

Quick and Easy Minimal Introduction to Accessible Documents

Aaron N. K. Yip
Department of Mathematics
Purdue University

February 19, 2026

Key Points

Latex to tagged PDF:

- ▶ Use LuaLatex (update your TexLive to 2025)
- ▶ Add alt text to Figures
- ▶ Or simply use Overleaf

Latex to HTML:

- ▶ LatexML
- ▶ MathJax

New or Other Platforms:

- ▶ PreTeXt
- ▶ Word, PowerPoint, Excel ... so they claimed

Teaching Pit Crew Website (TPC):

<https://www.math.purdue.edu/~yipn/TPC>

What is a tagged PDF

Tags

- <Document> Prepare for Emergencies Now: In...
- <Sect> Front Cover
- <Sect> 1 Be Informed
- <Sect> 2 Make a Communications Plan
 - <H2>
 - <P>
 - <H3>
 - <P>
 - <P>
 - <P>
 - <H3>
 - <Link>
 - Link - OBJR
 - <http://www.ready.gov/family-communications>
 - <H2>
 - <P>
 - <H3>
 - <P>

Create a Personal Support Network (con't)

Talk to your employer and co-workers about the assistance you might need in an emergency. This is particularly important if you need to be lifted or carried. Talk about any communication difficulties, physical limitations, equipment instructions and medication procedures that might arise during an emergency. Always participate in exercises, trainings and emergency drills offered by your employer or in your community.

Develop a Family Communications Plan

Your family may not be together when disaster strikes, so plan how you will contact one another and review what you will do in different situations. For more information on how to develop a family communications plan, visit <http://www.ready.gov/family-communications>.

Deciding to Stay or Evacuate

Depending on your circumstances and the nature of the emergency, the first important decision is whether to stay or go. You should understand and plan for both possibilities. Use common sense and available information to determine if there is immediate danger. In any emergency, local authorities may not immediately be able to provide information on what is happening and what you should do. However, you should monitor television,

Latex to tagged PDF

- ▶ Use LuaLatex (update your TexLive to 2025)
- ▶ Use DocumentMetaData and unicode-math:

```
1 \DocumentMetadata{  
2     lang=en,  
3     pdfversion = 2.0,  
4     pdfstandard = ua-2, %or a-4  
5     tagging=on,  
6     tagging-setup={math/setup=mathml-SE}  
7 }  
8 \documentclass[12pt]{article}  
9 %\documentstyle[portland, epsfig, 12pt]{article}  
10 %\pagestyle{empty}  
11 %\pagestyle{headings}  
12 \usepackage{amsmath, amsfonts, amssymb}  
13 \usepackage{epsfig}  
14 \usepackage{showkeys}  
15 \usepackage{unicode-math}
```

Latex to tagged PDF

► Add alt text to Figures

```
1 \includegraphics[height=4cm,alt={Portrait of Shakespeare}]{william-shakespeare.jpg}
2 \includegraphics[height=4cm,artifact]{crinklepaper}\makebox[0pt][r]{Some text }
3 \includegraphics[height=\baselineskip,actualtext=A]{example-image-a.jpg}
```

► You can also use Overleaf which includes all the most updated packages. In File/Settings:

Settings

X

↔ Editor

 **Compiler**

 Appearance

 Account settings

 Subscription

Main document

The primary file for compiling your project. You can also right-click a file to set it as main.

screenreadde▼

Compiler

The LaTeX engine used for compiling

LuaLaTeX ▼

TeX Live version

The version of TeX Live used for compiling

2025 ▼

Latex to tagged PDF

The following resources have many **actual examples** and comments (all accessible from TPC):

- ▶ Contributions by Mike Montoro
- ▶ Webpage of Tim Prescott:
<https://sites.und.edu/timothy.prescott/accessible/>
- ▶ Latex Tagging Project



Using LaTeX to produce accessible PDF

(LaTeX2e 2025-11-01)

The new code can be used with pdflatex or the Unicode engine xelatex. The latter is the preferred engine recommended for new documents.

Latex to HTML

- ▶ Use LatexML (see contributions by Arshak Petrosyan in TPC):

Using LaTeXML

Basic Command-Line Workflow

If you are comfortable with the command line, the workflow typically involves two steps:

```
latexml --dest=yourfile.xml yourfile.tex
latexmlpost --dest=yourfile.html yourfile.xml
```

Here is an [example](#).

Single-Step Conversion

```
latexmlc --dest=yourfile.html yourfile.tex
```

Latex to HTML

- ▶ Use MathJax:

MathJax v4: TeX input, HTML output test

When $a \neq 0$, there are two solutions to $ax^2 + bx + c = 0$ and they are

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

The Lorenz Equations

$$\begin{aligned}\dot{x} &= \sigma(y - x) \\ \dot{y} &= \rho x - y - xz \\ \dot{z} &= -\beta z + xy\end{aligned}$$

The Cauchy-Schwarz Inequality

$$\left(\sum_{k=1}^n a_k b_k \right)^2 \leq \left(\sum_{k=1}^n a_k^2 \right) \left(\sum_{k=1}^n b_k^2 \right)$$

Latex to HTML

► Use MathJax:

```
<head>
  <script>
    MathJax = {
      tex: {inlineMath: {'[+]': [[ '$', '$' ]]}}
    };
  </script>
  <script defer src="https://cdn.jsdelivr.net/npm/mathjax@4/tex-chtml.js"></script>
</head>

<body>

<p>
  When  $a \neq 0$ , there are two solutions to  $(ax^2 + bx + c = 0)$  and they are
  
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

</p>

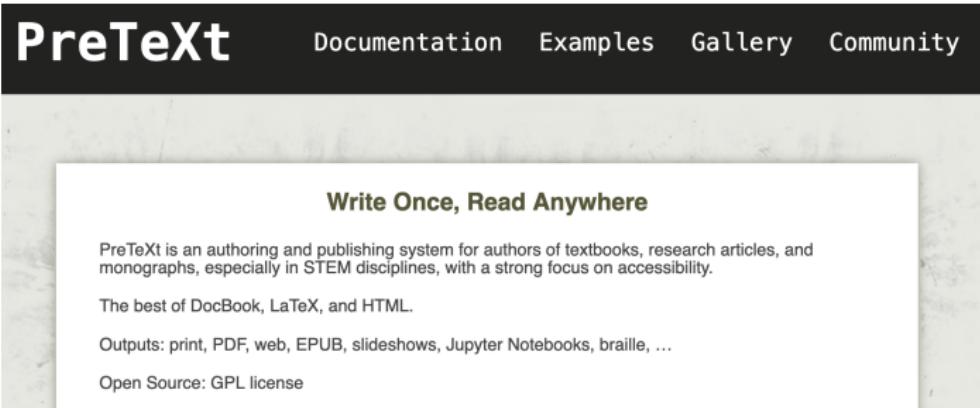
<h2>The Lorenz Equations</h2>

<p>
<math display="block">\begin{aligned} \dot{x} &= \sigma(y - x) \\ \dot{y} &= \rho x - y - xz \\ \dot{z} &= -\beta z + xy \end{aligned} \end{math>
</p>

```

New Platforms

► PreTeXt:



The screenshot shows the PreTeXt website homepage. The header features a dark navigation bar with the PreTeXt logo on the left and links for Documentation, Examples, Gallery, and Community. The main content area has a light gray background with a white central box. The title "Write Once, Read Anywhere" is centered in bold. Below it, a paragraph describes PreTeXt as an authoring and publishing system for STEM disciplines, focusing on accessibility. It highlights the integration of DocBook, LaTeX, and HTML, and lists various output formats like print, PDF, web, EPUB, slideshows, Jupyter Notebooks, and braille. It also mentions the Open Source GPL license. The footer contains standard navigation icons for a presentation slide.

PreTeXt Documentation Examples Gallery Community

Write Once, Read Anywhere

PreTeXt is an authoring and publishing system for authors of textbooks, research articles, and monographs, especially in STEM disciplines, with a strong focus on accessibility.

The best of DocBook, LaTeX, and HTML.

Outputs: print, PDF, web, EPUB, slideshows, Jupyter Notebooks, braille, ...

Open Source: GPL license

New Platforms

- ▶ PreTeXt (Examples from Jakayla Robbins):
https://www.math.purdue.edu/~jrrobbin/spring26_266/frontmatter.html

Ordinary Differential Equations: MA26600 Spring 2026

Jakayla Robbins

≡ Contents

🔍 < > ⌂

◀ Prev ⌂ Up

Ordinary Differential Equations

MA26600 Spring 2026

Jakayla Robbins
Department of Mathematics
Purdue University

New Platforms

- ▶ PreTeXt (Examples from Jakayla Robbins):

https://www.math.psu.edu/~jrrrobbin/spring26_266/frontmatter.html

Front Matter
Course Documents
Lecture Notes
Lesson 1, Introduction to Differential Equations
Lesson 2, Using Integration to Solve Simple Differential Equations
Lesson 3, Slope Fields and Sketching Solution Curves
Lesson 4, Separable Differential Equations and Applications
Lesson 5, First-order Linear Differential Equations, Part I
Lesson 6, First-order Linear Differential Equations, Part II
Lesson 7, Substitution Methods
Lesson 8, Exact Differential Equations and More Substitutions
Lesson 9, Population Growth Models
Lesson 10, Equilibrium Solutions and Stability

Lesson 2, Using Integration to Solve Simple Differential Equations

Textbook Section(s).

This lesson is based on Section 1.2 of your textbook by Edwards, Penney, and Calvis.

Differential Equations of the form $\frac{dy}{dx} = f(x)$.

A differential equation of the form:

$$\frac{dy}{dx} = f(x)$$

has **general solution**

$$y(x) = \int f(x) dx + C$$

(The "+C" is redundant, but I included it to stress that the generic constant is required in a general solution.)

Rule on Archived Web Content

<https://www.ada.gov/resources/2024-03-08-web-rule/>

Web content that meets **all four** of the following points would not need to meet WCAG 2.1, Level AA:

- (a). The content was created before the date the state or local government must comply with this rule, or reproduces paper documents or the contents of other physical media (audiotapes, film negatives, and CD-ROMs for example) that were created before the government must comply with this rule, **AND**
- (b). The content is kept only for reference, research, or recordkeeping, **AND**
- (c). The content is kept in a special area for archived content, **AND**
- (d). The content has not been changed since it was archived.