Outline

Workflow process for STEM
- SCRIBE / Sensus Access
- Illustrator / Inkscape
- Infty Reader
SCRIBE

Alice Wong
The SCRIBE Project

An online conversion system to promote student independence and deliver documents in an accurate, timely, and student-preferred format.

- Stanford Converter Into Braille and E-Text (SCRIBE)
  - http://scribe.stanford.edu
- Students request for alternate format conversions
  - From OAE
  - Use the SCRIBE platform
- Customized system based on RoboBraille agents (Sensus Access), focusing on needs of post-secondary institution
  - Web-based interface, independent of operating system
  - High-quality customizable voices
- Available to all members of the Stanford community, not just students
2009–2011 Student Preferences & Assistive Technology

- AT installed on personal computer
- Different formats of the same materials
- Mobile device support when using different formats
- Currently used apps, instead of new app
Sensus Access

http://sensusaccess.com

- Online self-service tool for individual use
- Supports multiple language MP3 audio output
- Available to universities, colleges and other educational institutions

Convert a File

Follow the four easy steps below to have your document converted into an alternative, accessible format. The result is delivered in your email inbox.

Step 1 - Upload the file

Select your file and upload it to the server (max 32 mb). Supported file types are .doc, .docx, .pdf, .ppt, .pptx, .txt, .xml, .html, .ht, .rtf, .epub, .mobi, .tiff, .tif, .gif, .jpg, .bmp, .pcx, .dcx, .j2k, .jp2, .jp, .djv and .asc

File name: [Choose File] No file chosen
SCRIBE Conversion Options

Original File Formats
- Text/RTF
- PDF
- MS Word & PowerPoint
- Image

Output Formats
- MP3 Audio
- DAISY (Full & Text Only)
- MS Word
- RTF
- Text
- Accessible PDF
- ePub
- Mobi
- Braille
- Portable Embosser Format (PEF)
Potential Benefits

- Simplify assistive technology, text-to-speech (TTS) licensing
- Decreased time required for staff to convert simple document formats
- Student independence
- Student privacy
- Not limited to students with print disability
- Provide a conversion tool that will support the creation of accessible formats for content authors throughout the institution
Extraction/Production of Accessible Images

Kyle Logsdon
Raster and Vector Based Graphics

Raster

Zoom

Vector

Zoom
Rastor vs Vector Based Images

Raster Image
- Used for photographs and painted styled artwork. Pictures get ‘blocky’ when scaled too large, and lose quality if shrunk then enlarged.

Vector Image
- Used for basic shapes and lines, and the manipulation of such. Pictures are editable to their individual lines.
The Importance of Using Vector Graphics for Alt Format

- Vectors allows for ease of changing small portions of an image.
- Vectors handle individual parts well, such as overlapping lines and graphs.
- It’s easy to save reusable patterns and objects, such as symbols for engineering and chemistry.
- Resizing for large print or unusual paper sizes will still retain quality.
Publisher Provided PDFs and Vector Images

- Most publisher PDFs will include the images as vectors to allow scalability for multiple sized books.
- In arranging the layout of text and images, publishers will group related items together, sometimes multiple times on the same page.
- You can extract the raw vector image, but you will need to break these grouped links in order to do so.
How to Extract the Vector Image via Illustrator

- Open Illustrator.
- Drag and drop the PP PDF into Illustrator.
  - Some computers may ‘freeze’ at this point if the file is large. Give it time.
- In the popup, choose the page that has the image and click OK.
  - Click OK to the ‘errors’ that pop up, most of them are Illustrator not having the publisher fonts
- Find your graphic and right click it. Choose “Release Clipping Mask” or “Ungroup”.
  - This step will be repeated several times depending upon how much grouping the publisher did with the current book.
  - You are done when you can drag and drop the image away from everything.
- At this point, clean up the rest of the page content and begin modifying your vector image for whatever standard is required!
Converting a Raster Image to Vector (…Sorta)

- Using the LiveTrace feature in Illustrator, one can turn a raster image into a vector one.
  - However it requires a simplistic image.
  - It doesn’t do well with a wide range of colors.
  - It is not a ‘fix all’ button, but is useful in very specific circumstances.
- Load your image.
- Window > Image Trace (Or LiveTrace depending on version).
  - This is the hardest part. You may need to tweak settings to get an output that is not a white square afterwards.
  - This portion may also take some time on slower computers, dependent upon the original image’s file size.
  - Click Preview to see what it’ll turn into, then Trace when it’s to the desired quality.
- Afterwards, choose to ‘expand’.
- Clean up artifacts afterwards.
  - LiveTrace doesn’t just get all the solid lines, but will also interpret the blank white spaces as their own objects as well. This can potentially cause issues if not cleaned up.
Why does it matter?

Using the right tools for the right job.

- Raster images are more easily created with programs such as Photoshop and GIMP.
- Vector images are created via Illustrator and Inkscape.
- Most PP PDFs include vector graphics from within the file.

- For these examples, we will be using Vector graphics due to the ease of changes and modifications to the already created image, starting with Adobe Illustrator.
Things to think about

- It’s easy to create a raster image from a vector image, but not the reverse.
- It’s easier to make individual changes to lines and shapes when it’s vector-based.
- Don’t recreate the wheel! Use what the publisher has already given you.
- Experiment, learn, and remember it’s easy to hide mistakes under the carpet (Or in this case the layer) if needed!
Infty Reader

Deborah Ting
What is Infty Reader?

- An OCR program for math content
  - recognizes numbers, symbols, and equations for conversion into text-based formats
- Will process both mathematical and text information
  - it does not require separate OCR processing
Typical Production Workflow
Infty Reader Workflow

PDF (Adobe) → Infty Reader → DOCX + MathType
Technical Details

Infty Reader requires:

- Windows-based computer (XP or later)
- 600 DPI scanned documents
- Input formats to be PDF, TIFF, GIF, or PNG
- Black and white scans (no color!)

Text OCR is performed using Infty tools or ABBYY FineReader dictionary

- FineReader dictionary plug-in is an additional purchase
- This is NOT the ABBYY FineReader application
Infty Workflow

1. Scan with CapturePerfect
2. Recognize with Infty Reader
3. Edit with Infty Editor (optional)
4. Edit with MS Word and MathType
Infty Workflow

1. **Scan with CapturePerfect**
   - Scan to PDF at 600 DPI
   - Modify Brightness & Contrast as necessary

   - On computer system with Infty Reader, convert PDF to TIFF
Infty Workflow

2. Recognize with Infty Reader

- Select the TIFF files for conversion
- Set IML as output format and folder location
- Check FineReader is enabled (if applicable)

Note: You can also set Output to Word XML to bypass any editing in Infty Editor
Infty Workflow

3. Edit with Infty Editor
   - Open IML file and make corrections as needed
   - Do only light editing using IML format
   - Export to Word XML file
Infty Workflow

4. Edit with MS Word and MathType
   - Open XML in MS Word
   - Convert Word equations to MathType equations
Infty Reader – Advantages

- Works well with simple math, algebra, matrices, etc.
- May decrease production time for STEM content
- Reduces the number of equations that must be manually entered
- Can perform additional editing in MS Word using MathType
Infty Reader – Limitations

- Requires specific settings for scanning files
- Text OCR does not always recognize content
  › Little control over the OCR process
- User experience, user interface can be improved (e.g., messages in Japanese, leaves additional files)
Infty Reader – Limitations

- Requires attention to equation formatting and formula details
  - An equation may “look” correct, but may not be grouped appropriately with other expressions

\[ A_1, \ldots, A_n, \]

- All in all, it can be a bit buggy… but it can also be faster than entering every equation by hand.
# Infty Applications

<table>
<thead>
<tr>
<th>Version</th>
<th>Functionality</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Infty Reader</td>
<td>Math and Text OCR</td>
<td>$800</td>
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<tr>
<td></td>
<td></td>
<td>$180 (1-year version)</td>
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<tr>
<td>Infty Editor</td>
<td>Create math content and output as LaTeX, HTML, MathML, and Word XML</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>Edit IML files from Infty Reader</td>
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<tr>
<td>Chatty Infty</td>
<td>Spoken interface to Infty Editor</td>
<td>$400</td>
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<tr>
<td></td>
<td></td>
<td>$80 (1-year version)</td>
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<tr>
<td>FineReader plug-in</td>
<td>ABBYY FineReader OCR dictionary plug-in to Infty Reader</td>
<td>$300</td>
</tr>
<tr>
<td></td>
<td>Does not require separate ABBYY FineReader application</td>
<td></td>
</tr>
</tbody>
</table>
References / Resources

Online conversion tools
- http://scribe.stanford.edu
- http://www.sensusaccess.com
- http://robobraille.org

Illustrator
- http://www.lynda.com
- helpx.adobe.com/illustrator/topics/illustrator-tutorials.html
- youtube.com search “Adobe Illustrator”
References / Resources (continued)

Inkscape
- youtube.com search “Inkscape”

Infty
- http://www.inftyreader.org/
- http://inftyreader.org/buy/ (To Purchase)
- http://www.inftyreader.org/?p=29 (Full Demos)