

# Creating Your Paper or Thesis With LyX

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Word processors do to words what food processors do to food. This seminar looks at a tool called LyX which allows you to focus on the composition of your paper or thesis, without worrying about the fiddly layout details too early.

# What Makes Word Processors Bad?

- Most current word processors are WYSIWYG.
- They give equal emphasis to content and layout.
- There are problems with this:
  - Documents have no structure.
  - Users fuss over layout too early, forgetting the most important thing: *content*.
  - It is very difficult to prevent layout inconsistencies.

# What Document Req'ts for My Thesis?

- I only knew once I'd finished the whole thesis!
- Separate files, e.g per chapter, with ability to produce 1 document.
- Chapters, sections, subsection.
- Markup & layout ability: fonts, bold/italic, quotation, computer code, math equations.
- Prefaces, appendices.
- Tables of contents, diagrams, references, etc.
- Graphics: diagrams, graphs, artwork, photos.

# What Document Req'ts for My Thesis?

- Internal references: chapter, section, subsection, page. Must be done automatically.
- Citation: of direct quotes, paper references. Flexible citation style. Production of bibliography and reference sections.
- A reference database: what details can be stored, ability to add more fields & use them.
- Document management: backups, versioning, visualisation of differences.

# What Document Req'ts for My Thesis?

- Preview of output. Printing of selected pages, with version numbers.
- Spell checking.
- Authoring and production tools that I was comfortable with.
- Anecdotal evidence from other students: Word was not able to provide this level of document management.

# LyX: A Document Processor

- Document production system which concentrates on structure and content.
- “What you see is what you MEAN”.
- User interface only shows document content, not layout.
- $\text{\LaTeX}$  is used as the typesetting back-end.
- The best typesetting engine since the mid 1980s.

# What You Don't Get With LyX:

- TAB key.
- Visual page breaks.
- Horizontal scroll bar.
- Any page layout widgets/tools.
- >1 spaces/returns in a row.

# What You Gain With LyX

- Control of style: avoids inconsistencies.
- Forced use of document structure.
- Paragraph environments, tables, figures.
- High-quality mathematical typesetting.
- Bibliography & referencing.
- Multi-file documents.
- Internationalisation.
- Document versioning.



# But What About Layout?

- $\text{\LaTeX}$  is used to typeset the document.
- User can view DVI, PostScript or PDF output.
- $\text{\LaTeX}$  layout commands can be inserted into the document: shown in red font.
- Not everything is possible:  $\text{\LaTeX}$  typesets documents; doesn't do page layout like PageMaker etc.

# Import and Export

- Import from plain text,  $\LaTeX$  files, EPS figures.
- Export to plain text,  $\LaTeX$ , PostScript, PDF.
- HTML output with external tools like TtH.
- Can manually import HTML using *'html2latex'*, then import  $\LaTeX$ .
- Internal document storage not yet XML, but likely to head that way.

# Document Versioning

- This is crucial! Need to know what version of each file you are working on.
- The reviewers of your work also need to know what version they are reading :-)
- Never throw away content, just keep it in old versions.
- LyX uses RCS to do versioning. Version numbers can be embedded in printed output.

# References

- The reference database tool which comes with LyX is BibT<sub>E</sub>X.
- BibT<sub>E</sub>X citation style is completely malleable.
- I tweaked the ‘scribe’ format to suit my thesis. New fields can be defined.
- I added fields to remind me where my photocopies were.
- Other standard citation formats available. Many journals provide BibT<sub>E</sub>X templates.

# Platforms for LyX

- The main platform is Unix: Solaris, Linux, FreeBSD etc.
- There is now a Windows version of LyX. I haven't used it.
- LyX depends on tools like  $\text{\LaTeX}$ , Ghostscript.
- So you need to install quite a lot of other things before LyX will work.

# Conclusion

- LyX eminently suitable for large documents, especially academic papers & theses.
- Disciplines the author to think about content and structure, leaving layout to last.
- Good quality typesetting with  $\text{\LaTeX}$ .
- Good citation & versioning tools.
- Stop using that food processor!

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