# LaTeX Practical Class

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1. Open a **file-explorer** window (WinKey + E).

   (a) If not done already, **map** '\\raptor\files\' to a suitable drive-letter (e.g. 'S:').

   (b) Assuming you mapped 'S:', navigate to 'S:\courses\projweek\' and *copy* the 'latex' folder (right-click and copy, or select and Ctrl+C).

   (c) Navigate to 'S:\home\' (which is *your* home-directory on raptor[1]) and *paste* the 'latex' folder (right-click and paste, or Ctrl+V).

   (d) Navigate into the pasted folder.

   You should see a bunch of '.tex' files that are (by default) *associated* with a package called "Texmaker" — we will not be using this, so try and avoid double-clicking the LaTeX source files!

2. Open **Putty** from the start menu (**All Programs** → **Central Software** → **PUTTY**).

   (a) Connect to **raptor** (over SSH). Login with your regular username (e.g. 'abc123') and your *CS-auth* password.

   (b) If you cannot remember your password, you can visit this web-page to reset it:
   http://www.cs.kent.ac.uk/systems/newuser/

   (c) Change into your 'latex' directory (folder):

   ```
   raptor$ cd latex
   ```

   (d) One of the files that should have been copied over is 'simple.tex'. Generate a PDF from this by running '**pdflatex**':

   ```
   raptor$ pdflatex simple
   This is pdfTeX, Version 3.1415926-2.5-1.40.14 (TeX Live 2013/Debian)
    restricted \write18 enabled.
   entering extended mode
   (./simple.tex
   LaTeX2e <2011/06/27>
   Babel <3.9h> and hyphenation patterns for 78 languages loaded.
   (/usr/share/texlive/texmf-dist/tex/latex/base/article.cls
   Document Class: article 2007/10/19 v1.4h Standard LaTeX document class
   (/usr/share/texlive/texmf-dist/tex/latex/base/size12.clo))
   No file simple.aux.
   [1{/var/lib/texmf/fonts/map/pdftex/updmap/pdftex.map}] (./simple.aux) )</usr/sh
   are/texlive/texmf-dist/fonts/type1/public/amsfonts/cm/cmr12.pfb></usr/share/tex
   live/texmf-dist/fonts/type1/public/amsfonts/cm/cmr8.pfb>
   Output written on simple.pdf (1 page, 19773 bytes).
   Transcript written on simple.log.
   ```

   The penultimate line is what you need to be looking for in the output!

3. The file-explorer window for 'S:\home\latex\' should now show some additional files. Double-click the **PDF** ('simple.pdf') to check what was generated looks as you expect!

*(continued over...)*

[1] Raptor is a CS Unix host, running Linux. You should have had some experience of using Unix from the Autumn term's project-week. If not, all that you need to do here is follow the instructions!

4. Launch **Notepad++** from the start menu (**All Programs** → **Departmental Software** → **School of Computing** → **Notepad++**).

   (a) Open the file '`simple.tex`' in Notepad++ (make sure this is from '`S:\home\latex\`').

   (b) Add some random text into the body of the document (make it up, don't copy+paste from the web!). If you're struggling for content, how did you get from bed to the class today?

   (c) Save your changes.

   (d) Back on raptor, re-run `pdflatex` to re-create the PDF file.

   (e) Assuming no errors occured, re-load the resulting PDF and check that your modifications have resulted in something sensible!

   **Note:** if you experience problems with the PDF file contents apparently not updating, close the PDF viewer and delete the PDF file, before running '`pdflatex`'.

5. Build some of the other sample files using `pdflatex` and check that these look as you'd expect.

6. On the next couple of pages are a sample document typeset with LaTeX. The text of this (minus any LaTeX-specific formatting) is available in the file '`content.txt`'.

   - Starting with the template file '`mydoc.tex`', put in the text from '`content.txt`', but typeset to **look like** the output attached here. Some of the things we maybe haven't gotten to in the lectures are described within the document.
   - Note: don't try and do it all at once — the document contains a lot of characters that LaTeX can't handle cleanly (e.g. backslashes and braces) and these will need escaping! A little bit at a time is the way to go with this.

7. **Further exercises:** try typesetting some of your existing courseworks (e.g. things that you might previously have prepared in Microsoft Word).

# Report on Some Stuff

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**Abstract**

This is an abstract. It can be typeset by using the 'abstract' environment (somewhere between '\maketitle' and the first section usually). You'll also notice that the typewriter font is slightly different to what you may have seen elsewhere. This is done by changing the default typewriter font in the preamble (see section 2.1).

# 1 Introduction

This is a sample LaTeX document. It includes some **bold text**, some *emphasised text*, plus SOME TEXT TYPESET IN SMALL-CAPS. Small-caps can be selected in a *group* by using the '\scshape' command, or supplied as an argument to the '\textsc' command.

## 1.1 Graphics

One thing that it's useful to be able to do is include graphics or images within your documents. The common command for this is '\includegraphics', whose main argument is the file-name to get the graphics from (when using pdflatex this should be a PDF ideally). Various *options* can be set too, such as scaling of the graphic. For example:

```
\includegraphics[scale=0.5]{samplegraph1.pdf}
```

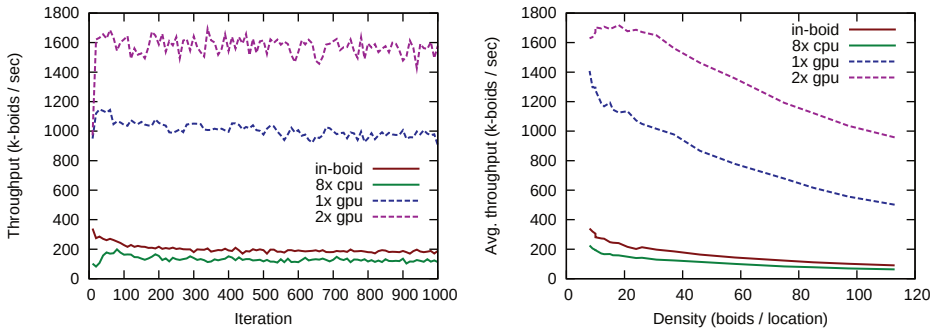
This command comes as part of the 'graphicx' package, that must be included using '\usepackage{graphicx}' in the document preamble (else you'll get an error about an undefined command when running pdflatex).

## 1.2 Chunks of Verbatim Text

The bit of typewriter text above showing how to use `\includegraphics` is typeset using the '`verbatim`' environment. This is slightly special in that all text (including newlines) are processed as-is, producing a **verbatim** copy of the input. This continues until '`\end{verbatim}`' is encountered.

# 2 Results

We ran some tests, and plotted some pretty graphs:




Note: whole graphics (like these) end up being single (and large) boxes for TEX. As such, they will fall out in the flow of text — and could be included on a normal line. The files are '`samplegraph1.pdf`' and '`samplegraph2.pdf`'.

## 2.1 Fixing Your Typewriter

The standard typewriter font isn't very "dense" compared with the selected Times font. To change this, put the following in the document's preamble:

```
\renewcommand{\ttdefault}{cmtt}
```

## Closing Remarks

Raptor is a CS unix host. Raptors were also flying **dinosaurs** that probably lived on cave-men around at that time[1]. Many cave dwelling families probably kept a tamed pet dinosaur, useful for keeping the rats under control. It's also possible that cave communities utilised trained homing dinosaurs for exchanging messages and shipping goods.

This is in an *un-numbered* sub-section. These can be started using: '`\subsection*{...}`'.

[1] Some people think that cave-men and dinosaurs didn't exist together, but they weren't there, so how would they know?