CMPSC 580
Junior Seminar
Spring 2021

Lab 1 Assignment
Writing and Presenting with LaTeX

Objectives

To enhance your understanding of the LaTeX text processing language. To experiment with developing a research question and a research area summary.

Reading Assignment

To learn more about Latex, there are many resources available online such as,

- General Latex: `https://www.latex-project.org/help/`

- Latex-Tutorials: `https://www.latex-tutorial.com/tutorials/`

Please use these resources as you learn how to create various entities, such as lists, figures, bibliography in LaTeX language.

Clone Your Assignment Repository

<div align="center">

`https://classroom.github.com/a/SHYoeE7b`

</div>

To use this link, please follow the steps below.

- Click on the link and accept the assignment

- Once the importing task has completed, click on the created assignment link which will take you to your newly created GitHub repository for this lab,

- Clone this repository (bearing your name) and work locally

- As you are working on your lab, you are to commit and push regularly. The commands are the following.

    - `git add -A`
    - `git commit -m "Your notes about commit here"`
    - `git push`

After you have pushed your work to your repository, please visit the repository the GitHub website (you may have to log-in) to verify that your files were correctly sent.

HANDED OUT: 2nd MARCH 2021

Introduction to LaTeX

LaTeX is a typesetting system used by computer scientists all over the world. Initially developed by Leslie Lamport (currently at Microsoft Research), it is actually a set of procedures that builds upon an earlier typesetting system, TeX, designed by Donald Knuth (retired from Stanford University). Unlike WYSIWYG word processors such as Microsoft Word or Open Office, LaTeX uses a set of predefined commands, environments, special characters, and etc. which are assembled by the user into a description of a document. For example, here is the LaTeX source code and the typeset output for a sample paragraph:

LaTeX Source:	Output:

`To determine the distance $d$`
`of a point $(x_0,y_0)$ from a`
`second point $(x_1,y_1)$, we`
`may use the \emph{distance`
`formula}:`
`\[d=\sqrt{(x_1-x_0)^2+(y_1-y_0)^2}\]`
`This generalizes to higher dimensions.`
	To determine the distance d of a point (x_0, y_0) from a second point (x_1, y_1), we may use the *distance formula*:
	
	$$d = \sqrt{(x_1 - x_0)^2 + (y_1 - y_0)^2}$$
	
	This generalizes to higher dimensions.

Requirements

1. Latex Installation

If you don't have LaTeX on your machine, first you will need to install it. You can find the relevant distribution on `https://www.latex-project.org/get/`. You can also use a Docker container to compile LaTeX files without installing its packages. For example, the project at `https://github.com/blang/latex-docker` provides the necessary set up for doing so.

2. Proposal Introduction

In you the `src/` directory of your lab01 repository, you will find a template called SeniorThesisProposal. Additionally, please note that:

- an image file: `logo.png` that is used to display a logo on the title page and that can be used as an example of how figures can be included in a LaTeX document is stored inside "images" directory;

- a sample bibliography file is titled `bibliography.bib` and is located in the "preamble" directory;

- the title page provided in this template can be modified after changing the values like the title and the names in the file `preamble/mydefinitions.tex`.

You can use any text editor such as TeXworks (`https://sourceforge.net/projects/texworks.mirror/`), TexMaker (`https://www.xm1math.net/texmaker/`, Atom (`https://atom.io/`) or another software to edit the file. Please note that you may have to install the LaTeX compiler in addtion to the editor to compile `.tex` files to `.pdf` files. See `https://www.latex-project.org/get/` for more information about installing the LaTeX compiler.

For editors which are specific to LATEX work, there are built-in options to compile .tex files, otherwise, you can use the terminal command "`pdflatex`" to compile the file into a PDF document locally, if desired. Then, to compile and display the bibliography, you can run the command "`bibtex`" to parse the .bib file, followed by "`pdflatex`" command again to generate the PDF with the correct references.

For this lab assignment, you are required to enhance the template proposal document by:

- modifying the **title page** to include a descriptive and an engaging title for a potential thesis proposal and changing the author name;

- including at least **three relevant references** using the `bibliography.bib` file with at least one journal article ("article" tag) and at least one conference article ("inproceedings" tag);

- writing the beginning of the **introductory section** (at least 300 words) by describing the area you propose to explore and providing a motivating justification (backed up by citations) for why this area is important to study. Specifically, in your introductory text you are required to include the following to the "Introduction" section of the proposal template. You can ignore or comment out the rest of the sections for now, do not delete it.

  1. **Figure**: Add a figure, which could be used to enhance your introductory text. For example, it could be a motivating image or a flowchart. If you obtain this image from another source, which is most likely what you should do at this stage, please make sure you cite it in the caption of the figure.

  2. **Lists**:
     - A numbered list of at least four items using `enumerate` environment. Note: this function is accomplished by;
       `\begin{enumerate} \item My item goes here \end{enumerate}`
     - A bullet list of at least four items using `itemize` environment.

  3. **Text**:
     - A "verbatim" paragraph. Note: this is accomplished by using the below code with keyword `verbatim`.
       `\begin{verbatim} My verbatim text here \end{verbatim}`
     - One or more words emphasized using "emph" (e.g., a newly-defined term might be italicized the first time it appears in a paper) and one or more words in bold-face font using "textbf" function.

0.1   Ethics

Technology in Computer Science is driven by automation and algorithms. In some cases of their usage, issues of bias may creep into the inner workings of technology to produce unintended and damaging consequences. In your Latex document, please add a section called "Bias" where you discuss how bias from algorithmic automation may cause some unintended misfortune.

To provide you with some ideas about how bias can become ingrained in technology, you are invited to attend a virtual screening of "Coded Bias", a film sponsored by Allegheny College's

ACM chapter. The screening is on the Wednesday, 3rd March 2021 at 7pm. Please complete the following form at link `https://forms.gle/rrNp7PSLyoWCnkk17` to reserve your place to view the film. You will be emailed an invitation link to view the film showing in Figure 1. Attendance is voluntary but highly recommended to help you to address your Bias Section of your deliverable. Note: to open a new section in Latex, use `\section{YOUR TITLE}` .
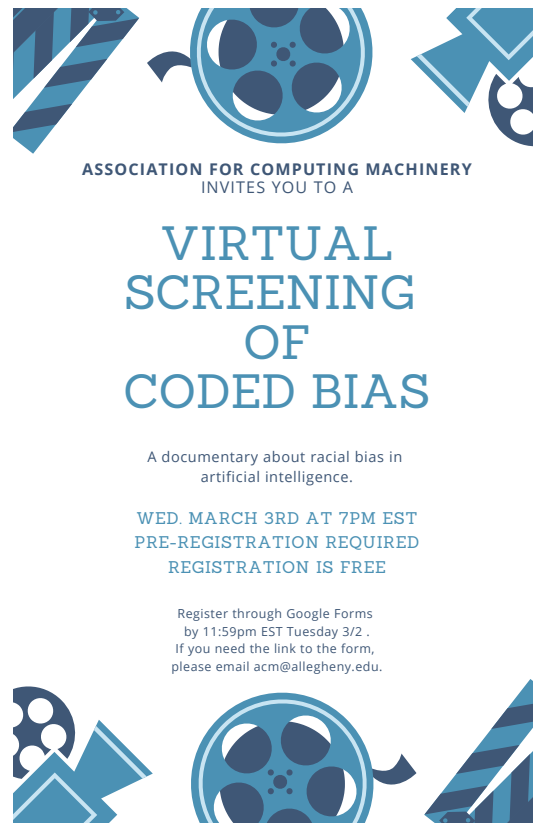

Figure 1: Screening on the Wednesday, 3rd March 2021 at 7pm. Please complete the following form at link `https://forms.gle/rrNp7PSLyoWCnkk17` to reserve your place to view the film and you will be emailed an invitation link to view the film.

Compile your work to a PDF and check that the proposal template looks as it should.

Summary of the Required Deliverables

This assignment invites you to submit your work using GitHub and Git. Your deliverable is the following.

1. Complete and correct versions of src/SeniorThesisProposal.tex, src/preamble/bibliography.tex, src/preamble/mydefinitions.tex and any images included in your LaTeX document, that both meets all of the established requirements and produces the desired pdf document. See the text in blue above for a list of that to include in your document and see Section, "Requirements", above, for other details of this deliverable.

2. A short writing in your Latex document concerning *Bias*. Note, ideas for this writing may come from the screening of the 3rd March (Wednesday) film, "Coded Bias" of Figure 1.