Technical Writing and Presentation

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Open Source Software (OSS)

- ▶ It is a software whose source code is published and made available to the public, enabling anyone to copy, modify and redistribute the source code without paying royalties or fees.
- ▶ It is very often developed in a public/collaborative manner through community cooperation
    - ▶ These communities are composed of individual programmers as well as very large companies
    - ▶ Many of the individuals programmers who start an open source project usually end up as large companies with open source programs

Notable Open Source Projects I

Application Software

- 7-Zip
- Blender
- Eclipse
- GIMP
- Inkscape

- Firefox
- Chromium
- Thunderbird
- NASA World Wind

- OpenOffice.org
- LibreOffice
- PrestaShop

Programming Languages

- Perl
- PHP
- Python
- Ruby

Operating Systems

- Android
- FreeBSD

- Linux
- OpenIndiana

- ReactOS
- Haiku

Notable Open Source Projects II

Server Software

- Apache
- Drupal
- MediaWiki
- MongoDB
- Moodle
- WordPress
- TYPO3

Useful Links I

- Introduction to Open Source Software (in Arabic)
  (`http://ojuba.org/wiki/%D9%85%D9%82%D8%AF%D9%85%D8%A9_%D9%81%D9%8A_%D8%A7%D9%84%D8%A8%D8%B1%D9%85%D8%AC%D9%8A%D8%A7%D8%AA_%D8%A7%D9%84%D8%AD%D8%B1%D8%A9`)

- Open source is the backbone for Startups
  (`http://www.findbestopensource.com/article-detail/open-source-startups`)

- How to contribute to open source
  (`http://www.findbestopensource.com/article-detail/contribute-to-opensource`)

- `en.opensuse.org/portal:How_to_participate`

- How to learn from open source projects
  (`http://www.findbestopensource.com/article-detail/learn_from_open-source`)

Useful Links II

- How to make money from Open Source
  (`http://www.findbestopensource.com/`
  `article-detail/make_money_opensource`)
- Arabic websites
  - `http://www.linuxac.org`
  - `http://itwadi.com`
  - `http://www.ojuba.org/`
- Imagine Publishing
  - Linux User&Developer magazine
    (`www.linuxuser.co.uk/`)
  - Linux Tips, Tricks, Apps & Hacks (`https:`
    `//www.imagineshop.co.uk/bookazines.html`)
  - Linux & Open Source Genius Guide (`https:`
    `//www.imagineshop.co.uk/bookazines.html`)

Clone vs Non-clone Alternative

- ▶ Clone software always follows the original software, hence clone is
  - ▶ always lagging
  - ▶ usually inferior
- ▶ In conclusion, often you won't be satisfied

Examples

- ▶ MS-Word vs Libre-office-Writer vs Abi-Word vs Calligra-Words vs Lyx
- ▶ Matlab vs Scilab vs GNU-Octave vs SciPython-MatPlotLib

Useful Links

- http://www.findbestopensource.com/
- Cool list of Linux programs (http://www.dedoimedo.com/computers/new-cool-list-linux.html)

Learning New Software Packages

Try/Explore/Read about capabilities of the new software
package

Find good examples

Short course/training/tutorial/user-guide

Test your knowledge through a real project

Use a book/manual/reference

If you find expert who is willing to answer your questions;
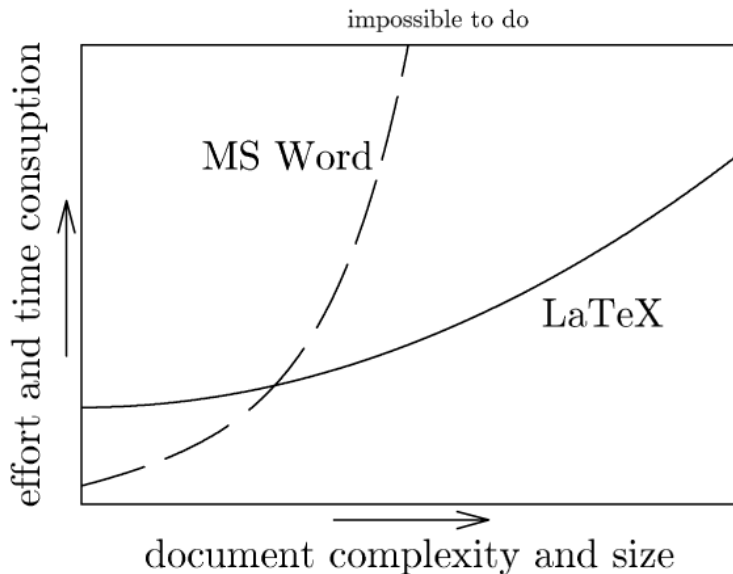
- ▶ you are lucky
- ▶ don't waste the chance

Word Processors

Usually there are two categories of word processing software packages

- What You See Is What You Get (WYSIWYG)
- What You See Is What You Mean (WYSIWYM)

WYSIWYG	WYSIWYM
Microsoft Word AbiWord LibreOffice Writer Calligra Words	LATEX

Roughly, you can compare LATEX to Word as you compare Matlab to Excel

LATEX vs Microsoft Word

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impossible to do

MS Word

LaTeX

effort and time consuption

document complexity and size

LaTeX

LaTeX is a document markup language.

- Simply you can think of it as similar to HTML[1]
- In order to create a document in LaTeX, a **.tex** file must be created using some **text editor**
- The **.tex** file is then **compiled** to produce the document
- LaTeX can generate several document formats including "pdf"

LATEX is Free

Although being free is an advantage, but it is a drawback at the same time

- ▶ Slow download server
- ▶ No clean official documentation
- ▶ Several alternatives to do the same thing

However; LATEX is very mature and widely used by professional/enterprise publishers

- ▶ Also it has a big user community
  - ▶ when you encounter a problem, google it. Most likely you will find others had encountered it and found a solution

LATEX Editors

- ▶ To write C/C++ code, any text editor can be used. But using a good IDE can greatly ease your job.
- ▶ LATEX is similar. Any text editor is ok, but a dedicated LATEX editor is strongly recommended.
- ▶ A dedicated LATEX editor
  - ▶ can highlight and auto complete LATEX keywords
  - ▶ has several LATEX templates for several types of documents
  - ▶ facilitates compiling and debugging
  - ▶ . . .

Some LATEX Editors

Kile; works on Linux, but can also work on Windows (my favorite)

Texmaker; cross-platform

and many others

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Keep Concentrating

Due to its WYSIWYM nature, I feel more concentrating while using LaTeX as compared to **Ms-Word**.

LyX

LyX is a front-end to LaTeX

- You can think of the LyX-LaTeX relationship as similar to the Visual Studio-C++ compiler relationship
- Unlike LaTeX, LyX comes with tidy and very good manuals
- Also it has a big community, i.e.,
  - it is mature enough
  - when you encounter a problem, google it. Most likely you will find others had encountered it and found a solution

Keep your concentration

Due to its WYSIWYM nature, I feel <u>very</u> concentrating while using **LyX** as compared to **Ms-Word**.

Lets Learn LyX

Help menu includes very good manuals. The manuals themselves are LyX documents. So they are essentially very good LyX examples.

lyx\examples folder contains wide variety of very good examples

Explore menus and toolbars

Test drive LyX to recreate the attached final exam

Beamer

Beamer is a LATEX class for creating **professional** presentation slides

Beamer template is a built in template in LyX provides to enable easily building presentations in LyX

Beamer manual explain creating Beamer presentations in plain LaTex and LyX as well

Check this;
http://www.hartwork.org/beamer-theme-matrix/

Presentation Handouts

Beamer-Article class is also available. It renders the slides on standard sized paper (like A4 or letter), with frame titles used as paragraph titles, no special slide layout/colors and keeps the sectioning.

- ▶ Beamer article class is suitable for creating lecture handouts (article)
- ▶ You can have a single source file for the slides and its handouts
- ▶ You can still control the source file so that the **slides** and the **article** are different.

- ▶ You can also use the Beamer-Article class within LyX

Keep your concentration

Due to its WYSIWYM nature, I feel very very very concentrating while using **LyX-Beamer** as compared to **Ms-Power Point**.

Lets Learn Beamer

Attached samples are a very good variety of presentations

Explore the styles list

Test drive Beamer to create this presentation

Create the handouts of this presentation
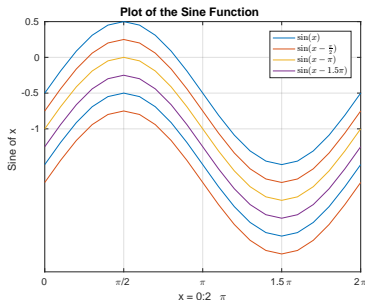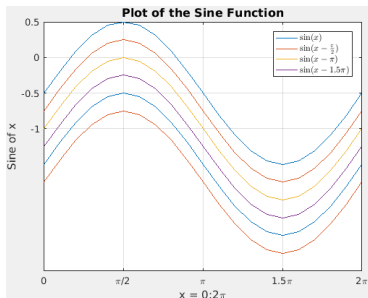
Beamer manual includes all the details you need to know

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OSS

Tech. Writing
Introduction to LaTeX
LyX
Presentations

Inkscape

Raster vs Vector Graphics I

Raster vs Vector Graphics II

Raster vs Vector Graphics III

Graphics Formats
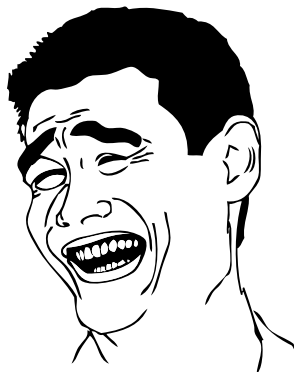
Raster		Vector	
.bmp	Uncompressed	.pdf	Compressed
.png	Loose-less compression	.eps	
.jpg	Lossy compression	.emf	compatible with Ms Office
		.svg	
⋮		⋮	

Vector Graphics Editors

- Adobe Illustrator (*de facto* standard; bloated)

- Corel Draw (bloated)

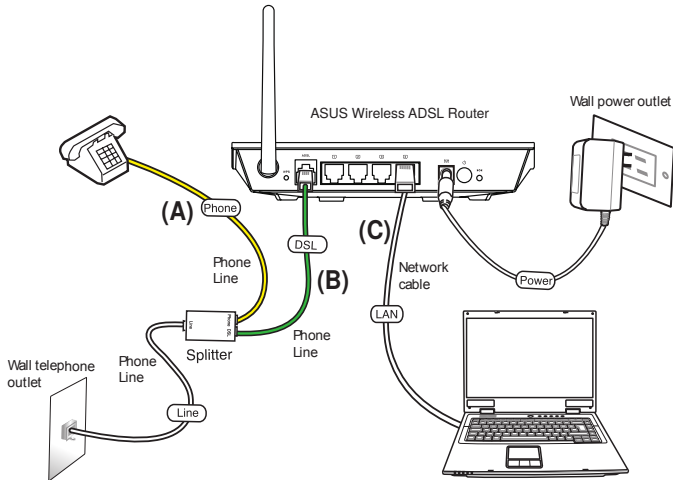- Inkscape (light, free, cross-platform and popular; my favorite)

- LibreOffice Draw

- . . .

Inkscape

- ▶ Free
- ▶ Open source
- ▶ Cross platform
- ▶ Has a big community, i.e.,
  - ▶ it is mature enough
  - ▶ when you encounter a problem, google it. Most likely you will find others had encountered it and found a solution
- ▶ Much much powerful than MS-Word or MS-Power point sketching capabilities
- ▶ Has several plugins that greatly expand its capabilities

Inkscape Capabilities

- Inkscape is based on brazier curves
  - Defines a curve using four information, **start**, **end**, **start tangent** and **end tangent**
- Additionally, you can draw and edit:

  - straight lines
  - circles/arcs/ellipses
  - text

  - LATEX formulas
  - function curves
 - . . .

Import Graphics from pdf

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Tech. Writing

Inkscape
**Interesting
Plug-ins
Learning Inkscape**

ASUS Wireless ADSL Router

Wall power outlet

(A) Phone

Phone
Line

(B)

(C)

DSL

Network
cable

Phone
Line

Power

LAN

Wall telephone
outlet

Phone
Line

Splitter

Line

▶ You can import vector graphics from pdf files, and even
edit them

Function Plotter

- It is a built in plugins
- It uses brazier curves, same as Inkscape
- It calculates the function derivative and use it to adjust the curve slope
  - It produces very smooth curves using much less points than Matlab
  - You can still adjust/correct the curve manually

TexText
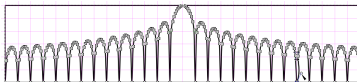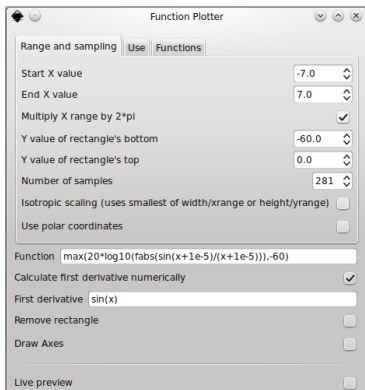
It allows you to write/edit LaTeX formulas inside Inkscape
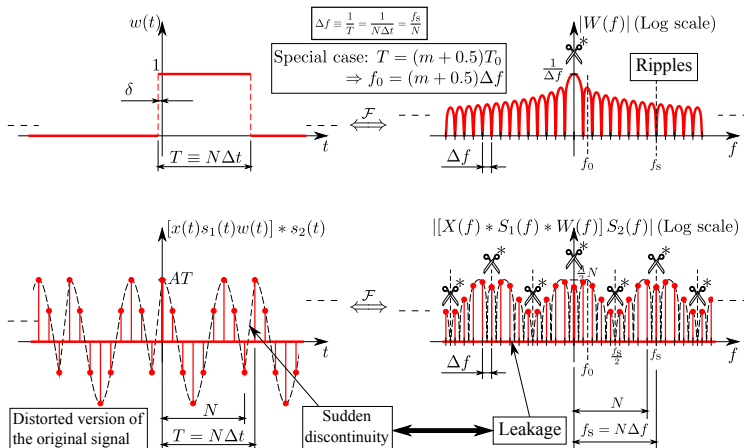
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OSS

Tech. Writing

Inkscape
Interesting
Plug-ins
Learning Inkscape

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Learning Inkscape

- **Explore** menus and toolbars
- **Official manual** [Tavmjong Bah, Inkscape: Guide to a Vector Drawing Program, Pearson Education, 4th ed, 2011] is very good and detailed
  - Chapters 1 includes 10 examples
    - The first 3 examples are enough for a good start
  - Chapters 5 explains editing
    - Surf it fast
- **Help menu** includes tutorials, FAQ, . . .
- http://inkscapetutorials.org/