

<InfPALS/>



What is Latex and why do we need it?

- Latex
 - high-quality typesetting system
- Reasons
 - production of technical documentation
 - production of scientific documentation

L^AT_EX

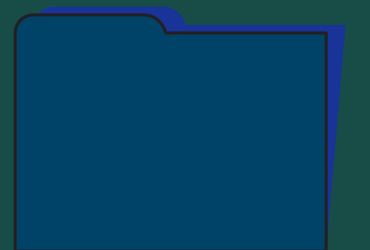
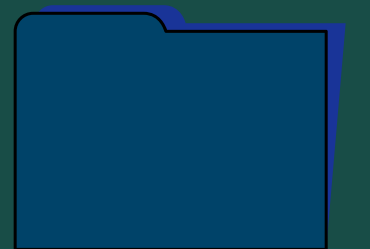
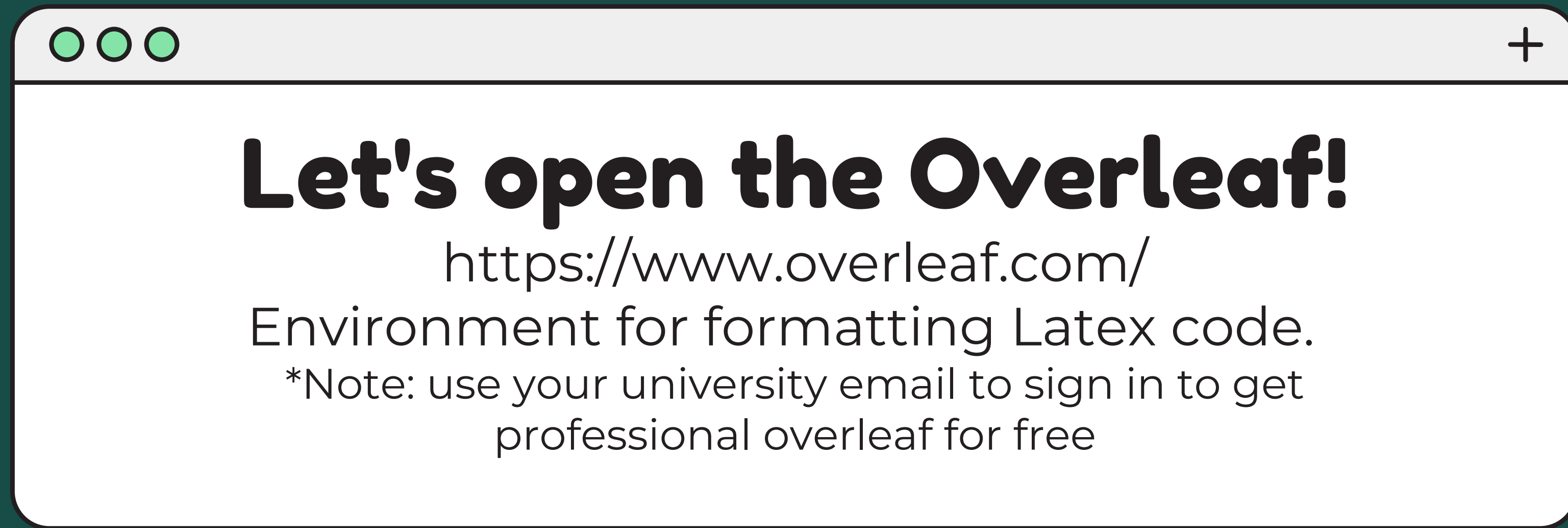
What are we going to learn today?



Basic Document Structure
Text Formatting
Lists
Tables

Images
Equations / Plots
Bibliography
Presentation

We hope you are having fun! ;)



Basic Document Structure

Types of documents possible in Latex

- Academic Journal
- Book
- Formal Letter ..

Today's Focus

In Overleaf:

1. Press 'New Project'
2. Press 'Blank Project'

Basic Document Structure

- `\documentclass{article}`
`\usepackage[utf8]{inputenc}`
 - set layout of your document
- `\title{your_title}`
`\author{your_name}`
`\date{today}`
- `\begin{document}` `\end{document}`
 - marking of the main body of your doc
- `\maketitle`
 - prints title/auther/date
- `\section{Introduction}` (*subsubsection)
 - marks the new section

Basic Document Structure

Your turn!
Create Blank Project.
Give it a title of your choice.
Fill in your name.
Create 6 sections for:
Text
Lists
Table
Images
Equations and Plots
Bibliography

Text Formatting

- **\textit{Italic}**
- **\textbf{Bold}**
- **\underline{Underlined}**
- **\uppercase{Uppercase}**

- **\tiny tiny_text**
- **\small small_text**
- **\normalsize normal_size_text**
- **\large large_text**
- **\Large Large_text**
- **\LARGE LARGE_text**

Text Formating

Your turn! (In new section)
Write this sentence in Latax:
This is my weird sentence.
A very (large) very (larger) tiny
(largest) **Chicken** (bold and
uppercase) *ate* (italic) very
(small) big (smallest)
worm(underline).

Lists

Bullet Points

- `\begin{itemize}`
 `\item One entry`
 `\item Another entry`
`\end{itemize}`

Ordered List

- `\begin{enumerate}`
 `\item First entry`
 `\item Second entry`
`\end{enumerate}`



Lists



Your turn! (In new section)

- Create a subsection for your self.
- Create and unordered list of things you like.
- Create ordered list for Starter Pack of Computer Scientist.

Tables

- `\begin{center}`
 - centres the table
- `\begin{tabular}{||c c||}`
 - indicates beginning of table
 - creates double vertical year
- `\hline`
 - new horizontal line
- `Title1 & Title 2 \ \`
 - Titles for each column
- `Row1Col1 & Row1Col2 \ \`
 - Values for row1 and indication of new line
- `\end{tabular} \end{center}`

Tables

Your turn! (In new section)

- **Create a Table with 3 Columns**
 - Course
 - Your Rating
 - Year
- **And list all Informatics Courses you have taken so far**

***Note Rating 1-5**

Images

When adding Pictures to your Latex doc you need to upload them to the files section

- `\usepackage{graphicx}`
 - package for adding pictures
- `\begin{figure}[H]`
 - indicating picture
- `\centering`
- `\includegraphics[height=5cm]{picture.png}`
 - height is size of the picture
- `\caption{This is caption for your picture}`
- `\end{figure}`

Images

Your turn! (In new section)
Try to replicate



(a) Me



(b) The guy she tells me
not to worry about

Equations / Plots

Equations

For any variable or equation use

- `\ (\\)`
- `$ $`
- `\begin{math} \end{math}`

Superscript

- `^`

Subscript

- `_`

All other parts of equations can be found here

https://en.wikipedia.org/wiki/List_of_mathematical_symbols_by_subject

Equations / Plots

```
Plots (\usepackage{pgfplots})  
\begin{figure}[h]  
\begin{tikzpicture}  
    \begin{axis}[  
        xlabel=x  
        ylabel=y]
```

```
\addplot[color=red,mark=x]  
coordinates {  
    (x,y)  
    (a,z)};  
\end{axis}  
\end{tikzpicture}  
\end{figure}
```

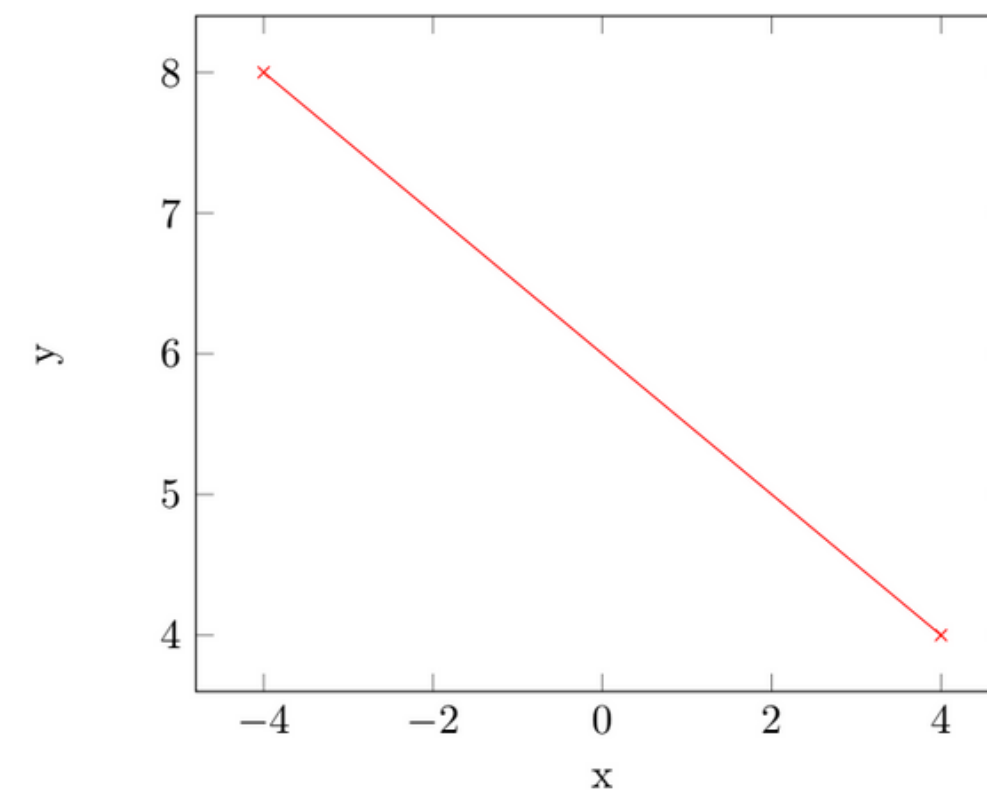
x,y,z,a are real coordinates

Equations / Plots

Your turn! (In new section)
Try to replicate

$$F(y) = \int_{-\infty}^y \frac{1}{\sqrt{2\pi\sigma^2}} e^{\frac{-(x-\mu)^2}{2\sigma^2}} dx$$

Try to replicate



Bibliography

**When creating a reference
Create a new file in file section
and name it [example].bib**

In that file:

```
@article{refence,  
  author = "Patricia Mizurova",  
  title  = "The memories of InfPals",  
  year   = "2022",  
  journal = "The NewYork Times",  
  volume = "1",  
  number = "1",  
  pages  = "11-33"  
}
```

Bibliography

In your latex document:
`\cite{nameofthereference}`
in text

`\bibliographystyle{alpha}`
`\bibliography{sample}`
at the end of you document

Bibliography

Your turn! (In new section)
Write this sentence and add a
reference in example
"InfPALS are the bestest you
know ;)."

Presentation

```
\documentclass{beamer}
\title{Sample_title}
\author{Anonymous}
\institute{Overleaf}
\date{2022}
\begin{document}
    \begin{frame}{Sample
frame title}
        This is some text in the first
frame.
    \end{frame}
\end{document}
```

Presentation

Your turn! (In new section)
Create a presentation 3 slides
about Edinburgh.
Slide 1 - Introduction
Slide 2 - 3 Top Tourists
Destinations (Bullet Points)
Slide 3 - Picture of Calton hill

**Apply to be
InfPals Leader in
2022/2023**

