

GE-161L

Introduction to Information and Communication Technologies

Laboratory 03

Hardware and Operating Systems – III

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Department of Information Technology

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Lahore, Pakistan

Contents:

- Learning Objectives
- Required Resources
- General Instructions
- Background and Overview
 - Microsoft ® Windows Control Panel
 - What is the Microsoft ® Windows Control Panel?
 - Sections of Microsoft ® Windows Control Panel:
 - Linux
 - Terminal
 - Basic Commands
 - Microsoft ® Windows Task Manager
- Activities
 - Pre-Lab Activity
 - Exploring Microsoft ® Windows Control Panel
 - Appearance and Personalization
 - Network and Internet
 - Programs
 - User Accounts
 - Task 01: Make Changes to Account on PC
 - In-Lab Activity
 - Connecting Two Computers
 - How to Connect Two Computers with an Ethernet Cable?
 - Four wires in Ethernet Cable:
 - Linux Terminal
 - Demonstration on Linux Terminal
 - Start Learning Commands
 - List detailed content of your current working directory
 - Show hidden files
 - Change to a different directory
 - Create a file
 - Creating a File with “cat” Command
 - Create Directory
 - Copy Files and Directories
 - Removing Directories with rmdir
 - Move file or directory:
 - Self-Learning
 - Task 01: Creating and moving directories in Linux using terminal
 - Post-Lab Activity
 - Task Manager
 - Explore Task Manager
 - Task Manager Detail View
 - Task 01: Describe Linux Terminal Commands
- Submissions
- Evaluations Metric
- References and Additional Material
- Lab Time and Activity Simulation Log

Learning Objectives:

- Learn to Install, Uninstall a Program using Search Bar, Control Panel
- Explore Task Manager of Microsoft ® Windows
- Connect two Computers (Wired and wireless connection)
- Deal with Linux Operating System using Virtual Box
- Creating, Deleting, Copying, Moving files using Terminal in Linux

Required Resources:

- Open Desktop or Laptop PC
- Ethernet Cable
- Installed Virtual Box with Linux
- Internet Connection

General Instructions:

- In this Lab, you are **NOT** allowed to discuss your solution with your colleagues, even not allowed to ask how is s/he doing, this may result in negative marking. You can **ONLY** discuss with your Teaching Assistants (TAs) or Lab Instructor.
- Your TAs will be available in the Lab for your help. Alternatively, you can send your queries via email to one of the followings.

Lab Instructors:		
Course Instructor	Prof. Dr. Syed Waqar ul Qounain	swjaffry@pucit.edu.pk
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Background and Overview:

Microsoft ® Windows Control Panel

What is the Microsoft ® Windows Control Panel?

The Control Panel is a component of Microsoft Windows that **provides the ability to view and change system settings**. It consists of a set of applets that include adding or removing hardware and software, controlling user accounts, changing accessibility options, and accessing network settings.

In Microsoft ® Windows 10, you can use the search box in the top-right corner of the Control Panel window to find the area you're looking to adjust. For example, type “**Security**” to search for the security settings in the Control Panel.

Sections of Microsoft ® Windows Control Panel:

There are eight main sections on the Control Panel, containing different tools designed to control your computer.

1. **System and Security:** A section to check your computer's status, backup and restore, and change the computer security settings.
2. **Network and Internet:** This contains tools that you'll use to check the status of the network, change settings, set preferences for sharing files and computers, and configure Internet connections etc.
3. **Hardware and Sound:** View which devices are on your computer and add devices. This contains all the tools that you'll use to add and remove printers and other hardware, change system sounds, configure AutoPlay, manage power, update drivers etc.
4. **Programs:** This contains all the tools that you'll use to uninstall a Programs, to make changes in an installed Program etc.
5. **User Accounts:** This contains all the tools that you'll use to add or remove a system user, or change users' access and privileges.
6. **Appearance and Personalization:** This contains the tools that you'll use to change the appearance of desktop items, apply various desktop themes and screen savers, customize the Start menu or Taskbar, change desktop options, like fonts and screen readers etc.
7. **Clock and Region:** This contains the tools that you'll use to change date, time, language, numbers, currency etc.
8. **Ease of access:** This contains the tools that you'll use to adjust your computer settings for vision, hearing, and mobility as well as configure speech recognition to control your computer with voice commands.

Linux:

Linux is a family of open-source Unix-like operating systems based on the Linux kernel an operating system kernel first released on September 17, 1991, by Linus Torvalds. Linux was originally developed for personal computers based, but has since been ported to more platforms than any other operating system. Because of the dominance of the Linux-based Android on smartphones, Linux also has the largest installed base of all general-purpose operating systems. Linux is one of the most prominent examples of free and open-source software collaboration. The source code may be used, modified and distributed commercially or non-commercially by anyone under the terms of its respective licenses, such as the GNU General Public License.

Terminal:

The Linux command line terminal is a text interface to your computer. Often referred to as terminal, console, or prompt. The terminal is just a mechanism to transfer information. For the operating system to understand the information, a shell is needed. A shell in Linux is a program that interprets the

commands you enter in a terminal window, so the operating system can understand what you want to do.

Basic Commands:

Now, let us look at the most important commands in Linux. Linux commands are case sensitive hence you need to be careful about what you are keying in.

1. **ls:** List directory contents.
2. **cd:** Change the current directory.
3. **pwd:** Print Working Directory.
4. **mv:** Move a file.
5. **cp:** Copy a file.
6. **rm:** Remove files in a directory or the directory itself.
7. **mkdir:** To make a directory.
8. **cat:** The cat command (short for “concatenate”) is one of the most frequently used commands in Linux. cat command allows you to create single or multiple files.
9. **echo:** This command is used to display a text or a string to the standard output or a file.
\$ echo “This is an article on basic Linux commands”.
10. **clear:** This command lets you clear the terminal screen.

Microsoft ® Windows Task Manager:

Task Manager, previously known as Windows Task Manager, is a task manager, system monitor, and startup manager included with Microsoft Windows systems. It provides information about computer performance and running software, including name of running processes, CPU workload, commit charge, I/O details, logged-in users, and Windows services. Task Manager can also be used to set process priorities, processor affinity, start and stop services, and forcibly terminate processes. The Task Manager could be opened by pressing Ctrl + Shift + Esc on the keyboard together.

Activities:

Pre-Lab Activities:

Explore Control Panel:

Go to Microsoft ® Windows Search bar.

Search for “Control Panel”.

You will get Control Panel on top.

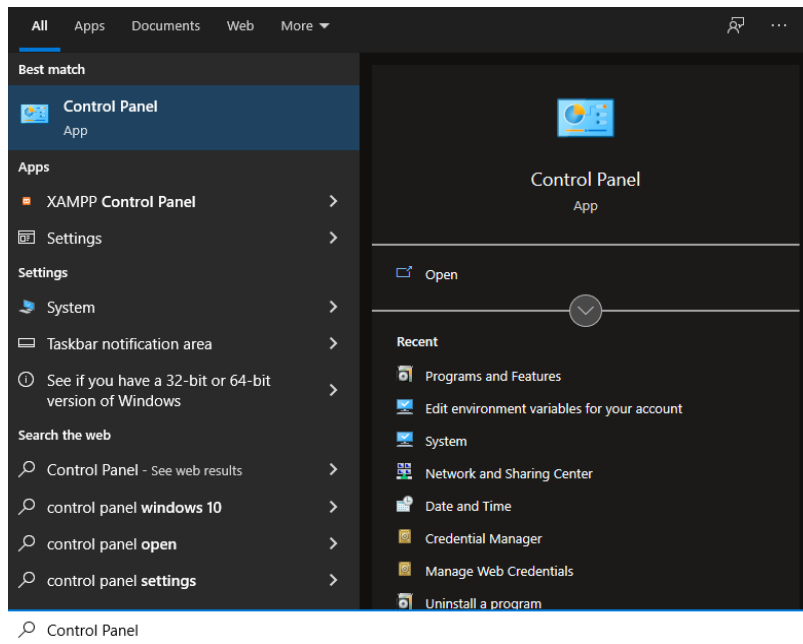


Fig. 1 (Control Panel)

Open Control Panel by pressing “Enter” or by using “Open” button on Microsoft ® Windows GUI.
Interface of Control Panel.

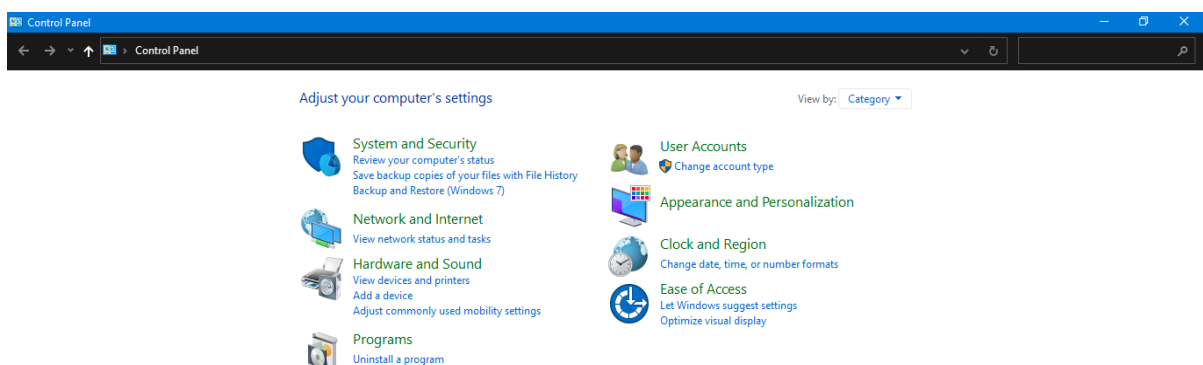


Fig. 2 (Control Panel Interface)

Appearance and Personalization:

The Appearance and Personalization category allows you to change the look and feel of Windows, which includes adjusting the theme, screen saver, and taskbar. Below is a list of each of the subcategories of Appearance and Personalization in Microsoft ® Windows 10.

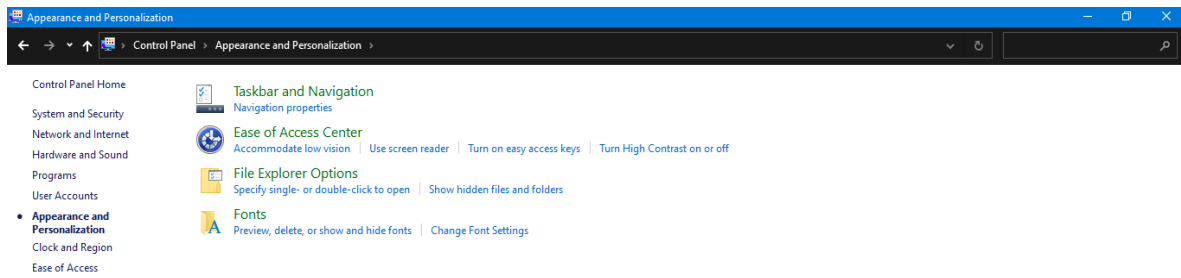


Fig. 3 (Appearance and Personalization)

Taskbar and Navigation - Opens the Taskbar settings that allow you to change how the taskbar is shown or hidden, its location, icons, and other settings.

Ease of Access Center - Opens the Ease of Access Center, which gives you access to all settings that makes Windows easier to use for all users. In this area, you'll find the following settings.

- Use the computer without a display - Optimize for blindness.
- Make the computer easier to see - Optimize visual display.
- Use the computer without a mouse or keyboard - Set up an alternative input device.
- Make the mouse easier to use - Adjust settings for the mouse or other pointing devices.
- Make the keyboard easier to use - Adjust settings for the keyboard.
- Use text or visual alternatives for sounds - Set up alternatives to sounds.
- Make it easier to focus on tasks - Adjust settings for reading and typing.
- Make touch and tablets easier to use - Adjust settings for touch and tablets.

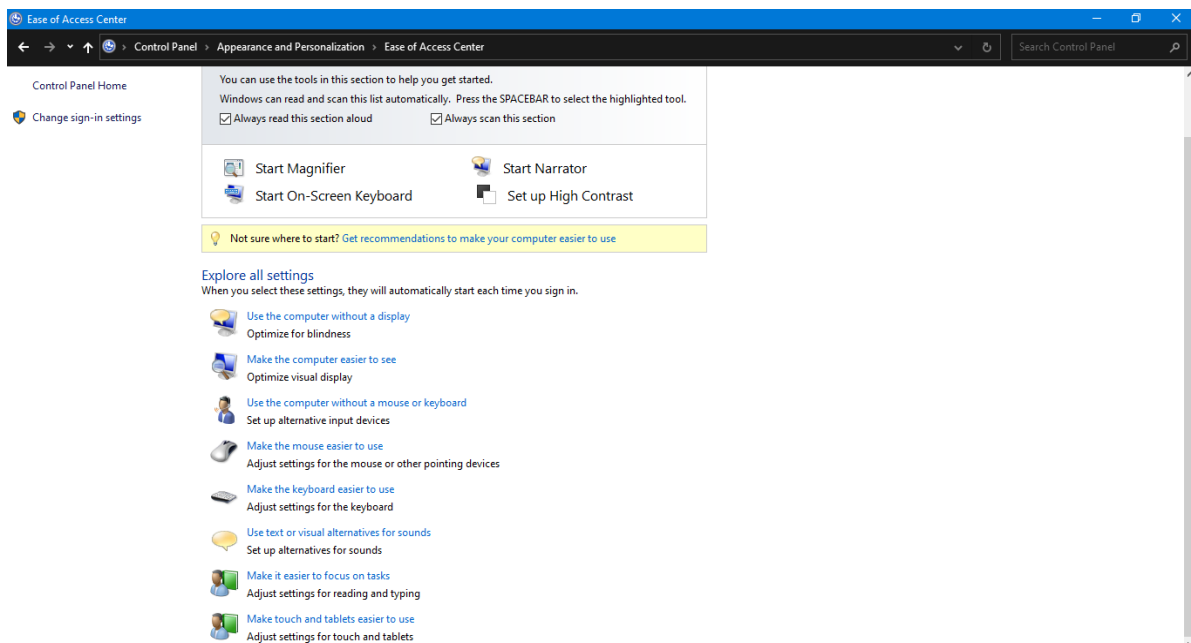


Fig. 4 (Appearance and Personalization)

File Explorer Options - Open the File Explorer Options window with options on how to view and search files on your computer.

Specify single- or double-click to open - Adjust the File Explorer mouse settings to be either single-click or double-click.

Show hidden files and folders - Opens the View tab in the File Explorer Options window that allows you to specify if hidden files should be shown.

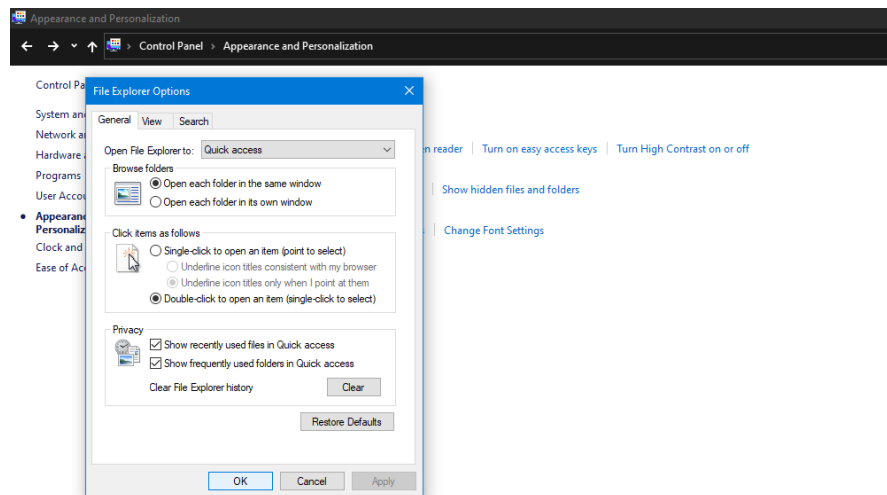


Fig. 5 (File Explorer Options)

Fonts - Opens the Fonts window that shows all installed fonts on the computer.

Preview, delete, or show and hide fonts - Opens the Fonts window (same as above).

Change Font Settings - Opens the Fonts settings window to adjust how fonts are shown on the computer.

Network and Internet:

The Network and Internet category is shown when viewing the Control Panel as categories and allows you to view your network status and configure other network settings and preferences. Below is a list of each of the subcategories of Network and Internet in Microsoft ® Windows 10.

Network and Sharing Center - Opens the Network and Sharing Center window to view basic networking information, set up a new connection, and troubleshoot network problems.

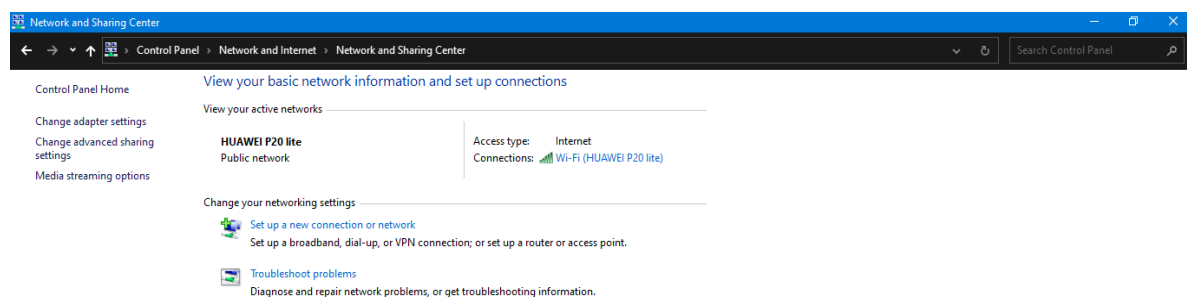


Fig. 6 (Network and Internet)

View network status and tasks - Open the Network and Sharing Center window (same as above).

Connect to a network - Open the available networks that which include available Wi-Fi networks and the ability to turn on Airplane mode and set up a mobile hotspot.

View network computers and devices - Opens the Network window that shows computers on your network, media devices, network infrastructure (e.g., router), and other devices (e.g., available IoT devices and Internet/Network connected devices).

Internet Options - Opens the Internet Properties window to adjust Internet Explorer browser settings (e.g., home page, browsing history, and other settings).

Programs:

The Programs category is shown when viewing the Control Panel as categories and allows you to get new Programs and Uninstall Programs on your computer. Below is a list of each of the subcategories of Programs in Microsoft ® Windows 10.

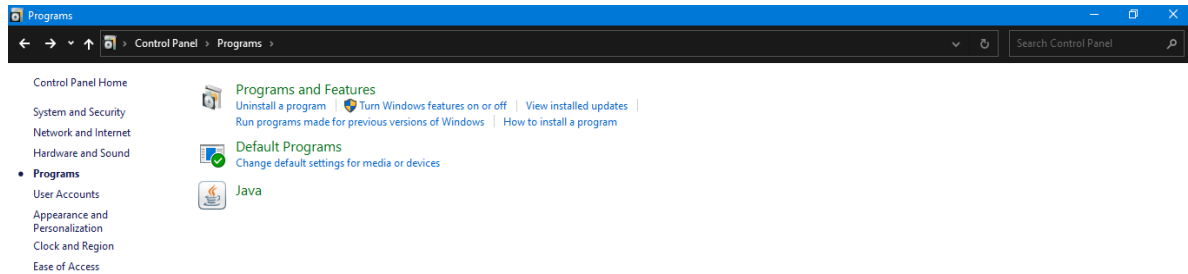


Fig. 7 (Programs)

Programs and Features - Opens the Programs and Features window that allows you to change, repair, and uninstalled any Program that is installed on the computer.

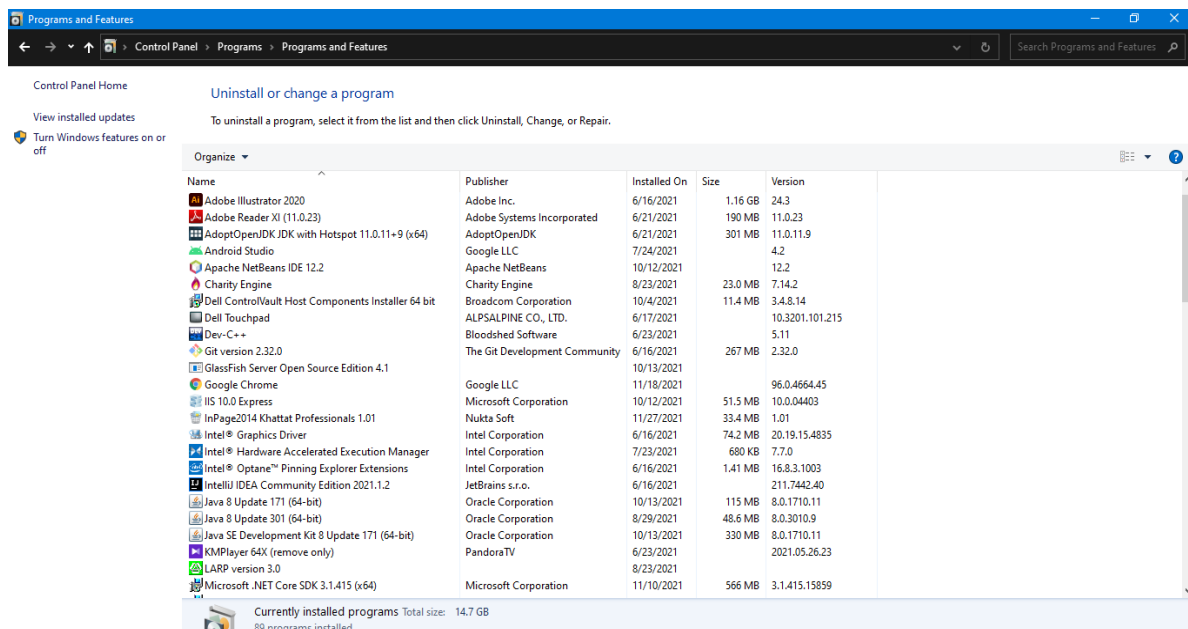


Fig. 8 (Programs and Features)

Uninstall a Program - Opens the Program and Features window.

Right Click on specific Program.

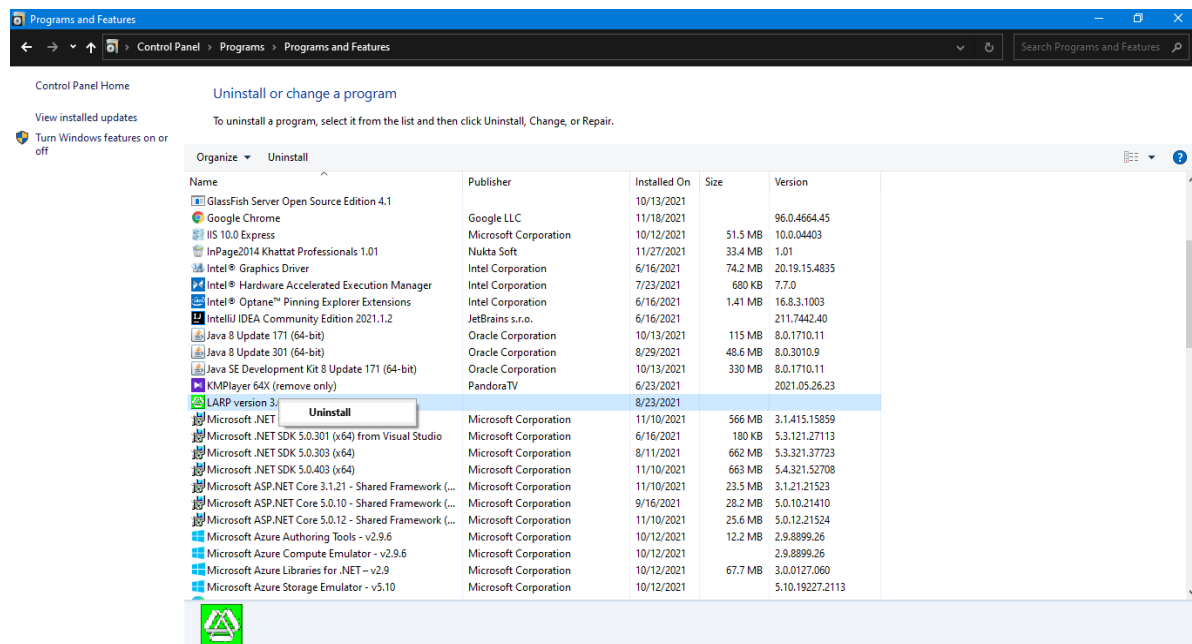


Fig. 9 (Uninstall or Change a Program)

Default Programs - Opens the Default Programs window with the options to Set your default Programs, associate files, change AutoPlay settings, and set Program access and computer defaults.

User Accounts:

The User Accounts category is shown when viewing the Control Panel as categories and allows you to view user accounts, adjust user settings (e.g., passwords), and adjust other user settings. Below is a list of each of the subcategories of the User Accounts in Microsoft ® Windows 10.

User Accounts - Opens the User Accounts window to make changes to your user account, change your account type, manage another account, and change User Account Control settings.

Change account type - Opens the Manage Accounts window to adjust the account type of one or more of the users on the computer.

Task 01: Make Changes to Account on PC

[Estimated 15 minutes / 20 marks]

- Change name of your Account on PC to your Roll number like (BITF19M007). Add Email to your Account.
- Use snipping tool to capture each step.

Email the zip folder to email of respective TA. The subject of your email should be “Your RollNo_Pre-Lab03”

In-Lab Activities:

Connecting Two Computers

How to Connect Two Computers with an Ethernet Cable?

The simplest method to connect two computer systems without using the internet is through an ethernet cable. Once the connection is established the two systems can share files between them and also view and edit those files.

Ethernet cables are **used to provide an internet connection, connect devices to a local network**. They plug into Ethernet ports on a variety of devices. The most common use for an Ethernet cable is connecting a Wi-Fi router or modem to the internet entry port or telephone line and connecting computers.



Fig.10 (Ethernet Cable)

Four wires in Ethernet Cable:

Grey-colored cables typically represent standard ethernet connections, while **Green-colored** cables represent crossover ethernet connections. **Yellow-colored** cables are used to signify POE (power over ethernet), while **Blue-colored** cables are used for terminal server connections.

Step 1: First check if the two selected systems have an **Ethernet port**.

Step 2: If anyone or both systems do not support **Ethernet card** then an external ethernet adapter is required.

Step 3: Plug one end of the ethernet cable in the ethernet port of first system and the other end to the ethernet port of second system.

Step 4: Once the ethernet cables are plugged in both the systems, open Control Panel. Press the start button and type “control panel” and press enter.

Step 5: In the Control Panel select the “**Network and Internet**” option.

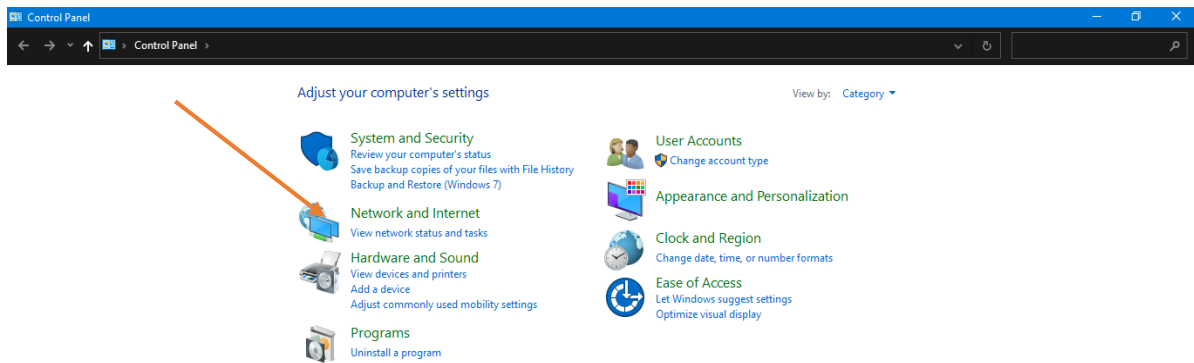


Fig. 11 (Open Control Panel)

Step 6: Then select “Network sharing Center”.

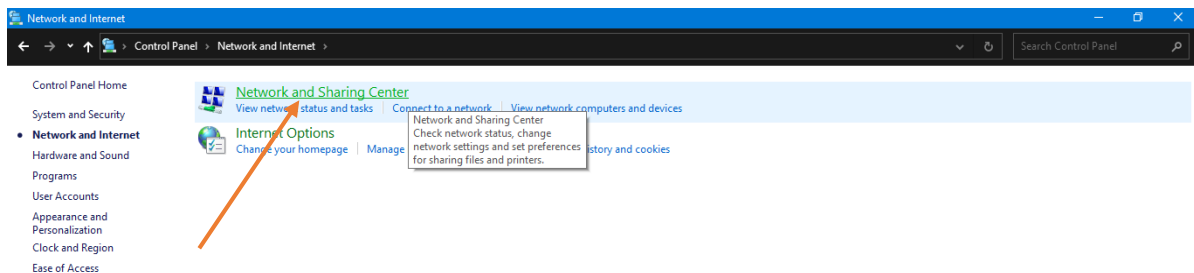


Fig. 12 (Open Network and Internet)

Step 7: From upper left portion of screen select “Change advanced sharing settings”.

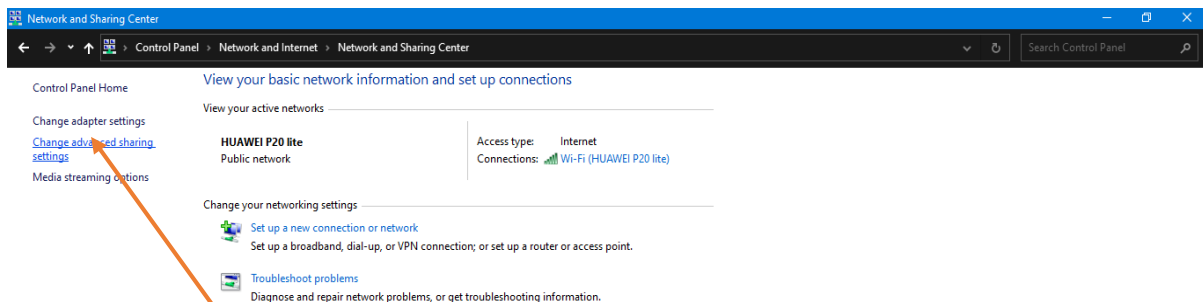


Fig. 13 (Change advance sharing settings)

Step 8: Under “File and printer sharing” select “Turn on file and printer sharing” option.

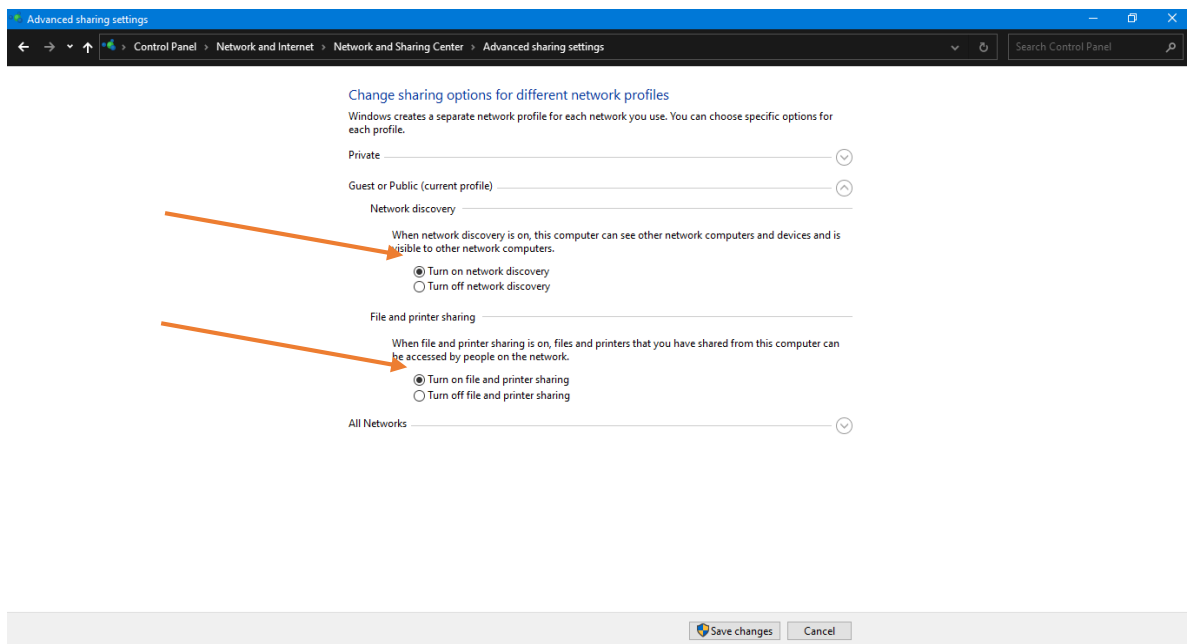


Fig. 14 (Change sharing options for different network profiles)

Step 9: Then click on “**Save changes**”.

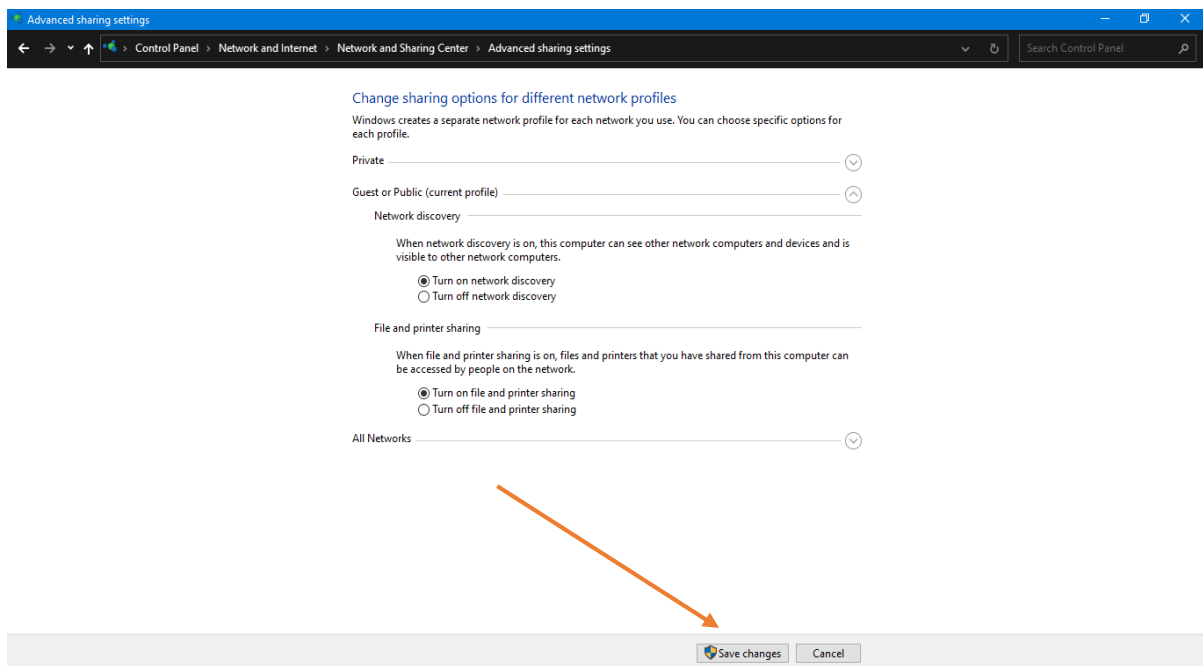


Fig. 15 (Save changes)

Step 10: To allow the two connected systems to view or edit shared data, a folder first needs to be selected and then click on the share tab then select the recipients then click on done.

Step 11: Now on the second system open file explorer, select the system who is sharing the file, enter the password of shared folder if folder is protected with password.

Step 12: View the contents of the shared folder or edit them.

Demonstration on Linux Terminal:

Open Terminal:

Go to search bar in Linux and Search “**Terminal**”. You will see built-in terminal by Linux.

You can also use short key “**Ctrl + Alt + t**”.

You will this screen on your computers.

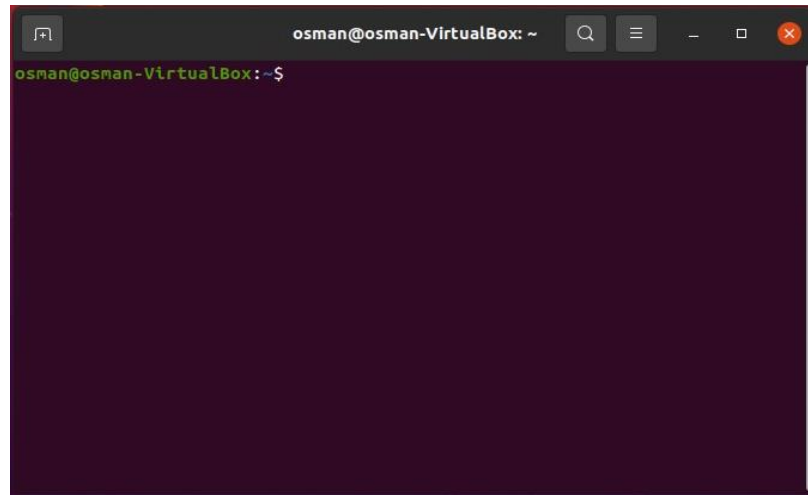


Fig. 16 (Open Terminal)

Start Learning Commands:

When you will open your terminal, you'll be in home directory. It will your current working directory.

The current working directory is **the directory in which the user is currently working in**. Each time you interact with your command prompt, you are working within a directory. By default, when you log into your Linux system, your current working directory is set to your home directory.

You can get current working directory by using command “**pwd**” on terminal.

~\$ pwd

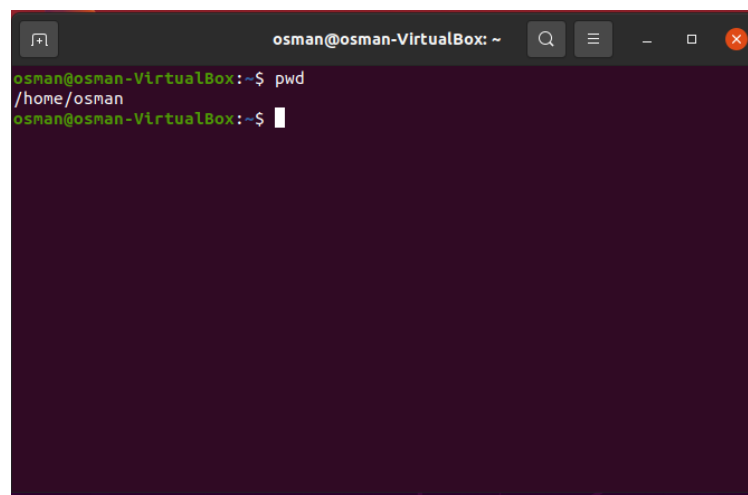
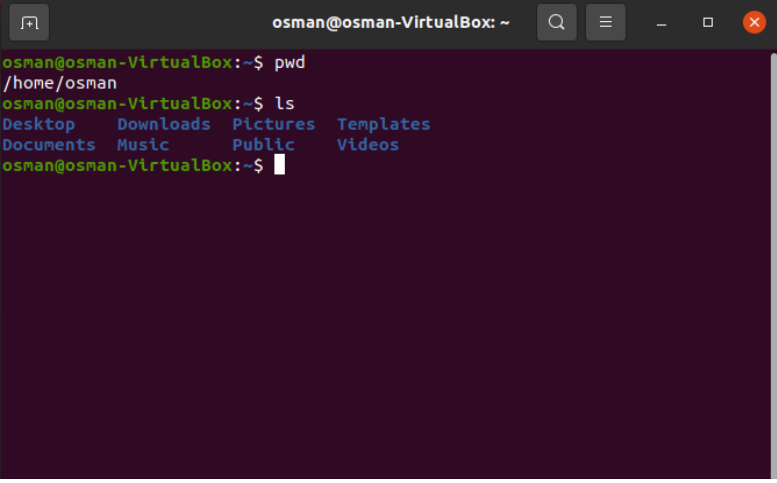


Fig. 17 (Current Working Directory)

To find out what is in your home directory, use the “**ls**” command. (ls is short for "list"). There may be no files visible in your home directory, in which case, nothing will print but the command prompt again.

List contents of your current working directory:

```
~$ ls
```



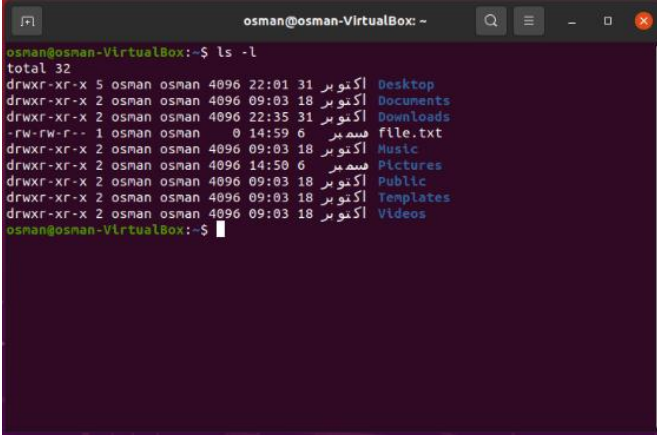
```
osman@osman-VirtualBox: ~  
osman@osman-VirtualBox:~$ pwd  
/home/osman  
osman@osman-VirtualBox:~$ ls  
Desktop  Downloads  Pictures  Templates  
Documents Music      Public    Videos  
osman@osman-VirtualBox:~$
```

Fig. 18 (List Command)

List detailed content of your current working directory:

To see detailed content of your current working directory, use “**ls -l**” command.

```
~$ ls -l
```



```
osman@osman-VirtualBox: ~  
osman@osman-VirtualBox:~$ ls -l  
total 32  
drwxr-xr-x 5 osman osman 4096 22:01 31 اکتوبر Desktop  
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Documents  
drwxr-xr-x 2 osman osman 4096 22:35 31 اکتوبر Downloads  
-rw-rw-r-- 1 osman osman  0 14:59 6 دسمبر file.txt  
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Music  
drwxr-xr-x 2 osman osman 4096 14:50 6 دسمبر Pictures  
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Public  
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Templates  
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Videos  
osman@osman-VirtualBox:~$
```

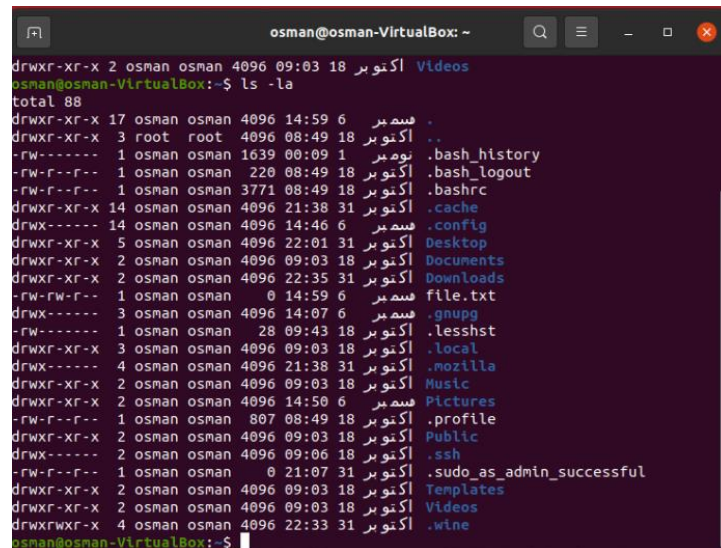
Fig. 19 (List Detailed Information)

Here you can see detailed list of directories. In the list items in blue color are directories and file are in white color.

Show hidden files:

By using “**ls -la**” command, you can get list all files including hidden files.

```
~$ ls -la
```



```
osman@osman-VirtualBox: ~
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Videos
osman@osman-VirtualBox:~$ ls -la
total 88
drwxr-xr-x 17 osman osman 4096 14:59 6 قسمبر .
drwxr-xr-x 3 root root 4096 08:49 18 اکتوبر ---
-rw-r----- 1 osman osman 1639 00:09 1 نومبر .bash_history
-rw-r--r-- 1 osman osman 220 08:49 18 اکتوبر .bash_logout
-rw-r--r-- 1 osman osman 3771 08:49 18 اکتوبر .bashrc
drwxr-xr-x 14 osman osman 4096 21:38 31 اکتوبر .cache
drwx----- 14 osman osman 4096 14:46 6 قسمبر .config
drwxr-xr-x 5 osman osman 4096 22:01 31 اکتوبر Desktop
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Documents
drwxr-xr-x 2 osman osman 4096 22:35 31 اکتوبر Downloads
-rw-rw-r-- 1 osman osman 0 14:59 6 قسمبر file.txt
drwx----- 3 osman osman 4096 14:07 6 قسمبر .gnupg
-rw-r----- 1 osman osman 28 09:43 18 اکتوبر .lessht
drwxr-xr-x 3 osman osman 4096 09:03 18 اکتوبر .local
drwx----- 4 osman osman 4096 21:38 31 اکتوبر .mozilla
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Music
drwxr-xr-x 2 osman osman 4096 14:50 6 قسمبر Pictures
-rw-r--r-- 1 osman osman 807 08:49 18 اکتوبر .profile
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Public
drwx----- 2 osman osman 4096 09:06 18 اکتوبر .ssh
-rw-r--r-- 1 osman osman 0 21:07 31 اکتوبر .sudo_as_admin_successful
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Templates
drwxr-xr-x 2 osman osman 4096 09:03 18 اکتوبر Videos
drwxrwxr-x 4 osman osman 4096 22:33 31 اکتوبر .wine
osman@osman-VirtualBox:~$
```

Fig. 20 (List with Hidden Files)

It is showing hidden files. All the files starting with “.” Are hidden files.

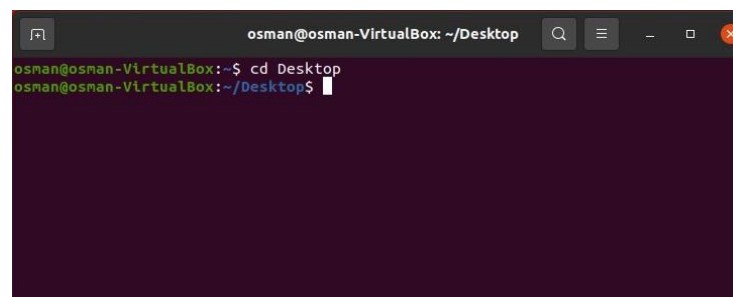
Change to a different directory:

The command `cd directory` means change the current working directory to “**directory**”. The current working directory may be thought of as the directory you are in, i.e., your current position in the filesystem. To change to the directory you have just made, type.

To change current working directory, use command “`cd <next-directory>`”.

It is showing how to change current working directory which is home directory to next directory which is “**Desktop**”.

```
~$ cd Desktop
```



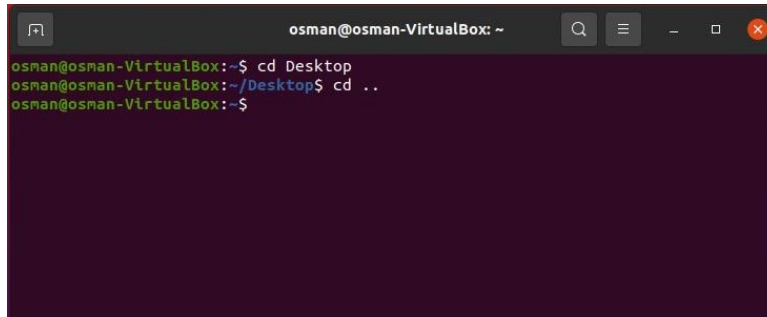
```
osman@osman-VirtualBox: ~/Desktop
osman@osman-VirtualBox:~/Desktop$
```

Fig. 21 (Change Directory)

To go up one level in the directory tree, use two dots.

```
~$ cd ..
```

At this point you should be back in your home directory.



```
osman@osman-VirtualBox: ~  
osman@osman-VirtualBox:~$ cd Desktop  
osman@osman-VirtualBox:~/Desktop$ cd ..  
osman@osman-VirtualBox:~$
```

Fig. 22 (Current Working Directory)

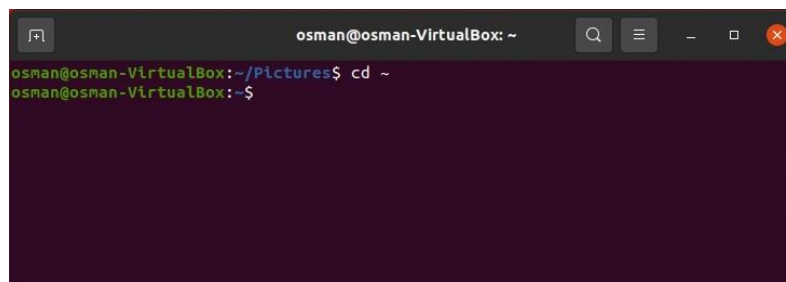
To jump back to your home directory (regardless of how deep in the file tree you happen to be), use either of the two following commands.

`~$ cd`

or

`~$ cd ~`

In Linux systems, the tilde (~) character represents your home directory.



```
osman@osman-VirtualBox: ~/Pictures$ cd ~  
osman@osman-VirtualBox:~$
```

Fig. 23 (Change Directory to home directory)

Create a file:

To create a new file simply run the touch command followed by the name of file you want to create.

`~$ touch textfile.txt`

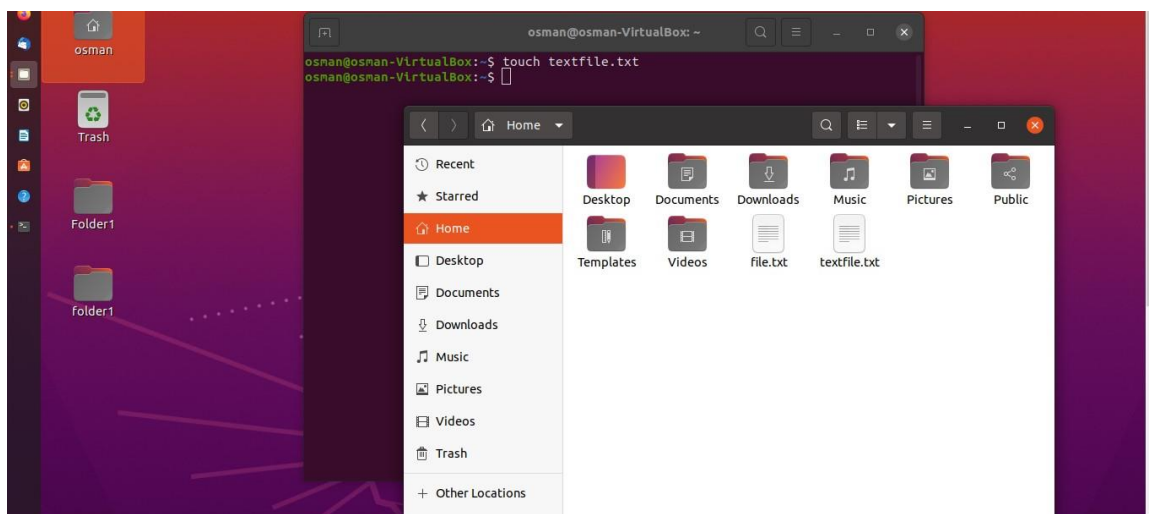


Fig.24 (Create a file)

After running command, a text file of name “**textfile.txt**” has been created.

Creating a File with “cat” Command:

The “**cat**” command is mainly used to read and concatenate files, but it can also be used for creating new files.

To create a new file run the cat command followed by the redirection operator “**>**” and the name of the file you want to create. Press Enter type the text and once you are done press the CTRL+D to save the files.

```
~$ cat > file1.txt
```

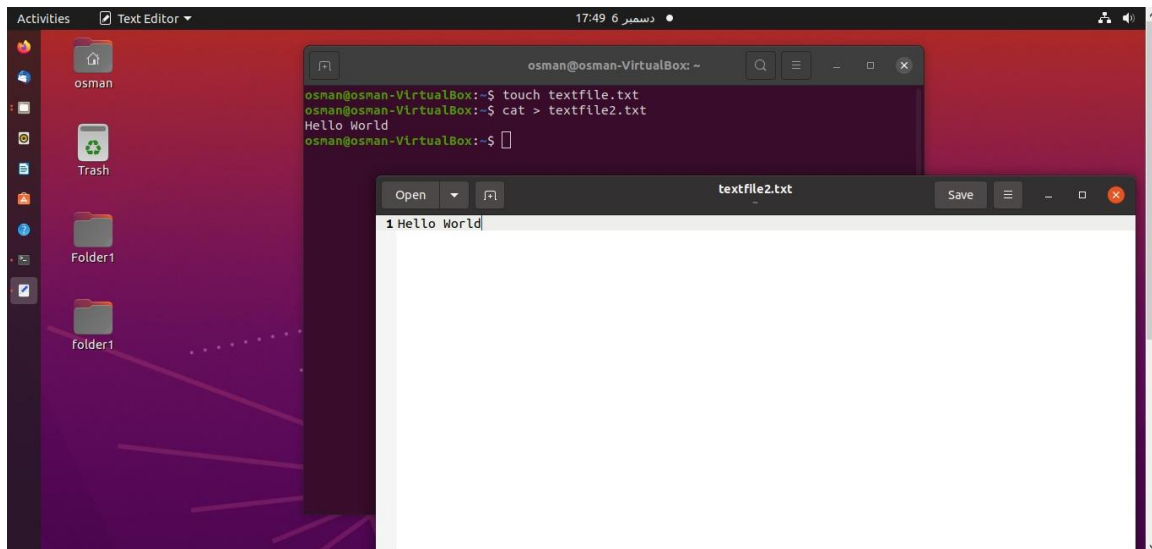


Fig. 25 (Create a file with cat)

cat (concatenate) command is very frequently used in Linux. It reads data from the file and gives their content as output.

To view a single file:

```
~$ cat filename
```

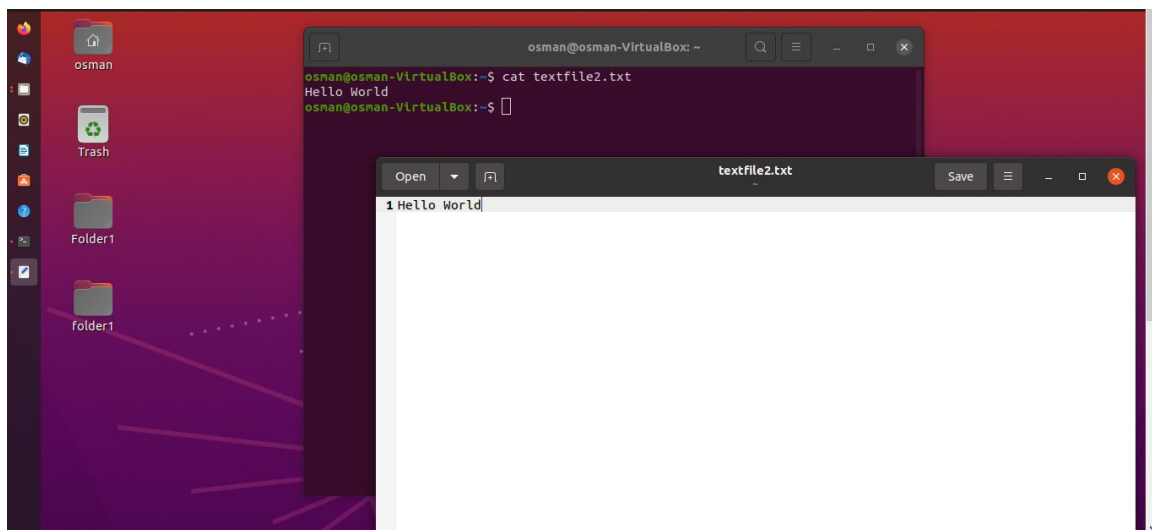


Fig. 26 (Create a file)

Create Directory:

Now let's learn how to create your own directory with the help of command prompt in Linux.

To directory Linux has command “**mkdir**” stands for 'make directory'. With the help of “**mkdir**” command, you can create a new directory wherever you want in your system. Just type “**mkdir <dir name>**”, in place of <dir name> type the name of new directory, you want to create and then press enter.

Syntax:

```
~$ mkdir <dirname>
```

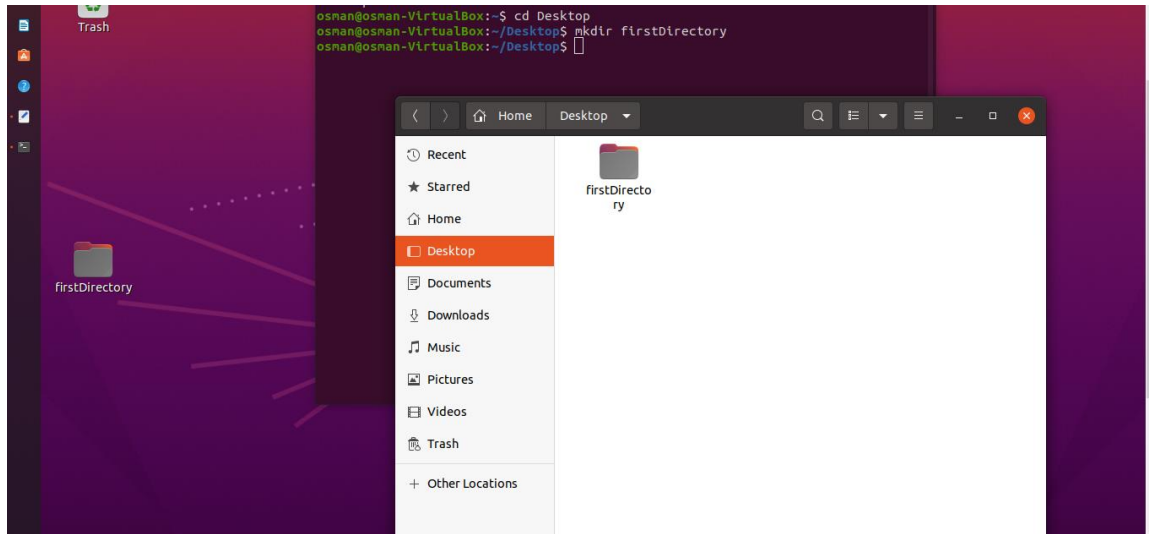


Fig. 27 (Make Directory)

Copy Files and Directories:

The “**cp**” command is the primary method for copying files and directories in Linux. Virtually all Linux distributions can use “**cp**”. The basic format of the command is:

```
~$ cp source_file target_file
```

For example:

```
~$ cp textfile2.txt file.txt
```

This Linux command creates a copy of the “**my_file.txt**” file and renames the new file to “**my_file2.txt**”.

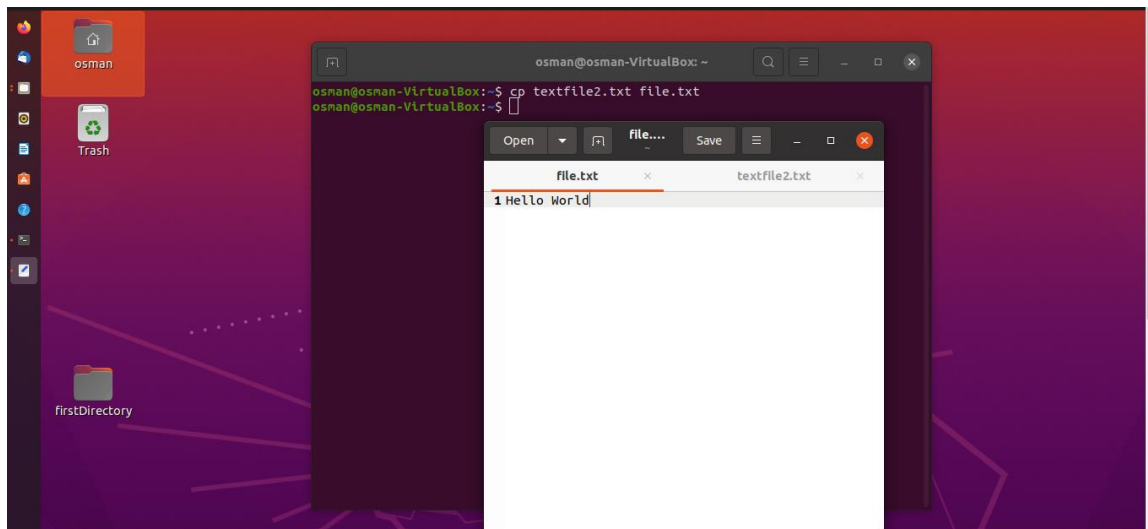


Fig. 28 (Copy File or Directory)

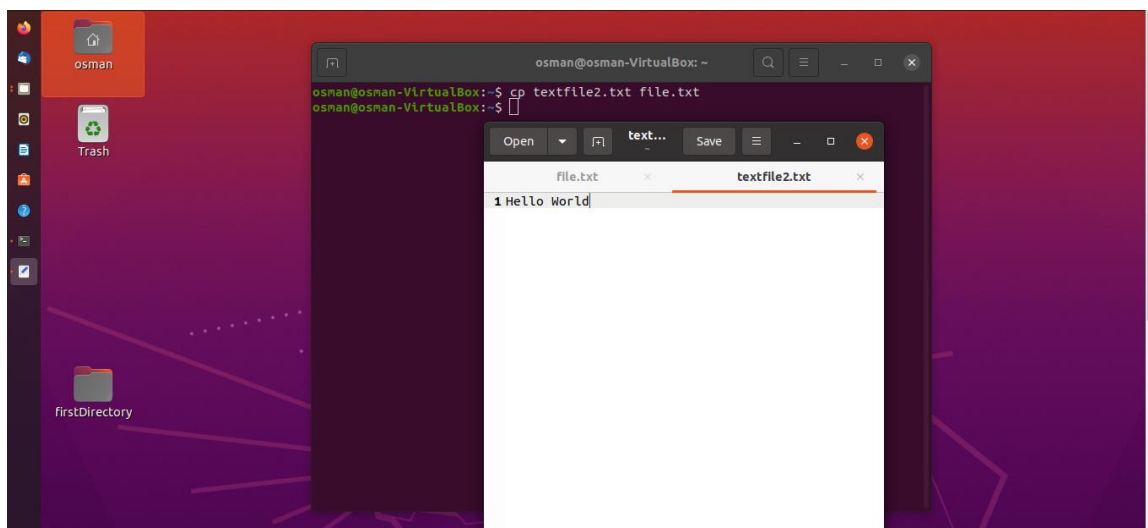


Fig. 29 (Copy File)

Copy File to Another Directory in Linux:

To copy a file from the directory you're working in to a different location, use the command:

```
~$ cp file.txt /new_directory
```

You don't need to rename the file unless there's already one with the same name in the target directory.

To specify a path for the source file:

```
~$ cp /etc/my_file.txt /new_directory
```

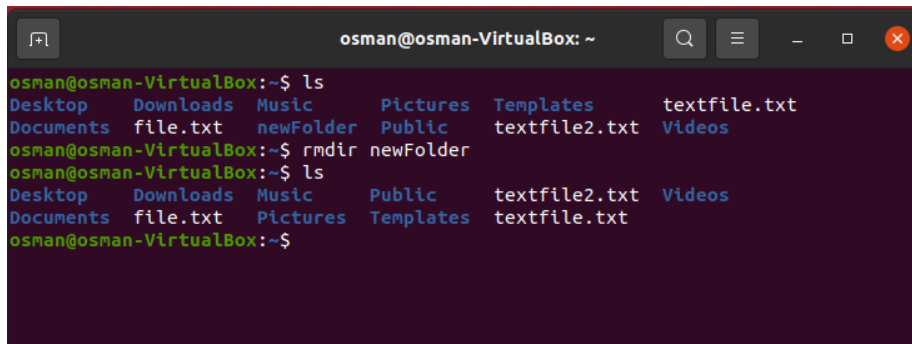
This lets you copy without having to change directories. The “**cp**” command will create the “/new_directory” if it doesn't exist.

Removing Directories with rmdir:

“**rmdir**” is a command-line utility for deleting empty directories. It is useful when you want to delete a directory only if it is empty, without needing to check whether the directory is empty or not.

To delete a directory with `rmdir`, type the command followed by the name of the directory you want to remove. For example, to delete a directory named `dir1` you would type:

```
~$ rmdir directory
```



```
osman@osman-VirtualBox: ~
osman@osman-VirtualBox:~$ ls
Desktop  Downloads  Music      Pictures  Templates  textfile.txt
Documents file.txt   newFolder  Public    textfile2.txt Videos
osman@osman-VirtualBox:~$ rmdir newFolder
osman@osman-VirtualBox:~$ ls
Desktop  Downloads  Music      Public    textfile2.txt Videos
Documents file.txt   Pictures  Templates textfile.txt
osman@osman-VirtualBox:~$
```

Fig. 30 (Remove Directory)

If the directory is not empty, you will get the following error:

```
rmdir: failed to remove 'directory': No such file or directory
```

In this case, you will need to use the `rm` command or manually remove the directory contents before you can delete it

For example, to delete a directory named `dir1` along with all of its contents you would type:

```
~$ rm -r dir1Copy
```

If a directory or a file within the directory is write-protected, you will be prompted to confirm the deletion. To remove a directory without being prompted, use the `-f` option.

Move file or directory:

To move a file from one folder to another with `mv`, remember the syntax “**mv <source> <destination>**”. For instance, to move the file `example.txt` into your `Documents` directory.

```
~$ touch example.txt
```

```
~$ mv example.txt /Documents
```

```
~$ ls /Documents
```

```
~$ example.txt
```

Just like when you move a file by dragging and dropping it onto a folder icon, this command doesn't replace **Documents** with **example.txt**. Instead, **mv** detects that **Documents** is a folder, and places the **example.txt** file into it.

Self-Learning:

Linux is not difficult to learn. The more experience you have using technology, the easier you'll find it to master the basics of Linux. With the right amount of time, you can learn how to use the basic Linux commands in a few days. It will take you a few weeks to become more familiar with these commands.

Ubuntu tutorial Command Line for Beginners.

<https://ubuntu.com/tutorials/command-line-for-beginners#1-overview>

Task 01: Linux Terminal Commands**[30 minutes/ 30 marks]**

Note: Use Only Linux Terminal Commands and take Screenshot at each step.

Make directories of name F1, F2, F3 and F4.

Make file of named “**file1.txt**” into directory F1.

Make file of named “**file2.txt**” into directory F2.

Make file of named “**file3.txt**” into directory F3.

Make file of named “**file4.txt**” into directory F4.

Move directory F3 into F1 and F4 into F2.

Copy F3 directory to F4 (F3 is destination directory and F4 is Source directory).

Post-Lab Activities:

Task Manager:

The Windows Task Manager is a powerful tool which provides useful information, from your system's overall resource usage to detailed statistics about each process.

Explore Task Manager:

Windows offers many ways to launch the Task Manager. Press Ctrl+Shift+Esc to open the Task Manager with a keyboard shortcut or right-click the Windows taskbar and select "Task Manager."

You can also press Ctrl+Alt+Delete and then click "Task Manager" on the screen that appears or find the Task Manager shortcut in your Start menu.

You can also go to search bar, Search for "Task Manager".

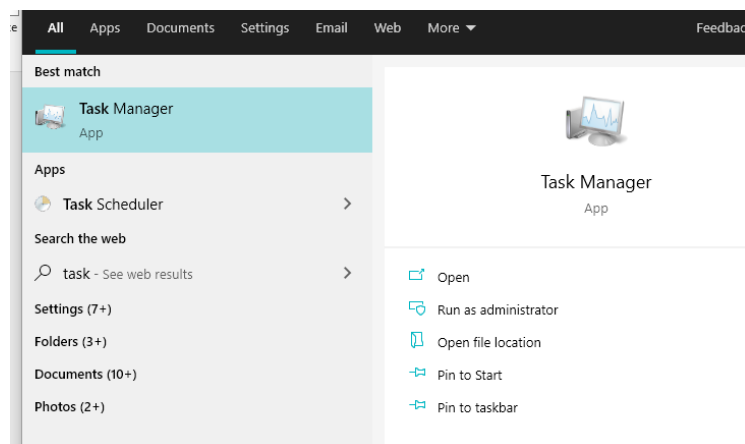


Fig. 31 (Task Manager)

You can locate the Task Manager option as shown above.

All the running processes will appear on Task Manager. The Task Manager Window look as shown in the figure below. The first time you launch the Task Manager, you'll see a small, simple window. This window lists the visible applications running on your desktop, excluding background applications.

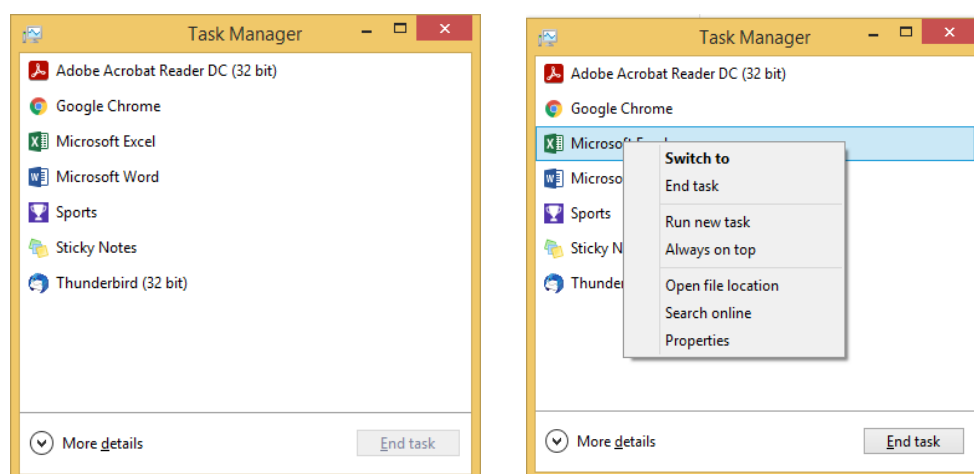


Fig. 32 (Task Manager Simple View)

You can also right-click an application in this window to access more options:

- **Switch To:** Switch to the application's window, bringing it to the front of your desktop and putting it in focus. This is useful if you're not sure which window is associated with which application.
- **End Task:** End the process. This works the same as the "End Task" button.
- **Run New Task:** Open the Create New Task window, where you can specify a program, folder, document, or website address and Windows will open it.
- **Always On Top:** Make the Task Manager window itself "always on top" of other windows on your desktop, letting you see it at all times.
- **Open File Location:** Open a File Explorer window showing the location of the program's .exe file.
- **Search Online:** Perform a Bing search for the program's application name and file name. This will help you see exactly what the program is and what it does.
- **Properties:** Open the Properties window for the program's .exe file. Here you can tweak compatibility options and see the program's version number, for example.

While the Task Manager is open, you'll see a Task Manager icon in your notification area. This shows you how much CPU (central processing unit) resources are currently in use on your system, and you can mouse over it to see memory, disk, and network usage. It's an easy way to keep tabs on your computer's CPU usage.

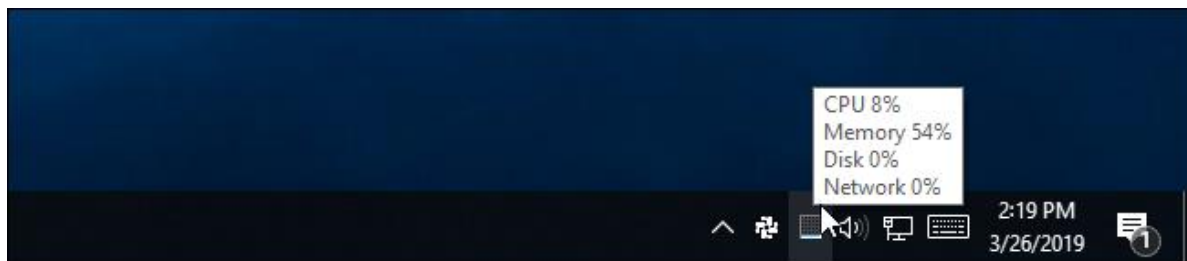


Fig. 33 (Task Manager at Notification Area)

Task Manager Detail View:

You can click "More details" option at bottom of the window to see detailed view.

To see the Task Manager's more advanced tools, click "More Details" at the bottom of the simple view window. You'll see the full, tabbed interface appear. The Task Manager will remember your preference and will open to the more advanced view in the future. If you want to get back to the simple view, click "Fewer Details."

With More Details selected, the Task Manager includes the following tabs:

- **Processes:** A list of running applications and background processes on your system along with CPU, memory, disk, network, GPU, and other resource usage information. You can click the CPU column to see running processes sorted by CPU usage. The top of the column also shows the total resource usage of all the processes on your system.
- **Performance:** Real-time graphs showing total CPU, memory, disk, network, and GPU resource usage for your system. You'll find many other details here, too, from your computer's IP address to the model names of your computer's CPU and GPU.
- **App History:** Information about how much CPU and network resources apps have used for your current user account. This only applies to new Universal Windows Platform (UWP)

apps—in other words, Store apps—and not traditional Windows desktop apps (Win32 applications.)

- **Startup:** A list of your startup programs, which are the applications Windows automatically starts when you sign into your user account. You can disable startup programs from here, although you can also do that from Settings > Apps > Startup.
- **Users:** The user accounts currently signed into your PC, how much resources they're using, and what applications they're running.
- **Details:** More detailed information about the processes running on your system. This is basically the traditional “Processes” tab from the Task Manager on Windows 7.
- **Services:** Management of system services. This is the same information you'll find in services.msc, the Services management console.

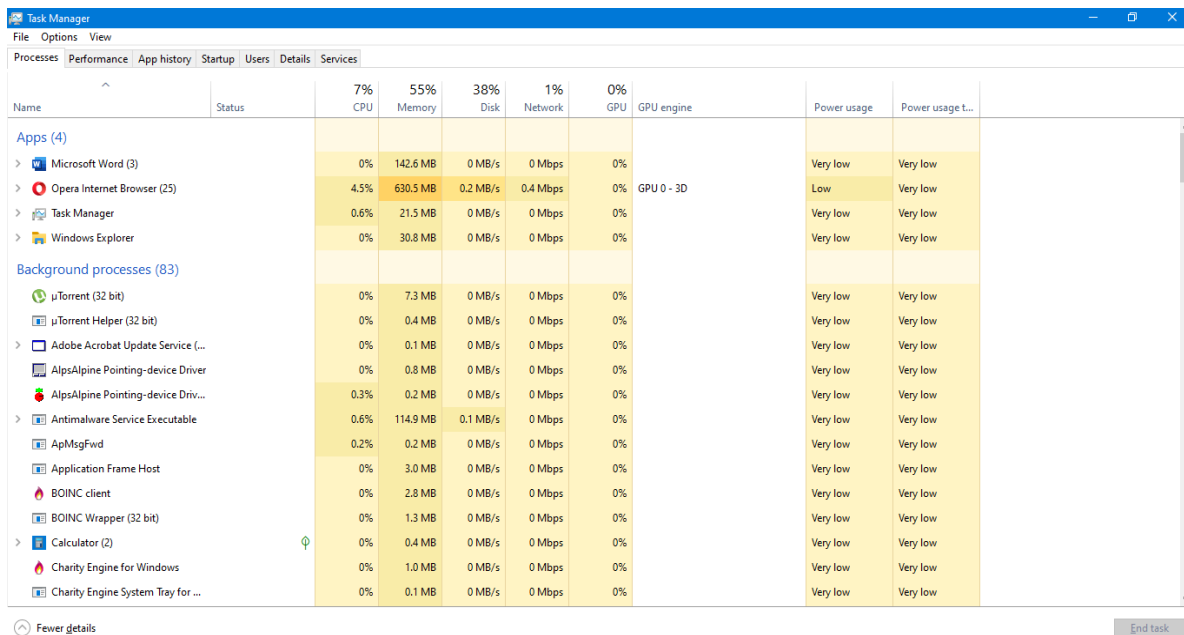


Fig. 34 (Task Manager Detailed View)

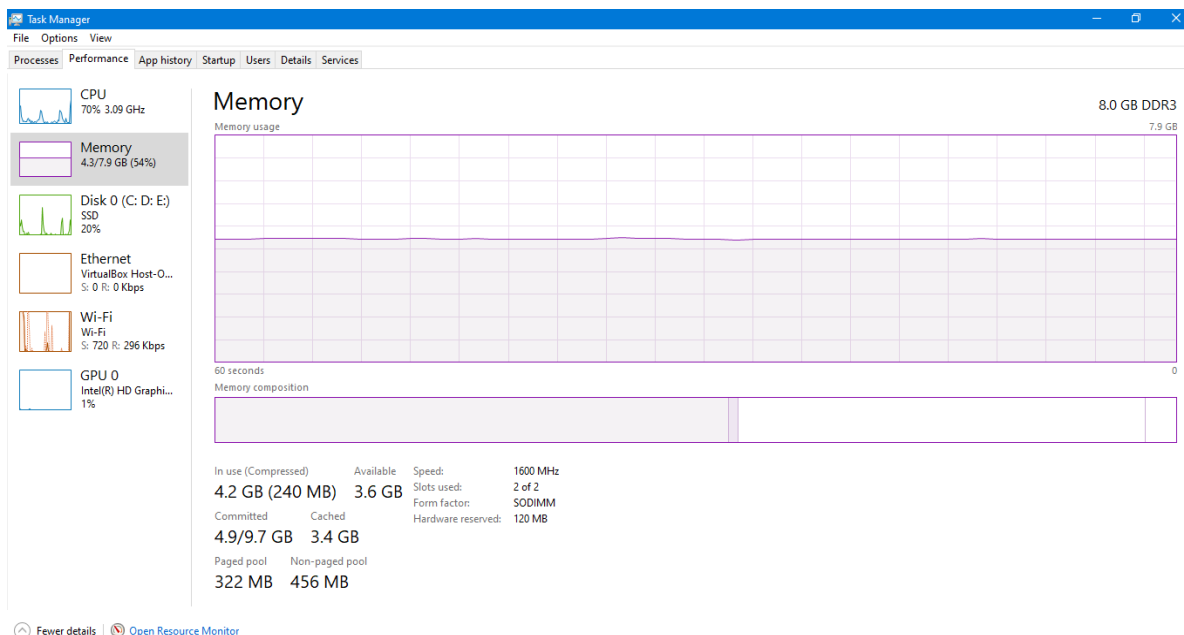


Fig. 35 (Performance)

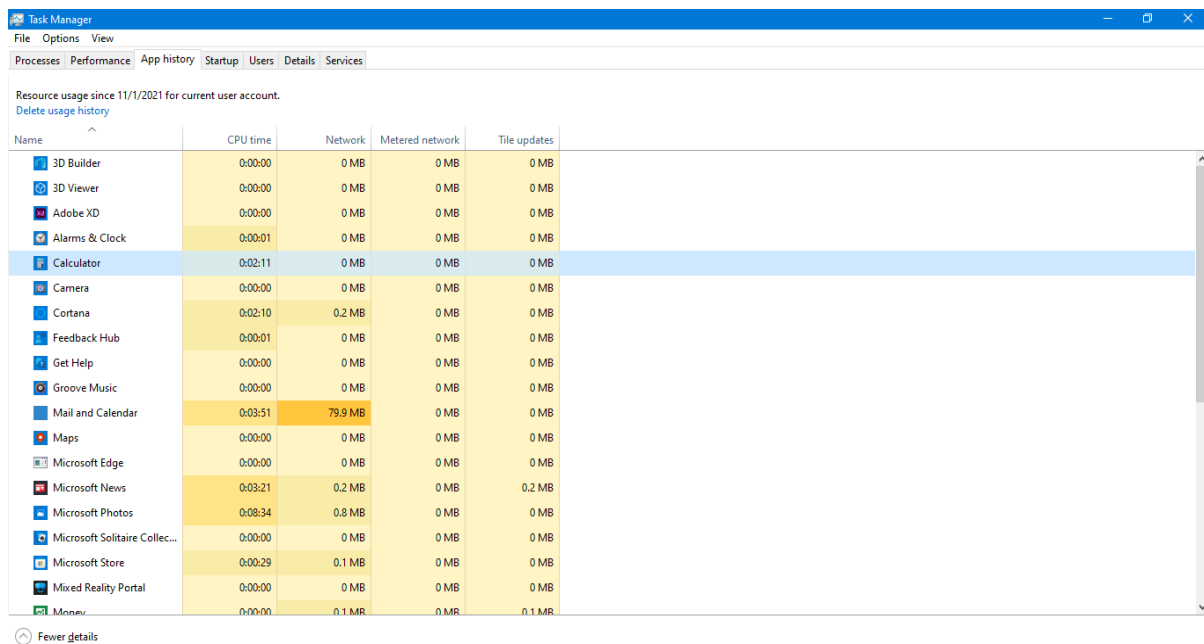


Fig. 36 (App History)

Task Manager also include detail of system use of different users, detail of other running processes, disabled Programs and processes.

Task 01: Describe Linux Terminal Commands

[Estimated 50 minutes / 30 marks]

Write the syntax and function of the following commands in text file. Also attach the screenshot after running these on Linux command line interface on your PC. (Capture full terminal screen).

1. help
2. mkdir
3. cd xyz
4. cd ..
5. cd ~
6. ls
7. rm myfile
8. cp file1 file2
9. cat myfile

Submissions:

- For Pre-Lab Activity:
 - Perform Pre-Lab as mentioned above.
 - Take screenshot of each step, (by name screenshot1.png screenshot2.png ...) and make a folder on Desktop by name “RollNo_Pre-Lab_03”.
 - Save screenshots in folder “RollNo_Pre-Lab_03”.
 - Then zip whole folder (RollNo_Pre-Lab_03.zip), and email to your respective TA.
- For In-Lab:
 - Perform mentioned tasks of In-Lab activity.
 - Make a folder on Desktop by name “RollNo_In-Lab_03”.
 - Take screenshot of each and save in folder “RollNo_In-Lab_03”.
- For Post-Lab Activity:
 - Perform Post-Lab as mentioned above.
 - Take screenshot of each command, (by name screenshot1.png screenshot2.png ...) and write function of each command in text file of named “Linux Command” and make a folder on Desktop by name “RollNo_Post-Lab_03”.
 - Save screenshots and text file in folder “RollNo_Post-Lab_03”.
 - Then zip whole folder (RollNo_Post-Lab_03.zip), and email to your respective TA.

Evaluations Metric:

- All the Lab tasks will be evaluated offline by TA's.
- Division of Pre-Lab tasks: [20 marks]
 - Task 01 (Make Changes to Account on PC) [20 marks]
- Division of In-Lab tasks: [30 marks]
 - Task 01 (Linux Terminal) [25 marks]
 - Full Terminal Screenshots [05 marks]
- Division of Post-Lab tasks: [30 marks]
 - Task 01 (Describe Linux Terminal Commands) [30 marks]

References and Additional Material:

- Windows Control Panel
<http://aeromaniacs.com/public/manuals/windows7/Lesson6-ControlPanel.pdf>
https://www.lacrosselibrary.org/sites/default/files/class_handout_windows_7_control_panel.pdf
- Windows Task Manager
<https://www.technorms.com/46638/guide-to-task-manager-in-windows-10>
- Ubuntu tutorial Command Line for Beginners:
<https://ubuntu.com/tutorials/command-line-for-beginners#1-overview>

Lab Time and Activity Simulation Log:

- Slot – 01 – 00:00 – 00:15: Settlement and attendance
- Slot – 02 – 00:15 – 00:30: Discussion on topics, some nouns and context
- Slot – 03 – 00:30 – 00:45: Demonstration on screen (Linux Terminal)
- Slot – 04 – 00:45 – 01:00: Demonstration on screen (Linux Terminal)
- Slot – 05 – 01:00 – 01:15: Demonstration on Computers Connection
- Slot – 06 – 01:15 – 01:30: Demonstration on Computers Connection
- Slot – 07 – 01:30 – 01:45: Give Tasks and discussion on each task
- Slot – 08 – 01:45 – 02:00: Activity time slot (Task 01: Linux Terminal)
- Slot – 09 – 02:00 – 02:15: Activity time slot (Task 01: Linux Terminal)
- Slot – 10 – 02:15 – 02:30: Discussion on Post-Lab
- Slot – 11 – 02:30 – 02:45: Evaluation (In-Lab)
- Slot – 12 – 02:45 – 03:00: Evaluation and Next Instructions