



GUJARAT TECHNOLOGICAL UNIVERSITY

Report of Workshop on LATEX

(A Document Preparation System)

Organized by

Open Source Technologies Club (OSTC)

GTU PG SCHOOL

On

24th October-2015

at

GTU Chandkheda

With the guidance of our honorable Vice Chancellor Dr. Akshai Aggrawal open source technologies club of Gujarat Technological University (GTU-OSTC) and GTU PG SCHOOL organized workshop on LATEX on 24th October-2015 to disseminate knowledge of LATEX, a document preparation system and markup language. To conduct this workshop we invited **Prof. Vijay Ukani from Nirma University** to conduct this workshop.

The workshop was initiated by welcoming experts and given an introduction of the experts to all participants and explained the significance of LATEX.

Prof. Vijay Ukani initiate session with explained about What is TEX? and What is LATEX? Why LATEX? and Limitations about LATEX. He also explained basics of LATEX including basic commands, document structure, running and viewing LATEX.

What is LATEX?

- Pronounced as Lah-tek, or Lay-tek
- A typesetting program, not a word-processor
- Macros of TeX (Donald E. Knuth)
- Designed for producing beautiful Books, Thesis, Papers, Articles...
- De facto standard for writing academic papers

Limitations of LATEX.

- LATEX is not WYSIWYG you have to compile your `_les` before you can see the changes. Rather it is WYMIWYG (What You Mean is What You Get)
- If you are trying to produce a document for which there is no pre-de`_ned` layout, it requires a fair bit of knowledge to design a new layout
- You cannot easily exchange LATEX `_les` with colleagues who are unfamiliar with it
- Inflexible formatting (di`_cult` to change position of `_gures`)Requires compilation

TEX distributions

- MiKTeX for Windows <http://www.miktex.de/>
- TeX Live for Linux and other UNIX-like systems
- MacTeX redistribution of TeX Live for Mac OS X
- TeTeX for Linux and other UNIX-like systems, now is no longer
- actively maintained
- ProTeXt is based on MiKTeX

LATEX editors

- Open Source: AUCTEX, GNU TeXmacs, Gummi, Kile, LaTeXila,
- MeWa, TeXShop, TeXnicCenter, Texmaker, TeXstudio, TeXworks
- Freeware: LEd, WinShell
- Proprietary/Shareware: Inlage, Scienti`_c` WorkPlace, WinEdt
- Notepad, wordpad or any other text editor can also be used

How to configure LATEX for Ubuntu

- Go to Ubuntu Software Center and install texlive
- First to install the basic version
`sudo apt-get install texlive-base`
`apt-get install biblatex`

- Recommended fonts
sudo apt-get install texlive-fonts-recommended
- Extra fonts
sudo apt-get install texlive-fonts-extra
- For algorithm related packages such as algorithm.sty and algorithmic.sty
sudo apt-get install texlive-science
- All texlive packages
sudo apt-get install texlive-full

Output formats

- DVI: Device independent $_le$ format consists of binary data describing the visual layout of a document in a manner not reliant on any speci_c image format, display hardware or printer.
- PS: PostScript $_le$ format describes text and graphics on page and it is based on vector graphics. PostScript is, until now, a standard in desktop publishing areas.
- PDF: Portable Document Format is a $_le$ format, based on PostScript, used to represent documents in a manner independent of application software, hardware, and operating systems. It is now widely used as a $_le$ format for printing and for distribution on the Web.

Running and Viewing LATEX

- Start LEd or any of your favorite TEX editor
- Create a new .tex $_le$
- Prepare your latex $_le$ as per previous slide
- Prepare Bibliography, if any
- Use BibTeX to process Bibliography
- Compile your document with LaTeX $_lename.tex$ command on DOS prompt or click TEX button in the menubar
- View the dvi output
- To get pdf output, the command is pdatex $_lename.tex$
- View the pdf output

He also explain Microsoft word and LATEX comparison and LATEX Compilers & Editor.

Prof. Vijay Ukani also explained hands on experiments about controlling appearance of LATEX like numbering list, bullet point list, description list, basic text formatting (fonts, symbols, quotations, footnotes). He explained paragraphs indentation and new lines, change font style & size. He also explained following structure adding information:

- Including figures
- Add Tables
- Add basic math building blocks & equations

After completion of hands on session, he explained common mistakes done by LATEX users.

- Misspelled command or environment names
- Missing or improperly nested \end statements
- Improperly matched { and }. They should always come in pairs
- Missing command arguments
- A missing \$
- Using one of the special LATEX characters such as #

Good LATEX helper websites

- <http://www.latextemplates.com/>
- <https://www.sharelatex.com/>
- <https://www.overleaf.com/>
- <http://www.maths.tcd.ie/~dwilkins/LaTeXPrimer/>
- <http://tex.stackexchange.com/>
- <http://latex-project.org/guides/>
- <http://www.howtotex.com/>
- <http://www.latex-community.org/>

The entire session was very well delivered by the expert. The Workshop ended with a vote of thanks to the expert, the participants and students of the GTU PG School of their valuable support.

WORKSHOP PHOTO GALLERY



