

Writing in the Major Lab (CS 296)

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March 29, 2020

Contents

1	Tools	2
1.1	tex-live	2
1.2	Kile	2
1.3	LaTeX Workshop for VS Code	2
1.4	Lucid chart	2
2	Structure	2
3	Timeline	3
4	Advanced elements	3
4.1	Math	3
4.2	Code	3
4.3	Image	4

Abstract

This document describes basic tools and elements of \LaTeX one needs to start working on a paper. \LaTeX fundamentals are described in [1] and [2].

1 Tools

1.1 tex-live

You are going to need `tex-live` package to work with \LaTeX . It is a multi-platform \TeX document production system[3] that comes packed with various tools you may use to compile your file. You can also use GUI tools like *TeXShop* (macOS), *Kile* (multi-platform), *Texmaker* (multi-platform), or *LaTeX Workshop* for *VS Code*.

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

Listing 1: Installing tex-live

1.2 Kile

Kile is an IDE for \LaTeX that 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* 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 charts¹.

2 Structure

The main goal of this course is for you to 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. You should use class *article*.

¹Use *Excel* or *Spreadsheets* for charts

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.

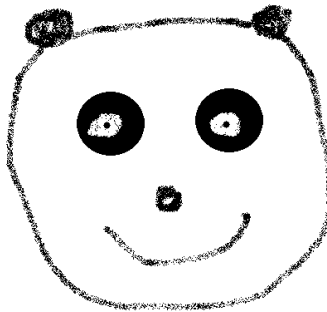


Figure 1: Panda

References

- [1] *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).
- [2] Tobias Oetiker et al. “The not so short introduction to LATEX2 ϵ ”. In: (1995).
- [3] *TeX Live - TeX Users Group*. <https://www.tug.org/texlive/>. (Accessed on 10/22/2019).

Appendix A

Task	Week	Points
L ^A T _E Xseminar	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