

Spoken Tutorial: Presentation using \LaTeX and Beamer

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- Title page, author name, colour, logo, etc.
- Minimal animation
- Two columns
- Figures and Tables
- Equations
- Verbatim
- References for further reading



- The following spoken tutorials on L^AT_EX are available at <http://moudgalya.org>:
 - What is compilation?
 - Letter writing
 - Report writing
 - Mathematical typesetting
 - Equations
 - Tables and figures
 - How to create bibliography?
 - Inside story of bibliography
- Installation and use of L^AT_EX on windows is explained at <http://www.che.iitb.ac.in/faculty/km/spoken/LaTeX-Win.wmv>
- If you are not comfortable in using L^AT_EX, you may consider going through these spoken tutorials first
- More permanent links for all of these should be available in the future at <http://fossee.in>



Let us start with the model of an inverted pendulum:

$$\frac{d}{dt} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & -\gamma & 0 & 0 \\ 0 & \alpha & 0 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{bmatrix} + \begin{bmatrix} 0 \\ 0 \\ -\delta \\ -\beta \end{bmatrix} \Delta\mu$$

Proportional, integral, derivative controller is most popular in industry. It has three tuning parameters: K , τ_i and τ_d . The integral mode includes the term $\int_0^t()dt$.

$$u(t) = K \left\{ e(t) + \frac{1}{\tau_i} \int_0^t e(t)dt + \tau_d \frac{de(t)}{dt} \right\}$$



National Mission on Education through ICT, with an outlay of Rs. 4,600 crore (\$ 1 billion):

- ① Rs. 1,800 crore has been reserved for content generation and the rest to establish good connectivity in all 20,000 colleges and 200 universities.**
- ② Support for all good proposals, including those from private colleges.**
- ③ All products funded by this mission will be delivered as open source.**
- ④ Web based support through www.sakshat.ac.in.**





Hints for Including Figures

- **Do not use floated environments in presentations - `begin{figure}`, `end{figure}`, etc.**
- **Use `includegraphics` directly**
- **Do not include caption, figure number, etc.**
- **The audience will not remember figure numbers, any way**
- **If you want to refer to a previously shown figure, show it again - do not refer to it by number**



- 1 Rs. 1,800 crore has been reserved for content generation and the rest to establish good connectivity in all 20,000 colleges and 200 universities.
- 2 Support for all good proposals, including those from private colleges.



Table: From Spoken Tutorial on Tables

Fruit details		Cost calculations		
Fruit	Type	No. of units	cost/unit	cost (Rs.)
Mango	Malgoa	18	50	1,500
	Alfonso	2	300	
Jackfruit	Kolli Hills	10	50	500
Banana	Green	10	20	200
Total cost (Rs.)				2,200



Hints for Including Tables

- **Do not use floated environments in presentations -**
`begin{table}`, `end{table}`, etc.
- **Use `tabular` directly**
- **Do not include `caption`, Table number, etc.**
- **The audience will not remember Table numbers, any way**



Example of Verbatim to Illustrate Scilab

```
-->a = 1:5, b = 1:2:9
```

```
a =
```

```
! 1. 2. 3. 4. 5. !
```

```
b =
```

```
! 1. 3. 5. 7. 9. !
```

```
-->a - 2
```

```
ans =
```

```
! -1. 0. 1. 2. 3. !
```



Where to Get more Information on Beamer?

- **Authoritative source: user guide to the Beamer class**
- **Author: Till Tantau**
- **File name: [beameruserguide.pdf](#)**
- **email: tantau@users.sourceforge.net**
- **At the time of creating this tutorial, available at <http://www.ctan.org/tex-archive/macros/latex/contrib/beamer/doc/beameruserguide.pdf>**
- **The web page for the Beamer project is <http://latex-beamer.sourceforge.net>**



There Is No Largest Prime Number

The proof uses *reductio ad absurdum*.

Theorem

There is no largest prime number.

Proof.

- ① Suppose p were the largest prime number.
- ② Let q be the product of the first p numbers.
- ③ Then $q + 1$ is not divisible by any of them.
- ④ Thus $q + 1$ is also prime and greater than p . □



- Funding to create this tutorial has come from the National Mission on Education through ICT
- Web site for this mission: <http://sakshat.ac.in>



- We have come to end of this tutorial
- Thanks for joining
- Please give your feedback at kannan@iitb.ac.in

