

Assignment- ELP- 780 Software Laboratory

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Latex and Linux



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1 Problem Statement

Perform the following actions using commands in Linux terminal only. (30 - 45 minutes)

- Make a new directory in the home folder.
- Change Directory to this new directory.
- Display full path of the Present Working Directory.
- Make a file with .txt extension.
- Copy any text of less than 500 words from Wikipedia and paste it in the file.
- Change mode of the file to read only.
- Display Word Count of the file.
- Display number of the words in the file using grep command.
- Add the sentence The world is round to the end of the file, without opening the file.
- Display the last modified time of the file.
- Update last modified time of the file to current time, without opening or writing anything to the file.
- Create a new empty file without opening the file.
- Copy top 10 lines of the first file to the second file, without opening the file.
- Make a soft link to your Documents directory, in this directory.
- Pipe the command history of terminal to a new file called terminal.cmd

2 Assumptions

- home \abhaygupta used as home directory.
- assumed that terminal works fine.
- used ubuntu 18.04
- used overleaf for \LaTeX

2.1 Algorithm and Implementation [2]

2.1.1 Commands used

- mkdir : for making directory
- ls : to show files in current directory
- cd : change directory to new directory
- pwd : to see the path of present working directory
- gedit : to create a new file
- chmod : to change access permission to the file
- wc : to get word count of file
- grep : to search and get the word count of specific word
- echo : to add some words at the end of file
- stat : to check the last modified time of file
- touch : to change the modification time to current time and also for make a new file
- sed : to copy some number of lines to other file
- ln : to make a softlink of a directory
- history : to get the history of terminal commands

3 Screenshots

Figure 1: Terminal Output

```

abhaygupta@shankar-corp:~/new_directory$ chmod 777 new_file.txt
abhaygupta@shankar-corp:~/new_directory$ echo "The world is round" >> new_file.txt
abhaygupta@shankar-corp:~/new_directory$ stat -c '%y' new_file.txt
2019-07-30 20:49:21.796549153 +0530
abhaygupta@shankar-corp:~/new_directory$ chmod 444 new_file.txt
abhaygupta@shankar-corp:~/new_directory$ stat -c '%y' new_file.txt
2019-07-30 20:49:21.796549153 +0530
abhaygupta@shankar-corp:~/new_directory$ touch -m new_file.txt
abhaygupta@shankar-corp:~/new_directory$ stat -c '%y' new_file.txt
2019-07-30 20:58:00.708547174 +0530
abhaygupta@shankar-corp:~/new_directory$ touch file2.txt
abhaygupta@shankar-corp:~/new_directory$ ls
file2.txt  new_file.txt
abhaygupta@shankar-corp:~/new_directory$ sed -n '1,10p' new_file.txt >file2.txt
abhaygupta@shankar-corp:~/new_directory$ ln -s /home/abhaygupta/Documents softlink
abhaygupta@shankar-corp:~/new_directory$ ls
file2.txt  new_file.txt  softlink
abhaygupta@shankar-corp:~/new_directory$ history> terminal.cmd
abhaygupta@shankar-corp:~/new_directory$ ls
file2.txt  new_file.txt  softlink  terminal.cmd
abhaygupta@shankar-corp:~/new_directory$

```

Figure 2: Terminal Output

```

abhaygupta@shankar-corp:~$ cd
abhaygupta@shankar-corp:~$ pwd
/home/abhaygupta
abhaygupta@shankar-corp:~$ mkdir new_directory
abhaygupta@shankar-corp:~$ ls
Desktop  Downloads  Music  Pictures  Templates
Documents  examples.desktop  new_directory  Public  Videos
abhaygupta@shankar-corp:~$ cd new_directory/
abhaygupta@shankar-corp:~/new_directory$ pwd
/home/abhaygupta/new_directory
abhaygupta@shankar-corp:~/new_directory$ gedit new_file.txt
^C
abhaygupta@shankar-corp:~/new_directory$ chmod 444 new_file.txt
abhaygupta@shankar-corp:~/new_directory$ gedit new_file.txt
abhaygupta@shankar-corp:~/new_directory$ wc new_file.txt
  5  261 1664 new_file.txt
abhaygupta@shankar-corp:~/new_directory$ gedit new_file.txt
abhaygupta@shankar-corp:~/new_directory$ grep -o "the" new_file.txt | wc -l
24
abhaygupta@shankar-corp:~/new_directory$ echo "The world is round" >> new_file.txt
bash: new_file.txt: Permission denied
abhaygupta@shankar-corp:~/new_directory$ chmod 777 new_file.txt
abhaygupta@shankar-corp:~/new_directory$ echo "The world is round" >> new_file.txt
abhaygupta@shankar-corp:~/new_directory$ stat -c '%y' new_file.txt
2019-07-30 20:49:21.796549153 +0530

```

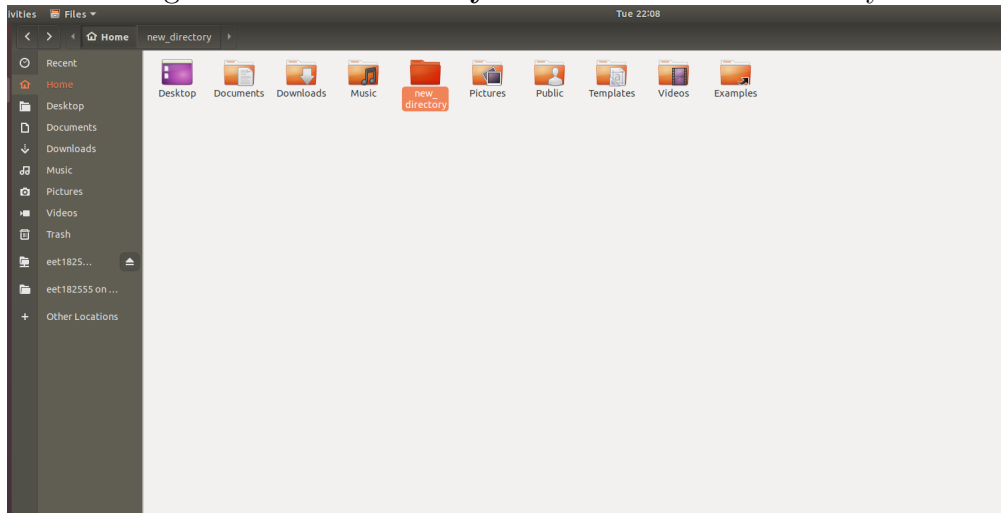
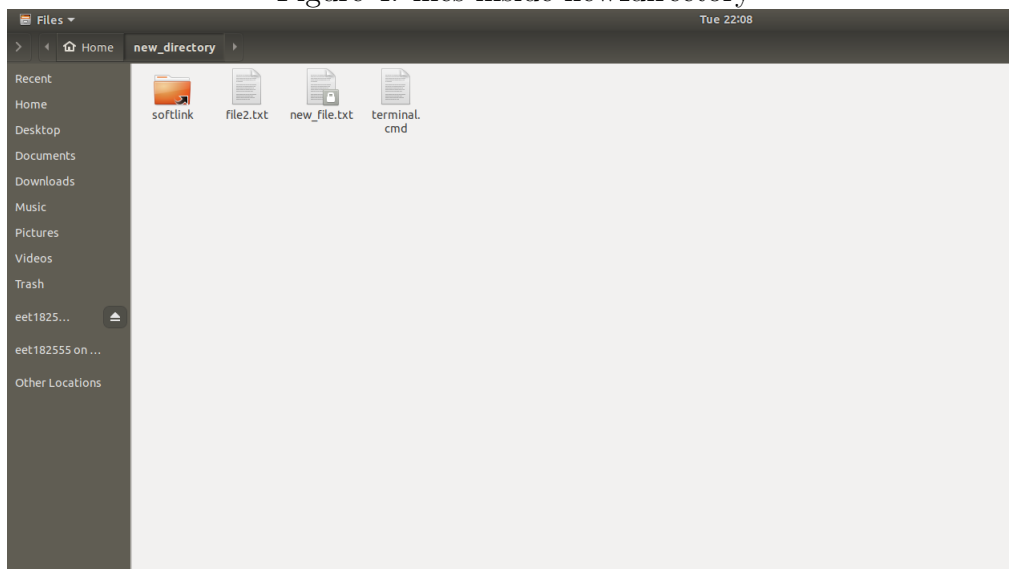
Figure 3: `new_directory` is created in home directory

Figure 4: files inside new_directory



4 Appendix

4.1 Command History of Terminal

```
27  ls
28  cd
29  pwd
30  mkdir new_directory
31  ls
32  cd new_directory/
33  pwd
34  gedit new_file.txt
35  chmod 444 new_file.txt
36  gedit new_file.txt
37  wc new_file.txt
38  gedit new_file.txt
39  grep -o "the" new_file.txt| wc -l
40  echo "The world is round" >> new_file.txt
41  chmod 777 new_file.txt
42  echo "The world is round" >> new_file.txt
43  stat -c '%y' new_file.txt
44  chmod 444 new_file.txt
45  stat -c '%y' new_file.txt
46  touch -m new_file.txt
47  stat -c '%y' new_file.txt
48  touch file2.txt
49  ls
50  sed -n '1,10p' new_file.txt >file2.txt
51  ln -s /home/abhaygupta/Documents softlink
52  ls
53  history> terminal.cmd
```

References

- [1] Install ubuntu along with wiindows,
<https://itsfoss.com/install-ubuntu-dual-boot-mode-windows/>
- [2] linux commnds,
<https://www.howtogeek.com/412055/37-important-linux-commands-you-should-know/>