Creating and publishing
a book
with FOSS

The software

- TeX/LaTeX: the original FOSS typesetting software

- XeTeX/LuaTeX: alternatives to the original TeX engine to cope with encodings/fonts not supported by TeX

- Kile: an IDE for TeX/LaTeX

- LyX: a GUI for TeX/LaTeX

TeX

- TeX algorithms implement best practice by, for example:
  - splitting pages across the whole document
  - hyphenating across the whole paragraph

The template

- KOMA-script book offers the most features

- Alternatives include: Standard, American Mathematical Society and Memoir (more traditional style)

The parts of a book

- A book has three parts:
  - Front matter: everything up to the first (numbered) chapter
  - Main matter: the main text and appendices
  - Back matter: bibliography, indexes, etc.

Front matter

- Has a title page, a back title page with publication details and a contents page

- And may have a half-title, lists of figures, tables and contributors, foreword, preface, series preface, acknowledgements and various other tables which might be useful to the reader

Main matter

- Has chapters and may have an introduction to the argument of the book (an introduction which is not part of the argument of a book goes in the Front matter)

- May be split into parts, have appendices and have various section levels

Back matter

- May have a bibliography and indexes

- May have other supplementary material such as a glossary or text which does not form part of the argument of a book

Images

- Images should be c. 700ppi for a normal book and 1,100-1,300ppi for a glossy book

- Crop images firstly if there are people in them so that their eyes are half way up the image and secondly to remove as much background as possible

Image placement

- Images should face into the page, that is, left-facing images on odd numbered pages and vv.

- Images should normally be placed in floats with a title *below* them and a cross-reference

- Images in floats will normally be printed at the top of a page

Tables

- Like images, tables should normally be placed in floats but with a title *above* them and a cross-reference

- Tables in floats will normally be printed at the top of a page

Bibliography and index

- TeX/LaTeX accommodates a single bibliography in the back matter or bibliographies at the end of each chapter in a multi-authored book using either BibTeX or BibLaTeX.

- TeX/LaTeX supports multiple indexes

BibTeX and BibLaTeX

- BibTeX was created before Unicode and requires special formatting for non-US ASCII characters

- BibLaTeX supports Unicode but does not yet support British English references

- Both can use BibTeX databases

Page numbering

- Roman numerals are used for pages in the front matter and Arabic numerals for pages in the main matter and back matter

- This is handled automatically in TeX/LaTeX if you use the \frontmatter and \mainmatter commands.

Page layout

- KOMA-script supports a traditional formula for page layout based on strips

- Considering a page as having nine strips, two form the outer margin and one the inner margin; so the text is held in six strips

- Increasing the number narrows the margins

KOMA-script page layout

- To cope with the part of the inner margins being taken up with the binding, you can set, for example, BCOR=7.5mm to enable a binding correction

Fonts

- Times Roman is a narrow newspaper font and Ariel is similarly narrow; neither are FOSS

- Book fonts are always broader, for example, Latin Modern or the TeX Gyre series, all of which are high quality and FOSS

KOMA-script font management

- In TeX/LaTeX you set a base font size, normally 10, 11 or 12 points and all other font sizes are calculated from that

- With an A5 book the calculated headings might be too large; you can adjust that with headings=small

Running headers

- A book normally has running headers giving the current part, if any, on the even numbered pages and the current chapter on the odd numbered pages

- You need to decide whether you want these

Copy-editing

- The aim of copy-editing is to remove any barriers for the reader

- Some of the common barriers will have been removed by using TeX/LaTeX which imposes good typesetting practice

Copy-editing tips

- Check for consistent spelling and quotes, e.g. -ise and single quotes or -ize and double quotes

- Ensure foreign words are in *italics*

- Ensure quotations are correctly referenced

- See Butcher *et al*. *Butcher's copy-editing* Cambridge University Press

Publication data

- The back title page contains (at least)

  - The publisher's name, address and website

  - A copyright or Creative Commons notice

  - Year of publication

  - ISBN number

ISBN numbers

- If the publisher does not already have an ISBN number, ISBN numbers can be purchased with a minimum quantity of 10 from Nielsen UK ISBN Store (https://nielsenisbnstore.com/)

PDF check

- Make sure the number of pages is a multiple of four; if not, add blank pages at the end

- KOMA-script has a 'draft' option which produces a PDF marked with all the places where the TeX algorithms have not worked perfectly, allowing you to adjust the spacing, line endings

ISBN barcode

- To create the barcode for the bottom right hand corner of the back cover, install the Barcode extension into LibreOffice

- Open LibreOffice Draw and Insert>OLE Object>Barcode

ISBN barcode

- The extension calculates the check number itself; so only the first 12 numbers of the ISBN need to be entered

- Resize the barcode as large as possible to increase its resolution

- Copy and paste it into a folder as a PNG

Cover

- Create the cover in Scribus, the back cover on the left and the front cover on the right with the spine in between

- Calculate the spine width with the Gutenberg Spine Width Calculator (https://www.gutenberg.com.mt/spine-width-calculator)

PDF version

- I have found that printers will normally accept a standard PDF as generated by TeX/LaTeX but Scribus can also generate PDFs in PDF/X if necessary, for example, to handle CMYK colours in the cover.

Printers

- Online: Lightening Source

  (https://myaccount.lightningsource.com/)

- Or consider a small run printer

Booklet and self-print

- If you are producing a short booklet rather than a book, use the Report template

- You can convert a short A5 booklet into A4 pages with:

pdfjam Pellon_Lane.pdf '28,1,2,27,26,3, 4,25,24,5,6,23,22,7,8,21,20,9,10,19,

18,11,12,17,16,13,14,15' --landscape --nup 2x1

Legal deposit

- A copy of every published book must be sent to the British Library and free copies made available to five other libraries: the National Library of Scotland, the National Library of Wales, the Bodleian Library, Oxford, the University Library, Cambridge, and the Library of Trinity College, Dublin

Happy publishing