Purpose

The purpose of this assignment is to get familiar with the Linux command line, be able to manager user account, use package manager and to configure file permissions.

Materials

1. Linux Based Operating System: https://learn.hamk.fi/mod/book/view.php?id=336191
2. Introduction to Bash Scripting: https://learn.hamk.fi/mod/book/view.php?id=336192

Guidance and feedback

Guidance is available in class or via Zoom session during the lecture.

Evaluation

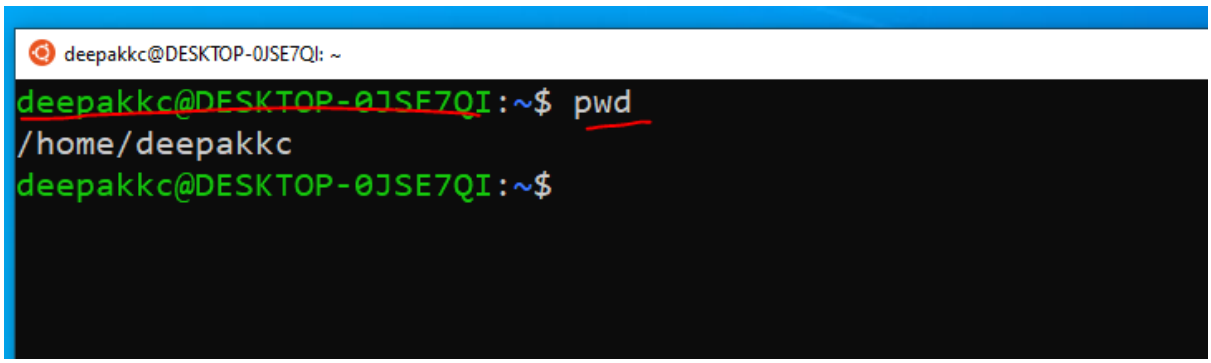
The evaluation is done based on the number of successfully completed tasks. It is graded on a scale of 0 -5. The peer review method is used.

Schedule and timing

Please check the deadline below.

Submission

Complete the following tasks. You are required to run commands and submit the required screenshot. Typing only the command is not accepted as a correct answer. Please ensure that, the name of the device is your firstname_lastname for example find the answer for task number 1 below:



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1. Basics of Command Line (22.09.2021)

1. The file system is managing how a file is stored and accessed in a storage device like hard drive or usb sticks. The file system is managing files and directories. Each one of them is identified by a path under the file system's root directory such as /home/deepakkc. Run the command to print the path of your current working directory and include the screenshot.

```
hafizja@ubuntu:~$ pwd
/home/hafizja
hafizja@ubuntu:~$
```

2. Run the command to display a list of your files and directories in your Desktop.

```
hafizja@ubuntu:~/Desktop$ ls
dir1  dir2  dir3  hafiz.txt
hafizja@ubuntu:~/Desktop$
```

3. What is relative path? Explain with an example.
   It is the path to locate the file or folder from the current directory.
   EX: cd Desktop/ → to get into the desktop by relative path
4. Create a directory in your Documents directory. Use absolute path.

```
hafizja@ubuntu:~$ mkdir /home/hafizja/Documents/dir34
hafizja@ubuntu:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public
hafizja@ubuntu:~$ cd /home/hafizja/Documents/
hafizja@ubuntu:~/Documents$ ls
dir1  dir34
hafizja@ubuntu:~/Documents$
```

5. Get into your home directory.
   a. In your home directory, create two directories as dir1 & dir2.

```
hafizja@ubuntu:~$ mkdir dir1 dir2
hafizja@ubuntu:~$ ls
Desktop  dir1  dir2  Documents  Downloads  Music
hafizja@ubuntu:~$
```

   b. Create 5 empty text files in dir1.

```
hafizja@ubuntu:~/dir1$ ls
file1.txt  file2.txt  file3.txt  file4.txt  file5.txt
hafizja@ubuntu:~/dir1$
```

c. Create 2 text files with nano in dir2.

```
hafizja@ubuntu:~$ cd dir2
hafizja@ubuntu:~/dir2$ nano file1.txt file2.txt
hafizja@ubuntu:~/dir2$ ls
file1.txt  file2.txt
hafizja@ubuntu:~/dir2$
```

d. Create a directory dir3 in dir1.

```
hafizja@ubuntu:~/dir1$ mkdir dir3
hafizja@ubuntu:~/dir1$ ls
dir3  file1.txt  file2.txt  file3.txt  file4.txt  file5.txt
hafizja@ubuntu:~/dir1$
```

e. Rename dir2 to mydir

```
hafizja@ubuntu:~$ mv dir2 mydir
hafizja@ubuntu:~$ ls
Desktop  dir1  Documents  Downloads  Music  mydir  Pictures  Public
hafizja@ubuntu:~$
```

f. Rename two of the files in dir1.

```
hafizja@ubuntu:~/dir1$ mv file1.txt myfile1.txt
hafizja@ubuntu:~/dir1$ mv file2.txt myfile2.txt
hafizja@ubuntu:~/dir1$ ls
dir3  file3.txt  file4.txt  file5.txt  myfile1.txt  myfile2.txt
hafizja@ubuntu:~/dir1$
```

g. Delete dir3 (relative path).

```
hafizja@ubuntu:~/dir1$ rm -r dir3/
hafizja@ubuntu:~/dir1$ ls
file3.txt  file4.txt  file5.txt  myfile1.txt  myfile2.txt
hafizja@ubuntu:~/dir1$
```

h. Move dir1 to the Desktop directory.

```
hafizja@ubuntu:~$ mv dir1 /home/hafizja/Desktop/
hafizja@ubuntu:~$ cd /home/hafizja/Desktop/
hafizja@ubuntu:~/Desktop$ ls
dir1          file3.txt  hafiz.txt       newfile.txt
file100.txt   file.txt   localnew23.txt  onemore.txt
hafizja@ubuntu:~/Desktop$
```

i. Move 1 of the file from dir1 to mydir.

```
hafizja@ubuntu:~$ mv /home/hafizja/Desktop/dir1/file3.txt /home/hafizja/mydir/
hafizja@ubuntu:~$ cd mydir/
hafizja@ubuntu:~/mydir$ ls
file1.txt  file2.txt  file3.txt
hafizja@ubuntu:~/mydir$
```

j. Copy any one of the file from mydir to Desktop.

```
hafizja@ubuntu:~$ cp /home/hafizja/mydir/file3.txt /home/hafizja/Desktop/
hafizja@ubuntu:~$ cd mydir/
hafizja@ubuntu:~/mydir$ ls
file1.txt  file2.txt  file3.txt
hafizja@ubuntu:~/mydir$ cd ..
hafizja@ubuntu:~$ cd /home/hafizja/Desktop/
hafizja@ubuntu:~/Desktop$ ls
dir1  file3.txt  hafiz.txt
```

6. Check what other directories you have in your Ubuntu under the root directory. List them.

```
hafizja@ubuntu:/$ cd /
hafizja@ubuntu:/$ ls
bin   cdrom  etc   lib    lib64   lost+found  mnt  proc  run   snap  swapfile  tmp  var
boot  dev    home  lib32  libx32  media       opt  root  sbin  srv   sys       usr
hafizja@ubuntu:/$
```

7. Get into the etc directory. It contains lots of config files. As a standard user you won't be able to make any changes to these files. Conduct the following tasks using wild card characters.
   a. List all files that contain a 3-letter extension.

```
hafizja@ubuntu:/etc$ ls *.???
brlapi.key  gamemode.ini  issue.net  locale.gen
hafizja@ubuntu:/etc$
```

   b. List all files that is starting with either a or b.

```
hafizja@ubuntu:/etc$ ls ?a* ?b*
bash.bashrc      ca-certificates.conf           gai.conf      machine-id  magic.mime  mailcap.order
bash_completion  ca-certificates.conf.dpkg-old  gamemode.ini  magic       mailcap     manpath.config

bash_completion.d:
apport_completion

ca-certificates:
update.d

calendar:
default

dbus-1:
```

   c. List all files that has only 5 characters as a filename.

```
hafizja@ubuntu:/etc$ ls ?????
fstab  group  hosts  issue  legal  magic  vtrgb
```

8. What does the following command do? Execute the following commands in your terminal and include screenshots with very short explanations.
    a. cd ~ →It returns to login directory

```
hafizja@ubuntu:/etc$ cd ~
hafizja@ubuntu:~$
```

    b. cd .. → It takes to one directory lower

```
hafizja@ubuntu:~/Desktop$ cd ..
hafizja@ubuntu:~$
```

    c. cd / → It takes to the system's root directory

```
hafizja@ubuntu:~$ cd /
hafizja@ubuntu:/$
```

9. What happens when you press the up and down arrow key in your keyboard?

Ans: By pressing up arrow key: we can see the previous commands which we have used already

By pressing lower arrow key: we can see commands later than the pressing up arrow key

10. What is the usage of tab key when typing directory or filename?

Ans: By typing the tab key while typing the directory or filename, we do not need to type full name but typing the few characters and pressing the tab key, the name appears by itself.

11. Get to the link https://en.wikipedia.org/wiki/Linux and copy all the text till the line 74% of smartphones in the world are Linux based and save it in a text file in your Desktop. Use nano.
    a. Write the command to view the content page wise.

Type: less file.txt

```
hafizja@ubuntu:~/Desktop$ less file.txt
```

```
Linux (/ˈlɪnʊks/ (About this soundlisten) LEEN-uuks or /ˈlɪnʊks/ LIN
is a family of open-source Unix-like operating systems based on the
l,[11] an operating system kernel first released on September 17, 19
s Torvalds.[12][13][14] Linux is typically packaged in a Linux distr

Distributions include the Linux kernel and supporting system softwar
ries, many of which are provided by the GNU Project. Many Linux dist
se the word "Linux" in their name, but the Free Software Foundation
me "GNU/Linux" to emphasize the importance of GNU software, causing
```

b. How can you go the next page?
   Ans: Press Spacebar
c. You are done viewing the content. You would like to quit viewing it. What do you type to quit.
   Ans: press q
d. Look into the first 5 lines of a file.

```
hafizja@ubuntu:~/Desktop$ head -n 5 file.txt
Linux (/ˈlɪnʊks/ (About this soundlisten) LEEN-uuks or /ˈlɪnʊks/ LIN-uuks[10])
is a family of open-source Unix-like operating systems based on the Linux kerne
l,[11] an operating system kernel first released on September 17, 1991, by Linu
s Torvalds.[12][13][14] Linux is typically packaged in a Linux distribution.

Distributions include the Linux kernel and supporting system software and libra
ries, many of which are provided by the GNU Project. Many Linux distributions u
se the word "Linux" in their name, but the Free Software Foundation uses the na
me "GNU/Linux" to emphasize the importance of GNU software, causing some contro
versy.[15][16]
```

e. Look into the last 5 lines of a file.

```
hafizja@ubuntu:~/Desktop$ tail -n 5 file.txt
Linux also runs on embedded systems, i.e. devices whose operating system is typ
ically built into the firmware and is highly tailored to the system. This inclu
des routers, automation controls, smart home technology (like Google Nest),[33]
 televisions (Samsung and LG Smart TVs use Tizen and WebOS, respectively),[34][
35][36] automobiles (for example, Tesla, Audi, Mercedes-Benz, Hyundai, and Toyo
ta all rely on Linux),[37] digital video recorders, video game consoles, and sm
artwatches.[38] The Falcon 9's and the Dragon 2's avionics use a customized ver
sion of Linux.[39]
```

f. Store the output of “Look into the first 5 lines of file” into a text file.

```
afizja@ubuntu:~/Desktop$ head -n 5 file.txt > newfile.txt
afizja@ubuntu:~/Desktop$ ls
ir1  file3.txt  file.txt  hafiz.txt  newfile.txt
afizja@ubuntu:~/Desktop$ cat newfile.txt
inux (/ˈlɪnʊks/ (About this soundlisten) LEEN-uuks or /ˈlɪnʊks/ LIN-
s a family of open-source Unix-like operating systems based on the L
,[11] an operating system kernel first released on September 17, 199
 Torvalds.[12][13][14] Linux is typically packaged in a Linux distri

istributions include the Linux kernel and supporting system software
ies, many of which are provided by the GNU Project. Many Linux distr
```

12. With redirection you can save the output of any command into a text file. What is the difference when using > and >> .

Ans: **>** → It over writes the file

>> → In this case, it adds the existing file.

```
hafizja@ubuntu:~/Desktop$ ls dir1/ > file100.txt
hafizja@ubuntu:~/Desktop$ cat file100.txt
file4.txt
file5.txt
mydir
myfile1.txt
myfile2.txt
hafizja@ubuntu:~/Desktop$ ls dir1/ >> file100.txt
hafizja@ubuntu:~/Desktop$ cat file100.txt
file4.txt
file5.txt
mydir
myfile1.txt
myfile2.txt
file4.txt
file5.txt
mydir
myfile1.txt
myfile2.txt
hafizja@ubuntu:~/Desktop$
```

13. How can you combine commands? Us ls command to list all files and directories in the etc directory and display only the first 5 files into a text file.

```
hafizja@ubuntu:/etc$ ls | head - n 5 > /home/hafizja/Desktop/textfile.txt
head: cannot open 'n' for reading: No such file or directory
head: cannot open '5' for reading: No such file or directory
hafizja@ubuntu:/etc$ cd ..
hafizja@ubuntu:/$ cd /home/hafizja/
hafizja@ubuntu:~$ cd Desktop/
hafizja@ubuntu:~/Desktop$ ls
dir1         file3.txt  hafiz.txt       newfile.txt  textfile.txt
file100.txt  file.txt   localnew23.txt  onemore.txt  twomore.txt
hafizja@ubuntu:~/Desktop$ cat textfile.txt
==> standard input <==
acpi
adduser.conf
alsa
alternatives
anacrontab
apg.conf
apm
apparmor
apparmor.d
apport
```

2. GREP IN LINUX (06.10.2021)

1. Use Wget to download the text file into your home directory link https://raw.githubusercontent.com/dipaish/cimages/main/hello.txt . You will use this text file for the following tasks.

    a. To display all lines that contain the word ‘Linux’.

```
hafizja@ubuntu:~$ grep 'Linux' hello.txt
Linux (/ˈlɪnʊks/ (About this soundlisten) LEEN-uuks or
open-source Unix-like operating systems based on the Li
[11][12][13] Linux is typically packaged in a Linux dis
Distributions include the Linux kernel and supporting s
many of which are provided by the GNU Project. Many Lin
 "Linux" in their name, but the Free Software Foundatio
 uses the name GNU/Linux to emphasize the importance of
Popular Linux distributions[16][17][18] include Debian,
```

    b. To display all lines that contain the word ‘linux’ . (that is, it should find both linux and Linux, no case sensitive.

```
hafizja@ubuntu:~$ grep -i 'linux' hello.txt
Linux (/ˈlinʊks/ (About this soundlisten) LEEN-uuks or /ˈlɪ
open-source Unix-like operating systems based on the Linux k
[11][12][13] Linux is typically packaged in a Linux distribu
Distributions include the Linux kernel and supporting syster
many of which are provided by the GNU Project. Many Linux di
 "Linux" in their name, but the Free Software Foundation
 uses the name GNU/Linux to emphasize the importance of GNU
Popular Linux distributions[16][17][18] include Debian, Fedo
Commercial distributions include Red Hat Enterprise Linux ar
```

c. To display first 5 lines that contains the word ‘Linux’

```
hafizja@ubuntu:~$ grep -n 'Linux' hello.txt | head -n 5
1:Linux (/ˈlinʊks/ (About this soundlisten) LEEN-uuks or /ˈlɪnʊks
2:open-source Unix-like operating systems based on the Linux kern
4:[11][12][13] Linux is typically packaged in a Linux distributio
6:Distributions include the Linux kernel and supporting system so
7:many of which are provided by the GNU Project. Many Linux distr
hafizja@ubuntu:~$
```

d. To get the total count of the word Linux in the text file. (hint check manual pages for grep command for appropriate flag options. You can use WC command for word count.)

```
hafizja@ubuntu:~$ grep -wc 'Linux' hello.txt
11
hafizja@ubuntu:~$
```

e. Use grep to search recursively under the etc directory for a string 127.0.0.1

```
hafizja@ubuntu:~$ sudo grep -r 127.0.0.1 /etc/
[sudo] password for hafizja:
/etc/dhcp/dhclient.conf:#prepend domain-name-servers 127.0.0.1;
/etc/dhcp/dhclient.conf:#  option domain-name-servers 127.0.0.1;
/etc/hosts:127.0.0.1    localhost
/etc/speech-dispatcher/modules/ivona.conf:#IvonaServerHost "127.0.0.1"
/etc/security/access.conf:#+:root:127.0.0.1
hafizja@ubuntu:~$
```

f. Search for the string ‘root’ in the file /etc/passwd and use the appropriate flag option to contain the line number as the preceding value for each line of output into a text file named output.txt.

```
hafizja@ubuntu:~$ grep -n 'root' /etc/passwd > output.txt
hafizja@ubuntu:~$ cat output.txt
1:root:x:0:0:root:/root:/bin/bash
37:nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nolo
hafizja@ubuntu:~$
```

3. USER MANAGEMENT (06.10.2021)

1. Add two new users: user1 & user2

```
user1:x:1001:1001:,,,:/home/user1:/bin/bash
user2:x:1002:1002:,,,:/home/user2:/bin/bash
hafizja@ubuntu:~$
```

2. Give sudo privileges to user1.

```
hafizja@ubuntu:~$ sudo usermod -aG sudo user1
hafizja@ubuntu:~$ groups user1
user1 : user1 sudo
hafizja@ubuntu:~$
```

3. Delete user1 with sudo privileges

```
hafizja@ubuntu:~$ sudo deluser user1
Removing user `user1' ...
Warning: group `user1' has no more members.
Done.
hafizja@ubuntu:~$ groups user1
groups: ‘user1’: no such user
hafizja@ubuntu:~$
```

4. Find out what groups, your current user account belongs to.

```
hafizja@ubuntu:~$ groups hafizja
hafizja : hafizja adm cdrom sudo dip plugdev lpadmin lxd sambashare
hafizja@ubuntu:~$
```

5. Use visudo command to specify explicit user privileges in /etc/sudoers for user2

```
# User privilege specification
root    ALL=(ALL:ALL) ALL
user2   ALL=(ALL:ALL) ALL
# Members of the admin group may gain root pri
%admin ALL=(ALL) ALL
```

6. Why should you remove a sudo user record from /etc/sudoers when you delete a user account who is given explicit user privileges in /etc/sudoers?
   Asnwer: It is extremely important to delete the record from /etc/sudoers as that specific user can do anything in the operating system like installation, management etc.

7. When a new user is created, it also creates home directory for that user. What command would you use to delete user along with its home directory?

```
hafizja@ubuntu:~$ sudo deluser --remove-home user2
Looking for files to backup/remove ...
Removing files ...
Removing user `user2' ...
Warning: group `user2' has no more members.
Done.
```

4. File Permissions in Linux (07.10.2021)

1. Execute ls -l in one of your directories that contains some items. Explain the mode, owner and group of at least 3 of your files or directories.

```
hafizjavid@HAFIZ:~$ ls -l
total 4
drwxr-xr-x 1 hafizjavid hafizjavid 4096 Oct 13 19:09 dir1
-rw-r--r-- 1 hafizjavid hafizjavid   95 Oct 13 14:47 file.txt
-rw-r--r-- 1 hafizjavid hafizjavid   59 Oct  7 13:21 first_script
-rwxr--r-- 1 hafizjavid hafizjavid  104 Oct  7 13:42 first_script.sh
-rw-r--r-- 1 hafizjavid hafizjavid 1167 Oct  6 14:21 hello.txt
drwxr-xr-x 1 hafizjavid hafizjavid 4096 Oct  1 13:12 mydir1
-rw-r--r-- 1 hafizjavid hafizjavid   21 Oct  1 13:20 newfile
-rw-r--r-- 1 hafizjavid hafizjavid   38 Oct  9 21:11 script23.sh
-rw-r--r-- 1 hafizjavid hafizjavid   74 Oct  7 15:06 taks15.txt
-rw-r--r-- 1 hafizjavid hafizjavid   41 Oct  7 14:50 task1.sh
```

dir1:

Owner: hafizjavid >>rwx

Group: hafizjavid >> r-x

Others: >> r-x

File.txt:

Owner: hafizjavid >> rw-

Group: hafizjavid >> r--

Others: >> r--

File_Script.sh:

Owner: hafizjavid >>rwx

Group: hafizjavid >>r--

Others: >> r--

2. Explain read, write and execute in your own words.

Read: This is permission in which user allows to view the content of the file.

Write: In this permission, user can modify the content and have the privilege to delete the content too.

Execute: In this permission, user allows to run the file if its executable.

3. -rw- - - - - - - What does hyphen (-) represent?

Answer: The hyphen before the rw means that this is a normal file whereas for the directory, d should be mentioned before the permissions.

4. Explain the following permission
   4.1.-rw- - - - - - -

Owner: Read and write

Group: No permission

Other: No permssion

4.2.drwxr-x- - -

Owner: Read write and execute

Group: Read and execute

Other: No permission

4.3.-rw-rw-rw-

Owner: Read and write

Group: Read and write

Other: Read and write

4.4.-rwxr-x- - -

Owner: Read write execute

Group: Read and execute

Other: No permission

5. Use octal notation for following permissions
   5.1.-rw- - - - - - - **600**
   5.2.drwxr-x- - - **750**
   5.3.-rw-rw-rw- **666**
   5.4.-rwxr-x- - - **750**

6. Apply CHMOD with examples (at least 3).

```
hafizjavid@HAFIZ:~$ chmod 755 file.txt
hafizjavid@HAFIZ:~$ chmod 655 first_script
hafizjavid@HAFIZ:~$ chmod 766 hello.txt
hafizjavid@HAFIZ:~$ ls -l
total 4
drwxr-xr-x 1 hafizjavid hafizjavid 4096 Oct 13 19:09 dir1
-rwxr-xr-x 1 hafizjavid hafizjavid   95 Oct 13 14:47 file.txt
-rw-r-xr-x 1 hafizjavid hafizjavid   59 Oct  7 13:21 first_script
-rwxr--r-- 1 hafizjavid hafizjavid  104 Oct  7 13:42 first_script.sh
-rwxrw-rw- 1 hafizjavid hafizjavid 1167 Oct  6 14:21 hello.txt
drwxr-xr-x 1 hafizjavid hafizjavid 4096 Oct  1 13:12 mydir1
-rw-r--r-- 1 hafizjavid hafizjavid   21 Oct  1 13:20 newfile
-rw-r--r-- 1 hafizjavid hafizjavid   38 Oct  9 21:11 script23.sh
-rw-r--r-- 1 hafizjavid hafizjavid   74 Oct  7 15:06 taks15.txt
-rw-r--r-- 1 hafizjavid hafizjavid   41 Oct  7 14:50 task1.sh
hafizjavid@HAFIZ:~$
```

7. Apply Chown with examples (at least 3).

```
chown: cannot access 'dir11': No such file or directory
hafizjavid@HAFIZ:~$ sudo chown root dir1
hafizjavid@HAFIZ:~$ sudo chown :root file.txt
hafizjavid@HAFIZ:~$ sudo chown root:root hello.txt
hafizjavid@HAFIZ:~$ ls -l
total 4
drwxr-xr-x 1 root       hafizjavid 4096 Oct 13 19:09 dir1
-rwxr-xr-x 1 hafizjavid root         95 Oct 13 14:47 file.txt
-rw-r-xr-x 1 hafizjavid hafizjavid   59 Oct  7 13:21 first_script
-rwxr--r-- 1 hafizjavid hafizjavid  104 Oct  7 13:42 first_script.sh
-rwxrw-rw- 1 root       root       1167 Oct  6 14:21 hello.txt
drwxr-xr-x 1 hafizjavid hafizjavid 4096 Oct  1 13:12 mydir1
-rw-r--r-- 1 hafizjavid hafizjavid   21 Oct  1 13:20 newfile
-rw-r--r-- 1 hafizjavid hafizjavid   38 Oct  9 21:11 script23.sh
-rw-r--r-- 1 hafizjavid hafizjavid   74 Oct  7 15:06 taks15.txt
-rw-r--r-- 1 hafizjavid hafizjavid   41 Oct  7 14:50 task1.sh
hafizjavid@HAFIZ:~$
```

5. BASH SCRIPTING (07.10.2021)

1. Write a simple script that prints a list of files in the user's home directory into the text file.

```
#!/bin/bash
ls /home/$USER > fike.txt
```

```
hafizjavid@KHURRAM:~$ ls
fike.txt  file.txt  hello.txt  myscript.sh  new.txt  newfike.txt  pf.sh
hafizjavid@KHURRAM:~$ bash pf.sh
hafizjavid@KHURRAM:~$ cat fike.txt
fike.txt
file.txt
hello.txt
myscript.sh
new.txt
newfike.txt
hafizjavid@KHURRAM:~$
```

2. Write a shell script that displays the name of the computer, home directory of the current user & locale. The output should be something like this "Your computer name is deepak. /home/deepak is your home directory. The locale used is en_US.UTF-8. " (System Defined Variables)

```
GNU nano 4.8                                custom.sh
#!/bin/bash
echo "Your Computer name is $HOSTNAME. $HOME is your home directory. The Locale used is $LANG"
```

```
hafizjavid@KHURRAM:~$ ls
custom.sh  fike.txt  file.txt  hello.txt  myscript
.sh  new.txt  newfike.txt  pf.sh
hafizjavid@KHURRAM:~$ bash custom.sh
Your Computer name is KHURRAM. /home/hafizjavid is
 your home directory. The Locale used is C.UTF-8
hafizjavid@KHURRAM:~$
```

3. Write a shell script that asks users to input the word (such as linux) to search. The script should then search in the text file

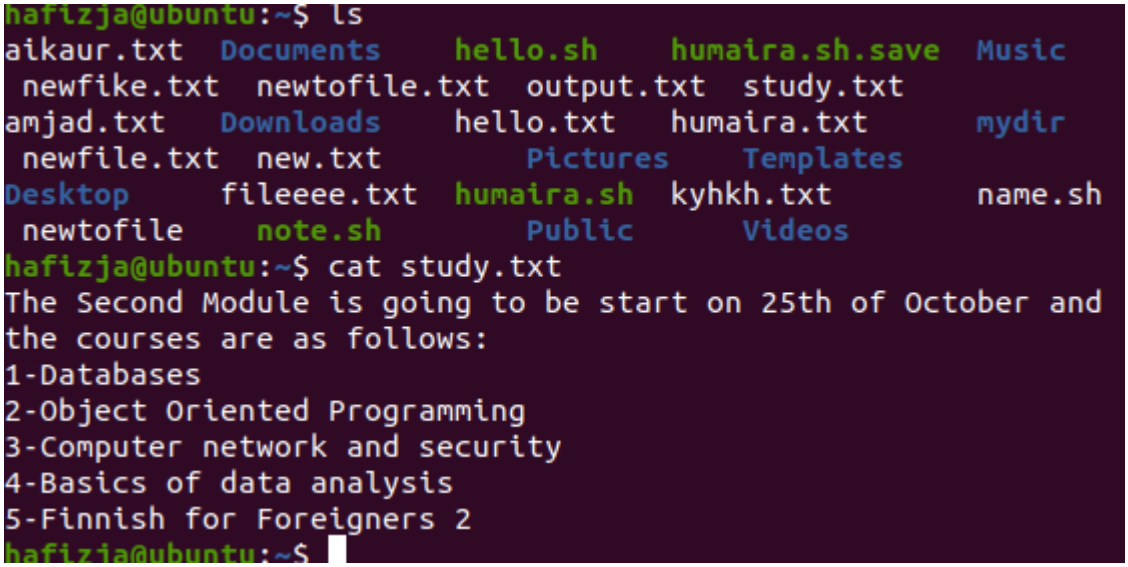
```
#!/bin/bash
echo "Please select the file from the home directory as follows: "
echo " "
ls
echo " "
echo "Please Enter the file name:"
read file
echo "Please Enter the word:"
read word
grep -i $word $file
```

```
hafizja@ubuntu:~$ ./search_word.sh
Please select the file from the home directory as follows:

aikaur.txt  Documents    hello.sh    humaira.sh.save  mydir        newfile.txt
    new.txt     Pictures        snap       Videos
amjad.txt   Downloads    hello.txt   humaira.txt      name.sh      newtofile
      note.sh     Public          study.txt
Desktop     fileeee.txt  humaira.sh  Music            newfike.txt  newtofile.tx
t  output.txt  search_word.sh  Templates

Please Enter the file name:
hello.txt
Please Enter the word:
kernel
Linux (/ˈlɪnʊks/ (About this soundlisten) LEEN-uuks or /ˈlɪnʊks/ LIN-uuks[9]) i
s a family of open-source Unix-like operating systems based on the Linux kernel
,[10] an operating system kernel first released on September 17, 1991, by Linus
 Torvalds.
[11][12][13] Linux is typically packaged in a Linux distribution.Distributions
include the Linux kernel and supporting system software and libraries,
hafizja@ubuntu:~$
```

4. Complete the following shell script to create a simple note taking script

```
#!/bin/bash
# A simple note taking script
#Get the date and store it in a variable  called date
echo "Pleaes enter the date: "
read date
date=$(date +'%d-%m-%Y')
#Get the topic of the note from the user and store it in a variable called topic
echo "Please enter the topic: "
read topic
#Specify the filename where the file will be written in a variable
echo "Please enter the filename: "
read filename
#Ask user to input the note and store ina  variable note
echo "Type the note: (Enter) "
read note
nano $filename.txt
echo "************************************************************"
echo "Date: $date"
echo "Topic of the note: $topic"
echo "Main note: $note >> $filename.txt"
echo "Your note is saved to $filename"
cat $filename.txt
echo "************************************************************"
```

```
hafizja@ubuntu:~$ bash note.sh
Pleaes enter the date:
15-10-2021
Please enter the topic:
Second Module
Please enter the filename:
study
Type the note: (Enter)

************************************************************
Date: 15-10-2021
Topic of the note: Second Module
Main note:  >> study.txt
Your note is saved to study
The Second Module is going to be start on 25th of October and the courses are as follows:
1-Databases
2-Object Oriented Programming
3-Computer network and security
4-Basics of data analysis
5-Finnish for Foreigners 2
************************************************************
hafizja@ubuntu:~$
```


hafizja@ubuntu:~$ ls
aikaur.txt Documents hello.sh humaira.sh.save Music
newfike.txt newtofile.txt output.txt study.txt
amjad.txt Downloads hello.txt humaira.txt mydir
newfile.txt new.txt Pictures Templates
Desktop fileeee.txt humaira.sh kyhkh.txt name.sh
newtofile note.sh Public Videos
hafizja@ubuntu:~$ cat study.txt
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hafizja@ubuntu:~$