INTRODUCTION TO BEAMER

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May-August 2024

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What is Beamer

- Beamer is LaTeX class for making slides and presentations.
- It supports functionality for making PDF slides complete with colors, overlays, environments, themes, transitions etc
- Adds a couple new features to the commands you've been working with.

Disclaimer

- Errors and warnings are standard
  i. Compile often
  ii. Do not stress about getting rid of every warning
- Package conflicts may occur
  i. Check the Beamer Class documentation for details
- It takes time to compile

Advantages of Beamer

- Math environments are easier in beamer.
- Automated Outlines, easy links with your presentation
- Create overlays and transitions
- Easily add graphics
- Clean way to represent math/engineering without worrying about space
- Many themes to choose from
- Great functionality

Disadvantages

- First template is usually hard to start
- Due to learning curves, it might take a little longer to create your first few presentations

Document Class

- First test your LATEX has the beamer class installed

```
\documentclass[options]{beamer}
\mode<presentation>
{
\usetheme{Luebeck}
\usecolortheme{crane}
}
```

- **Fragile** allows you to insert graphics into your powerpoint
- **envcountsect** theorem environment counting is localized to section
- **compress** makes navigation easier

Themes

- An example of themes available are: Madrid, Warsaw, Antibetes, AnnArbor, Copenhagen, Pittsburg among others

- The colors that are available: Think about plants and animals: crane, whale, dove, rose etc

- For more information consult here

Generating Title Page

```
\documentclass[11pt]{beamer}
\usepackage[utf8]{inputenc}
\usepackage[T1]{fontenc}
\usepackage{lmodern}
\usetheme{Madrid}
\begin{document}
    \author{Dr. Mutua}
    \title{Sample Presentation}
    \institute{Kirinyaga University}
    \date{July 2024}
    \begin{frame}[plain]
        \maketitle
    \end{frame}
\end{document}
```

Generating a New Slide

- We use the following format

```
\section[short name]{full name}
\begin{frame}[options]
\frametitle{title of slide here}
\end{frame}
```

- The options are:

  i. **shrink** starts the first line at the top of the slide instead of starting in the middle

  ii. **fragile** allows you to do more sophisticated overlays

  iii. **containsverbatim** allows you to use verbatim environment

Generating an Outline

```
\begin{frame}
\frametitle{Outline}
\tableofcontents
\end{frame}
```

- At the start of every slide have the following syntax

```
\section{Introduction}
\begin{frame}
    \frametitle{Introduction}

\end{frame}
```

Definitions in Slides

- For definition use the following:

```
\begin{frame}
    \begin{definition}[Definition title]
        Here is definition.
    \end{definition}
\end{frame}
```

- To number the definition or theorem use the following syntax in the preamble `\setbeamertemplate{theorems}[numbered]`

Theorems

```
1 \begin{theorem}[Theorem title]
2 Here is theorem.
3 \end{theorem}
```

Example

- You can define example using the following syntax

```
\begin{example}

\end{example}
```

Blocks

- You can define blocks in beamer as:

```
\begin{block}{Snazzy Block Title}
You can ...
\end{block}
```

Use of Alert in Beamer

- You can emphasize text like this in beamer:

```
1 \begin{alertblock}{Alert Block Title}
2 \end{alertblock}
```

Splitting a Slide into columns

- One is able to split slides into two columns especially when explaining an output

```
\begin{columns}
\begin{column}{3cm}
\begin{block}{Smaller Column 1} ... \end{block}
\end{column}
\begin{column}{5cm}
\begin{block}{Bigger Column 2} ... \end{block}
\end{column}
\end{columns}
```

Lists in Beamer

- Lists are done the same way we do while typsetting in Latex

```
\begin{enumerate}
\item
\end{enumerate}

% or

\begin{itemize}
\item
\end{itemize}
```

Tables, Figures and Equations

- The same mode of operations under `documentclass` article or report is the same way we do tables, figures and equations.

Text Color

- You can highlight a text in a different color using the following syntax
  `\textcolor{blue}{Text you want}`

- Ensure you have loaded the package color or xcolor before execution.

References

- We learnt how to use JabRef to do citations and the same way you do in document class article or report is the same you do citations here.

- Use the following Synatx

```
\begin{frame}[allowframebreaks]{References}
\frametitle{Selected References}
\bibliographystyle{apalike}
\bibliography{phdref.bib}
\end{frame}
```

- You can have a thank you slide for your audience as:

```
    \begin{frame}
    \begin{center}
    \LARGE \color{blue}\textbf{THANK YOU}
    \end{center}
    \end{frame}
```

Cont'd

- Have the following package at the preamble

```
1 \usepackage{natbib}[author]
```

- If the citation is at the beginning or in the midst of the text use `\cite{}` if it is at the end of a sentence use `\citep{}`

Thank You