

# ITWS-2 Lab, Jan Week 2

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January 16, 2012

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We will be covering the following topics

- Org mode in emacs

- Shell scripting

## 1 Lab evaluation

There will be a lab assignment which *must* be evaluated *within the lab timings* or *immediately after the lab*. It will involve both the topics covered today.

## 2 Installing org mode

There are a number of ways to install **org mode** as can be seen from its manual. We discuss a simple way to install the latest stable version of **org mode**. We will be using the Emacs Package Manager <sup>1</sup>. Follow these steps

- Download the file **package.el** from this link. Save it so that its path is `~/.emacs.d/package.el`.
- Download the file **.emacs** from this link and save it so that its path is `~/.emacs`
- Now open **emacs** and type the following **M-x list-packages**
- You will now see a list of packages. Go next to the **org** package and press **i**. A capital **I** will appear next to it. This means that you have selected the package for installation.
- Press **x** to install all the selected packages.
- Restart **emacs**.
- Type **M-x locate-library RET org**. If the installation was successful you should see a path **similar** to `~/.emacs.d/elpa/org-20120109/org.elc`.

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<sup>1</sup>: <http://tromey.com/elpa/>

## 3 Topics in org mode

### 3.1 Basic introduction

### 3.2 Document structure - title, author, date, headings, sub-headings

### 3.3 Font styles - bold, italics, code, verbatim

### 3.4 Linking: to a local file, hyperlink

### 3.5 Including source code: `#begin_example ... #end_example`

### 3.6 Exporting to HTML

## 4 Topics in Shell scripting

### 4.1 Basic introduction

- what is a `.sh` file ? How to invoke it ? Adding execute permissions
- accessing variables

### 4.2 Constructs to cover

- if then else; else if: `&&`, `||` operations in the `if`
- for loop: C style, bash style. example: print names of file in current directory.

### 4.3 Miscellaneous

- the backtick
- Escaping wildcards
- Shell arithmetic using `expr`
- read input. `read -s`
- using the exit status of a command. eg. `rm unknown_file`
- `/dev/null` for unwanted outputs
- `bc`: the linux calculator
- command line arguments

## 5 Lab Evaluation Questions

### 5.1 Question 1

Write a shell script that takes two integers and gives their sum as the output.

Input 1:

```
$> ./pgm.sh 2 3
```

Output 1:

```
$> 5
```

Input 2:

```
$> ./pgm.sh 1
```

Output 2:

```
$> Incorrect number of arguments. You must specify two numbers
```

### 5.2 Question 2

Write a report of the above script in **org mode**. Your report should have the following

- A title
- Date
- Author Name
- Introduction section
- Actual shell script included
- Two sample input output cases of the shell script

## 6 Resources

### 6.1 Org mode

Org manual - <http://orgmode.org/manual/>

### 6.2 Shell scripting

Linux shell scripting tutorial - <http://www.freeos.com/guides/lsst/>