Writing in the Major Lab (CS 296)

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Contents

Abstract

This document describes basic tools and elements of LaTeXone needs to start working on a paper. LaTeXfundamentals are described in the *Learn LaTeXin 30 minutes* on Overleaf[3].

1 Tools

1.1 tex-live

You are going to need `tex-live` package to work with LaTeX. `tex-live` is a multi-platform TeXdocument production system [5]. It comes packed with various tools and you may use command line to compile your file. You can also use GUI tools like *TeXShop* (macOS), *Kile*[1] (multi-platform), *Texmaker* (multi-platform), or *LaTeX Workshop*[2] for *VS Code*.

```
sudo apt install tex-live
```

Listing 1: Installing tex-live

1.2 Kile

Kile is an IDE for LaTeXthat allows you to compile, convert, and preview your document.

```
sudo apt install kile
```

Listing 2: Installing Kile

1.3 LaTeX Workshop for VS Code

If you prefer *VS Code* to write code, install the *LaTeX Workshop* extension to write your LaTeX, build (compile) it, and generate (preview) the resulting PDF.

1.4 Lucid chart

While professional tools like *OmniGraffle* (macOS) or *Visio* (Windows) are usually used to create diagrams, *Lucid chart*[4] should be sufficient for the purposes of this paper and it is free. You should not include photos in your paper but rather draw diagrams and generate charts[1].

2 Structure

The main goal of this course if for you write a scientific paper while using proper tools and methods. Your paper is going to be a survey/review of existing sources and should not exceed 7 pages.

[1] Use *Excel* or *Spreadsheets* for charts

Sections of the paper should include at least the following sections:

- Introduction
- History of the subject
- Prominent features
- Conclusion
- References

3 Timeline

You are expected to stick to the schedule specified on KATIE (see Table 1 in the Appendix).

4 Advanced elements

4.1 Math

Your paper may include mathematical formulas. They can appear *inline* (e.g. $i^2 = -1$ or $E = mc^2$) or in *display* mode.

$$F = G\frac{m_1 m_2}{r^2} \tag{1}$$

or

$$a^2 + b^2 = c^2$$

4.2 Code

An easy way to include code is to use package `listings` and have your code in a separate file. Other options (e.g. package `minted`) are acceptable too but may require additional tools.

```
1 def hello():
2     print("Hello, Panda!")
```

Listing 3: `hello` from file

You can also include code in the body of your document.

```
def hello():
    print("Hello, Panda")
```

Listing 4: `hello` inline and with different options

4.3 Image

An image (see Figure 1) or a chart can be inserted into the document.

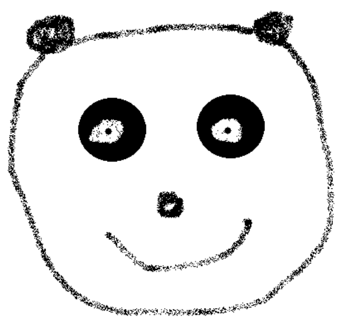

Figure 1: Panda

4.4 Fancy text

Text reflected horizontally. Text reflected vertically.

References

[1] *Kile - an Integrated LaTeX Editing Environment.* `https://kile.sourceforge.io/`. (Accessed on 10/22/2019).

[2] *LaTeX Workshop - Visual Studio Marketplace.* `https://marketplace.visualstudio.com/items?itemName=James-Yu.latex-workshop`. (Accessed on 03/28/2020).

[3] *Learn LaTeX in 30 minutes - Overleaf, Online LaTeX Editor.* `https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes`. (Accessed on 10/22/2019).

[4] *Online Diagram Software & Visual Solution — Lucidchart*. https://www.lucidchart.com/pages/?noHomepageRedirect=true. (Accessed on 10/22/2019).

[5] *TeX Live - TeX Users Group*. https://www.tug.org/texlive/. (Accessed on 10/22/2019).

Appendix A

Task	Week	Points
LaTeXseminar	1	5
Select a topic	1	10
Meet the librarian	2	5
Identify the sources	2	10
Outline	3	10
First draft	4	20
Meet the instructor	5	0
Final draft	7	20
Presentation	8	10
Full paper	8	10

Table 1: Tentative schedule