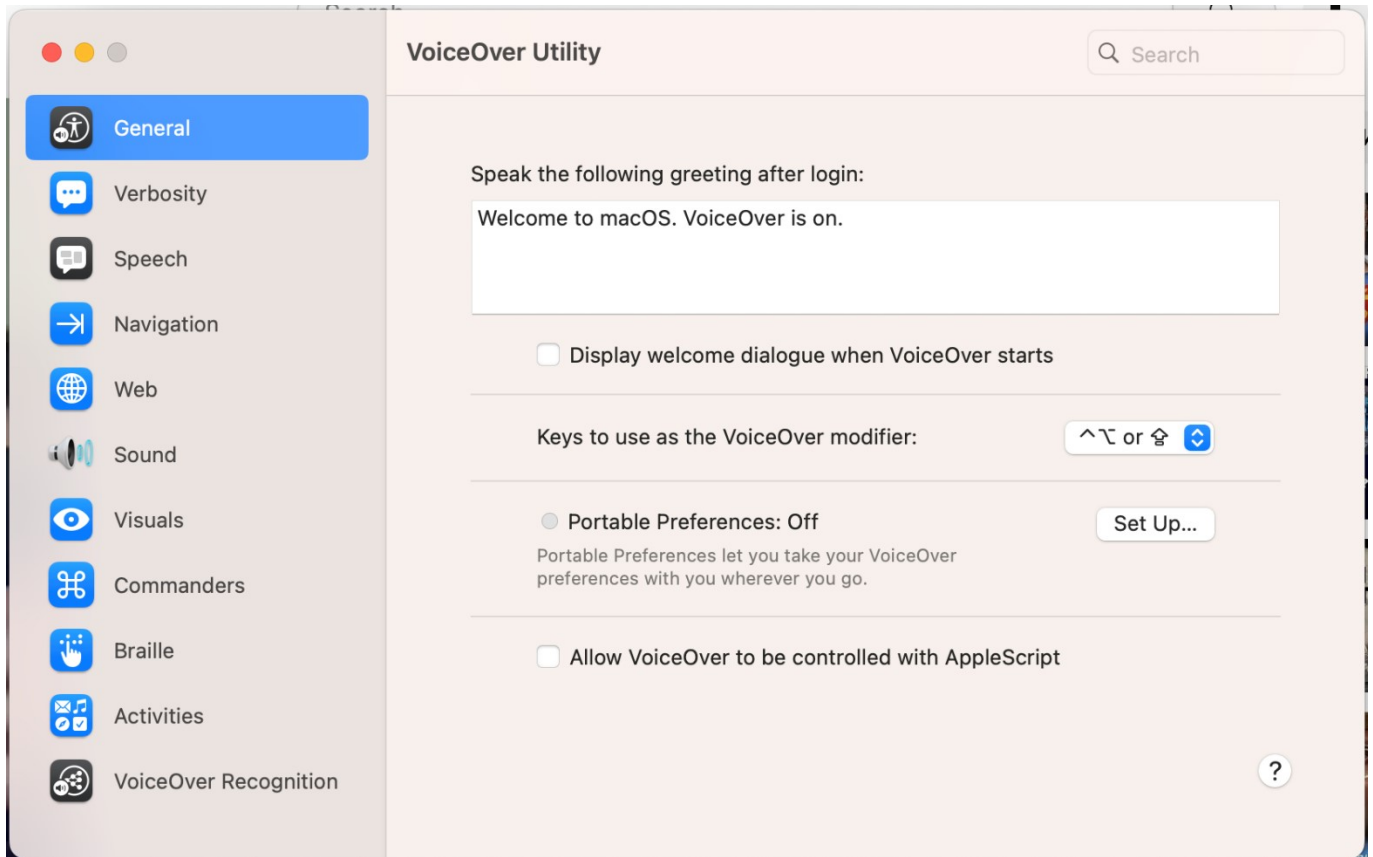


Figure 4.5-1 How to Manage VoiceOver Utility Settings

4.5.1.2 Zoom features

- Make content on the screen larger and easier to see by zooming the entire screen or an area of it. If you are using a second display, you can set the zoom for it separately. See [Zoom in and out on what's onscreen](#).
- Use Hover Text to see a larger version of whatever is under the pointer — for example, text you are reading or typing or text and icons in the user interface. See [Use Hover Text](#).

With Hover Text on your Mac, you can move the pointer over text on the screen to display a larger version of it and display a larger version of text as you type.

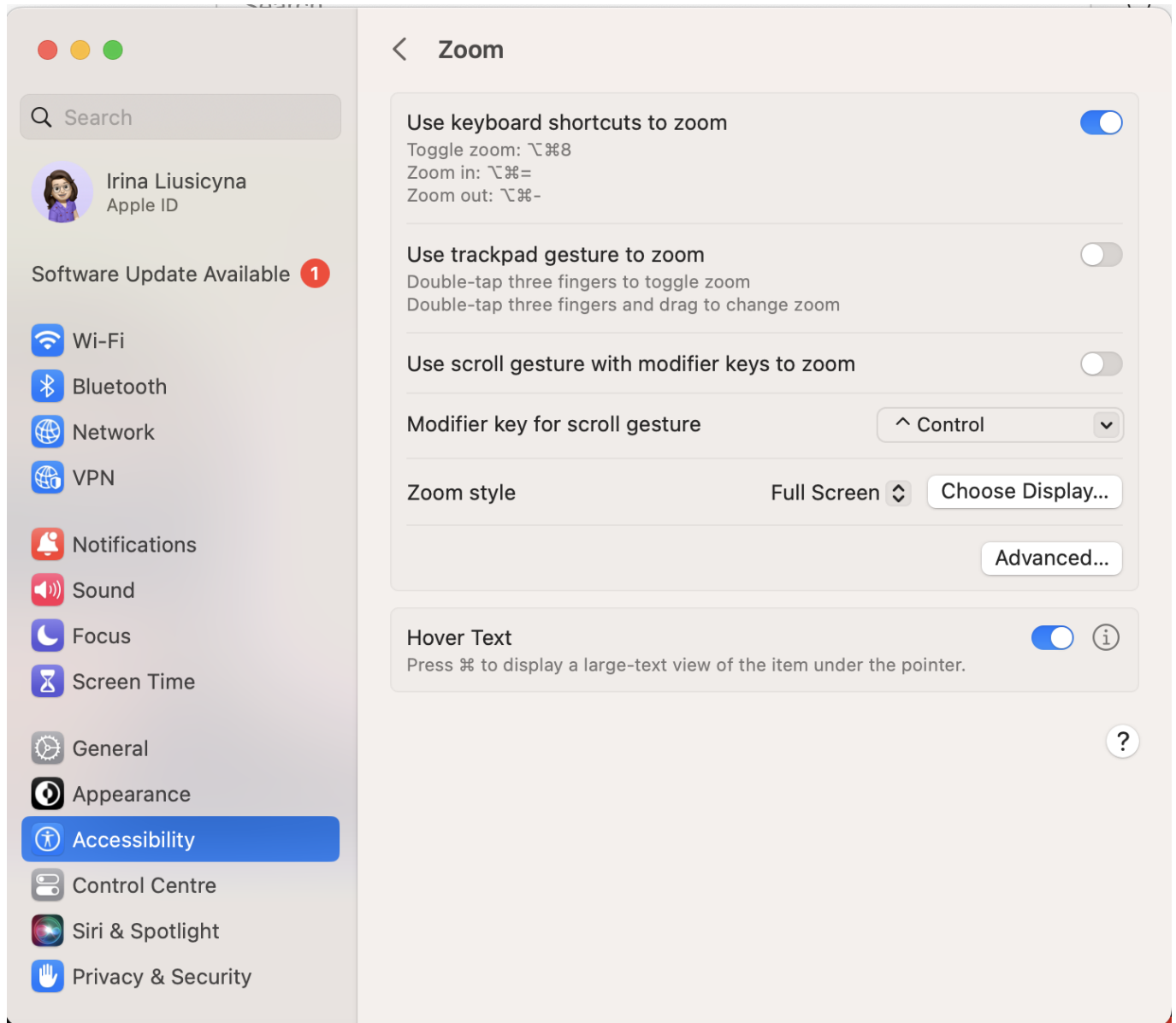


Figure 4.5-2 How to Turn on Hover Text

- Turn on Hover Text
 - ✓ On your Mac, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Zoom on the right. (You may need to scroll down.)
 - ✓ Turn on Hover Text.
- Show a larger version of text when you move the pointer over it
 - ✓ After you [turn on Hover Text](#), move the pointer over text on the screen, then press the Command key to display a larger version.

Tip: Have the Hover Text window automatically displayed when you move the pointer over text, without needing to press a key every time. Choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Zoom on the right (you may need to scroll down). Click the Info button  next to Hover Text, then turn on Triple-press modifier to set activation lock. To turn activation lock on or off, quickly press the Command key three times.

You can change the key you press to activate Hover Text and activation lock. Click the Activation modifier pop-up menu, then choose another key.

- Show a larger version of text as you type

After you [turn on Hover Text](#), you can display a larger version of what you are typing as you type.

- ✓ On your Mac, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Zoom on the right. (You may need to scroll down.)
- ✓ Click the Info button  next to Hover Text, click the Text-entry location pop-up menu, then choose a location.

As you type, a larger version of what you are typing is displayed in a window at the location you specified.

- Customise the appearance of Hover Text

- ✓ On your Mac, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Zoom on the right. (You may need to scroll down.)
- ✓ Click the Info button  next to Hover Text, then change any of the following:
 - ✓ The text size and font of the text shown in the Hover Text window
 - ✓ The colours used for the text shown in the window and the window itself

- If your Mac has a [Touch Bar](#) and items in the Touch Bar are hard to see, turn on Touch Bar zoom to display a larger version of the Touch Bar on the screen. See [Zoom in on the Touch Bar](#).

4.5.1.3 Display features

- Use a single slider to adjust the reading size for text across multiple apps and system features. See [Make text and icons bigger across apps and system features](#).

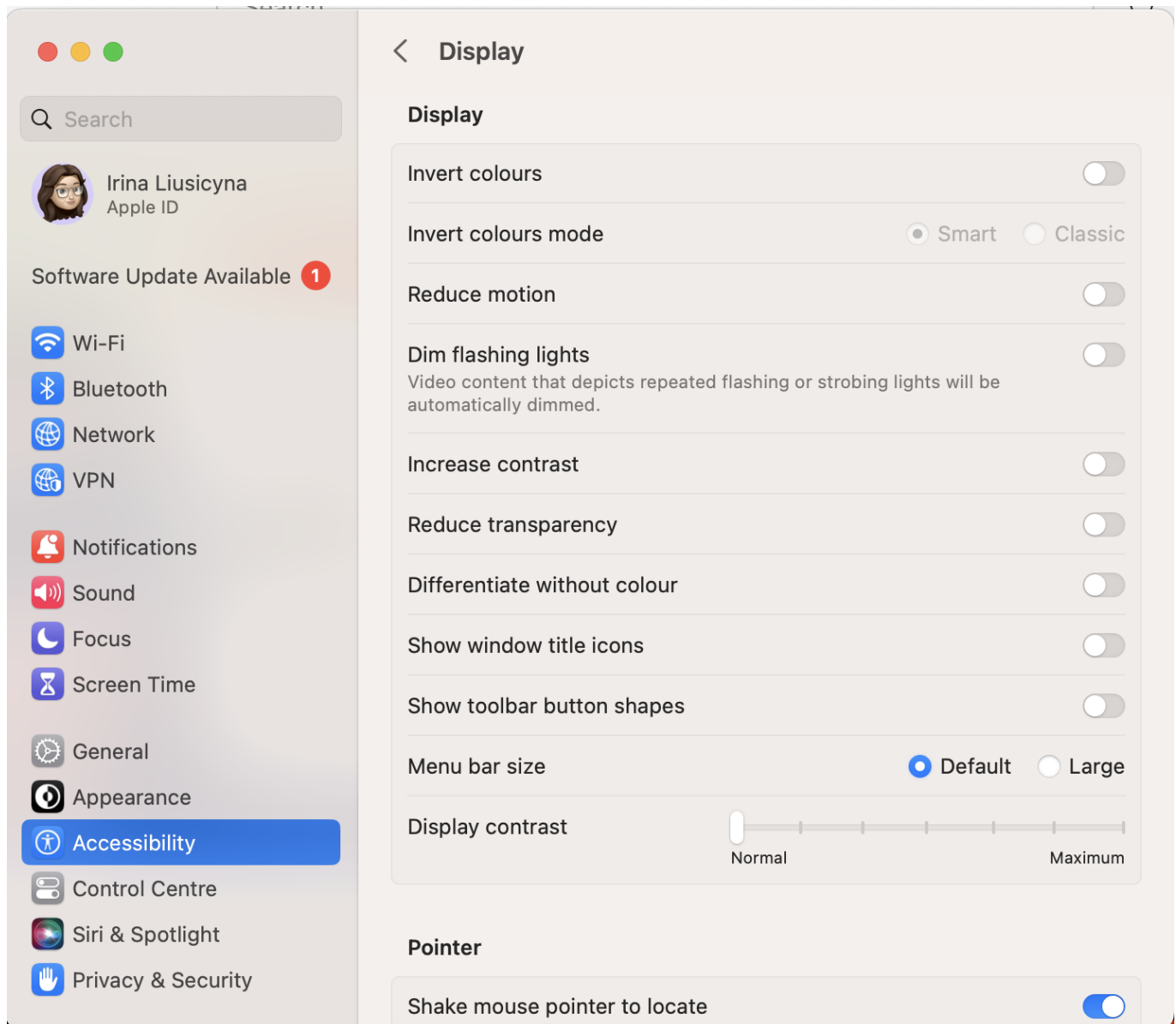


Figure 4.5-3 How to Manage Accessibility Display settings (1 of 3)

- On your Mac, choose Apple menu  > System Settings, then click Accessibility  in the sidebar. (You may need to scroll down.)
- Click Display on the right, go to Text, then click Text size. (You may need to scroll down.)
 - Drag the slider to the right to increase the text size on the desktop, in sidebars and in the listed apps (if they are set to Use Preferred Reading Size).

To set a different text size for any of the listed apps, click the pop-up menu next to the app, then choose a size.

Note: If an app is set to Customised in App, a unique text size has been set in that app's settings. If you change the app's text size in System Settings, it replaces the text size customisation you set in the app.

- Make it easier to find the pointer on the screen by changing its size or colour, or making it bigger when you quickly move it. See [Make the pointer easier to see](#).

If you have difficulty seeing or following the pointer, you can change its size and colour so it is easier to locate on the screen.

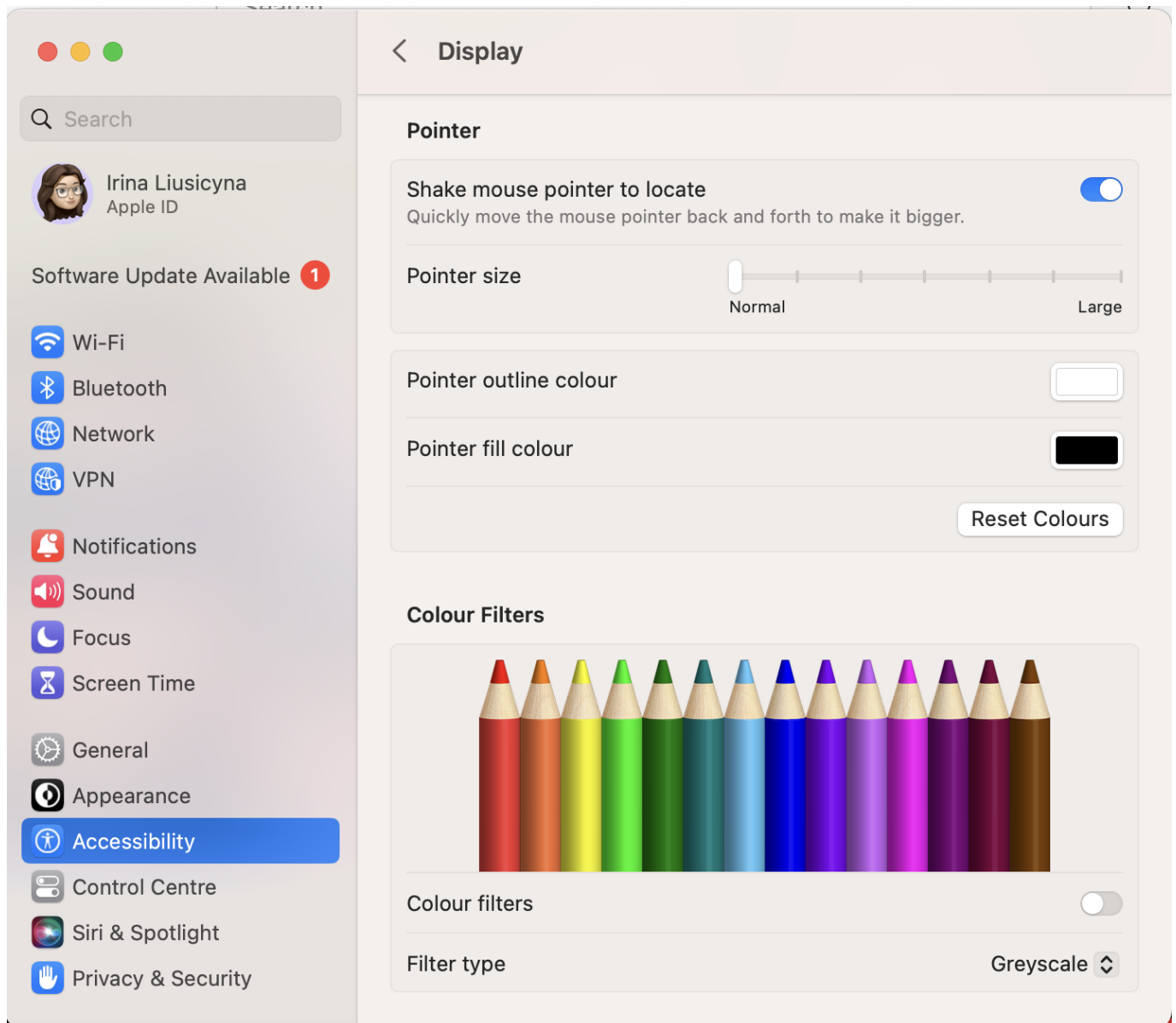


Figure 4.5-4 How to Manage Accessibility Display settings (2 of 3)

- On your Mac, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Display on the right. (You may need to scroll down.)
- Go to Pointer, then set any of these options:
- **Shake mouse pointer to locate:** Turn this option on to make the pointer larger when you quickly move your finger on the trackpad or quickly move the mouse.
- **Pointer size:** Drag the slider until the pointer size is right for you.
- **Pointer outline colour:** Click the colour well to select a colour for the pointer's outline.
- **Pointer fill colour:** Click the colour well to select a colour for the inside of the pointer.

- **Reset Colours:** Use the default pointer outline colour (white) and fill colour (black).
- Make it easier to view and differentiate what's on the screen by inverting colours, reducing transparency or applying a colour filter or tint. See [Change display colours to make it easier to see what's onscreen](#).

To make it easier to see what's on the screen of your Mac, you can invert display colours, make transparent items solid, and modify display colours with colour filters.

- Invert colours

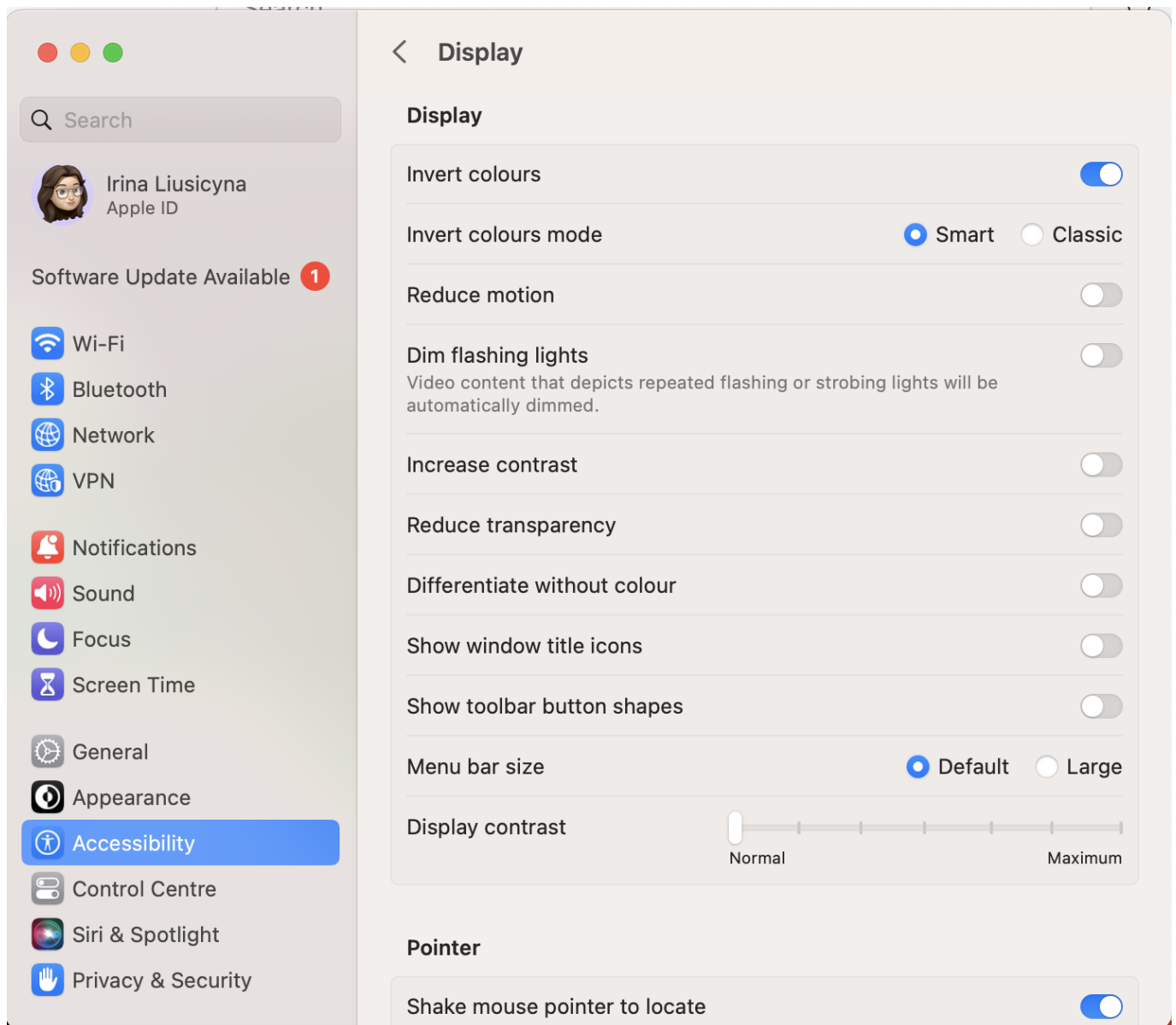


Figure 4.5-5 How to Manage Accessibility Display settings (3 of 3)

You can invert display colours to make the background dark so text and content stand out. This can be especially useful in apps and websites that do not support Dark Mode. (To use Dark Mode on your Mac, see [Use a light or dark appearance](#).)

- ✓ Choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Display on the right. (You may need to scroll down.)
- ✓ Turn on “Invert colours”.

Note: If you turn on [Night Shift](#) or [colour filters](#) (except Greyscale), “Invert colours” is automatically turned off.

- ✓ Choose a mode for inverting colours:
 - **Smart:** Invert colours everywhere except images and video.
 - **Classic:** Invert colours everywhere.
- Make transparent items solid

Some windows and areas of the desktop, such as the Dock and menu bar, appear transparent by default. You can turn these transparent areas a solid grey to make it easier to distinguish them from the background.

- ✓ Choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Display on the right. (You may need to scroll down.)
- ✓ Turn on “Reduce transparency”.
- Differentiate or tone down colours

You can apply a filter to view the entire screen in greyscale, adjust colours for colour vision deficiencies, or tint the screen a colour of your choosing.

- ✓ On your Mac, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Display on the right. (You may need to scroll down.)
- ✓ Go to Colour Filters, then turn on Colour filters.

The pencils reflect how the filter affects a range of colours.

Note: If you turn on [Night Shift](#) or [invert colours](#), colour filters are automatically turned off (except Greyscale).

- ✓ Click the “Filter type” pop-up menu, then choose a filter.

You can adjust the intensity by dragging the Intensity slider.

If you choose Colour Tint, click the colour well to choose the colour of the tint.

Note: Colour filters can change the look of images and videos.

- Stop or reduce motion on the screen — for example, when you open apps or switch between desktops, view media depicting flashing or strobing lights, or view rapid animated images (such as GIFs). See [Stop or reduce onscreen motion](#).

Note: “Dim flashing lights” is available only for supported media and on Mac computers with [Apple silicon](#). It should not be relied upon for the treatment of any medical condition.

Content is processed on device in real time.

4.5.1.4 Spoken Content features

Customise the voice your Mac uses to speak text, and have your Mac speak announcements, items under the pointer and whatever you type or select. See [Change Spoken Content settings for accessibility](#).

On your Mac, use Spoken Content settings to customise the system voice, be notified when an alert or app needs your attention and set other options for content your Mac can speak aloud.

To change these settings, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Spoken Content on the right. (You may need to scroll down.)

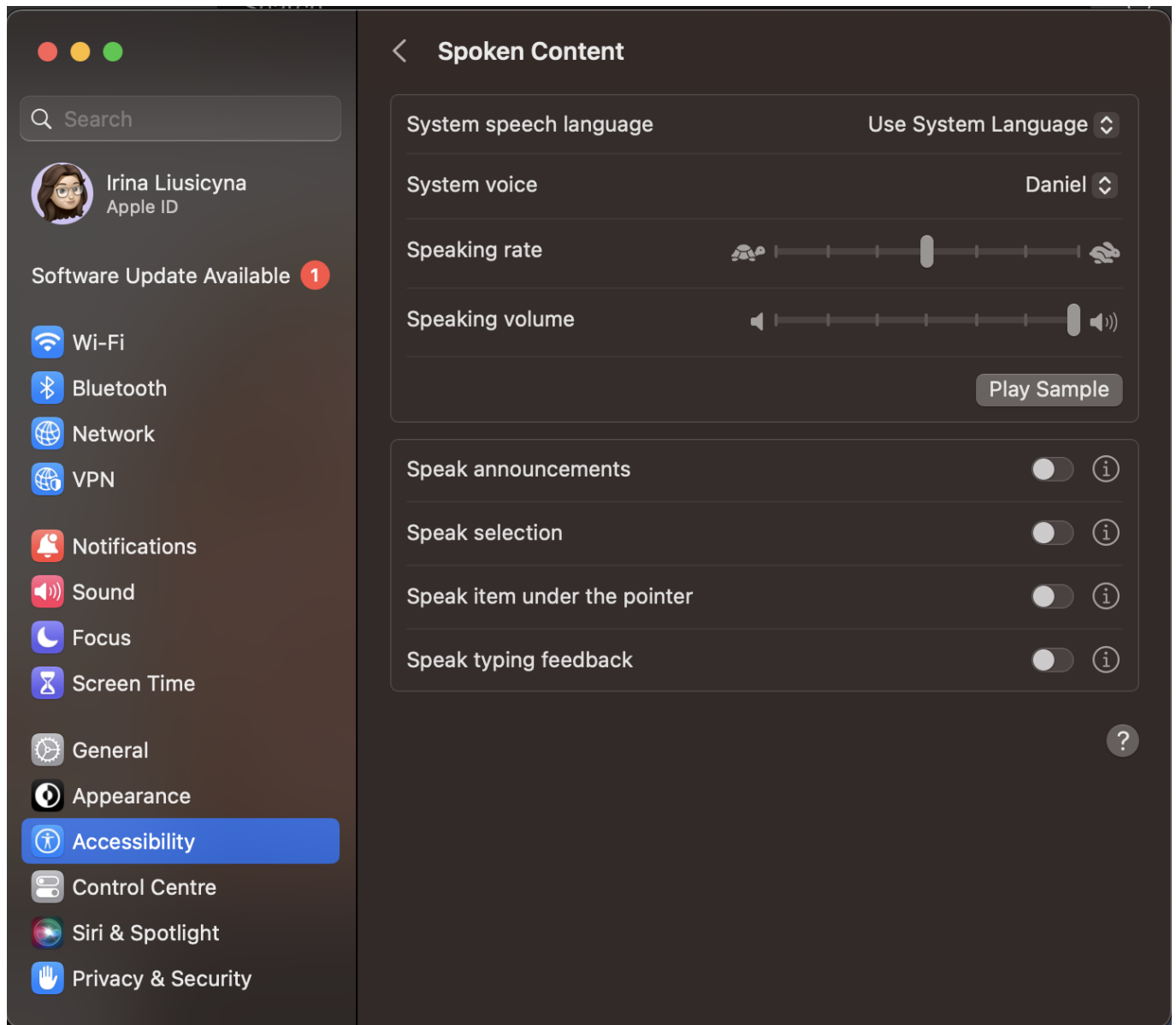


Figure 4.5-6 How to Manage Accessibility Spoken Content Settings

Option	Description
System speech language	Choose the language you want your Mac to use to speak text and alerts, if different from the system language.
System voice	Choose a voice to speak text and alerts; click Play Sample to hear a sample. See Change the voice your Mac uses to speak text .
Speaking rate	Set the speed at which text is spoken.
Speaking volume	Set the volume at which text is spoken. Setting the volume here does not affect the volume set for your Mac in Sound settings.

Option

Description

Speak announcements

Have your Mac announce and speak dialogues and other announcements. See [Have your Mac speak announcements](#).

To customise, click the Info button , then select a voice, the phrase you want to hear (such as the app name or “Attention!”) before an announcement is spoken and how long your Mac waits before it speaks. Click Play Sample to hear a sample.

Speak selection

Have your Mac speak selected text when you press the specified keyboard shortcut. See [Have your Mac speak text that is on the screen](#).

To customise, click the Info button :

- **Keyboard shortcut:** Press the key combination you want to use. For example, press the Option and Tab keys together to set the keyboard shortcut as Option+Tab.
- **Highlight content:** Choose to have spoken words, sentences or both highlighted. If you do not want spoken content highlighted, choose None.
- **Word colour:** Choose the colour to use to highlight words as they’re spoken.
- **Sentence colour:** Choose the colour to use to highlight sentences as they’re spoken.
- **Sentence style:** Choose how to indicate sentences as they’re spoken (Underline or “Background colour”).
- **Show controller:** Choose when to show the controller (Automatically, Never or Always).

Speak item under the pointer

Have your Mac identify items under the pointer.

To customise, click the Info button , then choose when your Mac speaks the item (all the time or only when you use zoom), the level of detail (called *verbosity*) (High, Medium or Low), and how long to have your Mac wait before speaking.

Speak typing feedback

Have your Mac speak what you type or press using the keyboard.

To customise, click the Info button :

- **Echo characters:** Your Mac speaks each character you type.
- **Echo words:** Your Mac speaks each word you type.
- **Echo selection changes:** When you use the arrow keys to move the insertion point forward or back, your Mac speaks the character to the right or left of the insertion point.
- **Echo modifier keys:** Your Mac speaks each modifier key you press, including the Caps Lock key.

You can set keyboard shortcuts to quickly turn on or off options like Speak selection, Speak item under the pointer and Speak typing feedback. Choose Apple menu  > System Settings, click Keyboard  in the sidebar (you may need to scroll down), click Keyboard Shortcuts on the right, then click Accessibility. See [Use macOS keyboard shortcuts](#).

If your Mac is speaking even though you didn't set options for it to do so, you may have inadvertently turned on VoiceOver, the built-in screen reader that describes aloud what appears on your screen. To quickly turn VoiceOver off, press Command-F5. If your Mac or Magic Keyboard has [Touch ID](#), press and hold the Command key while you quickly press Touch ID three times.

4.5.1.5 Descriptions

Listen to a description of the visual content in movies, TV shows and other media, if available.

See [Change Descriptions settings for accessibility](#).

On your Mac, use H to listen to a description of the visual content in movies, TV programmes and other media, if available.

To change these settings, choose Apple menu  > System Settings, click Accessibility  in the sidebar, then click Descriptions on the right. (You may need to scroll down.)

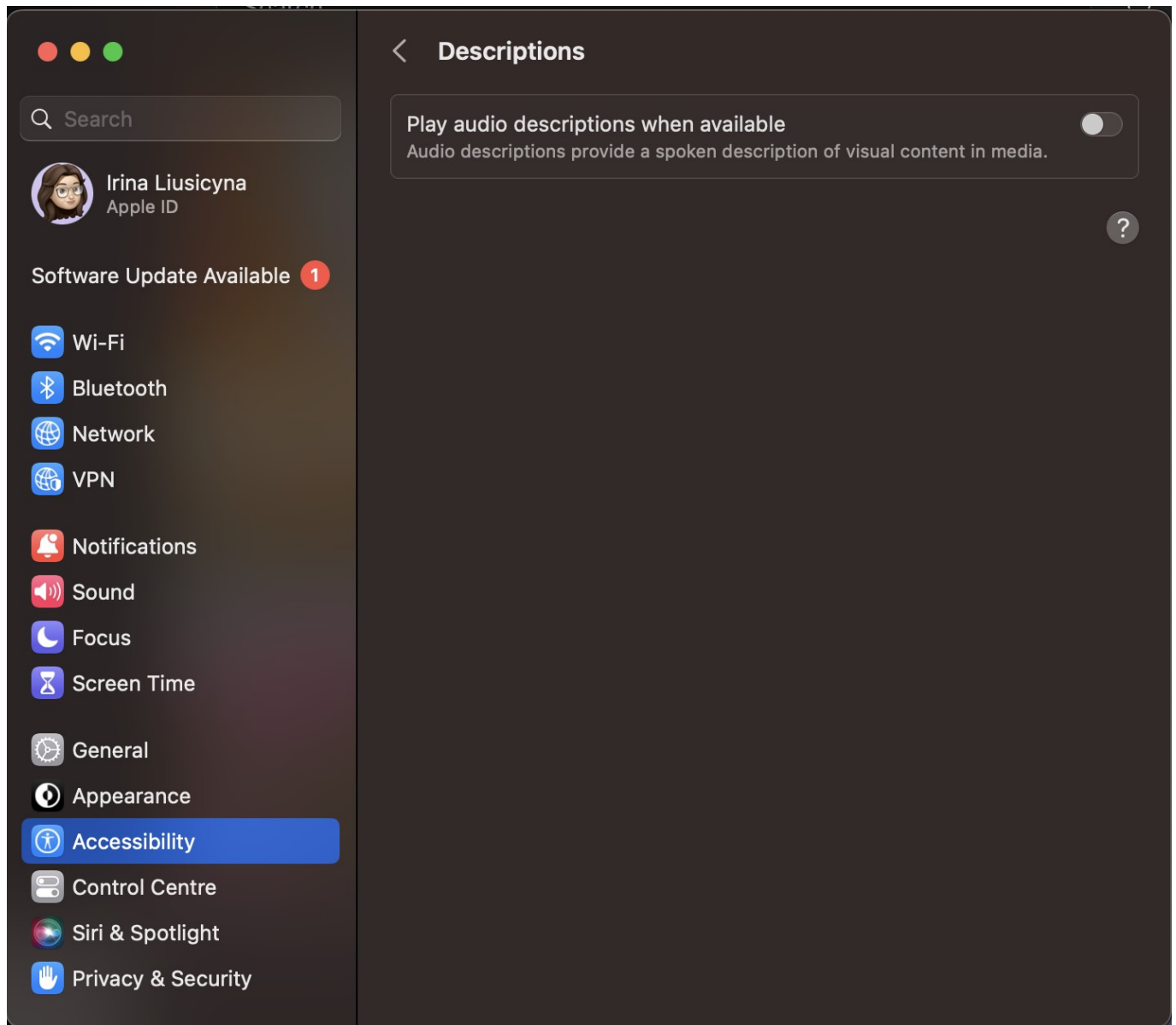


Figure 4.5-7 How to Manage Accessibility Descriptions Settings

Option	Description
Play audio descriptions when available	Automatically play a spoken description of visual content in media.

4.5.2 Exercises (Mac OS Accessibility for People with Visual Impairments)

Using one of the accessibility features for vision, please do one of the exercises for Pages, Numbers or Keynote, optionally.

4.6 Resources

1. Use VoiceOver to create a Pages document on Mac. [Use VoiceOver to create a Pages document on Mac – Apple Support \(UK\)](#);
2. Use VoiceOver to preview comments and track changes in Pages on Mac. [Use VoiceOver to preview comments and track changes in Pages on Mac – Apple Support \(UK\)](#);
3. Use VoiceOver to create a Numbers spreadsheet on Mac. [Use VoiceOver to create a Numbers spreadsheet on Mac – Apple Support \(UK\)](#);
4. Use VoiceOver to create formulas and autofill cells in Numbers on Mac. [Use VoiceOver to create formulas and autofill cells in Numbers on Mac – Apple Support \(UK\)](#);
5. VoiceOver User Guide. [VoiceOver User Guide for Mac – Apple Support \(UK\)](#);
6. Use VoiceOver to create a Keynote presentation on Mac. [Use VoiceOver to create a Keynote presentation on Mac – Apple Support \(UK\)](#);
7. VoiceOver modifier. [VoiceOver modifier – Apple Support \(UK\)](#);
8. MacOS accessibility features for vision. [macOS accessibility features for vision – Apple Support \(UK\)](#);
9. Use Voice Control commands to interact with your Mac. [Use Voice Control commands to interact with your Mac – Apple Support \(UK\)](#);
10. AirPods User Guide (for Using Spatial Audio). [Control Spatial Audio and head tracking – Apple Support \(UK\)](#);
11. MacOS accessibility features for hearing. [macOS accessibility features for hearing – Apple Support \(UK\)](#);
12. Use Voice Control commands to interact with your Mac. [Use Voice Control commands to interact with your Mac – Apple Support \(UK\)](#);
13. Customise Voice Control on Mac. [Customise Voice Control on Mac – Apple Support \(UK\)](#);
14. Navigate your Mac using Full Keyboard Access. [Navigate your Mac using Full Keyboard Access – Apple Support \(UK\)](#);
15. Use the Accessibility Keyboard on Mac. [Use the Accessibility Keyboard on Mac – Apple Support \(UK\)](#);
16. Change Keyboard settings for accessibility on Mac. [Change Keyboard settings for accessibility on Mac – Apple Support \(UK\)](#);

17. Control the pointer using Dwell on Mac. [Control the pointer using Dwell on Mac – Apple Support \(UK\)](#);
18. Change Pointer Control settings for accessibility on Mac. [Change Pointer Control settings for accessibility on Mac – Apple Support \(UK\)](#);
19. Use Switch Control on Mac. [Use Switch Control on Mac – Apple Support \(UK\)](#);
20. Have what you type spoken out loud on Mac. [Have what you type spoken out loud on Mac – Apple Support \(UK\)](#);
21. Mac OS general accessibility features. [macOS general accessibility features – Apple Support \(UK\)](#);