Introduction to LaTeX

A very short briefing

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Physical Sciences Coordinator
Regional Organizer: Asia and Oceania
Head of Website Maintenance
University of Edinburgh **Mathematical Physics** Y1

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Sample frame title

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

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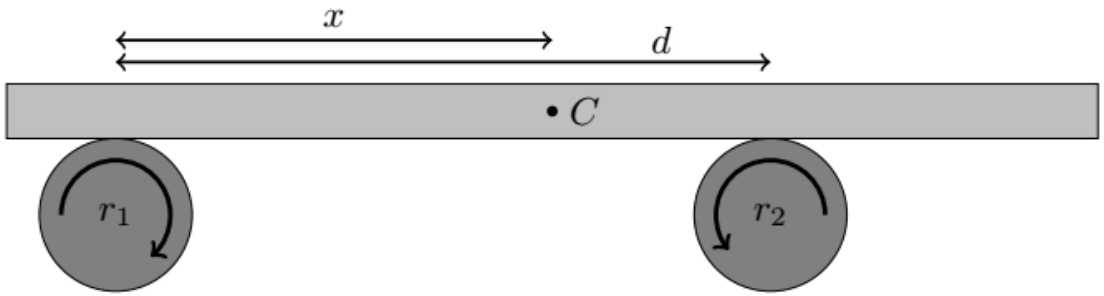

Figure 1: Advertisment **ALERT**: This image is created jointly by **Henry Yip** and **Lorian Richmond**. If you want to create Physics or Math documents with them please contact **Henry Yip**

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 LaTeXthat allows you to 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.

Features

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- Preample

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- Bonus Session for Texmaker Users

Preample

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

```
\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
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Components

- \documentclass{}

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

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

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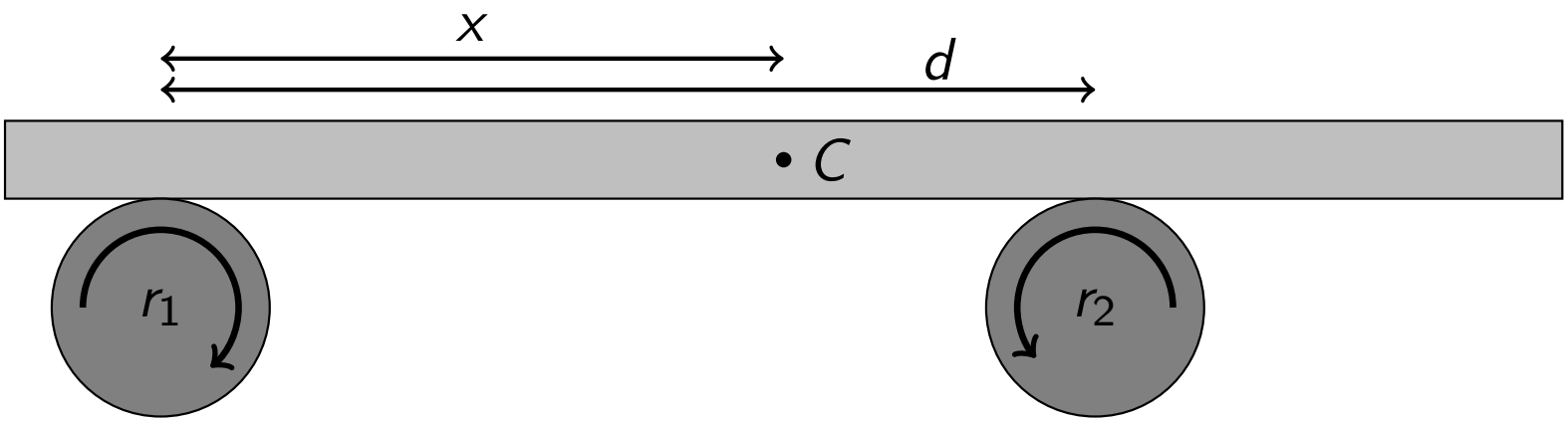
- **usepackage**{**amsmath**} and **usepackage**{**amssymb**} are almost always required.
- **Tikz** is preferred if you want to draw graphs
- Below is a beautiful example!



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More on Packages

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- There are pretty much all sorts of packages anywhere. For example, the \usepackage{parskip}
- You can **always** find your answer in Stackexchange

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Preample

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- \documentclass{beamer}
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Important Notice

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

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- \usecolortheme{default}

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- Always include **maketitle** after **begin**{**document**}

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- You can make your equations aligned also:

$$\Delta K = \frac{dK}{dR}\Delta R \tag{1}$$

$$= -\frac{GM\Delta m}{2R^2}\Delta R \tag{2}$$

$$\Delta U = \frac{dU}{dR}\Delta R \tag{3}$$

$$= -\frac{GM\Delta m}{R^2}\Delta R \tag{4}$$

More on Math Symbols

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- You can find more in Overleaf's website

Inserting pics

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

Inserting pics

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

Hyperlink

- 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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\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
```

Footnotes

- Just type down \footnote {}

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- The formatting is automatic

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Table

- You can make very nice tables with LaTeX

Time	**Activity**	**Remarks**
7:00	Train in **Glascow**/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\hline
      7:00 & Train in \textbf{Glascow}/Paris& \\
      \hline
      12:00 & Arriving in \textbf{King's Cross Station}&\\
      \hline
      12:30 & Check in & \\
      \hline
      13:00-14:00 & Lunch \\
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      15:00-18:45 & Hong Kong Disneyland & Walk Around\\
      \hline
      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}
  \end{center}
\end{table}
```

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- To adjust position please download \usepackage{float}

Bonus Session

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- I understand that most of you are Overleaf users, but this section is for TexMaker users
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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!