

Introduction to \LaTeX

A very short briefing

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1 Introduction

\LaTeX is a very popular and useful Language. Indeed, this very slide itself is created using \LaTeX beamer.

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Sample L^AT_EX file

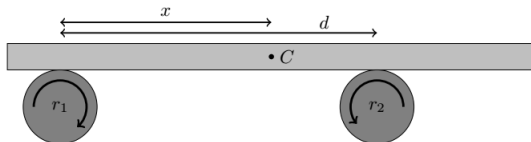


Figure 1: Advertisement **ALERT**: This image is created jointly by **Henry Yip** and **Lorian Richmond**. If you want to create Physics or Math documents with them please contact **Henry Yip**

1.1 Documentclass

- On the first line you can see `\documentclass{}`. As we are writing articles, we always put `\documentclass{articles}` in the brackets. If you want to include a report later on, you should put `\documentclass{report}`

2

1.2 Packages

- Packages are extensions of L^AT_EX that allows you to include all sorts of things, like graphs, hyperlinks, math symbols and so on

1.2.1 Math Articles

- `\usepackage{amsmath}` and `\usepackage{amssymb}` are almost always required.

- Introduction

Features

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- Preamble

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- Math Symbols

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- Bonus Session for Texmaker Users

Preamble

- Below is an example of a **Preamble**

```
\documentclass{article}
\usepackage{amsmath}
\usepackage{amssymb}
\usepackage{parskip}
\usepackage[utf8]{inputenc}
\usepackage{titlesec}
\setcounter{secnumdepth}{4}
\titleformat{\paragraph}
{\normalfont\normalsize\bfseries}{\theparagraph}{1em}{}
\titlespacing*{\paragraph}
{0pt}{3.25ex plus 1ex minus .2ex}{1.5ex plus .2ex}
\newcommand{\ie}{\textit{i}. \textit{e}. }
\title{Introductory Astrophysics (PHYS08050) Notes}
\author{Henry Yip
s2231321@ed.ac.uk
}
```

Components

- `\documentclass{}`

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Components

- `\documentclass{}`
- `\usepackage{}`
- Title, Author, Date...
- `\begin{document}`

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More Features

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- Example: `\documentclass[Option 1, Option 2]{article}`

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- **Tikz** is preferred if you want to draw graphs
- Below is a beautiful example!

- You can include hyperlinks through `\usepackage{href}`

More on Packages

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- You can **always** find your answer in [Stackexchange](#)

Sidenote: Wait what is a beamer?!

Preamble

- `\documentclass{beamer}`

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Preamble

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- `\usetheme{Madrid}`

Important Notice

Try not to use powerpoint slides for your Math-related presentations

Sidenote: Wait what is a beamer?!

Preamble

- `\documentclass{beamer}`
- `\usetheme{Madrid}`
- `\usecolortheme{default}`

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- The Sample document has **Sample** as the default title, feel free to change to anything you want

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- Always include `\maketitle` after `\begin{document}`

Abstract?

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Math Symbols

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- a $\$$ sign is **required** to show that you are entering math mode. For example: $\$ \backslash \text{measuredangle} \$$ will show as \sphericalangle

Math Symbols

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- a \$ sign is **required** to show that you are entering math mode. For example: `\measuredangle` will show as \angle
- You can make your equations aligned also:

$$\Delta K = \frac{dK}{dR} \Delta R \quad (1)$$

$$= -\frac{GM\Delta m}{2R^2} \Delta R \quad (2)$$

$$\Delta U = \frac{dU}{dR} \Delta R \quad (3)$$

$$= -\frac{GM\Delta m}{R^2} \Delta R \quad (4)$$

More on Math Symbols

- You can use the `\begin{align}` and `\end{align}` to achieve this. Remember to include a `&` before every `=` sign so equations can be actually aligned

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\begin{align}
\Delta U &= \frac{dU}{dR} \Delta R \\
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```

- You can find more in Overleaf's website

- First, upload your images to **Overleaf**

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- Second, include this line:
 - `\includegraphics[scale= 1]{Preamble.png}`

- First include the following packages in the **Preamble**

```
\usepackage{hyperref}
\hypersetup{
  colorlinks=true,
  linkcolor=blue,
  filecolor=magenta,
  urlcolor=cyan,
  pdftitle={Overleaf Example},
  pdfpagemode=FullScreen,
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```

- There are many ways to change all sorts of settings. You should refer to the Overleaf page for reference

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```
\begin{itemize}  
\item Go to \href{https://www.overleaf.com/login}{the login page of Overleaf}  
\item Create a New Account \footnote{You'll likely obtain a professional acco
```

- Just type down `\footnote {}`

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- The formatting is automatic

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- You can make very nice tables with \LaTeX

Time	Activity	Remarks
7:00	Train in Glasgow /Paris	
12:00	Arriving in King's Cross Station	
12:30	Check in	
13:00-14:00	Lunch	
15:00-18:45	Hong Kong Disneyland	Walk Around
19:15-20:45	Dinner	

More on Tables

```
\begin{table}[H]
\begin{center}
\begin{tabular}{c|c|c}
\textbf{Time} & \textbf{Activity}&\textbf{Remarks}\\
\hline
7:00 & Train in \textbf{Glasgow}/Paris& \\
\hline
12:00 & Arriving in \textbf{King's Cross Station}&\\
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12:30 & Check in & \\
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19:15-20:45 & Dinner & \\
\hline
\end{tabular}
\end{center}
\end{table}
```

- Above is how you should type

More on Tables

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\hline

\end{tabular}
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\end{table}
```

- Above is how you should type
- To adjust position please download `\usepackage{float}`

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- You can also click "View" in TexMaker, then "print" and then "Microsoft Print to Pdf". However, at least for me, the hyperlinks may be lost.

Approaching The End!

Questions

If you have any Questions feel free to ask me now!

Thank You!