

# Linux Tutorial: ASESMA 2010

This tutorial covers basic Linux tutorial about linux files, linux commands, linux editor, and Linux data management.

## 1 Linux Files

### 1.1 Directory

- Current directory - the working directory at a given time, a **pwd** command prints the current directory
- Subdirectory - a directory within the working directory

### 1.2 Terminal

- We use a linux bash shell, which means working with command line. When opening the terminal a prompt character (\$) is displayed and the terminal is ready to receive a new command.
- Linux commands are case sensitive

### 1.3 Navigation

- to move from one directory to another use a **cd** command  
eg. – to change the current working directory to another directory *dir1* type

```
$ cd dir1
```

eg. – to change the directory to subdirectory *subdir1* of *dir1* type

```
$ cd dir1/subdir1
```

eg. – to change to *dir0* which is located one directory before the current one type

```
$ cd ../dir0
```

## 1.4 Creating new directory

- to create a new directory use **mkdir** command  
eg. – to create a directory named *dir1* type

```
$ mkdir dir1
```

- Exercise 1

1. Create a new directory with *YOUR-NAME*
2. Change your working directory to a directory created with your name
3. Create a subdirectory called *ASESMA* under your name
4. Create another subdirectory called *PROJECT1* under *ASESMA*
5. Change your directory back to the main directory created in (1)

## 1.5 Creating a new file using gedit

- To create a new file use a gedit text editor. Gedit has windows copy, cut, paste, save, find and replace key shortcuts.
- In order to create a new file called *file1.tex* using gedit, type the following on the terminal

```
$ gedit file1.tex
```

- The previous command opens a new blank gedit terminal and you can start writing on it.
- To save the newly created file press the **Save** button on the top of the menu.
- To create a new file press the **New** button on the menu bar.
- To open an existing file press the **Open** button and choose the file that you need to open.

## 1.6 Listing files

- to list all the files in a directory type **ls**
- to list all the files with some detail type **ls -la**
- to check the size of the files in a directory type **du -hs**
- to display the file content of a given file type **cat filename**

## 1.7 Copying files

- to copy a file named *file1* to a file named *file2* on the same directory type

```
$ cp -i file1 file2
```

- to copy a file named *file1* to a file named *file2* on the another directory */dir1* type

```
$ cp -i file1 /dir1/file2
```

- the **-i** option in the **cp** commands prompt a warning, if omitted the **cp** commands overwrite files

## 1.8 Removing files

- to remove a file named *file1* on the same directory type

```
$ rm -i file1  
project
```

- to remove a directory named *dir1* on the another directory type

```
$ rm -r dir1
```

- **NOTE: When using rm command, one must be very careful, once removed there is no way of getting the files back. BE SURE OF WHAT YOU DELETE**

- Exercise 2

1. Create a new file called *myfile1.tex* using gedit and save it under your directory
2. Copy *myfile1.tex* to *myfile2.tex* under your directory
3. Copy *myfile2.tex* to asesma subdirectory with a new name *myfile3.tex*
4. Copy *myfile2.tex* to project subdirectory with a new name *myfile4.tex*
5. Type **ls** to see how many files you have in your directory
6. Remove *myfile2.tex* from your current directory
7. Go to the *PROJECT1* subdirectory and open, change and save the content of *myfile4.tex* using gedit

## 2 Linux Commands

- **man** command - used to display online manuals. For example if you type  
\$ **man** *f77* – displays online manual for fortran 77 compiler
- **passwd** command - used to change login password. For example if you type  
\$ **passwd** – you will be prompted to enter your old and new passwords.
- **spell** command - used to check a spelling. For example if you type  
\$ **spell** *file1.txt* – a spell check is performed for a file *file1.txt* .
- **lpr** command - used to print out a document. For example if you type  
\$ **lpr** *file1.txt* – a file *file1.txt* will be printed out.
- **diff** command - used to compare two files. For example if you type  
\$ **diff** *file1 file2* – the difference between *file1* and *file2* will be printed out on the screen.

### 3 Linux editor

**Vi** Editor – is a common editor in linux.

- To create a file named *test1.tex* type

\$ **vi** *test1.tex* – creates a an empty screen ready to be used

- To start adding a text to the file *test1.tex* – press the letter *a* or *i*
- To save the file that you have created
  - first you press **esc** to exit the insert or write mode
  - then you press **:w** to save your work without exiting the editor, or **:wq!** to save and exit the editor
  - to exit from the editor press **q!**
- Editing a text file
  - use **R** command to replace a text
  - use **X** command to delete a letter at the cursor
  - use **dd** command to delete an entire row
  - use **o** to add a new line and now in input mode so that you can write. To switch to a command mode press **esc** .
- Miscellaneous
  - To compare the difference between two files side by side type

\$ **vimdiff** *file1 file2*

- To see another file named *file2* while editing *file1*
- first press **esc** to be on the command mode
- then type **:vsplit file2** – this opens *file2* on the same terminal and now you see two windows
- to switch from one window to another press **ctrl+ww** while on the command mode