

Emacs Worksheet

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1 Emacs

- Emacs is an extensible text editor. Extensible meaning it can do pretty much anything you want it to. Don't confuse it with a normal text editor, it's far more capable than that.
- We have automatically set some preferences for you, turning off the User Interface and picking a color scheme. This Theme may or may not work, depending on your terminal.
- If you don't want a gui add the line **alias emacs='emacs -nw'** to your .bashrc file. For this tutorial you will not be using it, and turning off the gui speeds using emacs over a network.
- In this tutorial we will cover the basic commands you need in order to use emacs, and go through some of its more advanced features, such as babel and org mode.

2 Basic Emacs Commands

- To launch emacs, type **emacs**.
- You can create new files when launching emacs by typing **emacs [filename]** *never type the square brackets!!!!!!...*
- Emacs primarily uses keyboard commands, not mouse
- The syntax of commands is like this **C-x-s**
- **C** means **ctrl** on Linux (on any system)
- **x** means *execute*
- The final letter represents the operation
- if two letters are connected by -, it means press the relevant keys simultaneously.

3 Command List

- **C-x-s**
 - save file
- **C-x-c**
 - exit emacs
- **C-x-f**
 - visit/open new file
- **C-x-LEFT/RIGHT ARROW**
 - switch to prev/next buffer
- **ESC-x**
 - execute mode command and other things
- **ESC-x ansi-term**
 - open a terminal window in emacs
- **ESC-g-g**
 - followed by a line number *n* is *goto line n*
- **C-c C-e l o**
 - Open the org export window and export your org file as a pdf

4 Org Syntax

- To set up an org file header

```
#+TITLE:    your title
#+AUTHOR:   your name
#+EMAIL:    you@coventry.ac.uk
#+DATE:     insert date here
```

- To insert a date, type **C-c !**, then press enter to choose the highlighted date.
- Section headers are **,***, ***** depending on the depth you want.
- unordered lists are created by putting **-** at the start of each line in the list.

4.1 Tables

- org mode includes a fully featured spreadsheet. We can't go through everything it can do, but we can use it to write out a table.

```
| A | B | C |
|---+---+---|
| 1 | 2 | 3 |
| a | b | c |
```

- In this example, the first line will be formatted as a column header. The final form of that table is shown next.

A	B	C
1	2	3
a	b	c

- Once you start typing text into table feilds it will look messed up, out of position, possibly with the wrong number of -. But if you move the curser inside the table and press tab, emacs will tidy it up for you.
- Org tables is actually a complete spreadsheet system with equivilent features to Excel (only free, and better...), but we don't have time to go into it.
- You can insert images using the following syntax

4.2 Images and Hyperlinks

```
[[file:img.png]]
```

- And insert hyperlinks using similer syntax

```
[[http://google.com][web search]]
```

4.3 Babel

- In org mode, emacs can also evaluate code, via babel
- A babel code block to execute python code and put the output in the generated document looks like this:

```
#+BEGIN_SRC python :exports both :results output
//python code goes here
#+END_SRC

#+RESULTS:
```

- You can also generate diagrams from plain text, using ditaa, like:

```

#+begin_src ditaa :file cyclic_buffer.png
    /-----\      /-----\
    | Read |      | Write |
    \-----/      \-----/
      |-->          |-->
        v            v
  /-----\
  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
  \-----/
      Looping -----\
                          |
                          <-----/
                          Cyclic Buffer

#+end_src
#+RESULTS:

```

- There are a lot of programs for data generation and programming languages supported by babel.

5 Task

- Create an org file with the same name as your user account on nostromo.
- Using the section indicators to separate them, write two short paragraphs on your experience with this module.
- Create a table
 - Put two hyperlinks, with descriptive text to the right of each. in this table.
 - After the table add a image to the document. What image is your choice, but not rude, and not too big. (use wget to fetch it from the net if you need to).
- Babel
 - Write some python code in a babel block whose output would be displayed in your pdf.
 - create two ditaa diagrams, the first using the provided ditaa text and the second something you create yourself.

6 Submission for this Worksheet

- The submission will be the **org mode file**, and the **pdf file** it produced once you have completed the tasks.