Assess the Accessibility of PDFs

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# Introduction

Use this document to determine the accessibility of PDFs.

## Tools

The list below contains links to the applications used in this tutorial to assess PDFs:

* [Natural Reader](http://www.naturalreaders.com/download.php)
* [PDF Accessibility Checker (PAC)](http://www.access-for-all.ch/en/pdf-lab/pdf-accessibility-checker-pac.html)
* [Colour Contrast Analyser (CCA)](http://www.paciellogroup.com/resources/contrastanalyser/)
* [Adobe Reader](http://www.adobe.com/products/reader.html)

## Further Assistance

If the PDF being assessed does not meet one or more of the accessibility criteria described below, please consult with the campus office serving students with disabilities for assistance in obtaining an accessible version of the PDF. Providing this access in a timely manner is critical for student success.

# Text Access

Text access allows users to enable text-to-speech functionality so that the text may be read aloud.

## What to do

Listen to the text

## Tool(s) to use

[Adobe Reader](http://www.adobe.com/products/reader.html) and [Natural Reader](http://www.naturalreaders.com/download.php)

## How to use

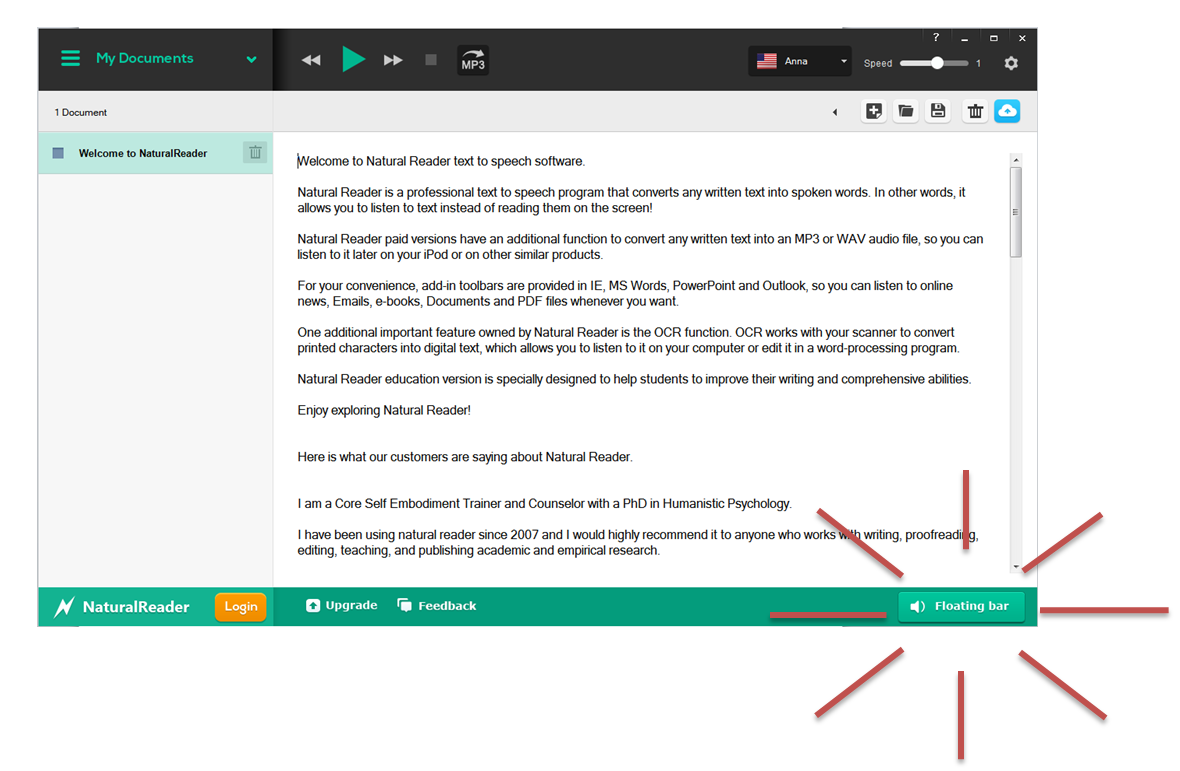
1. Open the PDF in Adobe Reader

Adobe Reader Icon

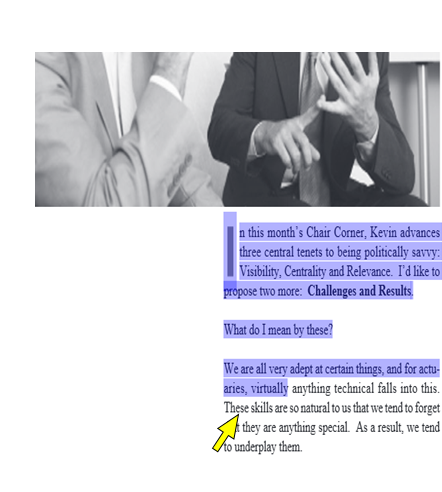

1. Open Natural Reader.

Natural Reader Icon

1. Select the **Floating Bar** button.

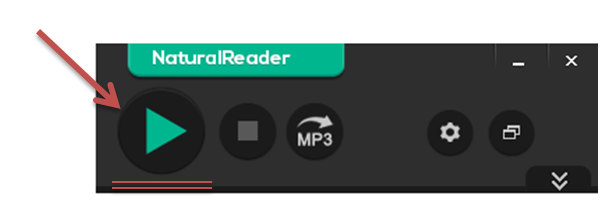


1. Select text in the material to be read aloud.



**Note:** If the text is selectable letter by letter, then this is a good indication that the text is digital.✓

1. If needed,enable the computer’s sound and adjust it to a safe volume level to listen to Natural Reader.
2. On the Natural Reader Floating Bar, select the **Play** button to hear the text read aloud.



## What is the Result?

✓ If the text can be heard using Natural Reader, then it is digital text that assistive technology may be able to access.

🗴 If the text is not selectable or cannot be read aloud by a Text to Speech technologies such as Natural Reader, then the text is not digital and assistive technologies may not be able to access that information.

# Reading Order

Reading order corresponds to visual layout.

## What to do

Check the reading order

## Tool(s) to use

[Adobe Reader](http://www.adobe.com/products/reader.html)’s Read Out Loud Tool

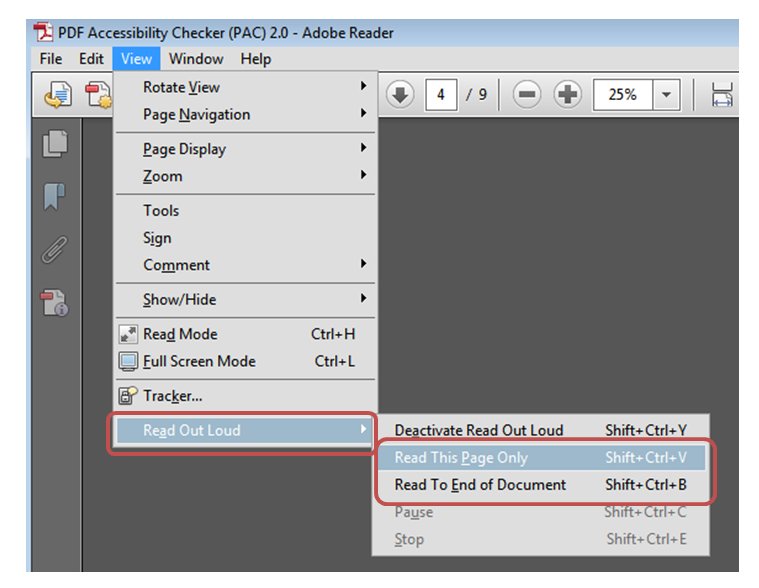
## How to use

Adobe Reader has a built in text to speech reader called Read Out Loud. Read Out loud will read the order of content based on its structure.

1. Save the PDF on the computer
2. Open the PDF in Adobe Reader



1. The Read Out Loud features are located in the **View** menu under the **Read Out Loud** submenu.



1. Select **Activate Read Out Loud**
2. Select options to **Read This Page Only** or **Read To End of Document**

## What is the Result?

✓ If the order of the content read by Read Out Loud matches the order of the content in the PDF, then the content will be conveyed to assistive technology users in a logical order.

🗴 If the order of the content read by Read Out Loud does not match the order of the content, then the content will be conveyed to assistive technology users in the wrong order.

# Structural Markup and Navigation

The document includes structural markup, such as headings and lists, which can be used for navigation by assistive technology.

## What to do

Assess the structure of the document by looking for headings, lists and tables.

## Tool(s) to use

[PDF Accessibility Checker (PAC)](http://www.access-for-all.ch/en/pdf-lab/pdf-accessibility-checker-pac.html)

## How to use it

1. Save the PDF on the computer
2. Open the **PDF Accessibility Checker**

PDF Accessibility Checker Icon

1. Select the **Browse** button and select the saved PDF



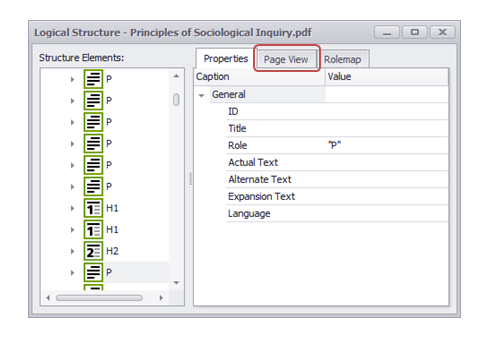
1. Select the **Start** button



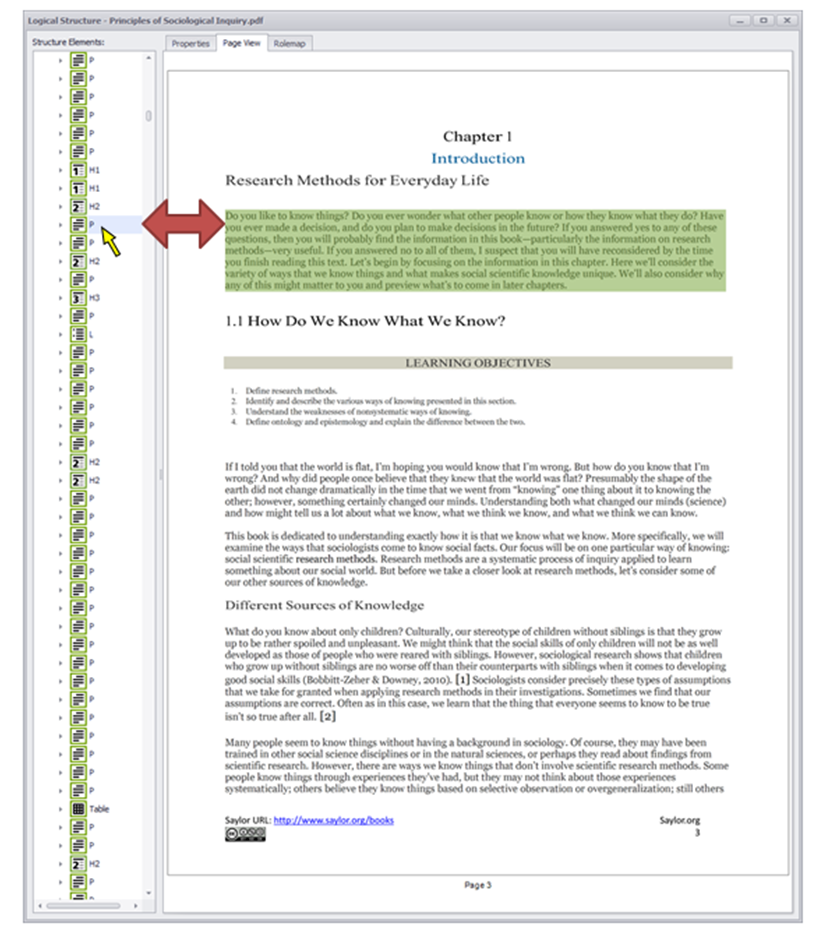
1. Select the **Logical Structure** button



1. Select the Page View tab



1. Use the keyboard’s down and up arrow keys or use the mouse to move through each element in the **Structure Elements** section. Observe the highlighted content and its corresponding element.



## What is the Result?

✓ The structural markup may be used for navigation if the content type in PAC’S Page View is represented in **Structure Elements** pane:

* Heading 1 Icon in PDF accessiblity checker tool - Heading 1
* Heading 2 Icon in PDF accessibility checker tool - Heading 2
* Heading 3 Icon in PDF accessibility Checker Tool - Heading 3
* Paragraph Icon in PDF accessiblity Checker tool - Paragraph
* List Icon in PDF accessiblity Checker tool - List
* table icon in PDF accessiblity checker tool - Table

🗴 The structural markup may not be used for navigation if the content type in PAC’S Page View is not correctly represented in **Structure Elements:**.

For example, if the **Paragraph** icon is the only element that appears in the **Structure Elements:** pane when headings and lists are apparent in the **Page View**, assistive technology users will not have the structure of the content correctly conveyed to them. These readers may miss the importance of the content in the document.

# Tables

Data tables include markup that identifies row and column headers.

## What to do

Assess the structure of the tables in a PDF.

## Tool(s) to use

[PDF Accessibility Checker (PAC)](http://www.access-for-all.ch/en/pdf-lab/pdf-accessibility-checker-pac.html)

## How to use

1. Save the PDF on the computer
2. Open the **PDF Accessibility Checker**

PDF Accessibility Checker

1. Select the **Browse** button and select the saved PDF



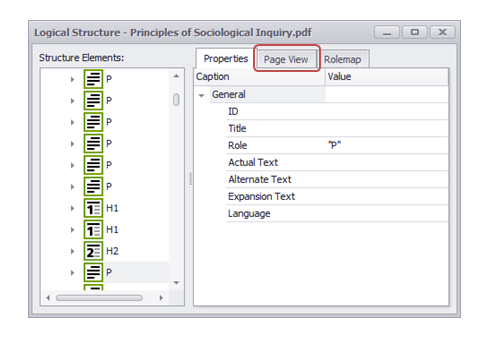
1. Select the **Start** button



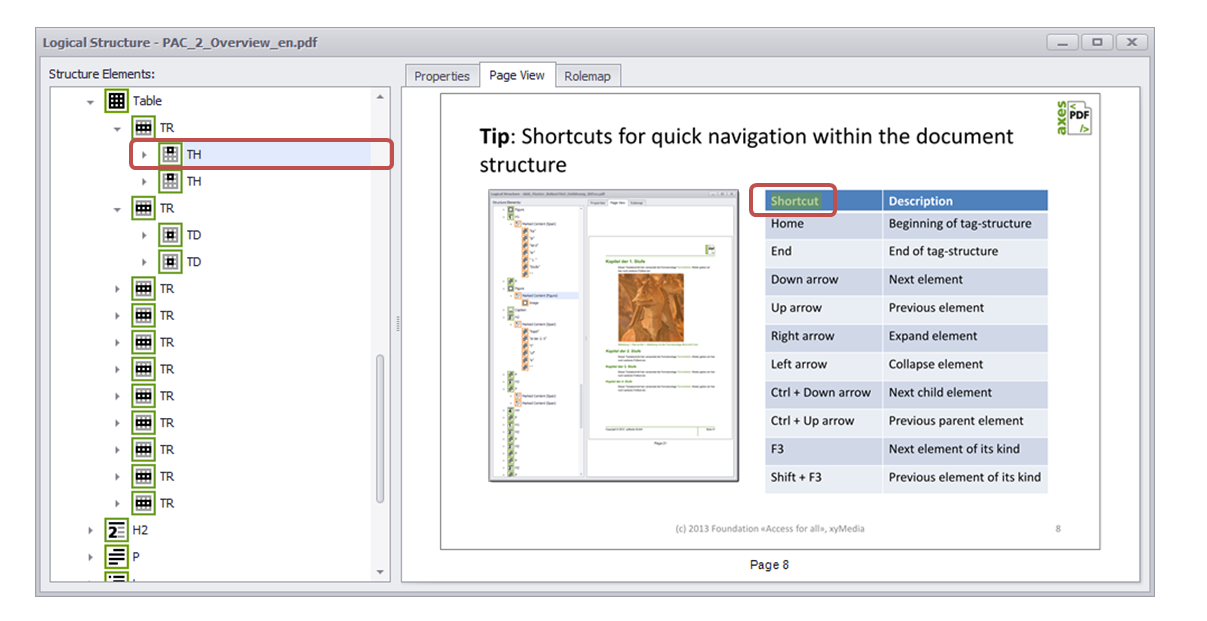
1. Select the **Logical Structure** button



1. Select the **Page View** tab



1. Scroll to the section of the document that contains a table and expand the nested lists in **Structure Elements:** to display the table structure. Each corresponding part of the table will highlight in the **Page View**.



## What is the Result?

✓ The PDF has proper structural markup for its tables that can be used for navigation if the following icons are present (when applicable):

* table icon in PDF accessiblity checker tool Table
* Table Header Icon in PAC TH - Table Header used for data table headers

Assistive technology users may be able to navigate through properly structured tables.

🗴 The page does not have a proper structural markup for tables if:

* Layout tables, tables that do not have relational data, have table headers.
* Data tables, tables with interrelated information, do not have headers.

Users of assistive technology may not be able to navigate through the table and may not understand its content.

# Hyperlinks

Allows users to understand a link’s destination and what the name of the resource is that they are linking to.

## What to do

Verify that links have a recognizable meaning and are functional.

## Tool(s) to use

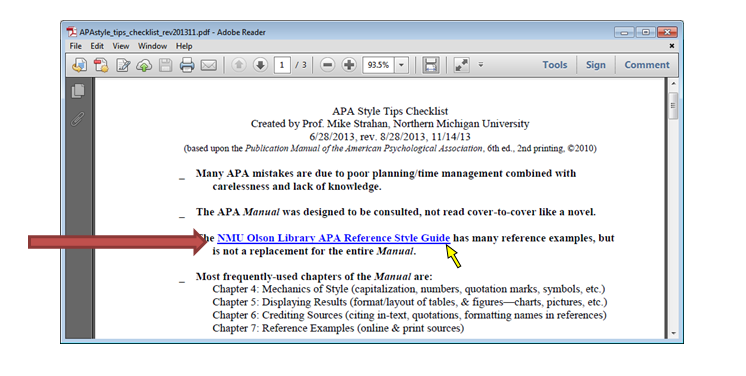
[Adobe Reader](http://www.adobe.com/products/reader.html)

## How to use

1. Open the document in Adobe Reader



1. Browse through the document and look for links.



<http://library.nmu.edu/guides/userguides/APAstyle_tips_checklist_rev201311.pdf>

1. Manually check the links by selecting them.
2. Verify that the link goes to the expected destination. A well labeled link provides the user with information such as a meaningful name of a document, or name of a website.

## What is the Result?

✓ All users may be able to use the links included in a document if they are understandable and work properly. The hyperlinks in a document are operable and understandable if:

* + The links go to their appropriate destination.
  + The link text for the link clearly states where it will lead. A link labeled “Word doc” does not tell a person where it is linking to, especially when taken out of context of the text around it.

Below is a list of links that do not have meaningful names:

“Click here”

“Next document”

“New document”

“here”

“Link”

* + Links are well labeled if the link text is understandable when extracted from the surrounding text.
  + Many users navigate a page by listing the links without the surrounding text.

🗴 Users may not be able to use the links included in a document if they are not understandable or do not work as expected. Hyperlinks are not useful to users if:

* + Links are broken
  + Links do not have meaningful text
  + Link text is “Click here”, “About”, “More Info”, “More”, etc.
  + Links do not look different from its surrounding text

# Color as Information

When information is conveyed using color, a second technique is necessary for users that cannot perceive colors.

## What to do

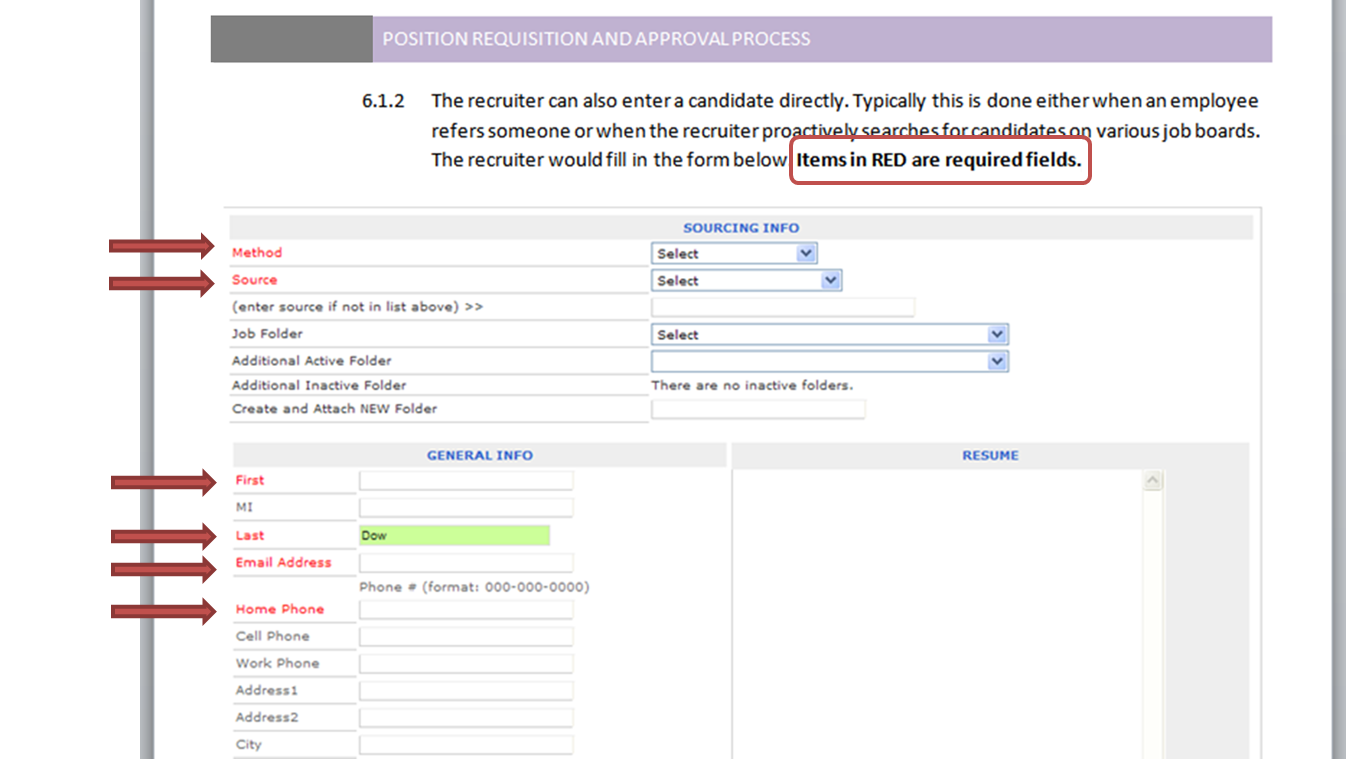
Look for content that conveys meaning through the use of only color.

## Tool(s) to use

[Adobe Reader](http://www.adobe.com/products/reader.html)

## How to use

1. Read through the content and look for instructions or descriptions that require readers to interpret colors.



## What is the Result?

✓ Users may visibly perceive information and instruction when alternative distinguishing features are used such as:

* The use of Strong, larger, or italic font is used in combination or instead of color
* The use of symbols, such as asterisk (\*) or pound (#), is used in combination or instead of color.
* The use of an underline or pattern is used in combination or instead of color.

Using any of these alternatives may be beneficial to users with colorblindness.

🗴 Users may not be able to visibly perceive information and instruction if they are color dependent. Users with colorblindness may not be able to obtain information from the document because alternatives to color are not used.

# Color Contrast

High contrast helps users distinguish between text and the background on which the text appears. Tools can test for the proper contrast ratio of 4.5:1 provided between the text (foreground) and its background.

## What to do

Analyze the color contrast between text and its background.

## Tool(s) to use

[Colour Contrast Analyser](http://www.paciellogroup.com/resources/contrastanalyser/) (CCA)

## How to use

1. Open the document in Adobe Reader.



1. Open the Colour Contrast Analyser.

Colour Contrast Analyser icon

1. Scan the page for text with color combinations other than black text with white backgrounds (and vice versa). Below is an example that can be used.



http://www.merlot.org/merlot/downloadFile.htm?fileName=Nanabek%2fIntroductory+Inclusion+jea.gm.pptx

1. Using the CCA’s **Foreground Colour Sampler**, select the color of the text by placing the cross hair in the center of the letter.



1. To analyze the contrast, use the **Background Colour Sampler** and place the crosshair just outside of the letter previously selected.



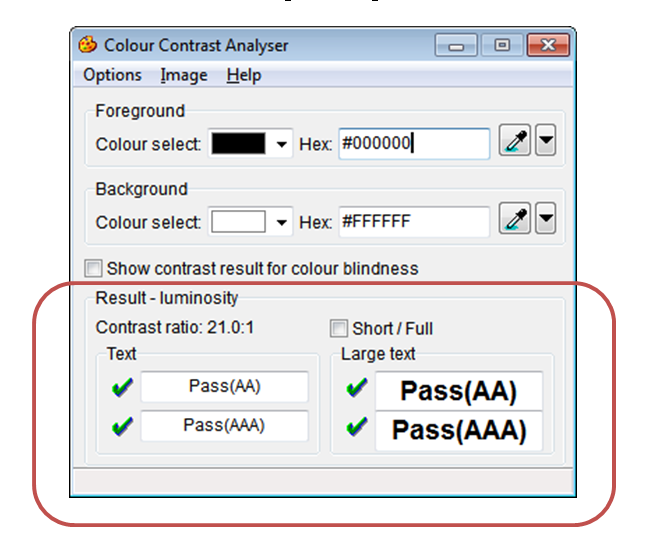
**Note:** **Use the Colour Contrast Analyser.** Do not assume that the contrast is accessible without using a color contrast analyzing tool. Sometimes, the contrast between text and background may appear like it should pass a color contrast test, but when tested, fails due to low contrast.



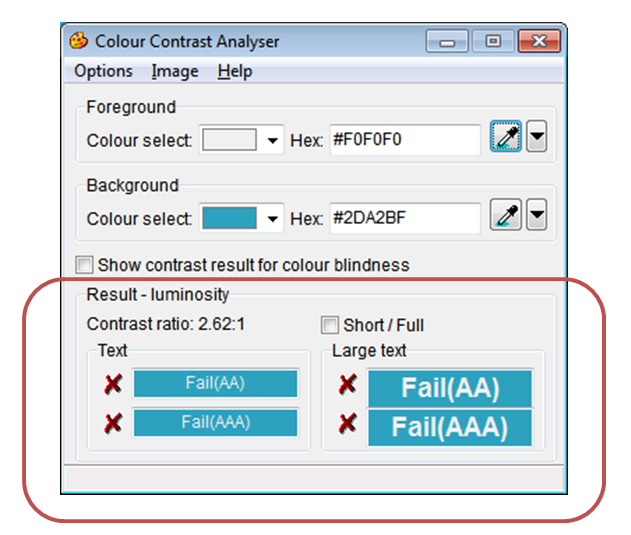
1. Review the **Results** at the bottom of the CCA.

## What is the Result?

✓ If there is a green check mark next to the word **Pass (AA)**, then the text and foreground color combination has a high enough contrast that is suitable for most people.



🗴 If there is a red x next to the word **Fail (AA)**, then the text and foreground color combination does not have a high enough contrast and people with color blindness may not be able to read the text.



# Language

The language used in the document is conveyed to users of assistive technology. This helps with the way the document is read.

## What to do

Verify the language set for the PDF

## Tool(s) to use

[PDF Accessibility Checker (PAC)](http://www.access-for-all.ch/en/pdf-lab/pdf-accessibility-checker-pac.html)

## How to use

1. Save the PDF on the computer
2. Open the **PDF Accessibility Checker**

PDF Accessibility Checker

1. Select the **Browse** button and select the saved PDF



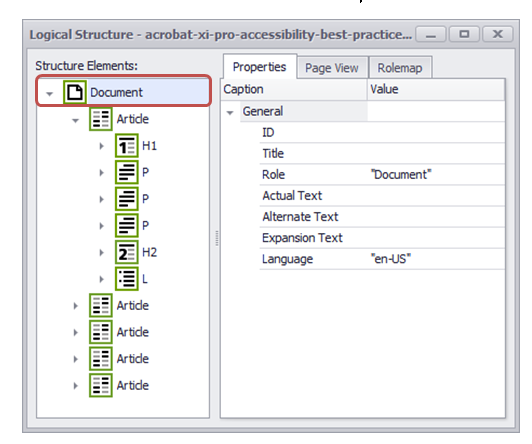
1. Select the **Start** button



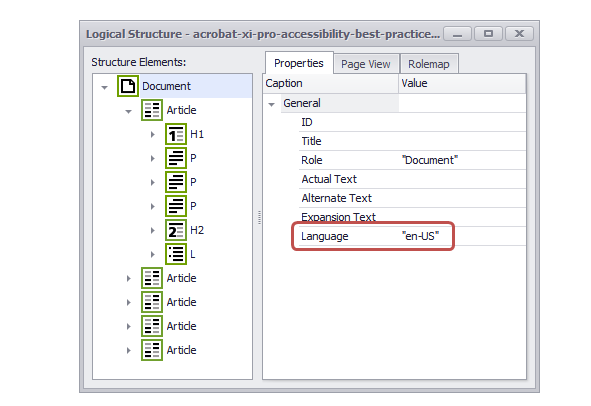
1. Select the **Logical Structure** button



1. In the **Structure Elements:** list on the left, select **Document** at the top.



1. On the **Properties** tab, verify that there is a language specified for the document.



**Note:** If the document contains content in more than one language, go to that section in the **Structure Elements:** list and verify that that the language setting is correct. ✓

## What is the Result?

✓ If the document’s or section’s language is appropriately declared, then the content may be conveyed through assistive technology in the intended language.

🗴 The document’s content may not be correctly conveyed to readers using assistive technology if there is no language declared for the document or content or if the language declared is incorrect.

## Resources

[Language Codes](http://msdn.microsoft.com/en-us/library/ee796272%28v=cs.20%29.aspx)

# Images

Meaningful images should be described for all users. As authors, consider what message the image is meant to provide. If it is meaningful, a brief description of the intended information should be provided.

## What to do

Check the images in the document for alterative text or a description of the image in the surrounding text.

## Tool(s) to use

[PDF Accessibility Checker (PAC)](http://www.access-for-all.ch/en/pdf-lab/pdf-accessibility-checker-pac.html)

## How to use

1. Open the PDF Accessibility Checker

PDF Accessibility Checker

1. Select the **Browse** button and select the saved PDF



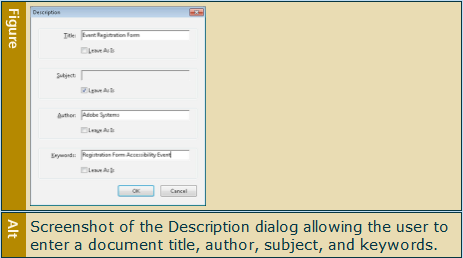
1. Select the **Start** button



1. Select the **Screenreader Preview** button



1. Scroll down to where images are in the PDF. Look specifically for beige colored **Figure** and **Alt** sections



## What is the Result?

✓If there is text inside the Alt area that describes the image in the document, then assistive technology users will be able to understand the meaning and purpose of the image.

The image has proper descriptions if:

* + The alternative text description is short and meaningful.  The image may be described to assistive technology users.
  + Complex images, charts, and graphs are described in surrounding text for all users to read. Complex images may also be supplemented with a link to additional information.
  + Decorative images do not have alternative text descriptions. These images may be ignored by assistive technology which decreases the amount of non-important information the user of assistive technology will hear.

**Note:** The following images do not need to have alternative text descriptions: 

* decorative images
* unimportant images
* important images that are described in a paragraph above or below

🗴 The document does not have proper alternative text if:

* + The **Alt** area is blank for an important image without further explanation in surrounding paragraphs.
  + The **Alt** area does not have a short description of the image’s function, meaning or content.
  + The **Alt** Description area contains a web address (unless the image is of a web address).
  + Decorative images have alternative descriptions.