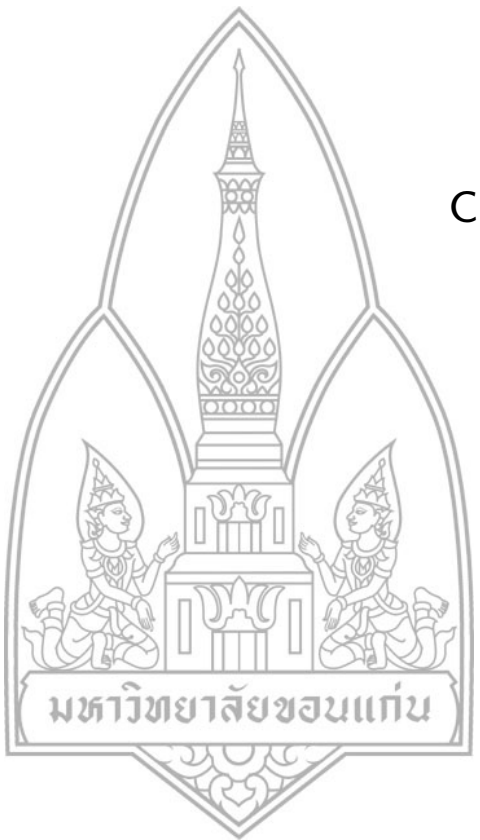
Biostatistics workshop series: Introduction to LaTeX



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What we will cover....

Conventions

The conventions I will use:

Notes and Hints:.....

Things to note will occur in a green box

Pitfalls:.....

Common mistakes and things to watch out for will occur in a red box

MS-Word vs LaTeX

- Most of us are used to WYSIWYG (What you see is what you get) editors such as the MS-Word wordprocessing software
- In contrast, TeX and it's easier cousin, LaTeX, are low level, mark-up programming langauages used to create documents (similar to html used to code webpages)
- When you first start using LaTeX you will wonder why you don't just stick with MS-Word.

QUESTION: Why would you put yourself through this pain??

ANSWER: Because LaTeX documents are ♡♡**BEAUTIFUL**♡♡ !!

Windows: MikTeX

There are a few different windows 'versions' of LaTeX, but perhaps the most common is MikTeX.

1. Google: *Download miktex* and it should list the official MikTeX site first. (Go to this site)
2. Download the "Recommended download" of MikTeX
3. Follow the instructions

Macs: MacTeX

If you are using a Mac, MacTeX is the best choice for you.

1. Go to the TeX users group page
   `http://www.tug.org/mactex/downloading.html`
2. Go to the file link on the page (MacTeX.pkg)
3. Install the package as you would any other Mac package

Straight LaTeX code vs LaTeX editors

Now that we have LaTeX on our machines, we could start creating LaTeX documents, but unless you really know what you are doing, you will probably want to use a LaTeX editor:

- LaTeX editors make the creation of LaTeX documents a little (more or less) like using a word processor (like MS-Word)
- Some editors are VERY basic (almost just like using Notepad), whereas some are much closer to WYSIWYG editors
- I have found the WYSIWYG editors (e.g. Lyx) use specialied libraries limiting the portability of your document (moving from computer to computer)
- I use (and suggest you use) TeXmaker.

TeXmaker

So before we start, let's also download TeXmaker.

1. Google *Download Texmaker* or go to site: `www.xm1math.net/texmaker/download.html`.
   - If you are a Windows user, download TeXmaker for Windows
   - If you are a Mac user, download TeXmaker for Mac
2. Follow the instructions

Before we start: Some important hints

Common LaTeX problems

- Windows (and word) tend to use some non-true type font symbols
- These include: ”, ’, - (and other non-alphanumeric characters)
- When copying text from word, LaTeX will often identify problems (but not be very imformative about where the problem is

Work-around: Non-standard symbols

To isolate where these problem symbols occur ALWAYS copy (from word), **A SINGLE PARAGRAPH AT A TIME**

The main LaTeX document is the ".tex" file, a text file that contains all the LaTeX code. Here is a very basic .tex file (WIth no text or features)

```
\documentclass[11pt, oneside, a4paper]{report}

%Preamble: Extra packages (special fonts and featur

%Top matter: Title, author, etc

\begin{document}

%Insert document text here blah blah balh

\end{document}
```

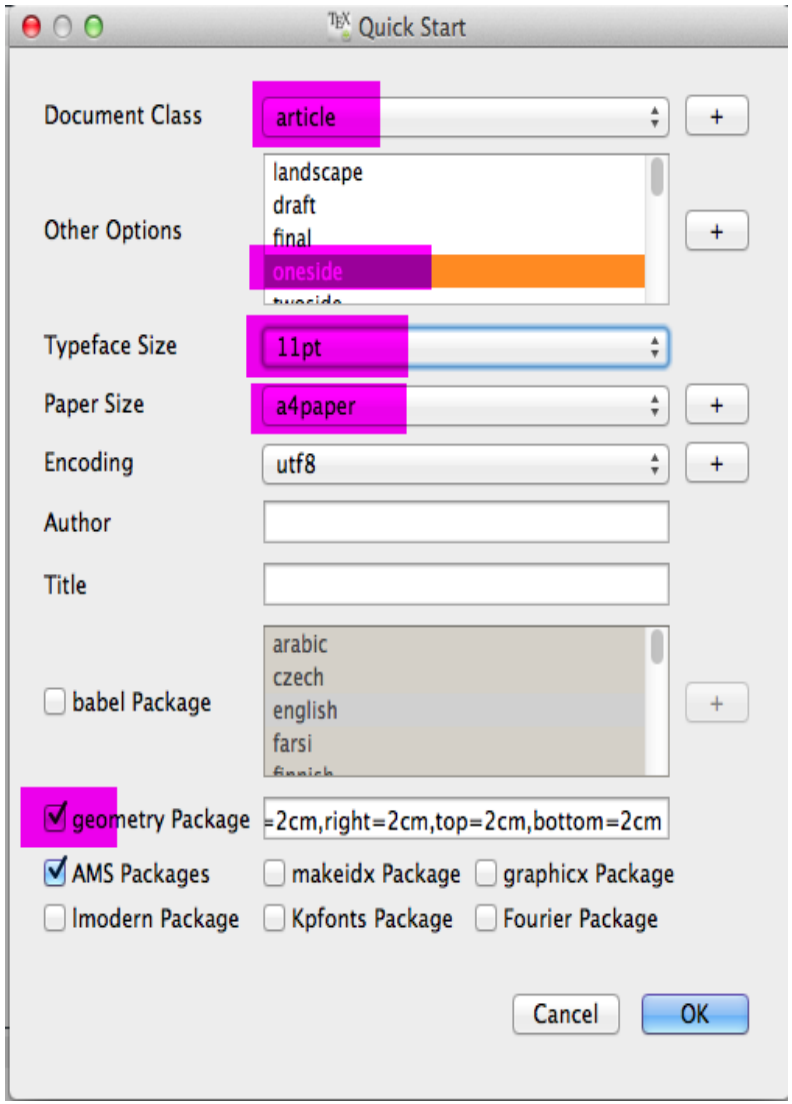
NOTE: % tells LaTeX that this is a comment. LaTeX ignores these lines

Our first LaTeX document

- Let's start by 'writing a paper", for this we will typically use the 'article' class.
- We will call it: "Risk factors for Type II Diabetes in Thailand: A prospective cohort study"
- We will use 11pt font, on one-sided sheets

Our first LaTeX document

1. Open TeXmaker
2. On pull-down menu, go to Wizard → Quick start (you should get a dialogbox similar to that on the right)
3. Make sure all of the areas highlighted in pink are the same.
4. Press OK



Our first LaTeX document

You should get a tex file generated like:

untitled1

```
1  \documentclass[11pt,a4paper,oneside]{article}
2  \usepackage[utf8]{inputenc}
3  \usepackage{amsmath}
4  \usepackage{amsfonts}
5  \usepackage{amssymb}
6  \usepackage[left=2cm,right=2cm,top=2cm,bottom=2cm]{geometry}
7  \begin{document}
8
9  \end{document}
```

Save this file as "myfirsttexdoc.tex" in a directory (create one) called myfirsttexdoc

Now we are ready to start entering text.

Other documents: Theses

Other documents: Beamer presentations

BibTeX

Integrating LaTeX with other software: R

THANK-YOU!!

Questions??

YOUR TURN