[Extended Presentation Title]

[Full name and Roll Number Expanded]

School of [Dept.],
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[Dissertation/Thesis Defence]
(Date)
Table of Contents

1 Introduction
   • Beamer Basics
   • Types of Blocks
   • Overlays for Uncovering Lists Piecewise/Itemwise
   • Proofs Blocks over Proof Block

2 Conclusion

3 Summing Up
Welcome to \LaTeX beamer.

- $\sum_{i=1}^m i^2 = \frac{m(m + 1)(2m + 1)}{6}$

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Frames function as slides. All content must clearly be defined within a \begin{frame}...\end{frame} environment.
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Similar to frames, blocks are used to highlight important information via text, figures, formulae, equations, code, etc.
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Block name

This is a block. Similar to frames, all content within a block must be defined within a \begin{block}...\end{block}.
Here are two blocks in separate columns. Columns in beamer work differently compared to the \texttt{multicols} environment in other document classes.

\begin{itemize}
  \item \textbf{Column 1:}
  \begin{itemize}
    \item Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, nisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa.
  \end{itemize}
  \item \textbf{Column 2:}
  \begin{itemize}
    \item Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.
  \end{itemize}
\end{itemize}
Here is an example of a lemma.

**Lemma 1**

*Lemma Name:* Body of Lemma.

**Non-Numbered Equation:**

\[ f = -X_1^2 - X_2^2 - \cdots - X_{\lambda+1}^2 + \cdots + X_m^2 + c \]

**Numbered Equations:**

\[ J(u) := \int_{\Omega} \left( \frac{1}{2}|\nabla u|^2 - F(u) \right) \, dx \quad (1) \]

\[ \Rightarrow: J'(u)(v) = \langle \nabla J(u), v \rangle = \int_{\Omega} \{ (\nabla u \cdot \nabla v - f(u)v) \} \, dx, \]

\[ = \int_{\Omega} (\Delta u - f(u)) \cdot vd, \quad \forall v \in H \quad (2) \]
Here is a definition block.

**Definition 2 (Term being defined)**


Here is a remark block.

**Remark**

Such blocks are suitable for **pointing out or revising a fact**. You can recall elements as shown, **Lemma 1**. Note the use of the ~ character between words to prevent line-breaks.
Here is an example of an example block.

Example 3

Below is an example of a cited theorem.

Theorem 4 (Catalan-Mihăilescu Theorem [Mih04])

Let \( p > q \) be prime numbers. Then the equation

\[
x^p - y^q = 1
\]

has no solutions in positive integers \( x \) and \( y \), other than \( 3^2 - 2^3 = 1 \).
Block environments such as block, alertblock and exampleblock can be used for creating other elements like so.

**Notation**

We denote the set of continuously differentiable functions within the domain \([a, b]\) as \(C^1[a, b]\).

**Special Case 1:**

The most notable exception to the general rule that uncountable sets must have non-zero measures is the Cantor set, which consists of iteratively deleting the open middle third of an interval, say, \([0, 1]\. 

Hence, the measure of the removed interval length:

\[
m ([0, 1] - C_{[0,1]}) = \sum_{n=0}^{\infty} \frac{2^n}{3^{n+1}} = \frac{1}{3} \left( \frac{1}{1 - \frac{2}{3}} \right) = 1
\]

\[
\Rightarrow m (C_{[0,1]}) = 0
\]

\[\therefore\] by (SC1), The measure of our Cantor set is zero.
Overlays for Uncovering Lists Piecewise/Itemwise

Here is an example of a list being uncovered piecewise.

Item 1 comes first.

Item 2 comes second.

Item 3.a and Item 3.b both appear at the same time.

Remark: Blocks and other objects can be uncovered as well.
Here is an example of a list being uncovered piecewise.

1. Item 1 comes first.
2. Item 2 comes second.
Here is an example of a list being uncovered piecewise.

1. Item 1 comes first.
2. Item 2 comes second.
3. Item 3.a and
4. Item 3.b both appear at the same time.
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Remark
Blocks and other objects can be uncovered as well.
Proofs Blocks over Proof Block

We used the custom-defined block ‘proofs’ instead of ‘proof’ when our proof exceeds one slide as this allows us to chain it as shown.

Long Proof.

Long Proof (Cont.)

Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

Figure 1: 3D Cone designed by Gene R., see Images/Figures/3D_Cone.tex
The 'proofs' blocks also allow us to throw in text in between blocks like so...

Remark

...as well as remarks, definitions and so on.

Long Proof (Cont.)

Remember, discontinuous lists and piece-wise overlays work here as well.

Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam.

Remark

End your proofs block with the '\texttt{\textbackslash qed}' command to signify the end of the proof.
The inclusion of appendices, which let you add supplementary slides to your presentation, is yet another useful feature, especially when you wish to keep ready any prerequisite data, or case studies that may fall out of the immediate scope of the topic.

An example of the use of an appendix.................................(A1) or Appendix I

This does not contribute to the total slides displayed on the left-hand corner; the appendix and reference slides are accounted for separately at the end.
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Mention your findings here.
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Happy \TeX-ing!
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Thank You!


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4 Appendix I

5 Appendix II
Remark

This is what an appendix would look like.

Example

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3 Appendix I

5 Appendix II
Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi.