



ALBUKHARY INTERNATIONAL UNIVERSITY

## SCHOOL OF COMPUTING & INFORMATICS

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Course Title : **OPERATING SYSTEMS**  
Course Code : **CCC 2123**

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### LAB EXERCISE (WEEK 6)

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#### Instructions:

Using the Command Line Interface (CLI) for Linux that we have learned and used so far, please execute the following tasks:

#### Task 1: Navigation

- Open the terminal.
- Identify and display the current location within the system.
- List the contents of the current directory.
- Navigate to the home directory.
- Create a new directory and enter it.

#### Answer:

```
File Actions Edit View Help
(haryani@kali)-[~]
$ pwd
/home/haryani
(haryani@kali)-[~]
$ ls
CLI Desktop Downloads Lab6 OS Practice Templates fruits test
CLI_Lab_Week6 Documents File_Lab Music Pictures Public Videos newDirectory
(haryani@kali)-[~]
$ cd ~
(haryani@kali)-[~]
$ mkdir New_Directory
(haryani@kali)-[~]
$ cd New_Directory
(haryani@kali)-[~/New_Directory]
$
```

# Open the terminal

# Identify and display the current location within the system  
`pwd`

# List the contents of the current directory

`ls`

# Navigate to the home directory

`cd ~`

# Create a new directory

`mkdir New_Directory`

# Enter the new directory

`cd New_Directory`

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## Task 2: File Operations

- Inside the newly created directory, create a text file.
- View the contents of the text file.
- Add new content to the file.
- Duplicate the file with a different name.
- Verify the creation of the duplicate file.

### Answers:

```
(haryani@kali)~$ mkdir New_Directory
(haryani@kali)~$ cd New_Directory
(haryani@kali)~/New_Directory$ touch new_file.txt
(haryani@kali)~/New_Directory$ cat new_file.txt
(haryani@kali)~/New_Directory$ echo "This is new content" >> newfile.txt
(haryani@kali)~/New_Directory$ cp new_file.txt duplicate_file.txt
(haryani@kali)~/New_Directory$ ls -l
total 4
-rw-r--r-- 1 haryani haryani 0 Dec 14 21:33 duplicate_file.txt
-rw-r--r-- 1 haryani haryani 0 Dec 14 21:32 new_file.txt
-rw-r--r-- 1 haryani haryani 20 Dec 14 21:33 newfile.txt
```

#Create a new directory:

`mkdir new_directory`

#Change into the newly created directory:

`cd new_directory`

#Create a text file:

`touch new_file.txt`

#View the contents of the text file:

```
cat new_file.txt
```

#Add new content to the file:

```
echo "Your new content here" >> new_file.txt
```

#Duplicate the file with a different name:

```
cp new_file.txt duplicate_file.txt
```

#Verify the creation of the duplicate file:

```
ls -l
```

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### Task 3: Directory Operations

- Create two subdirectories within the current directory.
- Move the text file to one of the subdirectories.
- Rename the second subdirectory.
- Remove one of the subdirectories and its contents.

#### Answers:

```
haryani@kali: ~/New_Directory
File Actions Edit View Help
(haryani@kali)-[~]
$ mkdir Subdirectory1 Subdirectory2

(haryani@kali)-[~]
$ mv newfile.txt Subdirectory1/
mv: cannot stat 'newfile.txt': No such file or directory

(haryani@kali)-[~]
$ ls
CLI      Documents  Lab6      OS        Public    Templates  newDirectory
CLI_Lab_Week6  Downloads  Music     Pictures  Subdirectory1  Videos    test
Desktop  File_Lab   New_Directory  Practice  Subdirectory2  fruits

(haryani@kali)-[~]
$ cd New_Directory

(haryani@kali)-[~/New_Directory]
$ mkdir Subdirectory1 Subdirectory2

(haryani@kali)-[~/New_Directory]
$ ls
Subdirectory1  Subdirectory2  duplicate_file.txt  new_file.txt  newfile.txt

(haryani@kali)-[~/New_Directory]
$ mv new_file.txt Subdirectory1/

(haryani@kali)-[~/New_Directory]
$ mv Subdirectory2 New_Name_Subdirectory

(haryani@kali)-[~/New_Directory]
$ ls
New_Name_Subdirectory  Subdirectory1  duplicate_file.txt  newfile.txt

(haryani@kali)-[~/New_Directory]
$ rm -r New_Name_Subdirectory

(haryani@kali)-[~/New_Directory]
$ ls
Subdirectory1  duplicate_file.txt  newfile.txt

(haryani@kali)-[~/New_Directory]
$
```

#Create two subdirectories within the current directory:

```
mkdir subdirectory1 subdirectory2
```

#Move the text file to one of the subdirectories:

```
mv new_file.txt subdirectory1/
```

#Rename the second subdirectory:

```
mv subdirectory2 new_name_subdirectory
```

#Remove one of the subdirectories and its contents:

`rm -r new_name_subdirectory`

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#### Task 4: Permissions

- Check and note the permissions of a specific file.
- Modify the permissions to make the file accessible only to the owner.

#### Answer:

```
(haryani@kali)-[~/New_Directory]
$ ls -l newfile.txt
-rw-r--r-- 1 haryani haryani 20 Dec 14 21:33 newfile.txt

(haryani@kali)-[~/New_Directory]
$ chmod 600 newfile.txt

(haryani@kali)-[~/New_Directory]
$ ls -l newfile.txt
-rw----- 1 haryani haryani 20 Dec 14 21:33 newfile.txt

(haryani@kali)-[~/New_Directory]
$ chmod 700 newfile.txt

(haryani@kali)-[~/New_Directory]
$ ls -l newfile.txt
-rwx----- 1 haryani haryani 20 Dec 14 21:33 newfile.txt

(haryani@kali)-[~/New_Directory]
$
```

#Check and note the permissions of a specific file:

`ls -l specific_file.txt`

#This command will display detailed information about the file, including its permissions.

#Modify the permissions to make the file accessible only to the owner:

`chmod 600 specific_file.txt`

#In this command, chmod is the command to change file permissions, and 600 specifies that only the owner has read and write permissions. No permissions are granted to the group or others.

## Task 5: System Information

- Use a command to display basic system information.
- Find and report the system's memory status.
- Retrieve information about the CPU.

### Answers:

```
(haryani@kali)~/New_Directory
$ uname -a
Linux kali 6.3.0-kali1-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.3.7-1kali1 (2023-06-29) x86_64 GNU/Linux

(haryani@kali)~/New_Directory
$ free -h
              total        used        free      shared  buff/cache   available
Mem: 7.7Gi          1.0Gi          6.3Gi          21Mi          597Mi          6.7Gi
Swap: 974Mi           0B           974Mi

(haryani@kali)~/New_Directory
$ lscpu
Architecture:                x86_64
CPU op-mode(s):              32-bit, 64-bit
Address sizes:               45 bits physical, 48 bits virtual
Byte Order:                  Little Endian
CPU(s):                      4
On-line CPU(s) list:         0-3
Vendor ID:                   GenuineIntel
Model name:                  Intel(R) Core(TM) i7-10510U CPU @ 1.80GHz
CPU family:                  6
Model:                      142
Thread(s) per core:         1
Core(s) per socket:         1
Socket(s):                   4
Stepping:                    12
BogoMIPS:                    4608.00
Flags:                       fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr s
se sse2 ss syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon nopl xtopology tsc_relia
ble nonstop_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 fma cx16 pcid sse4_1 sse4_2 x2api
c movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowpr
```

#Display basic system information:

`uname -a`

#This command will provide information about the system, including the kernel version, machine architecture, and other details.

#Find and report the system's memory status:

`free -h`

#This command will display information about the system's memory usage, including total, used, and free memory.

#Retrieve information about the CPU:

`lscpu`

#This command will provide detailed information about the CPU, including its architecture, cores, threads, and more.