

Creating Accessible PDFs

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Sometimes it is necessary to scan a document for an instructional need. When documents are in an electronic format, they are easier to distribute and can be more accessible than print documents for students with disabilities. However, in order to be fully accessible, certain steps must be followed to be sure the scanned document is of high quality.

Contents:

- Scanning a document to create a PDF.
- Creating an accessible PDF from an accessible Word document (see [Creating Accessible Documents in Microsoft Word to make a Word doc accessible](#)).
- Fixing a PDF that isn't accessible.

Evaluate Need

Before scanning a document, first evaluate if this particular document is needed and cannot be substituted. If it is necessary, search for the article using the [Hedberg Library catalog](#) to see if an electronic version already exists. This can save time and energy and allow for a cleaner copy for students to access. For help in finding electronic texts in the library or adding them to your Schoology course, please email help@carthage.edu.

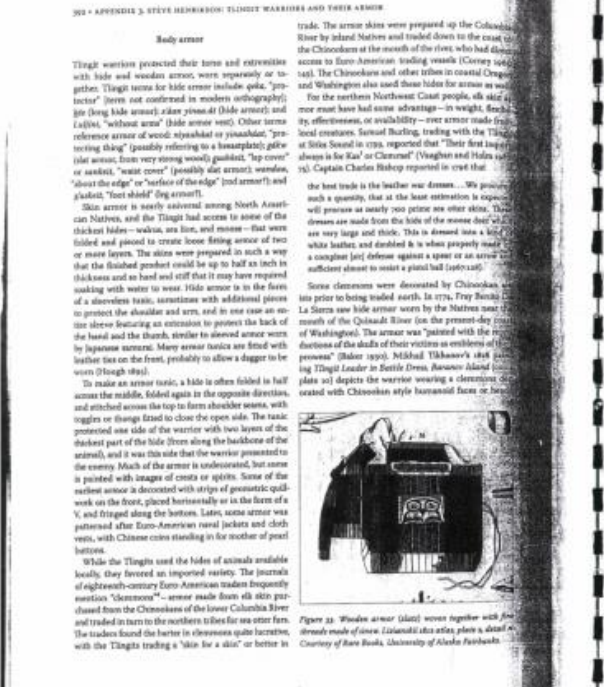
Keep copyright laws and guidelines in mind when scanning documents. [Consult this webpage](#) for further information. Please email help@carthage.edu if you have questions about copyright.

What Does a High Quality Scan Look Like?

A high quality scan is one that is easy for everyone to read, including individuals with low vision or who use assistive technologies to read text electronically. High quality scans should be free from:

- Text that is cut off
- Crooked pages
- Dark gutters (the margins where shadows occur from curvature in the book's spine)
- Poor contrast
- Pages that are rotated 90 or 180 degrees
- Handwriting, highlighting, or underlining
- Watermarks/coffee stains
- Blurry

Be sure to consider these issues when (a) choosing an original source and (b) producing the scanned version.



Example A. Scanned page with unreadable text in the margin



Example B. Scanned page with underlined text and stray markings

familiar with word processing programs, which are made by many companies and allow the computer to operate as a typewriter. We can type data that appear on the screen, revise the data in numerous ways, print the data using our printer, and save the data for later retrieval. Agencies use word processing software to create data in chart files, keep worker records, client contact, and letters, and the like.

Software may be designed for a single purpose, such as word processing, or be "integrated," allowing several functions to be accessed within a single program. An integrated system might allow you to type a letter to a client, look in a database to find the client's home address and year last contact with the client, and then use a calendar program to schedule an appointment on your first open date next month. If you were using single-purpose software, you would have had to exit or minimize one program before going into another. Software exists for an infinite variety of purposes. Database software allows us to maintain extensive records and retrieve that data quickly. We might like to know which of our clients we have not seen in the past month. We can easily get a list of those clients and their addresses (sorted by client name or by date if we prefer). If we want to know for which clients a report is due in just about one month, the database will tell us. Just about any piece of information can be entered into a database system. Figure 14.1 shows the information might be displayed in a database.

Of course, much more information can be contained in a database than what is represented here. We could list the presenting problem, names of family members, and any other data. At the same time, databases are complex for purposes other than maintaining records. We could, for example, use a database to keep membership records for a community association or organization, to maintain a record of contributions to a political campaign, or to save a list of authors and their agencies, phone numbers, and other information. You can also have the database organize information into reports. You might want a report on their sales. As you can see, a database can be a useful piece of software, whether you are working with machines or in live problems.

Spreadsheet are software packages that allow us to calculate and maintain various kinds of financial or numerical information. Spreadsheets are essentially electronic accounting ledgers into which we type the same type of information we would write into an accounting ledger. All software spreadsheets allow us to keep track of what we spend on various projects, and changes in a figure can be automatically reflected in the changed total. Figure 14.2 displays a typical spreadsheet.

A real spreadsheet could have many more columns and rows, depending on the financial information you are recording. Spreadsheets allow you to build formulas and automatically recalculate totals. This way, as the number of purchases you make increases, the total spent at the bottom changes along with it. Thus, the \$700.22 shown in Figure 14.2 would keep changing as new items were entered into the spreadsheet. You can also calculate what a 5 percent increase in price

Figure 14.1. Information in a Database. Table with columns: NAME, STREET ADDRESS, CITY, STATE, ZIP, TELEPHONE, LAST APPT.

FIGURE 14.1. Information in a Database

Court held that it has violated laws treating Negro citizens in cities, but upheld those compelling separate facilities accommodations, declaring that segregation is not discrimination, provided that the facilities are not substantially the same. Taking the same ground, the Interstate Commerce Commission recently dismissed a complaint filed by sixteen Negro students against the Atlantic Coast Line. The men asked for a bold declaration that segregation is and is itself today must be regarded as constituting an unlawful discrimination. That pure the Negro attitude an aggression in a nutshell. The Commission responded, "That complainants asked us to decide in its essence a social question and not a question of inequality of treatment."

That makes it lawful, if somewhat grotesque, for incidents like the following to happen. On a crowded train going through Texas the colored soldiers were fed behind a Jim Crow curtain at one end of the dining car. In the main section, along with the white folks, a group of German war prisoners dined—and no doubt felt their illusions of race superiority on that Jim Crow curtain.

The assignment of Negro units in the Army to menial jobs is a widespread practice. Colored inductees assigned to service units—cooking, shoveling coal, working on the white officers. Entirely service, they may find themselves building the Burma Road or Alaska Road, or encountering winter temperatures of 50 degrees below zero lacking the Alaska Highway or the Canal pipeline out of the Canadian wastes. Meanwhile white units engaged at the same time are in the fighting line, where the Negro hero is to be seen. The sight of women of Negro soldiers constantly blocked off into service groups and assigned to menial jobs, a white soldier writes, "degenerates in the mind of the average soldier a powerful feeling of superiority and of being inferior."

A highly trained Negro technician turned up in the psychotic ward of a hospital. His Army service was picking up papers around the officers' quarters in a Southern camp. When he was transferred to radio work his mental faculties vanished. Another instance, a brilliant biochemist had a fantastic Army career. At the reception center on the Pacific Coast the officers proposed to use his brain for medical training in the Army's advantage. He was sent to Camp A for training and assigned to a post in the biological laboratory. Before he could start work he was shipped further east to Camp B, and enrolled for technical training as an aviator. He passed this course with high honors, and was promptly shipped to Camp C—further west—classified as corporal and assigned to the Army Air Force. A week later he found himself at Camp D in the Southwest, assigned to labor detail. That meant losing his corporals' stripes pinned in another division. He wrote his wife:

I find that this post is the "Part of Last Hope." . . . Merciful God, I have not been so close to less of faith as I am at this moment. . . . All this build-up for something to report, only to be treated like a headless gorilla for looking more than a post-hole digger and a wringer of wire, a yard bird. . . . I swear if this was Guadalcanal or Australia or North Africa I would expect nothing and would give everything, even my life. . . . It is real hard, let me tell you differently, this sudden opening up of the so-called exclusive branches of the services to Negroes. We are trained, become skilled—and then the oblivion of common labor.

It is no secret that the Air Corps wished no Negro inductees. But it was forced to let the color bar down late in 1940 and created two "Aviation Squadrons (Separate)" which served no specific military need and were assigned to whatever odd jobs of common labor the various air fields could offer. There was no equivalent white organization and these Negro units would probably never have come into existence but for the necessity of making some provision for the Negroes called in the Air Force.

The Air Corps began by training Negroes for combat aviation in only one branch—pursuit flying. A segregated base was set up near Tuskegee Institute and advanced training was set at Selfridge Field. Pursuit flying is the most difficult type of combat aviation. Perhaps the Air Corps was paying tribute to the Negro, possibly it was trying to discourage him. In any event, the pursuit flyers not only made good in training, but the Ninety-ninth Squadron, the first and only one sent ahead, has won special praise from Secretary of War Stimson and others for its fine spirit and the specialized dye bombing the often were called upon unexpectedly to perform when the squadron was on loan to the British Eighth Army in Italy.

In 1943, schools for bombardiers and navigators were opened to Negroes and the first squadron, known as Squadron 10, was graduated on February 26, 1944, at Hondo, Texas, and will now receive training as bombardiers.

In some respects the Navy, with its ancient and Southern-gentleman traditions, tallies with the policy of the modern Air Command. Between 1920 and 1924 Negroes were "the chambermaids of the Navy," acting as stewards, chiefs and messboys. Several months after Pearl Harbor the Navy broke down and admitted colored men as apprentice seamen with the chance of becoming petty officers. It has let down the bars to women—but not dark-skinned women. There are no colored Wrens, Spars or Marine Corps Auxiliaries. And since no Negro could be commissioned up to a few weeks ago, there are no Negro chaplains in the Navy.

Example C. Page scanned with original not aligned well on scanner; page is tilted, text is blurry, and some text disappears into the margin

another rock en español band's music provided the soundtrack for Coors Light beer commercials during Monday Night Football broadcasts, and still others as background music for Levi's jeans commercials aired during the Super Bowl and otherwise regularly on television. In 2001, The Tonight Show host Jay Leno hosted Los Aterciopelados, a rock band from Colombia that became wildly popular throughout the world in the 1990s and continues to produce some of the most highly regarded rock en español and Latin alternative music in the 2000s. By the early to mid 2000s, Colombian pop-rock star Shakira could be seen in as many Pepsi commercials as MTV music videos, and was being touted by the music industry as 'the next Madonna.' Most recently, the Colombian pop-rock star Juanes was featured artist at the 2009 NBA All-Star game. As a result of these and other cultural shifts such as 2000 US Census data revealing the emergence of Latinos/Hispanics as the largest minority group in the US, contemporary Latino/as are opening up new areas increasingly worthy of scholarly investigation.

Worth noting is the fact that although the latest US Census revealed that Latino/as are now the largest minority group, the news came on the heels of a decade of controversy for Latino/as. From legacies of racism and ethnicism to controversial proposals in the 1990s like California's Proposition 187 (which sought to eliminate social services for undocumented immigrants based on their undocumented status), from complicated social issues like affirmative action to heated 'English-only' debates, from increasing immigration from Latin America to rampant xenophobia and anti-foreigner sentiment after September 11, 2001, and most recently, from increased visibility in popular culture to the increase in hate crimes against Latino/as, the rising tide of the Latino/a demographic in the US must be further contextualized through discussing complex social issues. In other words, a correlate can be proposed here that while scholars recognize that Latino/as are now more visible than ever in mainstream American culture, the supposed emergence of Latino/as in popular music is an issue that provides insight into contemporary issues in politics and relevant societal questions and, as I argue here, provides further insight into questions of cultural identity.

All of this establishes the rationale for this research and the questions that follow: What else can be gleaned from the notable presence of Latino/as in US popular culture? Can Latino/as in popular music aid better understanding of Latino/as, Latino/a identity, or, perhaps, the complications of Latino/a identity discourse(s)? In short, one of the aims of this chapter is to reiterate the fact that popular music should not be dismissed as just popular music but is, in fact, an important cultural site of discourse, debate, and conflict. Thus, a premise of this chapter is that some of the tensions and complications of Latino/a identity are articulated in media and popular culture. At the same time, some further

7. Guzmán and Valdivia, "Brain, Brow, and Booty: Latina Iconicity in U.S. Popular Culture," 208-9.
8. The 2000 Census uses the category of Spanish/Hispanic/Latino.
9. For more on Proposition 187, see Hassan and Delgado "The Trials and Tribulations of Racialized Critical Rhetorical Theory: Understanding the Rhetorical Ambiguities of Proposition 187," and Ono and Sloop, Shifting Borders: Rhetoric, Immigration, and California's Proposition 187.

Example D. A scanned page with good alignment, clear text, and no stray markings.

While Scanning

During the scanning process, please be aware of the following:

- Scanning books with a spine – A book with a spine will not naturally lie flat on a scanner which means text on the edges of the page will be distorted. Please push the spine of the book down while scanning to insure that all the text is copied in a clear manner.
- Don't combine pages – Limit each print page to one electronic page will improve reading on mobile platforms. Check the DPI (dots per inch) are set between 300 and 400. Documents scanned at a low resolution will not be recognized by conversion software.
- Scan the document in black/white or 24-bit color depending on (a) whether the color of the original is important, and (b) whether your choice of color will have an effect on contrast.
- Check if the scanner has built-in Optical Character Recognition (OCR) capabilities. OCR turns images of text into text that is searchable and readable. Often, this option is identified as saving a document as a Searchable PDF.

Name Documents Consistently

A consistent, logical naming scheme will help users identify and locate documents. Choose a naming scheme that would be clear to someone outside of the class/environment.

- Avoid strings of numbers
- Include more than one identifier in the title. An identifier can include the course name, author, name of document, date, organization, year published, etc.

Managing the Electronic Copy in Adobe Acrobat Pro

Once you have a clean scan of your document, it's time to adjust that PDF using Adobe Acrobat Pro. Adobe Acrobat Pro is part of the standard issue of software on all Carthage-owned faculty and staff computers. If you are faculty or staff and do not have access to this software, please email help@carthage.edu.

It is always best if possible to start with an accessible source document (e.g., in Microsoft Word) and export to an accessible PDF. This way, if the document is edited later, the document's accessibility features will still be intact and when the document is exported again to PDF the accessibility features will again be passed to the PDF.

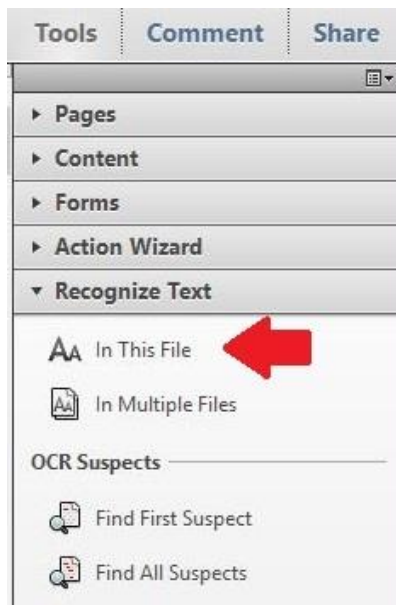
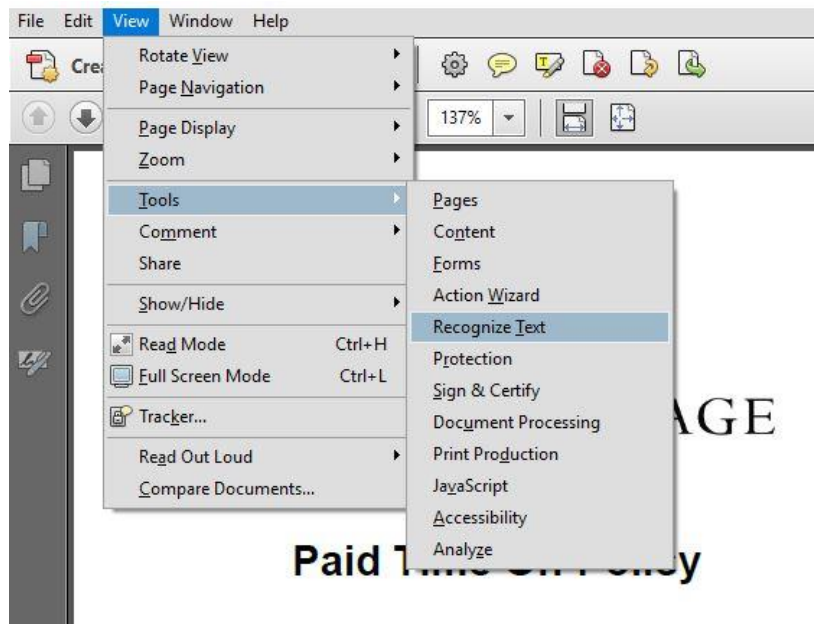
However, if the original source document is not available, accessibility features can be added to the PDF using Adobe Acrobat Pro. Before uploading your PDF to Schoology, perform the following functions in Adobe Acrobat Pro. Make sure to save your PDF after every stage.

For PDF Copies of Scholarly Articles

For PDF copies of scholarly articles, typically only a couple steps will be necessary. Run the “Recognize text” function to convert the PDF image to OCR text and add the title and author. Save the new document and upload to Schoology. These steps will allow users’ screen readers to read uploaded articles.

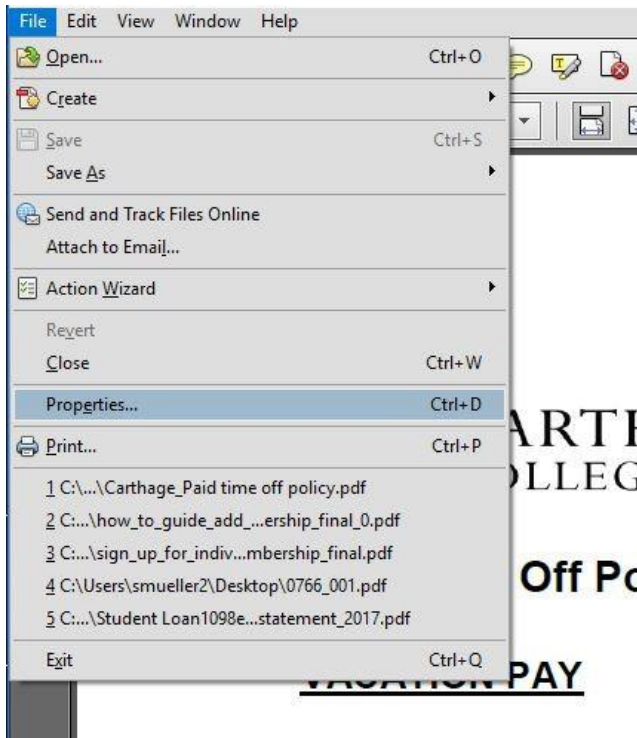
1. Recognize Text

Convert to text using View > Tools > Recognize Text > In This File. This function will physically straighten the scanned pages and convert the PDF image to text to make it searchable and readable by screen readers.

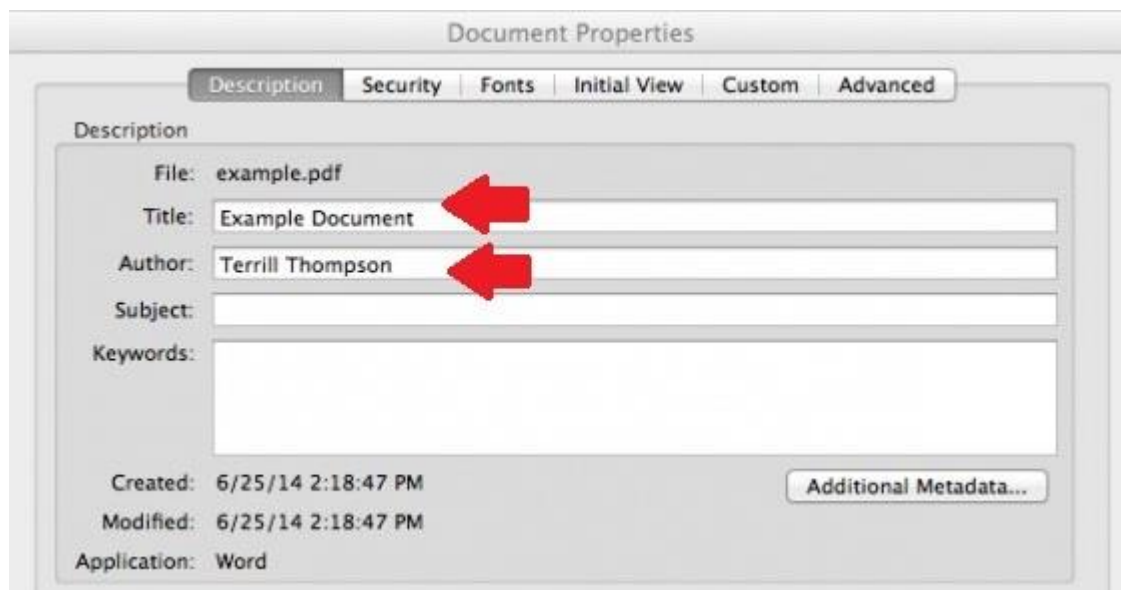


2. Add Title and Author to Your Document

Go to File > Properties.



In the Document Properties dialog box, add a descriptive title (Ex. Title of the article) and Author (Ex. Author of the article).



3. Press OK and Save your changes.

Creating a PDF from an Accessible Word Document

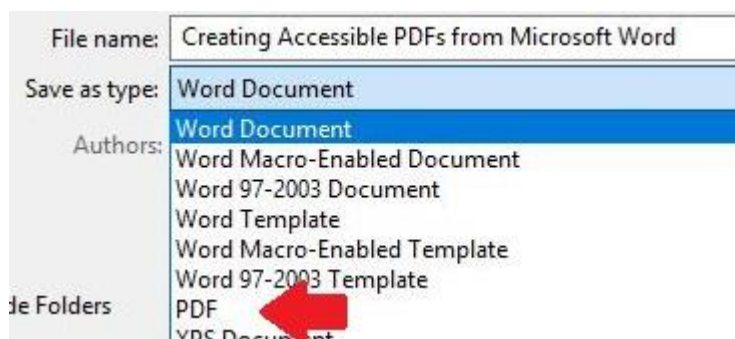
The first step in creating an accessible PDF from Microsoft Word is ensure that the original Word doc is accessible. See [Creating Accessible Documents in Microsoft Word](#) for instructions on how to do that.

The goal in exporting to PDF from Word is to preserve the accessibility features of the Word document, including heading structure, alternate text for images, and markup that explicitly identifies lists, tables, document language, and other content that is important for accessibility.

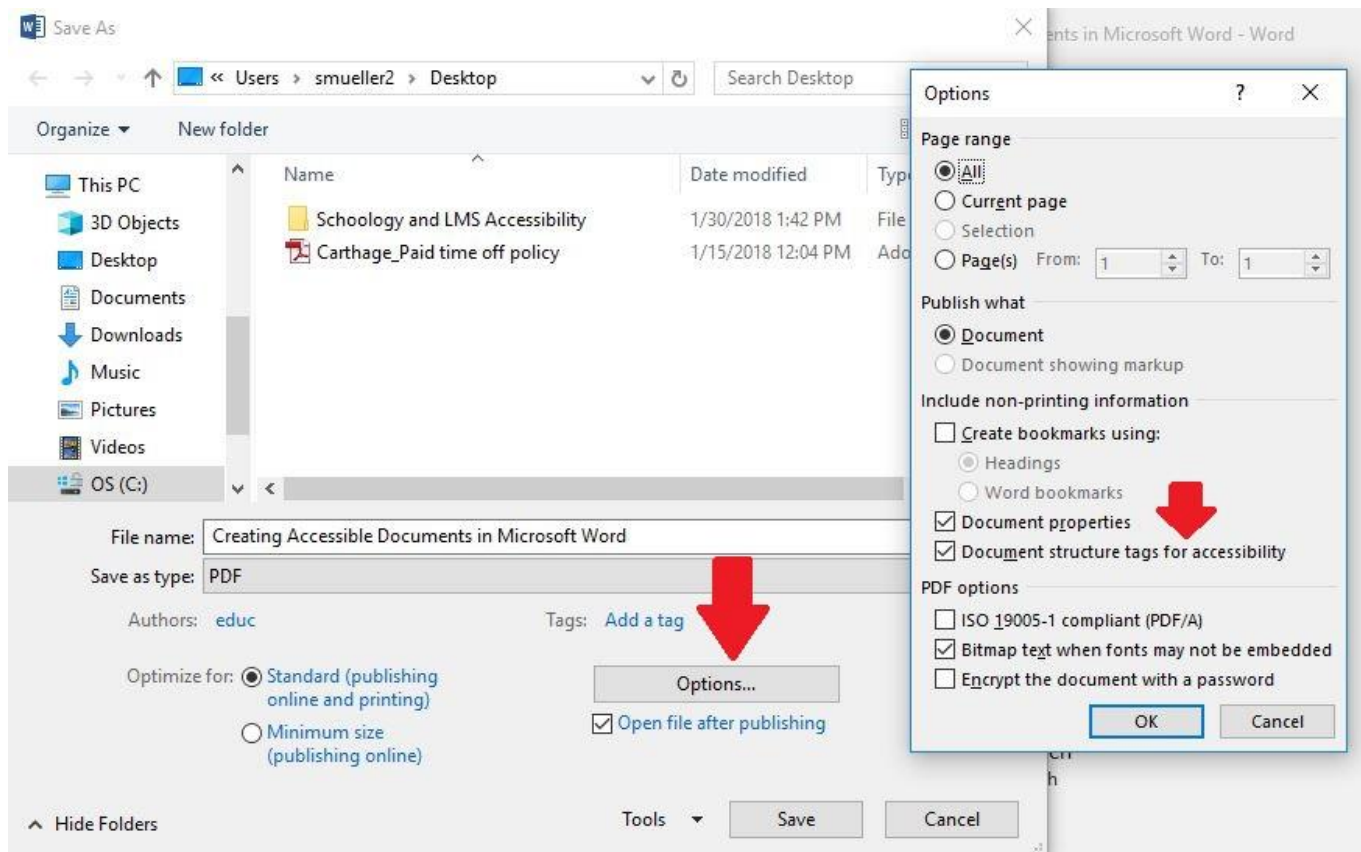
Do not create a PDF by using “Print to PDF” from your Print menu. This will not preserve accessibility features.

For Windows

Go to File > Save As and select “PDF” from the file type choices.



In that same dialog box, click the “Options” button. The Options menu will open. Make sure the box next to “Document structure tags for accessibility” is checked. Click “OK,” then “Save.”



For Macs

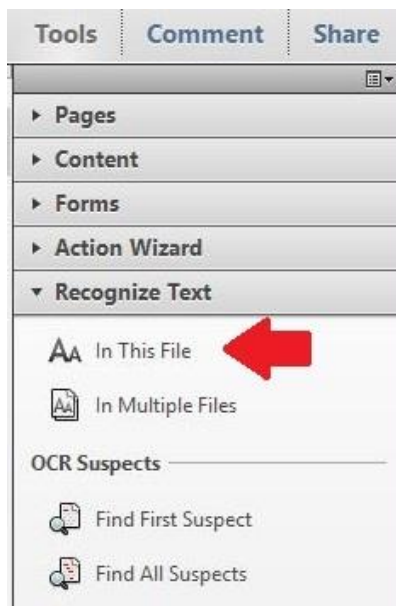
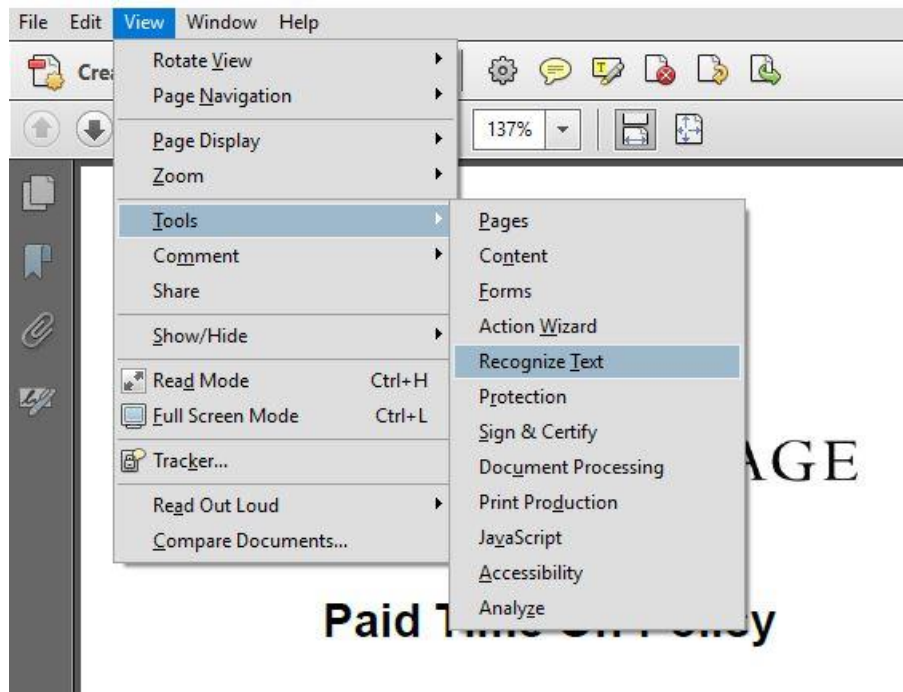
Go to File > Save As and select “PDF” from the file type choices. When saving, be sure the box labeled “Best for electronic distribution and accessibility” is checked.

Saving an already accessible Word doc to a PDF in this way should mean that you won’t have to complete the recognize text function in Adobe Acrobat Pro, but it couldn’t hurt to run the check anyway. (See Creating High Quality PDFs for more information.)

For PDFs You’ve Created

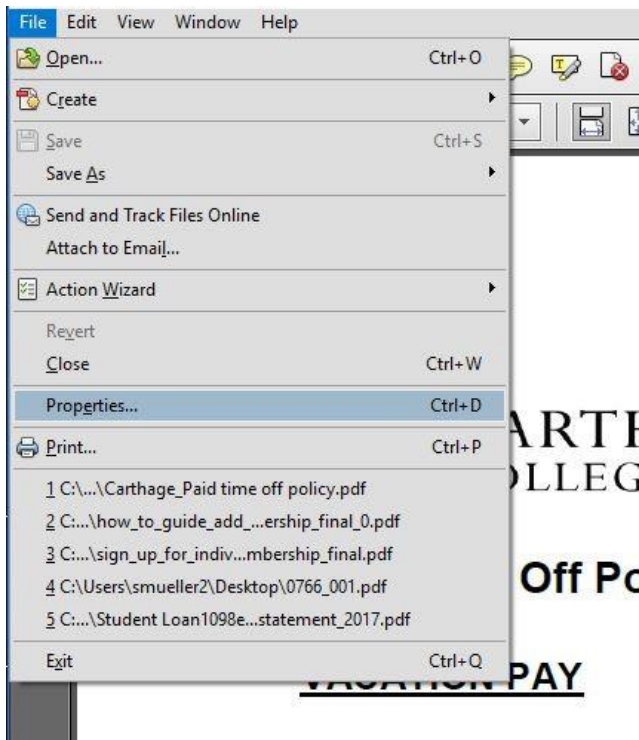
1. Recognize Text

Convert to text using View > Tools > Recognize Text > In This File. This function will physically straighten the scanned pages and convert the PDF image to text to make it searchable and readable by screen readers.

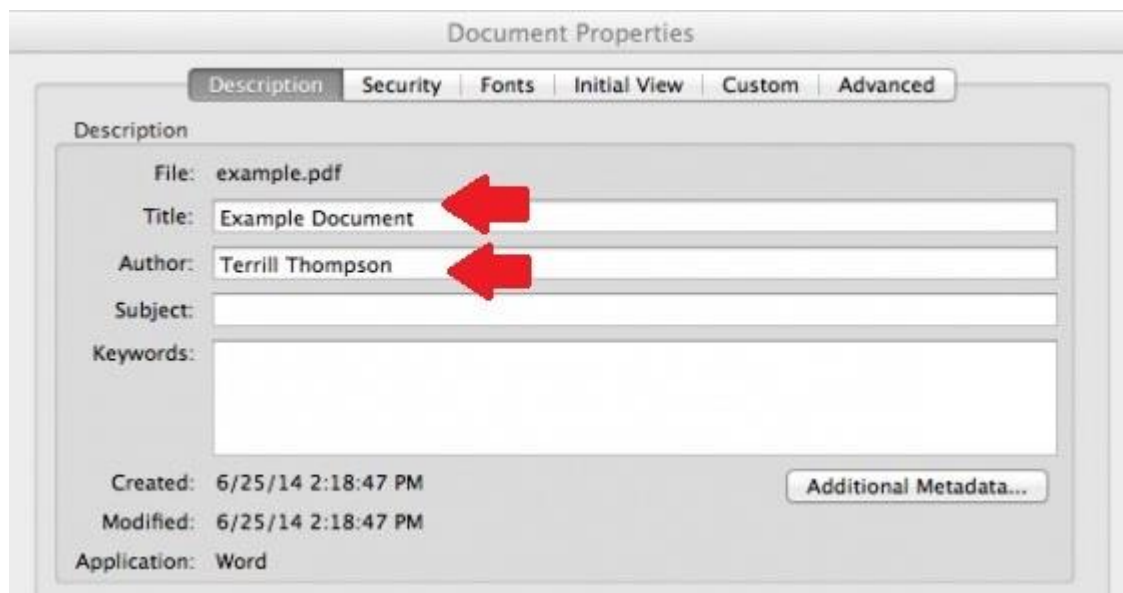


2. Add Title and Author to Your Document

Go to File > Properties.



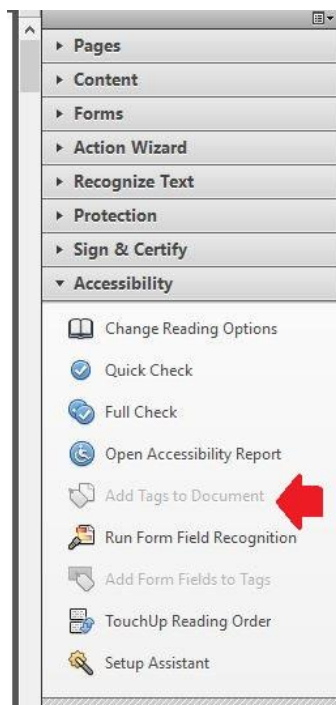
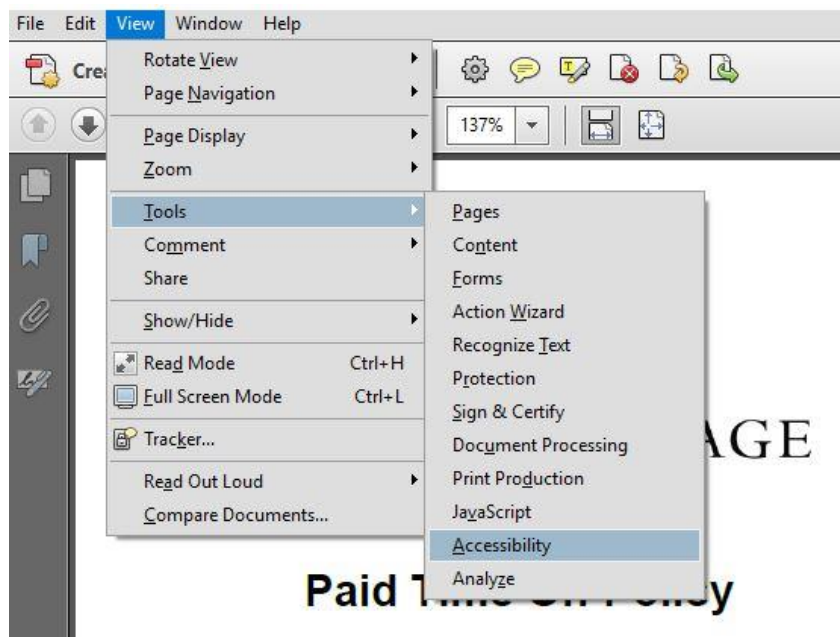
In the Document Properties dialog box, add a descriptive title (Ex. Title of the article) and Author (Ex. Author of the article).



3. Headings, Lists, Alternate Text, and Tags

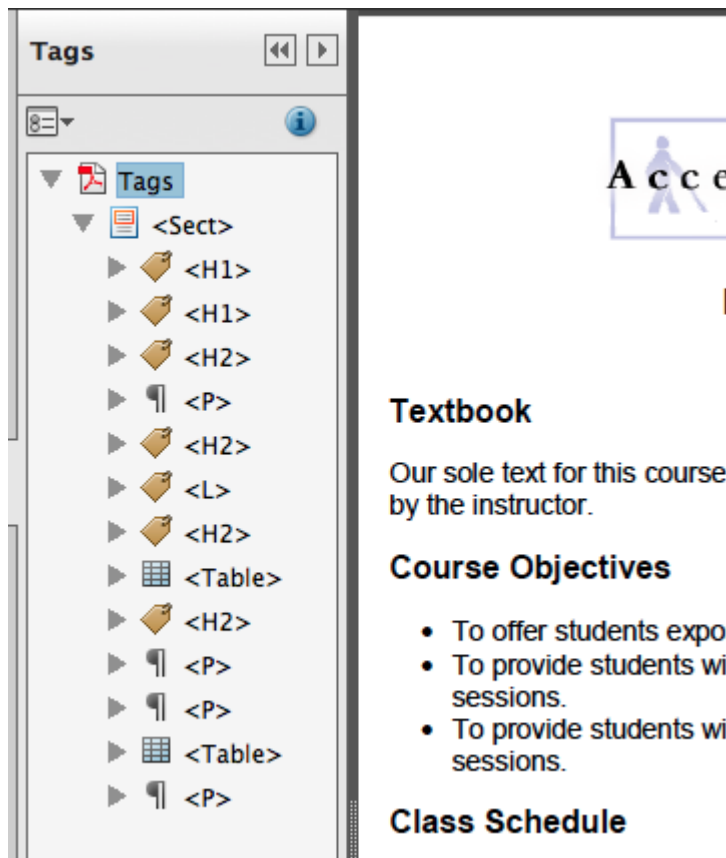
When creating new documents and saving them to PDF, TagTo view existing tags, select View > Show/Hide > Navigation Panes > Tags. Click the plus sign next to each tag.

If No, this document needs to be tagged. Tags provide the structure on which accessibility is built. Add tags by selecting View > Tools > Accessibility > Add Tags To Document.



Are headings marked up as headings at appropriate levels?

How to test: Study the document visually to determine what the heading structure should be. Keep in mind that headings should form an outline of the page. Next, open the Tags Panel by selecting View > Show/Hide > Navigation Panes > Tags. The Tags Panel shows a tree of tags that is very similar to HTML.



There are a variety of ways to explore the tag tree. For example, use Acrobat's text selector tool to highlight text in the document (for example, a heading) then click the menu icon at the top of the Tags pane and choose "Find tag from selection". This will expand the tag tree if needed and highlight the selected tag.

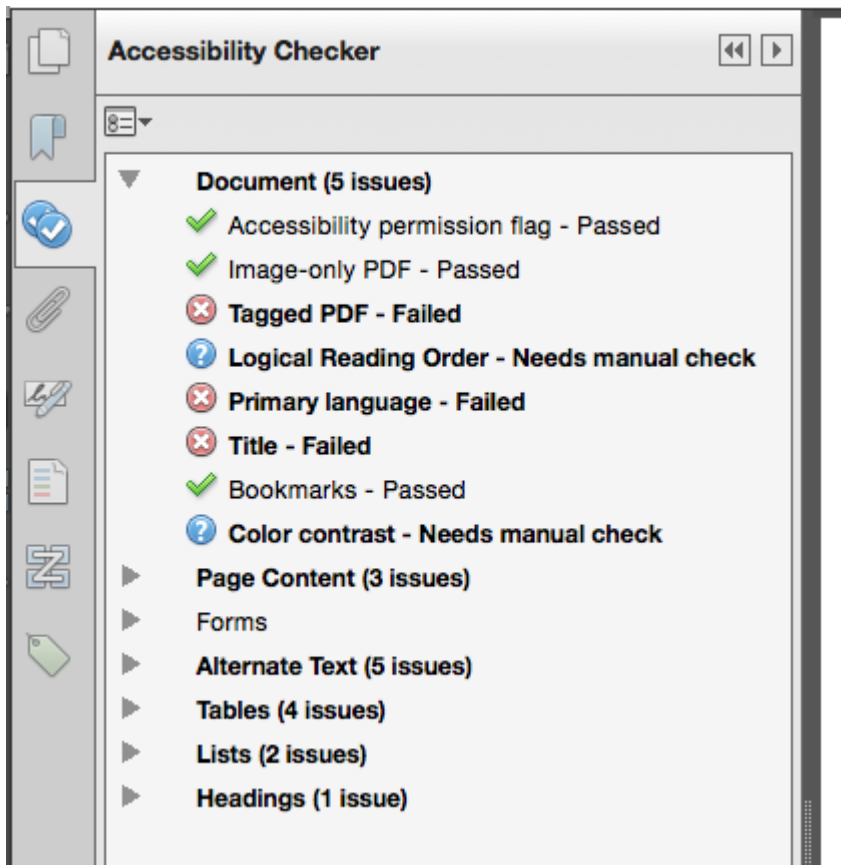
Alternatively, click the menu icon at the top of the Tags pane and be sure "Highlight Content" is checked. Then click on any tag to see the content associated with that tag highlighted in the document.

Headings should be marked up with tags that are equivalent to HTML headings tags (i.e., <H1> for the main heading, <H2> for subheadings, then <H3>, <H4>, etc. Some authoring tools may create tags that have heading-like names (e.g., "<Heading_Level_1>"). However, these are not recognized by screen readers and will need to be changed.

To change a tag, right click on the tag, select Properties, then choose an appropriate tag from the list. If you know the what the correct name should be for a particular tag, you can also double-click the tag and type in the correct name.

Step 6. Check for any lingering errors.

How to test: Run the accessibility checker that is built in to Acrobat Pro. Select Tools > Accessibility > Full Check, then read the report and follow the prompts.



The report lists items in various categories such as Document, Page Content, etc. Each item is preceded by an icon indicating that the item either passes, fails, or requires manual inspection. Right click on any item to see a list of options for fixing the problem or learning more about it.