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Ten Tips for Creating Usable and Accessible PDFs

Posted on December 2, 2008 by Deborah Edwards-Onoro

When I started my new job earlier this year, one of my first tasks was to identify methods for creating usable and accessible Adobe Acrobat PDF files. Eight months later, I'm still learning new techniques and sharing them with other web workers.

From the local USTA tennis district office to ebook publishers to fellow college web workers, I've shared my process for improving the usability and accessibililty of PDF files.

With the hopes that what I've learned will help others who publish PDF files, I've highlighted ten tips I use for creating accessible and usable PDF files. Not intended to be an extensive how-to tutorial, the tips I've outlined here will get you started in the right direction for creating friendly

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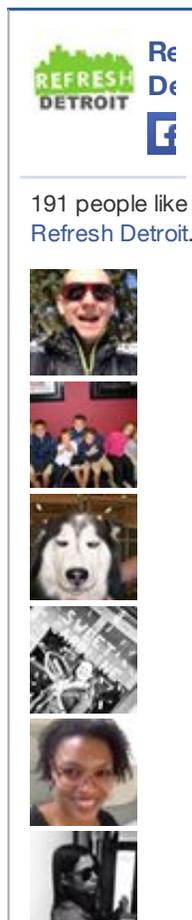
Archives

PDFs from Microsoft Word and Adobe InDesign.

The article focuses on **document preparation** before the PDF is created, as well as **processing the PDF further** in either the full version of Acrobat 8 or Acrobat 9. There's not a lot of information on managing tables or forms in PDF files, just some basic advice to move you toward creating a better PDF experience for your users.

I'm hoping the article will encourage further discussion, but hope the discussion doesn't head in the "PDF sucks" debate. While it's a valid debate, my interest in publishing this article is to provide tips and suggestions for those web workers looking for solutions in creating usable and accessible PDF files. There's a list of resources at the end of the article for additional information about PDF files.

1. **Use a structured source document**
   A properly structured source document is key to creating an accessible PDF file and essential to meeting Section 508 compliance in the United States. The structure within the source document allows PDF files be tagged, which means it has a logical defined order. Headings, tables, images, and paragraphs in a tagged PDF file can be easily identified by the user. A tagged PDF file also contains information about its reading order.

   To add structure:

Categories

Articles

Book

Reviews

Contests

Events

Jobs

Meetings

News

User

Experience

In Microsoft Word, use Word styles to format text. For example, use styles to create headings (Heading 1, Heading 2, etc.), rather than selecting text and making it bold. Add ALT text to all images so text can be read aloud by screen readers. Use "Insert Table" to create a table rather than using tabs and spacing to layout a table. Check Andrew Kirkpatrick's (Adobe's Senior Product Manager for Accessibility) excellent Reference Card for Accessible PDF Creation from Word for detailed tips on styling Word documents.

In Adobe InDesign, several methods can be used to structure a document, including manually tagging content, deriving structure from styles, and mapping styles to specific tags. To view the structure of a document, select **View > Structure**. Mark and hide printing artifacts, text and content so they won't display when the PDF document is reflowed for a different display, such as a mobile phone or large monitor.

Check Andrew Kirkpatrick's Accessibility and Adobe InDesign CS3 (PDF) for further details on adding structure.

As with Microsoft Word, ensure all images have ALT text. Adobe's InDesign CS4 Accessibility Overview has additional information on InDesign's accessibility.

2. **Save/export document as tagged PDF**

In Microsoft Word, assuming Adobe Acrobat has been installed on the same computer, Adobe adds an additional option in the Word ribbon/menu bar for its PDF Maker plugin to create PDF files. The PDF Maker plugin has numerous conversion settings for accessible documents.

In Word 2007, the Acrobat option is added to the ribbon; in Word 2003, the Adobe PDF option is added to the menu bar. Again, check Andrew Kirkpatrick's [Reference Card for Accessible PDF Creation from Word](#) for detailed information on the conversion settings for Word 2003 and Word 2007.

Note for Macintosh users: PDF Maker is not available in Word 2008, and conversion settings in Word 2004 are not the same as the Windows Word version. From my own personal experience, creating tagged PDF files in Macintosh Word is problematic.

To modify the PDF Maker conversion settings, select either Acrobat or Adobe PDF from the Word ribbon/menu bar. In Word 2007, select **Preferences** from the **Create Adobe PDF** group. In Word 2003, select **Adobe PDF**, and select **Change Conversion Settings**.

The instructions below assume Acrobat 8 or higher version has been installed; note that Acrobat 7 does not have the same advanced conversion setting options.

Here's a quick list of the conversion settings to change in the PDF Maker:

A. In the **Settings** tab, enable:
    i.   Fully functional PDF
    ii. Add Bookmarks to Adobe PDF
    iii. Add Links to Adobe PDF
    iv. Enable Accessibility and Reflow with tagged Adobe PDF
B. In the **Security** tab, if security permissions are enabled
    i.   Enable text access for screen reader devices for the visually impaired
C. In the **Word** tab, enable:
    i.   Convert cross-references and table of contents to links
    ii. Convert footnote and endnote links
    iii. Enable advanced tagging
D. In the **Bookmarks** tab, enable:
    i.   Convert Word Headings to Bookmarks

Select **OK** to save the settings. In Word 2007, select **Create PDF** from the **Create Adobe PDF** group. In Word 2003, select **Convert to Adobe PDF** from **Adobe PDF**, and save the document.

You can also use the Adobe PDF icon that appears in the Quick Access Toolbar in Word 2007 and in the Word 2003 menu bar to quickly save a document as a tagged PDF file. If you use the icon, ensure that all your conversion settings have been modified, or the document will not be saved as a tagged PDF file.

Note: Print to PDF in Word does not produce a tagged PDF file; it strips out all tagging.

In InDesign, select **File > Export > Save as Type > Adobe PDF**. The **Export Adobe PDF** dialog box will display, with seven panel options in the left column. Here's a list of the settings to change in the Export Adobe PDF dialog box:

A. In the **Compatibiity** panel, select Acrobat 7 (PDF 1.6)
B. Select the **Options** panel, enable:
   i. Optimize for Fast Web View – organizes PDF information so the first pages of a PDF file can be viewed while the remaining document is downloaded
   ii. Create Tagged PDF
   iii. View PDF after Exporting
C. Select the **Include** panel, enable:
   i. Bookmarks
   ii. Hyperlinks
D. Select the **Output** panel to change the color space for screen display
   i. In the **Color Conversion** drop-down menu, select **Convert to Destination** (converts the colors to the destination specified in step 2)
   ii. Change **Destination** option to **sRGB IEC61966-2.1**, which allows non-Acrobat applications to open the PDF file and ensure colors look good without color management.

According to [InDesign CS4 One-on-one](#), the sRGB color space is the best color space for identifying a computer monitor's display capabilities.

iii. Change **Profile Inclusion Policy** to **Include Destination Profile** so the color profile is embedded in the PDF file

E. Select **Export**

For applications that produce untagged PDF files, tags can be added automatically in a full version of Acrobat (**Advanced > Accessibility > Add tags to document**) after a PDF has been created. Be aware that using Add tags to document will remove any existing tags in the PDF file. Also, as of November 2008, documents created in Quark cannot be saved as tagged PDFs; tags will need to be added.

For PDFs created from scanning images, in a full version of Adobe Acrobat select **Document > OCR Text Recognition > Recognize Text Using OCR** and then add tags using a full version of Acrobat.

In the last few months, I've discovered two word processing applications that create tagged PDF files: [NeoOffice](#) and the newest version (as of October 2008) of [OpenOffice](#). I have not used either of these applications. Perhaps someone who has created a tagged PDF from NeoOffice or OpenOffice can comment on the results?

To check if a PDF file is tagged, open the document in Adobe Acrobat or Adobe Acrobat Reader. Select **File > Properties > Description**. Check that the Tagged PDF option in the Advanced pane is enabled.

The following steps, steps 3 to 8, are completed in a full version of Adobe Acrobat; Adobe Acrobat Reader cannot be used.

3. **Add title, author, subject and keywords**
   Make it easy for users to know what the PDF file is about and who or what organization authored the file. Be aware the title is almost always displayed in search engine results.

   Select **File > Properties > Description**

   A. Title – add a meaningful title
   B. Author – brand your PDF file with author/organization name
   C. Subject – what the document is about
   D. Keywords – keywords for the document
   E. Select **OK**
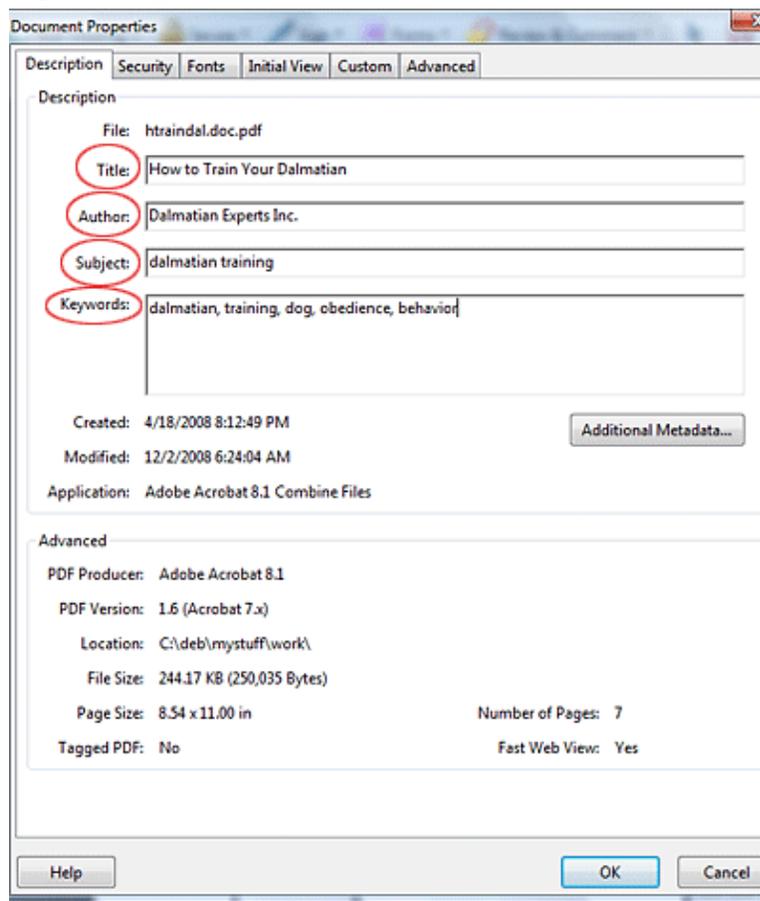
4. **Add bookmarks**

Bookmarks act as a table of contents in a PDF file, allowing users to quickly navigate a PDF. Who has time to scroll through 36 pages in a PDF file to find chapter 3? For PDF files larger than two pages, add bookmarks to the file.

If you followed step 2 (save/export document as tagged PDF) bookmarks will automatically be created from the source document. If the Word source document contained a table of contents, the table of contents will display in the Bookmarks pane.

To create bookmarks, open the Bookmark Panel (**View > Navigation Panels >**

Bookmarks or select the Bookmark icon in the navigation pane). Use one of the following methods:

A. Add bookmarks based on document structure – the easiest method!
   i. If the PDF file is tagged, you're in luck! Use the structure to create the bookmarks automatically
   ii. In the Bookmark pane, select the **Options** menu
   iii. Choose **New Bookmarks from Structure**
   iv. The Structure Element dialog box displays – select the elements you want to convert
   v. Select **OK**
B. Create bookmarks from selected text in the PDF file
   i. Use the **Select** tool from the **Select and Zoom** toolbar
   ii. Select text you want for the bookmark
   iii. Select the **New Bookmark** icon on the Bookmarks pane toolbar or in the **Options** menu, select **New Bookmark** to add the text
C. Add blank bookmarks and fill them in manually – most time consuming
   i. In the existing bookmarks, click the location above where you want to add a new bookmark
   ii. Select the **New Bookmark** icon on the Bookmarks pane toolbar or in the **Options** menu, select **New Bookmark**

      iii. The bookmark will be created with the default text "Untitled"

   iv. Enter the text for the bookmark

5. **Initial view**

When the PDF file is opened, display the title of the PDF file in the title bar and the bookmark panel in the navigation pane.

Titles such as htraindal.doc aren't very descriptive to users compared to "How to Train Your Dalmatian". Having the PDF open with the bookmarks visible gives the user a quick summary of the contents of a PDF. Otherwise the user won't know that bookmarks exist!

Select **File > Properties > Initial View**

A. In the **Layout and Magnification** section

    i. In the **Navigation tab**, select **Bookmarks Panel and Page**

    ii. In **Page layout**, select **Default**

    iii. In **Magnification**, select **Default**

    iv. In **Open to page**, select **1**

B. In the **Windows Options** section

    i. Keep all checkboxes unchecked

    ii. In **Show**: select **Document Title**

C. In the **User Interface Options** section, uncheck all checkboxes

D. Select **OK**
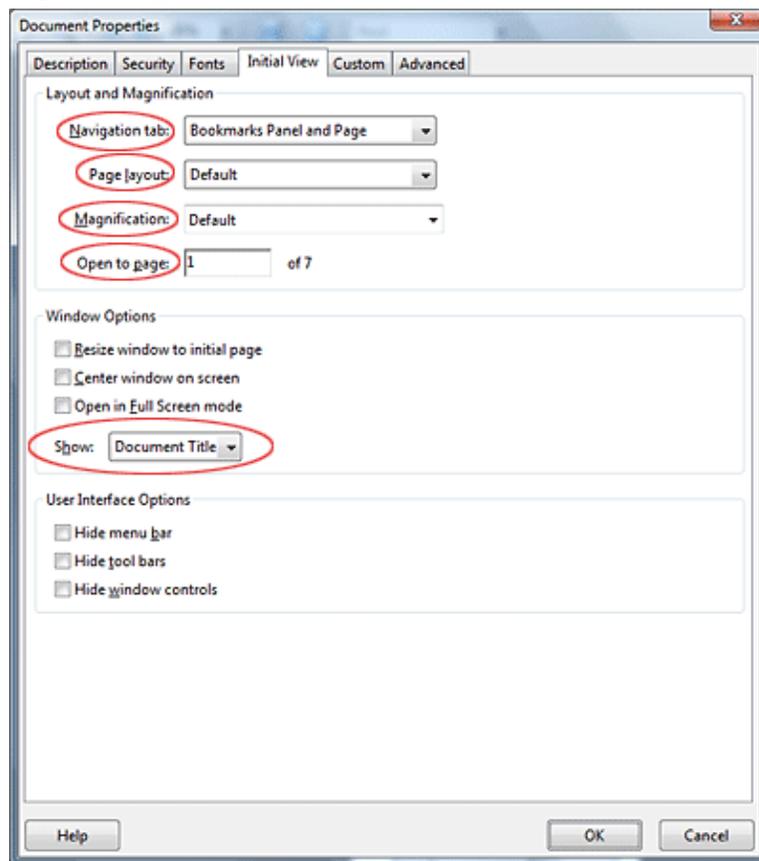
6. **Specify the reading language**
   Set the document language so screen
   readers can switch to the appropriate
   language for the user.

   Select **File > Properties > Advanced**

   A. In the **Reading Options** section, for the
      Language option, select the appropriate
      language from the menu.
   B. Select **OK**
7. **Correct the reading order**
   For each page, the reading order defines
   how the content is read on that page. To
   view the reading order for a specific page,
   select **Advanced > Accessibility >
   TouchUp Reading Order**.

The TouchUp Reading Order dialog box displays, with gray numbered boxes surrounding content. The numbers on each box indicate the order in which the content will be read. If the order is not what you expect, or you need to modify figure or table tags, or add alternate text descriptions to images, use the TouchUp Reading Order tool.

If numbered boxes don't appear when the TouchUp Reading Order dialog box is open, the PDF file is likely not tagged. More information on TouchUp Reading Order and how to change/edit order can be found at [WebAIM](http://...).

8. **Use PDF Optimizer**
   The PDF Optimizer provides many settings for reducing the file size of the PDF file; downsizing graphics, discarding objects, cleaning up settings are just a few of the settings.

   Creating an accessible PDF file with a small file size can be challenging, since adding accessible features to a PDF file increases the file size. Below are the settings I use to optimize PDF files; creating a custom setting in the PDF Optimizer that fits your requirements may be the best solution.

   Select **Advanced > PDF Optimizer**

   A. Enable the following sections

      i. Images

      ii. Fonts

      iii. Discard Objects

      iv. Discard User Data

      v. Clean Up

B. In the **Make Compatible with** section, change compatibility to Acrobat 7

C. In the **Images** section, for **Color Images** and **Grayscale Images**

      i. Change the **compression** to **JPEG2000** (available to any user with Acrobat 7 or Acrobat Reader 7 version or above)

      ii. Set **quality** to **medium**. To avoid text and image blurring, set the **quality** to **lossless** for screen shots and manuals

      iii. Change **Downsample** pixels/inch to **96** pixels/inch for any image over 100 pixels/inch

D. In the **Discard Objects** section

      i. Enable **Discard all alternate images**

      ii. Enable **Detect and merge image fragments**

      iii. Enable **Discard embedded page thumbnails** (newer Reader versions can create thumbnails on the fly)

      iv. Enable **Discard embedded print settings**

      v. All other settings should be disabled

E. In the **Discard User Data** section, enable all settings except **Discard document information and metadata**

F. In the **CleanUp** section, enable all the checkbox settings

G. In the **Object compression** options,
    select **Compress entire file**

H. Select **OK**
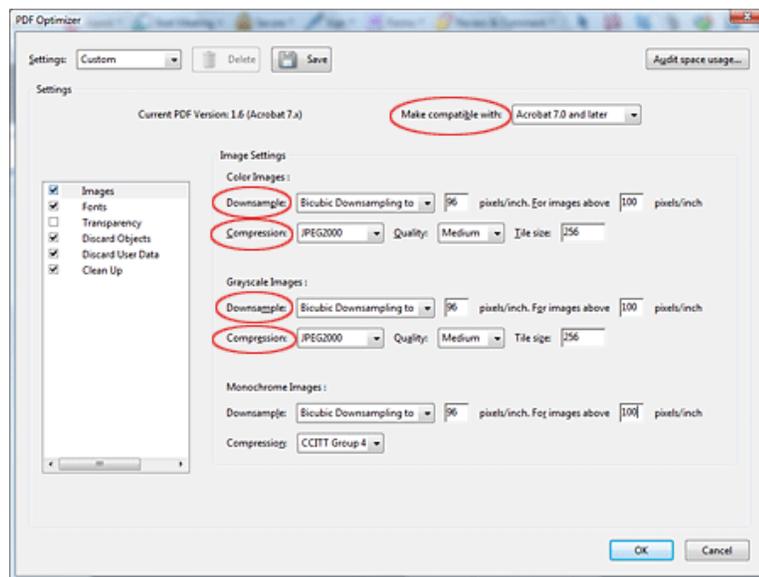
Once you have configured the optimization
settings, you don't have to type them in for
each PDF file. Use the Save button to save
your custom configuration so you can use it
for the next PDF file.

9. **Enable Adobe Reader features**
    Users often want to add comments to PDF
    files. Enabling Adobe Reader features
    allows Adobe Reader users to add
    comments, as well as fill in form fields,
    without having to purchase the full Acrobat
    product.

    Select **Advanced > Enable Usage Rights**
    and select **Save Now**

    Note: enabling Adobe Reader features
    restricts editing content as well as inserting
    and deleting pages in the PDF file.

10. **Check accessibility**

You've followed the steps to create a PDF file, but how do you know if the file is accessible, or if you have some additional changes to make?

Select **Advanced > Accessibility > Quick Check** to see if the PDF is tagged. For more information, select **Advanced > Accessibility > Full Check** for a detailed report on what is missing in the PDF as well as recommended changes to the PDF file such as adding ALT text to images, tagging headings, etc.

Phew! That's it. These ten tips will get you started on providing your users with a friendly PDF file that is easier to use. Automate the steps I've described above using batch processing in Acrobat (video) to make creating friendly PDFs even easier. Check out the resources for additional information on accessible and usable PDFs, including guides and tutorials.

My gratitude and thanks to Donna Baker, Bevi Chagnon from Community MX, and the helpful forum members and Adobe consultants at Acrobat Users for their patience in answering my ignorant questions about PDF files.

Shout out to Paul Bukhovko for his Belorussian translation of this article.

Resources

- [Reference Card for Accessible PDF Creation from Word](#) from Andrew Kirkpatrick
- [WebAIM PDF Accessiblity](#) – comprehensive PDF accessibility guide from Web Accessibility in Mind
- [Adobe InDesign CS4 One-on-one](#) – new book on InDesign CS4
- [Adobe Accessibility](#) – accessibility information on all Adobe products
- [AcrobatUsers](#) – articles, tutorials, and forums on all things Acrobat related
- [Facts and Opinions on PDF Accessibility](#) by Joe Clark
- [Why PDFs Suck](#) by Henny Swan, Web Access Centre, Royal National Institute of Blind People
- [Creating Accessible PDFs (PDF, 859K)](#) by High Tech Center Training Unit, California Community Colleges
- [Accessing PDF Documents with Assistive Technology: A Screen Reader User's Guide (PDF, 368K)](#) – Adobe's guide for using Acrobat Reader with Screen Readers
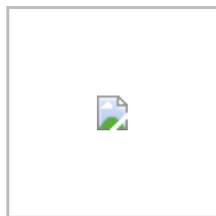
Deborah Edwards-Onoro is a web analyst at a community college, owner of [Lireo Designs](#), a web development and consulting company, events officer for [Michigan Usability Professionals' Association](#) and leader of [Refresh Detroit](#).

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← November 19 Accessibility
Meeting Recap

Tracking outgoing clicks with
Google Analytics →

13 thoughts on "Ten Tips for Creating Usable and Accessible PDFs"

Cathy McAdam says:
December 8, 2008 at 6:45 PM

Thank you for this detailed article.
As a blind user I will be forwarding it to many
PDF creators who still are struggling with
creating accessible documents.

Deborah says:
December 9, 2008 at 7:45 AM

Cathy,

Thanks – creating accessible PDF files has
been a learning experience for me. Glad to
share my experience with others, and hope
the tips help.

Pingback: nortypig » Blog Archive » Usable &
Accessible PDFs

Pingback: Ten Helpful Tips For Creating Usable and Accessible PDFs | 4xPDF

Pingback: Keep those PDFs accessible and usable! - STC AccessAbility SIG

Floating Nets says:
January 16, 2009 at 5:46 PM

This will be so useful for transcripting podcasts to PDF, thanks so much! I even bookmarked this post as it has so much information.

Pingback: Top Ten Blog Tips » 10 misconceptions about web accessibility

A_Flama says:
March 2, 2009 at 4:02 PM

Great tip! thanks 😃

Deborah says:
March 29, 2009 at 8:10 AM

For an in-depth article that goes beyond the ten tips for creating accessible PDF files, check out No Fuss Accessibility article by Antonio DaSilva.

Claude Almansi says:
September 17, 2009 at 8:53 AM

Re using NeoOffice: I've done several PDF's with it, though I am afraid not using the advanced settings for the export. However, if I remember correctly, they are very similar to the ones you describe for Word.

The problem with NeoOffice (and probably OpenOffice, on which NO is based) is getting a TOC where the items link to the various parts in the source document for the PDF: possible, but not default (as with Word) and not very intuitive: I reuse a document where I managed to do it when I need to have this feature.

Example of one such PDF I did this way (using header styles but not the advanced settings for export) with NeoOffice http://ia301533.us.archive.org/0/items/TheatreOfSleep/theatre_of_sleep_03.pdf . A blind friend told me it was usable for him. But it is a simple document: no tables, no illustrations.

Pingback: 10 Tips to Help You Create Accessible PDFs in Word or InDesign

Sven-Olav says:
October 31, 2009 at 1:59 AM

Thanks Deborah for the great article!

Concerning accessible PDFs, I would like to suggest the possibility for a user to access the PDF from web by using named destinations. IMHO, too few PDF authors are using named destinations at all, even if the source document is well structured.

I think the main reason is because there is no way to export named destinations directly from MS Word (as it is possible from OO).

I created the plug-in for Acrobat that converts PDF document bookmarks to PDF named destinations. I'm hoping that this will make life easier for many students, professors, and researchers, especially who are using Mac. Under Mac OS X there are few (even commercial) alternatives to automatically create named destinations.

My Acrobat plug-in is free for academic use: http://destinator.grifir.com/educational-license.html

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Pingback: The Two Percent

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