

**Step-by-Step Training Outline for Designing with Accessibility in Mind:
Adobe Acrobat
June 19, 2007**

You will use this series of steps to determine whether your PDF's are accessible.
You can follow these steps no matter what the origin of the PDF document was.

STEP 1: Determine the Origin of the PDF file:

- What is the original file type?
 - A scanned document
 - Word Processing Document (Microsoft Word)
 - Desktop Publishing (Adobe InDesign or Microsoft Publisher)
 - A Form

STEP 2: Decide the purpose of the PDF file:

- What will the final PDF file be used for?
 1. Is it a document to be read?
 2. Is it an Interactive Form?

STEP 3: Determine whether or not the PDF is Accessible:

- Is this PDF Accessible?
 1. Determine whether or not the PDF is a Scanned Image.
 - o Zoom in on the document and look for pixelation.
 - o Search for text on the page.
 - o Run Read Out Loud. (**View > Read Out Loud**)
 2. If you determine the document to be a **scanned document**, follow these steps. If you determine that it is not skip to step 3.
 - o If it is a scanned document, perform OCR (Optical Character Recognition) (**Document > OCR Text Recognition > Recognize Text Using OCR**)
 - o When the **Recognize Text** window appears select **all pages**.
 - o Under **Settings** select **Formatted Text & Graphics for PDF Output Style**
 - o Verify the language (**English**)
 - o Under **Downsample Images** select **Lowest Downsampling (600 dpi)**
 - o Search for and Correct "Suspects" (**Document > OCR text Recognition > Find First OCR Suspect**)
 - o Proofread your document.

- Try **searching for a word** within the document to ensure that it is indeed a searchable text document at this point. (**Edit > Find**)
- 3. Determine whether or not the PDF is tagged.
 - Select **File > Properties**. **Click on the description tab**. In the bottom left-hand corner you will see a field that says **Tagged PDF: (if you see the word Yes, it is tagged; if you see the word No, it isn't.)**
 - You may also want to **select View > Navigation Panels > Tags** to determine if any tags exist.
- 4. If the PDF is not tagged, you will need to tag it manually.
 - Select **Advanced > Accessibility > Add Tags to Document**.
 - Select **Advanced > Accessibility > TouchUp Reading Order**.
 - Use the **TouchUp Reading Order Tool** to clean up the tags automatically created in the previous step.
 - Verify the reading order of the elements on each page.
 - Click the **Show Order Panel button**.
 - If necessary add alternate text to graphics or figures. (
 - Add descriptions to form fields.
 - Verify proper tagging.
 - To add the needed tags, for instance, (select the heading on the page with the **TouchUp Reading Order Tool**, and click the **Heading 1** button in the TouchUp Reading Order Panel.)
 - If you were tagging an image, etc. you would select figure instead of Heading 1.
- 5. If the PDF is tagged, determine whether or not it was tagged properly.
 - Is the document structured correctly (is it in proper reading order?)
 - With the **TouchUp Reading Order Panel** open (**Advanced > Accessibility > TouchUp Reading Order**), click the **Show Order button** and review the order of the items on the page.
 - If something is in the wrong order you can **click and drag it into the correct order via the order panel**, or you can click on the Content Tab and change the reading order within the document window.
 - **Remember, reading order is not demonstrated by the location and alignment of the objects on the page. An object's order is demonstrated by the small number located in the upper left-hand box of the object in the document window.**

- The number in that box is what you need to refer to when determining whether or not the page is in logical reading order.
 - o Has alternate text been added to all necessary graphics and figures?
 - To **add alternate text** to an image, **open the TouchUp Reading Order Panel** as discussed before.
 - **Right-click** on one of the objects that you need to add alternate text to.
 - Select **Edit Alternate Text**.
 - Add or edit the alternate text in the field provided.
 - Click **Ok**.
 - Remember, it is only necessary to provide information for those items that are of importance.
- 6. If the document contains forms, have descriptions been added to the form fields?**
- o To determine whether or not there are form fields present in your document, select **Forms > Run Form Field Recognition**.
 - o If there are no form fields present, but you have decided this document is indeed supposed to contain form fields you will need to add them manually.
 - o Select **Tools > Forms > Show Forms Toolbar**
 - o If there are already form fields present, check the following:
 - Ensure that there are Labels and Descriptions in the tool tip fields (**Tools > Forms > Edit Layout**)
 - Set and test the tab order of the form fields. (You will need to click on the hand icon in the Acrobat toolbar to test the tab order.)
- Try tabbing through your form using the following suggestions:
- Press your **Tab key** to move focus to the **next field**
 - Press **Shift+Tab** to move focus to the **previous field**
 - Press the **Spacebar** to **select options**
 - Press the **Arrow keys** to select **radio button options** or **list items**.
- o Add your first tag by clicking and dragging a box over the field area.
 - o Add tags to your document after creating your form fields.
- 7. Run the Adobe Acrobat Accessibility checker. (Advanced > Accessibility > Full Check)** (Run it for both Adobe Acrobat and Section 508 compliance.)

8. Fix any errors that the checker finds by repeating the steps discussed above.
9. Continue to run the checker and fix errors until the checker appears to find no errors.

Practice:

Word Document:

Suggestions:

- When possible, start with a Word document that has been designed with Accessibility in mind.
- 1. You will need to download and install the 2007 Microsoft Office Add-in: Microsoft Save as PDF or XPS add-in. It is located at: <http://www.microsoft.com/downloads/details.aspx?FamilyId=4D951911-3E7E-4AE6-B059-A2E79ED87041&displaylang=en> (For the purposes of this workshop this add-in has already been installed. Please do not download and install it again.)
- 2. Open the Word Document that we applied accessible design techniques to in the previous hour. If you did not join us previously you will want to open, (**wordpractice.docx**)
- 3. Click on the **Office button > Save As > PDF or XPS**.
- 4. When the **Publish as PDF or XPS** dialog box appears:
 - o Enter a file name in the **File name: field**.
 - o Make sure that **PDF (*.pdf)** is chosen in the **Save as type** drop-down menu.
 - o Click on the **Options button**:
 - page range should be set to **All**,
 - publish what should be set to **document**,
 - **Create bookmarks using: Headings** should be checked
 - **Document Structure tags for accessibility** should be checked. (This is the element that will allow the hierarchical structure that was set previously in Microsoft Office to be maintained.)
 - o Click **Ok**.

PDF tags are comparable to HTML elements. Tags are required in order for screen readers and other assistive devices to convey the document structure and content. Acrobat's reflow feature, discussed previously calls on tags in order to redraw the PDF page to fit existing window widths while keeping content within a single page. Acrobat's Read Out Loud Feature uses tags to determine the reading order of the page.

Tags do not affect the visual appearance of your document. Although you may not be able to physically see the tags, you can follow the following steps to determine whether or not tags exist.

5. To see if your document has been tagged, choose **File > Properties > Description**. If you see the word **Yes** next to **Tagged PDF** at the bottom of the properties window then you have a tagged document. If you see the word **No** you do not have a tagged document.
6. Note: **Using the File > Print to PDF will not yield the correct type of tagging necessary for an accessible document**. Make sure that you always use the add-in discussed previously to create your tagged PDF. There will of course be times that you end-up with an untagged, or inappropriately tagged document dependent upon the point of origin for that document. You will learn how to add your own tags in a future section.
7. Check the overall accessibility of your document by choosing **Advanced > Accessibility > Full Check**.
8. When the Accessibility Full Check window appears:
 - o Under **Report and Comment Options**:
 - **Create Accessibility Report**
 - **Include repair hints in Accessibility Report** should be selected.
 - o Under **Page Range**:
 - **All pages in document** should be selected.
 - o Under **Checking Options Name**, choose:
 - **Adobe PDF** (run that report)
 - **Section 508 Web-based intranet and internet information and applications (1194.22)** (run that report)
 - o Click **Select All** to include all possible options in the report.
 - o Click **the Start Checking** button.

- o After running the Adobe PDF check the report should come back **clean with no errors**. (This is due to the hard work you did to set your Microsoft Word document up as an accessible document!)
- o Repeat the steps to run the **Section 508 accessibility** report.
- o The Section 508 will return 4 errors. Notice that the detailed reports gives you information on how to correct the problems. We will work on correcting this now.

9. Correcting Accessibility Errors (Tables)

Note: Verifying and Repairing Tables is one of the most time consuming processes you will do when making a PDF document accessible.

- o Click on the detailed report link to the left of your screen.
- o Select **View > Page Display > Single Page** (We want to ensure that this is chosen because we are going to be using the **TouchUp Reading Order Tool**. **Changes made with this tool cannot be undone and choices made with this tool can affect other pages if this is not done first!**)
- o You will notice that the error has to do with the structure of the document and the fact that table elements had no TH tags.
 - Click on the first instance of **“Table contains no Table Headers.”**
 - You will be taken to the page where the problem resides.
 - You will notice that the problem has to do with the fact that when the word document was created the images appear to have been laid out in tables.
 - Choose **Advanced > Accessibility > TouchUp Reading Order**.
 - You will now see that there is a **Table showing in the lower right-hand side of the window**. This is the result of the fact that tables were used to align the images in the original word document. This is not recommended when designing for accessibility, but it can be corrected now.
 - Click the **Show Order Panel button**.
 - Click on the **Order Tab**.
 - **Page 7 should be expanded. If not click the expansion button to expand it now.**
 - Notice that the table has the **number three** in the upper-left hand corner in the document window.
 - Click on **item 3 in the Order window**.
 - Press **Delete on your keyboard** to omit the table.

- Notice at the top of the page there is also an **extra object labeled 1**. It appears to be just a blank spacer. Select this object **(1)** in the **Order window**. Press **Delete on your keyboard** to omit it.
- Notice in the bottom left hand corner of your page there is a **blank spacer labeled 2**. Select object **(2)** in the order window and **press your delete key** to remove it.
- Look over the page. You should now see that all of the elements on the page follow the correct reading order, no tables exist, and no blank spacers exist.
- **Save** your document. (**File > Save**)
- Run the Accessibility checker again. Notice that there are still 3 errors remaining.
- Click on the first instance of **“Table contains no Table Headers.”**
- You will be taken to the page where the problem resides. It is **page 8. “COEHS Holiday Party Highlights.”**
- You will notice that the problem has to do with the fact that when the word document was created tables were used to align the images.
- Click **the Show Order Panel** button.
- Click on the **Order Tab**.
- **Page 8 should be expanded**. If not, click the **expansion button** to expand it now.
- Notice that the table in question has the number **3** in the **upper-left hand corner** in the document window.
- Click on **object 3** in the **Order window**.
- Press **Delete** on your keyboard to omit the table.
- Notice at the **top of the page** there is also an **extra object labeled 1**. It appears to be just a blank spacer. **Select this object (1)** in the Order window. Press **Delete on your keyboard** to omit it.
- Notice in the bottom left hand corner of your page there is a **blank spacer labeled 2**. Select object **(2)** in the order window and press your **delete key** to remove it.
- Look over the page. You should now see that all of the elements on the page follow the correct reading order, no tables exist, and no blank spacers exist.
- **Save** your document.
- **Run the Accessibility checker again**. Notice that there are still 3 errors remaining.
- Repeat this process for **page 9** of the document.

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Fixing Alternate Text:

- Notice that some of the alternate text in the document provided may be lacking description. You can add new alternate text or edit existing alternate text in **the TouchUp Reading Order toolbar** as well.
- Navigate to one of your pages that contains pictures. (**Page 8 might be a good starting point.**)
- Select **Advanced > Accessibility > TouchUp Reading Order** to turn on the **TouchUp Reading Order tool**.
- When the **Touch Up Reading Order** window appears **right-click on one of the images** in the document window.
- Choose **Edit Alternate Text** from the menu.
- When the **Alternate Text window** appears, add the text for the image.
- Click **OK**.
- Continue to work through this process until you have ensured that every figure in your document contains appropriate alternative text description.

Check the document for correct reading order throughout:

- Notice on **page 11, the reading order isn't exactly right**. You can use **the TouchUp Reading tool that we have already talked about to fix this problem**.
- Navigate to page 11.
- Notice that first of all **the header is submerged inside of the page content**. **Secondly, reading order 1 flows over into the second column**. This latter problem isn't such a concern but it is correctable.
- First, **to correct the heading**.
- Choose **Advanced > Accessibility > TouchUp Reading Order**.
- When the **TouchUp Reading Order toolbox** appears, click the **Show Order Panel** button.
- Choose **Clear Page Structure**.
- Select the **TouchUp Reading Order Tool**.
- Draw a box around the text "**Working with Columns**."
- Click **Heading 1**.
- With the **TouchUp Reading Order Tool**.
- **Draw a box** around all of the **text in Column 1**.
- Click **Text**.
- **Draw a box** around all of the **text in Column 2**.
- Click **Text**.
- You will now see that the reading order of the page is set to **1, 2, 3**. This is the correct reading order.
- You could go and check all pages of the document and change them at this time but for the sake of this workshop we will not.

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- **Run the Accessibility checker.** At this point your document should pass if you have made all of the necessary corrections. With the 508 checker you will notice that some remarks remain. That is because Adobe Acrobat can not test for things such as color. This requires that a user manually tests it.

Save the document as HTML:

- In order to make your document ultimately accessible you are going to want to save as HTML format.
- Choose **File > Save As**
- In the **File name** field enter a name for your file.
- In the **Save As Type** drop-down menu, choose **HTML 4.01 with CSS 1.0 (*.html, *.html).**

Scanned Document:

1. Open the file labeled (**scan1practice.pdf**)
2. **Zoom in** to determine that it is indeed a scanned document. (Use the magnifying glass tool or choose (**View > Zoom > Zoom To . . .**)
3. It is best to start with a document that has been **scanned as black and white at 300 pixels** for the conversion.
4. Perform OCR. (**Document > OCR Text Recognition > Recognize Text Using OCR.**)
5. Select **All Pages**.
6. Select **Edit** and then set the following:
 - a. Primary OCR Language: **English**
 - b. PDF Output Style: **Formatted Text and Graphics**
 - c. Downsample: **Lowest (600 dpi)**
 - d. Select **OK**.
7. Look for OCR Suspects. (**Document > OCR Text Recognition > Find All OCR Suspects.**)
8. Search for a word in the document to ensure that this is indeed searchable text. (**Edit > Find**)
9. In a real situation you would want to proofread your document.
10. Determine whether or not the PDF is tagged. (**File > Properties > Description**)
11. You may also want to choose (**View > Navigation Panels > Tags**) to determine if there really are any tags.
12. Tag the PDF Manually.
 - Select (**Advanced > Accessibility > Add Tags to Document.**)
 - Select **page 1** of your document.

- Use the **TouchUp Reading Order Tool** to clean up the tags automatically created in the previous step. (**Advanced > Accessibility > TouchUp Reading Order.**)
- Select the **Show Order Panel** button.
- At this point it is not exactly structured the way we want it to be. We want to set the headings off from the rest of the page, and remove the elements that have impact on the reader.
- Return to page 1 if you aren't already there.
- Select (**View > Page Display > Single Page.**)
- In the **TouchUp Reading Order panel**, select **Clear Page Structure**.
- The first thing that we are going to tag is the Heading for the page. With the **TouchUp Reading Order Tool**, draw a **rectangle around the text "Summary of Article"**, select **Heading 1**.
- With the **TouchUp Reading Order Tool** selected, draw a **rectangle around the main text** of the document, select **Text**.
- Select the **Name, Course Number, and Assignment Name** at the top of the page. **Select Background**. (Selecting background allows you to remove non-essential information from the document structure, allowing screen reader to skip over it.)
- Move on to **page two**. We will repeat the same process with minor changes.
- **Draw a box around the orphaned text** at the top of the page using the **TouchUp Reading Order tool**. Select **Text**.
- With the **TouchUp Reading Order tool**, draw a **rectangle around the text Critique of Article**. Select **Heading 1**.
- With the exception of the page number at the bottom of the page, the remainder of the text is already bound by a box labeled 3.
- Draw a box around the **page number at the bottom** of the page. **Select Background**.
- Continue to follow the same process to tag the rest of your document.
- Once you have tagged all of the text. **Run the Accessibility Checker**. (Remember to run both the PDF and 508 checkers.)
- You will likely have some errors.
- First, you need to **set a language specification** for the document. Select (**File > Properties > Advanced**) Choose **English** from the language drop-down box.
- Run the accessibility checker for both PDF and 508 again. With the 508 report there will always be an error returned because the user actually has to check manually for color. |

Save the document as HTML:

- In order to make your document ultimately accessible you are going to want to save it as HTML format.
- Choose **File > Save As**
- In the **File name** field enter a name for your file.
- In the **Save As Type** drop-down menu, choose **HTML 4.01 with CSS 1.0 (*.html, *.html)**.

Form:

1. Open the file **form-practice.pdf**
2. Determine if this is a scanned image. If it is you will need to perform OCR. If it is not you won't. **This is not a scanned image.**
3. This is meant to be an interactive form that the user can fill out.
4. Is the document tagged? (**File > Properties > Description**) **No.**
5. Determine whether or not form fields currently exist. (**Forms > Run Form Field Recognition**)
6. For this document, form fields already exist.
7. Determine whether or not Labels and Descriptions have been added to the form fields.
8. If there were no labels or descriptions, add Labels and Descriptions to the Form Fields. (This will allow the screen reader to notify visually impaired individuals of the type of information they must provide in the form field.)
9. Select (**Tools > Forms > Edit Layout**) **Double-click on the first form field "District."** Ensure that there is a description in the tool tip field. You should see that there is indeed. Screen readers identify and read descriptions placed in the tool tip field to the users.
10. You will notice that all of the form fields on page one appear to be properly labeled and include tool tip descriptions.
11. However, when you get to page two you will see that there are some problems. First of all, there are some form fields missing. Secondly, not all of the existing fields are labeled correctly.
12. Let's correct the existing form fields first.
13. If you have not already, choose (**Tools > Forms > Edit Layout**). **Double-click the first form field. (It is currently labeled feet.)**
14. Notice that the current tool tip description just says (feet). This is not enough description for people to understand what is needed here. Enter the following text into the tool tip description for this box: "Distance to nearest residence in feet."
15. Continue down the page to correct the form fields for:

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- a. Feet 2 – “**Distance to nearest business in feet**”
 - b. Is a rain cap... - “**Height of stack in feet**” (change the name to **Feet**)
 - c. Yes – “**Stack inside diameter in inches**” (change the name to **Inches**)
 - d. Date – “**Date of Signature**”
16. Next, we will be adding radio buttons for the Yes/No answers in the document.
 17. With the **Radio button selected, double-click on the document to create a radio button.**
 18. In the **Name box type “yes”** in the **tool tip type “Is raincap present on exhaust stack (yes or no)”**
 19. Click on the **Options tab**. Make sure **Export Value is set to Yes**. Select **Check** from the **Button Style** drop down menu. Close the form dialog box.
 20. Resize and position the form field as necessary by pulling the handles and moving it with the arrow keys on your keyboard.
 21. **Create a Radio button** for the no selection.
 22. In the **tool tip type “Is raincap present on exhaust stack (yes or no)”**
 23. Click on the **Options tab**. Make sure the **Export Value is set to No**. Select **Check** from the **Button Style** drop down menu. Close the form dialog box. Continue to create radio buttons for the additional fields.
 24. To make life easier on yourself you can experiment with duplicating and placing multiple fields at once. **Shift-click to select the radio buttons you made previously. (Select Forms > Edit Fields > Duplicate)** You will have to move the radio buttons into the desired position.
 25. You will now need to set and test the tab order for the form.
 26. If there appear to be problems with the tab order you will need to fix that. **(Choose Tools > Forms > Edit Layout.)**
 27. Choose **(Forms > Edit Fields > Set Tab Order)**.
 28. Attempt to let Acrobat automatically determine the order for you.
 29. Test again.
 30. If you still see problems, choose **(Forms > Edit Fields > Set Tab Order)** and do not allow acrobat to set the tab order automatically.
 31. When the form fields appear with boxes that contain numbers in the upper left-hand corner. Move through the document and click in the boxes in the order you want them to be tabbed through.
 32. Test the tab order again by using the hand icon from the toolbar. Remember, you will only be able to tab through those fields that have been created.
 33. Add tags to your document. Choose **(Advanced > Accessibility > Add Tags to Document.)**

34. Open the Touch up Reading tool. (**Advanced > Accessibility > Touch Up Reading Tool.**) Look through the tagging of the document. Make any necessary changes as we did in the previous documents.)
35. Add alternate, text, change reading order if necessary, etc.
36. Run the Accessibility Checker (Advanced > Accessibility > Full Check) At this point your document should pass if you have made all of the necessary corrections. With the 508 checker you will notice that some remarks remain. That is because Adobe Acrobat can not test for things such as color. This requires that a user manually tests it.

Desktop Publishing Document from Adobe InDesign:

1. Make sure headings, text, and images are not contained in the same frame
2. Choose **Window > Tags** to display the tags palette.
3. To determine if your InDesign document is structured, select **View > Structure > Show Structure**, or **Alt + Ctrl + 1**, to display the InDesign structure pane.
 - o If your InDesign document is not tagged, the structure pane will be empty except for the root.
4. Choose **Add Untagged Items** from the **Structure Menu Pane Menu**
 - o This will cause a structure tree to appear in the structure pane and color coded tags to appear in the tags palette. These colors correspond to the colored items on the document view.
5. Review the tags and make sure they are correct. To “re-tag” individual elements **click** on the correct tag in the **tags palette** and **drag** it to the element you want to “re-tag”.
6. Select the **Figure element** in the **Structure pane**, and then choose **New Attribute** from the **Structure pane menu**.
7. In the **Name field** of the **New Attribute Dialog box**, type **Alt** (this feature is case-sensitive). For **Value field** of the **New Attribute Dialog**, type the text that describes the image
8. Once the Adobe InDesign File has been set up you will be ready to generate an accessible PDF. Select **File > Export** from the InDesign menu or type **Control +E**. Make sure Adobe PDF is selected as the Save as type.
9. Choose **Save** and the Export Adobe PDF dialog will appear Be sure that the check box labeled **Create Tagged PDF** is checked. Also, having **Bookmarks** and **Hyperlinks** checked also contributes to the accessibility of the resulting PDF document.

10. If the PDF didn't open automatically, open the newly created PDF now.
11. Choose Advanced > Accessibility > TouchUp Reading Order select the **Show Order Panel** button
12. Look over the PDF and make sure that everything is in a logical reading order.
13. If something is out of order, you can manually re-order it by clicking the **Order Tab** in the **Show Order Panel**. Click and drag the items to their correct location or clear the page structure and add the tags manually.
14. Accessibility Checker (**Advanced > Accessibility > Full Check**) At this point your document should pass if you have made all of the necessary corrections. With the 508 checker you will notice that some remarks remain. That is because Adobe Acrobat can not test for things such as color. This requires that a user manually tests it.

Online Booklet

<http://www.adobe.com/enterprise/accessibility/training.html>

<http://www.adobe.com/enterprise/accessibility/acrobat.html>

http://www.adobe.com/enterprise/accessibility/pdfs/acro6_pg_ue.pdf