Seminar Series on Introduction to Research

Document Preparation Using LaTeX2$_\epsilon$

Mohammad Nauman
mohammad.nauman@nu.edu.pk
http://csrdu.org/nauman

Lecturer, Department of Computer Science
FAST National University of Computer and Emerging Sciences (FAST-NU)
Peshawar Campus

November 18, 2011

Session Series Plan I

- Introduction to LaTeX
- Why use it (or whats wrong with MS-Word)
- Terminology
- Getting started
  - Installing the software
  - Setting up the preferences
- Document structure
  - Setting the document class
  - Sections, subsections and formatting
  - Figures and Tables

Session Series Plan II

- Using packages (or whats with this undefined control sequence!)
- Typesetting Math/Equations
- Bibliographies (and how not to have headaches working with them)

- Advanced topics
- Setting up algorithms
- Code/program/policies/output formatting
- Must-see documents

Introduction to LaTeX

- Based on TeX
- Pronounced leh-tek (k being the sound of Arabic خ or Greek χ)
- Takes in LaTeX source and generates a number of outputs (dvi, html, rtf, pdf, ps)
- The output is concerned with placing boxes around the page
- Boxes are combined to form other boxes
- Placed using fixed or elastic widths and distances

Introduction (contd.)

- What's wrong with MS-Word?
- Lack of control
- Have to focus on content and presentation at the same time
- Too much effort required to format for specific conferences/journals
- Too much effort to change from one format to another
- Difficult to manage versions
- Difficult to manage references (even with EndNote)

Introduction (contd.)

- Whats wrong with LaTeX?
- You need to learn how to use it!
- Its not completely intuitive (for some)

The Power of LaTeX– An Example

Output:

2. What is the second question I should ask you?

.....

.....

.....

.....

.....

..... [3]

The Power of LaTeX– An Example

Output:

2. What is the second question I should ask you?

.....

.....

.....

.....

.....

..... [3]

Input:

```
What is the second question I should ask you?
\putansline{6}{3}
```

Terminology

- Document (the output)
- Document Class (the main type defining the doc)
- Package (a file encapsulating commands for a specific purpose)
- .sty (style files)
- .cls (document class files)
- FNDB (filename database)
- update (file/repository/meta information)

Must See Documents

- "A Not So Short Introduction to LaTeX"
- "The LaTeX Comprehensive Symbol List"

Getting Started

- To work with LaTeX, you need:
  - an editor (TEXnicCenter, Kile, WinEdt, LED)
  - a compiler (MikTEX, TEXLive, tetex ...)
- Enough talk. Lets get started!

Demo

- Installing software

Demo

- Installing software
- Creating your first document

Demo

- Installing software
- Creating your first document
- Getting the required packages

Demo

- Installing software
- Creating your first document
- Getting the required packages
- Creating your second document (an ACM format paper)

Demo

- Installing software
- Creating your first document
- Getting the required packages
- Creating your second document (an ACM format paper)
- Creating your third document (a Springer format paper)

Demo

- Installing software
- Creating your first document
- Getting the required packages
- Creating your second document (an ACM format paper)
- Creating your third document (a Springer format paper)
- Creating your fourth document (an IEEE transactions format paper)

Demo

- Installing software
- Creating your first document
- Getting the required packages
- Creating your second document (an ACM format paper)
- Creating your third document (a Springer format paper)
- Creating your fourth document (an IEEE transactions format paper)
- Algorithms

Demo

- Installing software
- Creating your first document
- Getting the required packages
- Creating your second document (an ACM format paper)
- Creating your third document (a Springer format paper)
- Creating your fourth document (an IEEE transactions format paper)
- Algorithms
- Mathematical typesetting

Demo

- Installing software
- Creating your first document
- Getting the required packages
- Creating your second document (an ACM format paper)
- Creating your third document (a Springer format paper)
- Creating your fourth document (an IEEE transactions format paper)
- Algorithms
- Mathematical typesetting
- Cool output boxes with line numbers!

Getting the Sources

- You can get the resources for these sessions here: `http://www.csrdu.org/nauman/2011/10/16/latex-screencasts/`
- All the required files (and completed documents) can be downloaded from this page.
- Feel free to leave comments on the post there if you have any questions at all. I'll try to answer them as soon as possible.
- You can find a really good resource on learning LaTeX here: `http://ctan.org/tex-archive/info/lshort/english/lshort.pdf`