LATEX PROJECT MANAGEMENT

A consistent boilerplate for LATEX projects, I choose AOS for regular articles, please check https://vtex-soft.github.io/texsupport.ims-aos/ for more details

The references are managed externally by Zotero and BBT, exported to BibTex format, then included via `natbib`.

1. Project Structure.

1.1. *Shared Files.* For example, I would like to have AOS template as the default but do not wish to include the `.cls` in each folder. This can be achieved locally when writing in Texifier. Most importantly, I can now sourced my `macro.tex` anywhere.

Ideally, my bib should also be centralized.

1.2. *Single File Project.* This is the default with one-file project, easy to track.

```
├── fig
│   ├── plots.pdf
├── main.bib
├── main.tex
├── main.pdf
├── marco.tex              % All my collected macros
├── custom-style.cls/def/sty/bst
```

1.3. *Multi-Files Project.* Below is a larger LATEX with different chapters:

```
├── chapters
│   ├── 01-blabla.tex
├── fig
│   ├── R/Python.pdf
│   ├── TikZ.tex
│   ├── TikZ.pdf
│   ├── Asymptote.asy
│   ├── Asymptote.pdf
├── main.bib
├── main.tex
├── main.pdf
├── marco.tex              % All my collected macros
├── custom-style.cls/def/sty/bst
```

2. Mathematical Notation. It has always been a hassle to organise mathematical notation across different sources, in fact, I would go so far as to argue that it is the most annoying thing when one starts reading a book or an article.

However, there *must be* some notational conflicts beyond primary school simply due to the fact that the limited number of alphabets (**26**). For example, "$\mathbb{E}$" might be energy in physics while it could refer to expectation or scores in probability.

Another difficulty is that the authors often assume some familiarity in the topics *also* I am expected to read in some logical or chronological order. In reality, I am constantly jumping back and forth between one literature to another.

$$\mathbb{A}, \mathbb{B}, \mathbb{C}, \mathbb{D}, \mathbb{E}, \mathbb{F}, \mathbb{G}, \mathbb{H}, \mathbb{J}, \mathbb{K}, \mathbb{L}, \mathbb{M}, \mathbb{N}, \mathbb{O}, \mathbb{P}, \mathbb{Q}, \mathbb{R}, \mathbb{S}, \mathbb{T}, \mathbb{U}, \mathbb{V}, \mathbb{W}, \mathbb{X}, \mathbb{Y}, \mathbb{Z}$$

$$\mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{J}, \mathcal{K}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{S}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Z}$$

$$\mathfrak{A}, \mathfrak{B}, \mathfrak{C}, \mathfrak{D}, \mathfrak{E}, \mathfrak{F}, \mathfrak{G}, \mathfrak{H}, \mathfrak{I}, \mathfrak{J}, \mathfrak{K}, \mathfrak{L}, \mathfrak{M}, \mathfrak{N}, \mathfrak{O}, \mathfrak{P}, \mathfrak{Q}, \mathfrak{R}, \mathfrak{S}, \mathfrak{T}, \mathfrak{U}, \mathfrak{V}, \mathfrak{W}, \mathfrak{X}, \mathfrak{Y}, \mathfrak{Z}$$

$$\arg\inf, \arg\sup, \arg\max, \arg\min, \operatorname{conv}$$

This stackexchange answer: https://tex.stackexchange.com/a/58124 is probably the most comprehensive answer to which fonts are shown in LaTeX.

Symbol	Usage	Comments
$\mathbb{B}$	`\*f`	blackboard bold except `\If` due to conflict
$\mathcal{B}$	`\*c`	calligraphic font
$\mathfrak{B}$	`\*k`	Fraktur font

2.1. *Choose the Right Notation and Shortcuts.* I am not even talking about the difference due to differences in fonts and italic or roman. It is just a very sad thing that we don't even have a unified way of saying probability is just sad. Take probability for example and return to the most basic case of tossing a coin where the sample space is $\mathcal{A} = \{H, T\}$. I have come across:

$$P() \quad \mathrm{P}() \quad \Pr() \quad \mathsf{P}() \quad \mathbf{Prob}().$$