Programming Fundamentals

Lab Manual 1

CLO:

- Activity

Learning Outcomes:

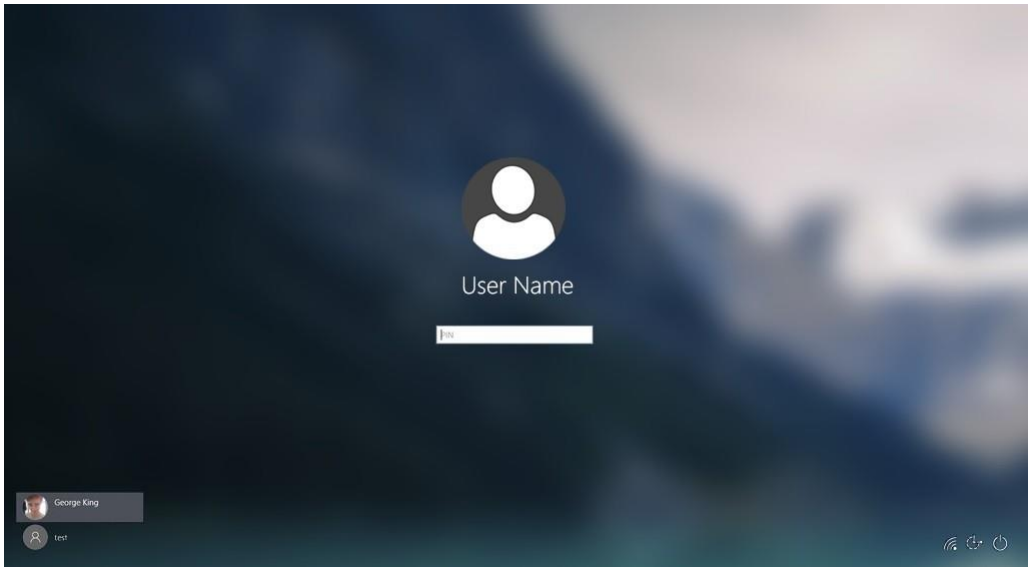
- Students shall be able to understand the GUI and CLI use of computer
- Student shall be able to write directory and file management commands

Ali is a student and he got admission in UET Lahore. He bought a new laptop but he is new in using computers. He does not know how to use the computer properly and manage different stuff. His University teacher shared different soft copy books and files with him for different subjects. Now he is confused about how to manage different files for different subjects. Let's help him.

Ali is happy and excited to know different features of computers.

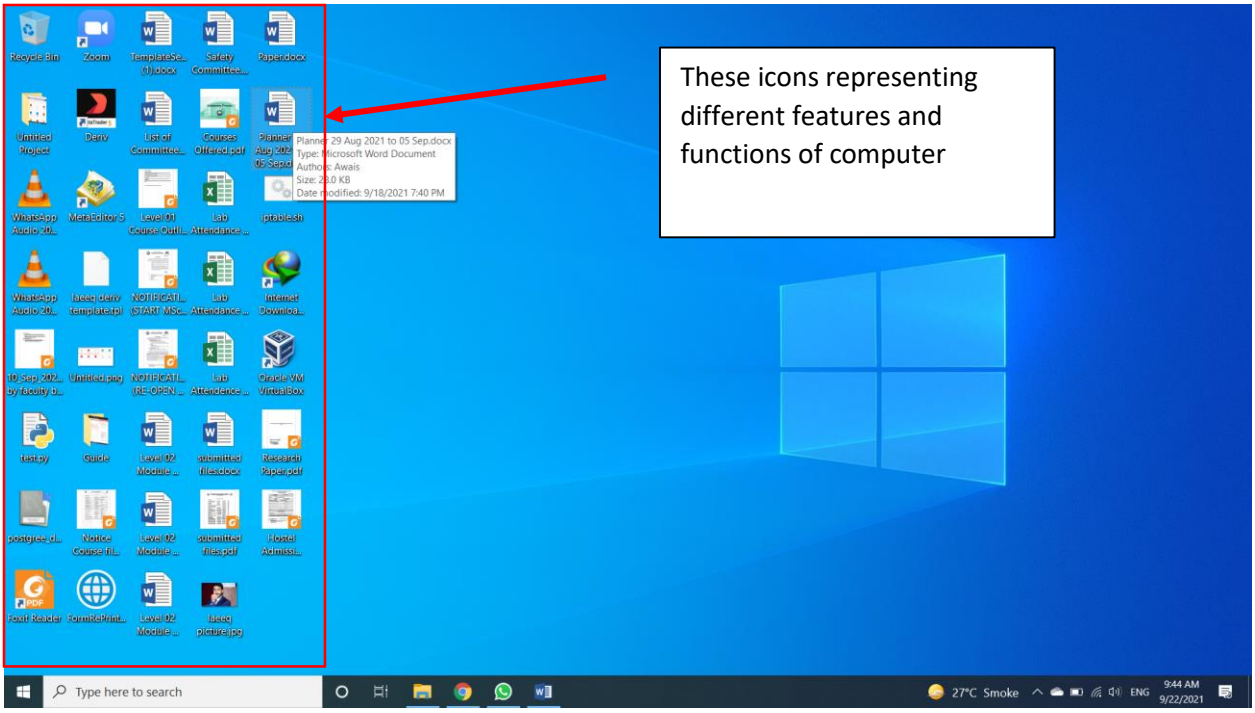
He presses the Power button to start the laptop. Power button is shown in the picture below.

After taking some seconds it will appear on the screen.



Ali enters his password and presses the Enter button from the keyboard.

The first screen appeared on the monitor after entering the correct password is called Desktop. As shown in the figure below.



Ali got very excited now. He can see different files, folders and icons on the screen.

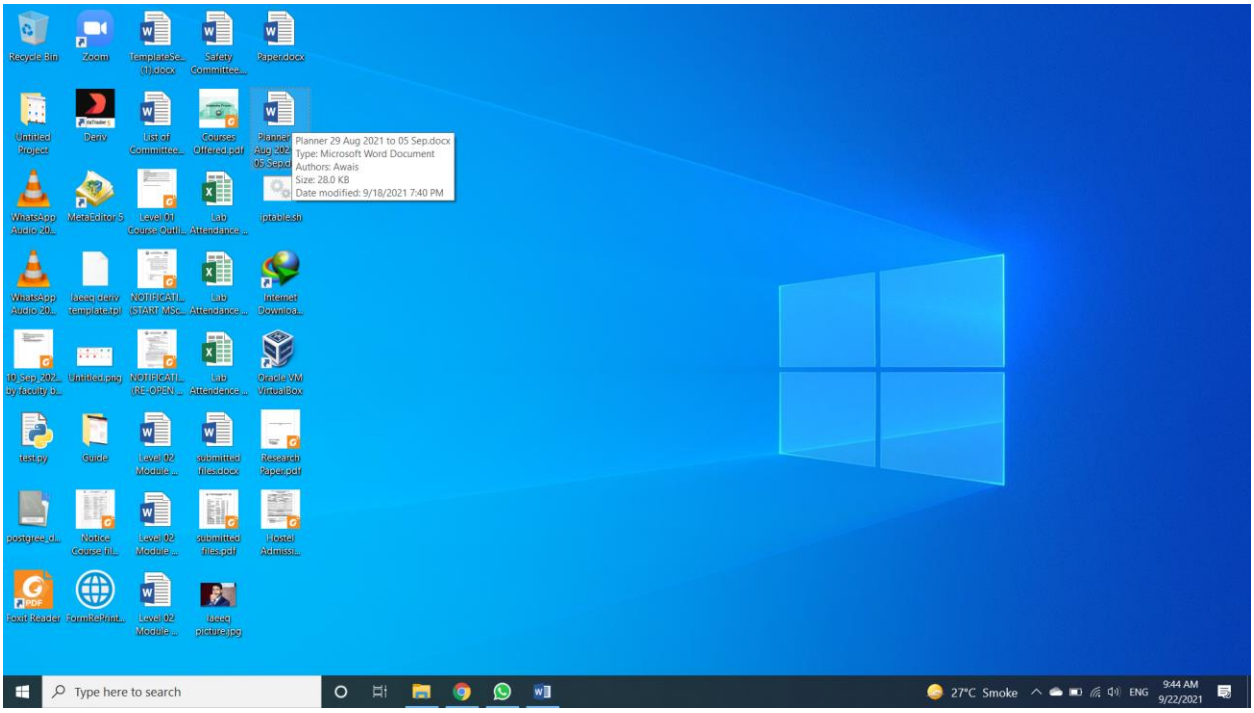
Listen Ali. This is the Graphical User interface, it means you can control and perform different tasks on the computer by just interacting with these things you can see on the monitor screen.

Ali, you know you can control your computer with two different methods.

1. GUI (Graphical User Interface)
2. CLI (Command Line Interface)

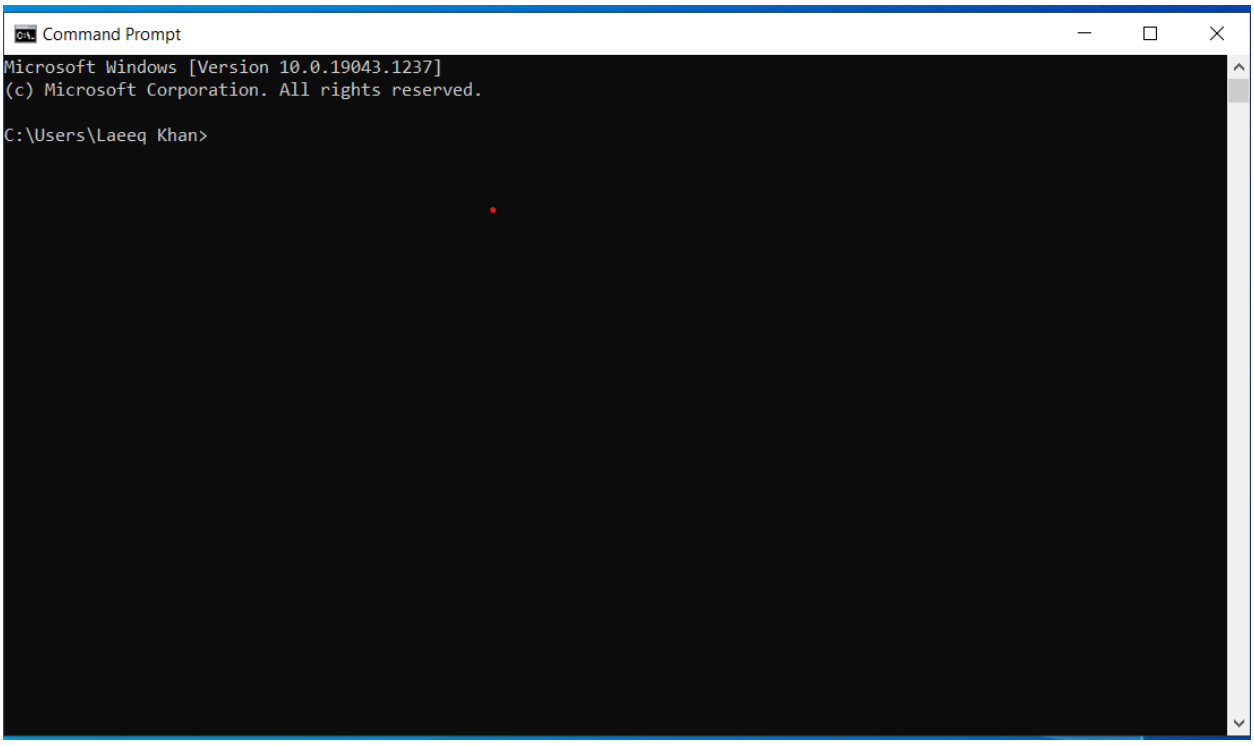
GUI (Graphical User Interface)

If you use your computer by interacting with graphics, images and icons it is called **Graphical User Interface.** In a graphical user interface, the user can use the computer mouse or Keyboard to click on buttons, and icons.

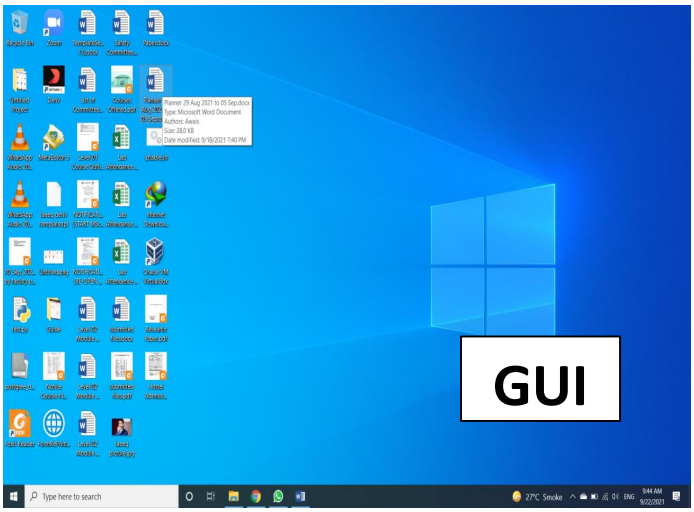


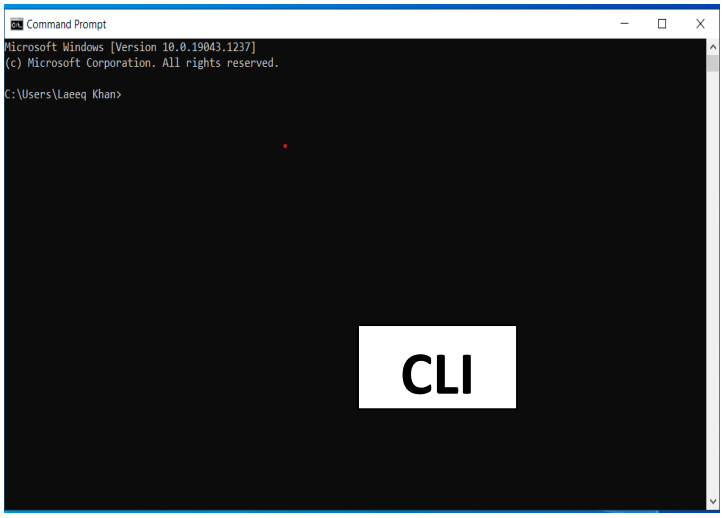
CLI (Command Line Interface)

Using a computer by writing commands on this black screen is called command line interface or CLI.



Now we will Help **Ali** to use computers with both GUI and CLI.





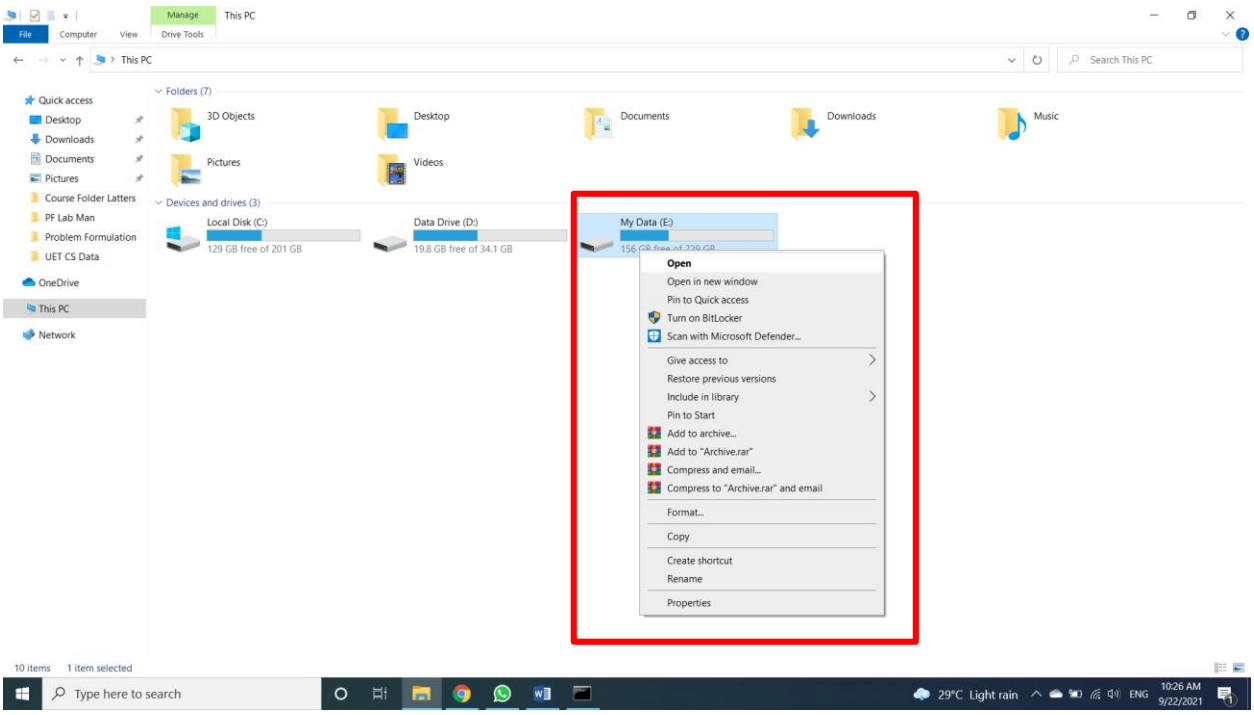
Why Both?

GUI	CLI
GUI is easy to use	CLI is hard to use
GUI is slow	CLI is fast
GUI is good for non-technical people	CLI is good for technical people
GUI is limited	CLI is broad (Have more feature access)

Now Ali has been given some soft copy books by his teacher. Let's help him to manage the files properly.

Let's learn the first step.

To open a drive in GUI (Graphical User Interface) we double click on the drive icon or right click on the icon and select the open option from the list.



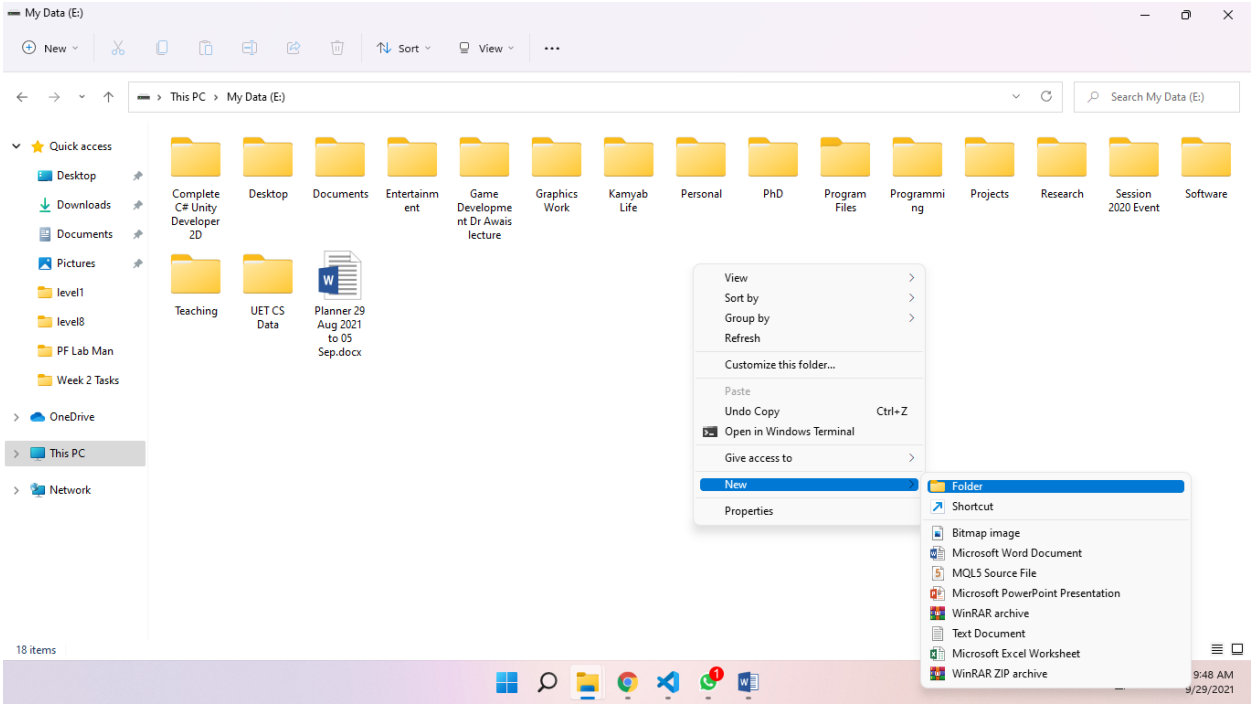
Let's learn to create a folder

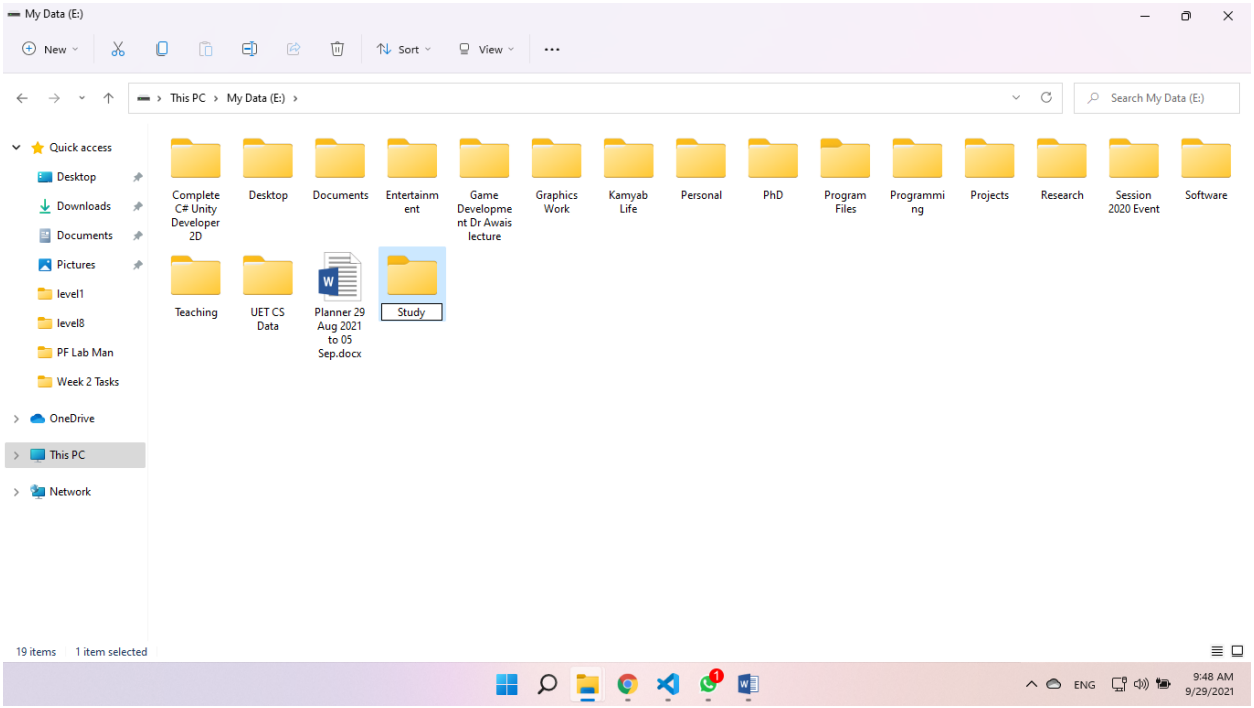
We need to create a **Study** folder and inside the study folder we need three more folders with following names **Programming, I2C, English**.

We are going to create first folder with name **"Study"** by following these steps

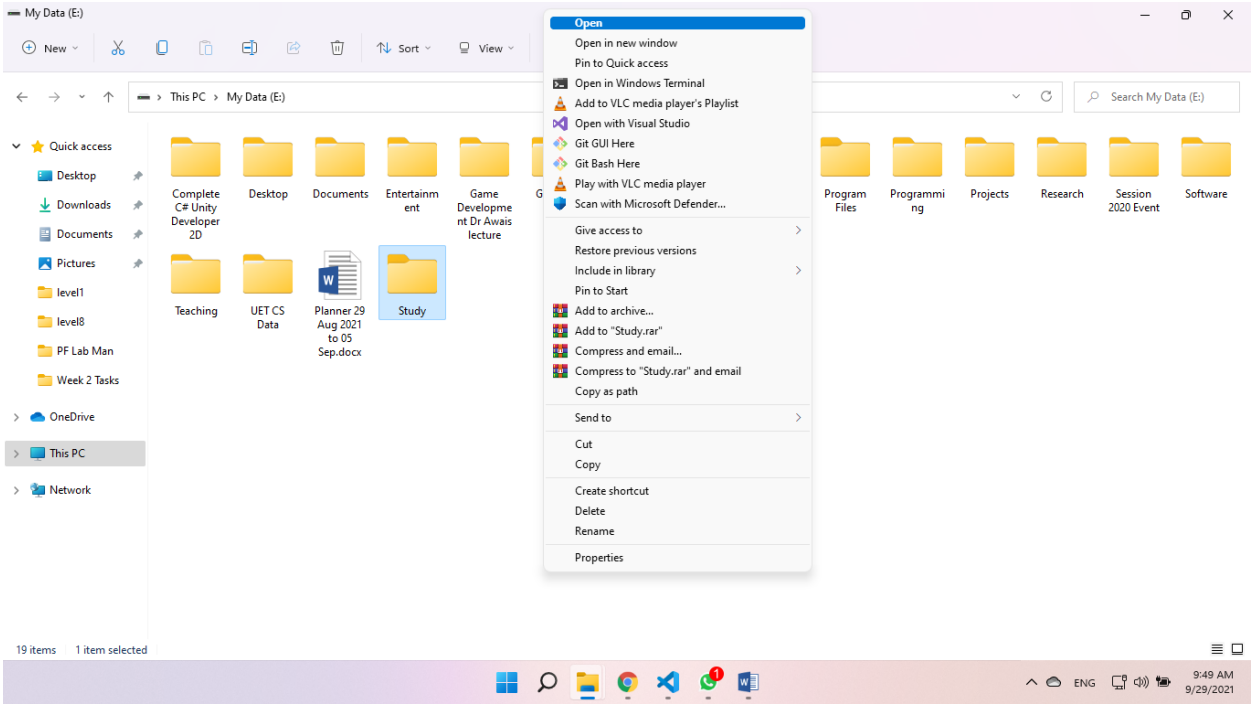
Using GUI

1. Right click on blank space
2. Select the New option from the list
3. Click on New Folder
4. Name it with your choice





Now Right click on the folder and select **open** option

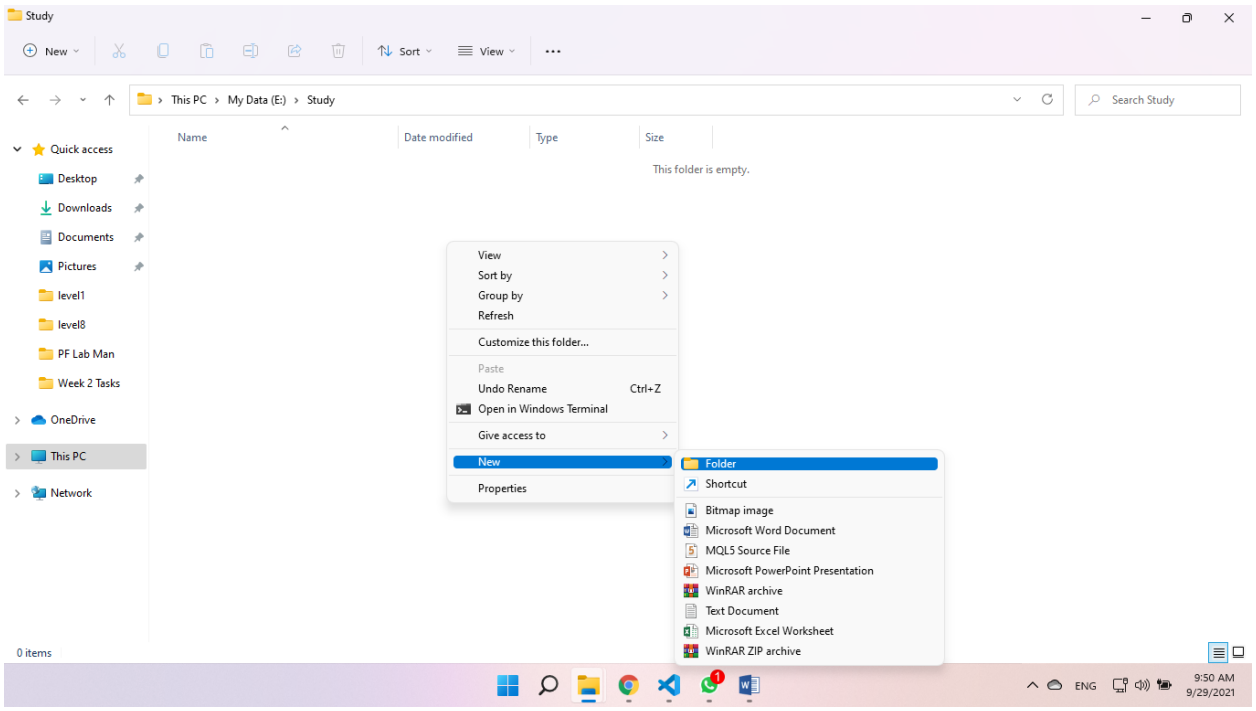


It will open the folder.

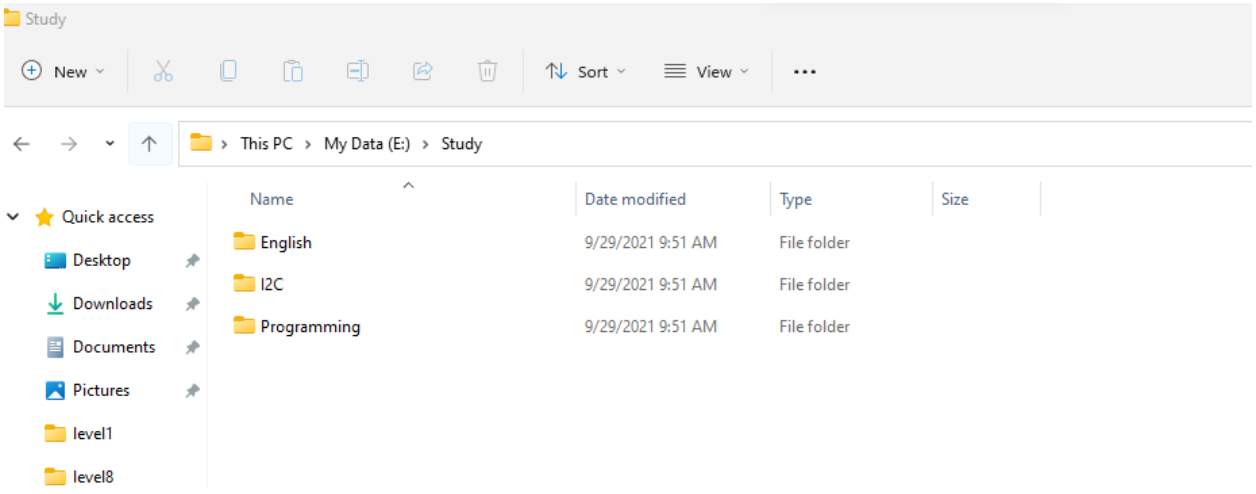
We need to create more three folders inside this folder with following names

1. Programming
2. I2C
3. English

Follow the same steps as we did before. Right click on the blank space and choose **New** and then **Folder** option from the list.

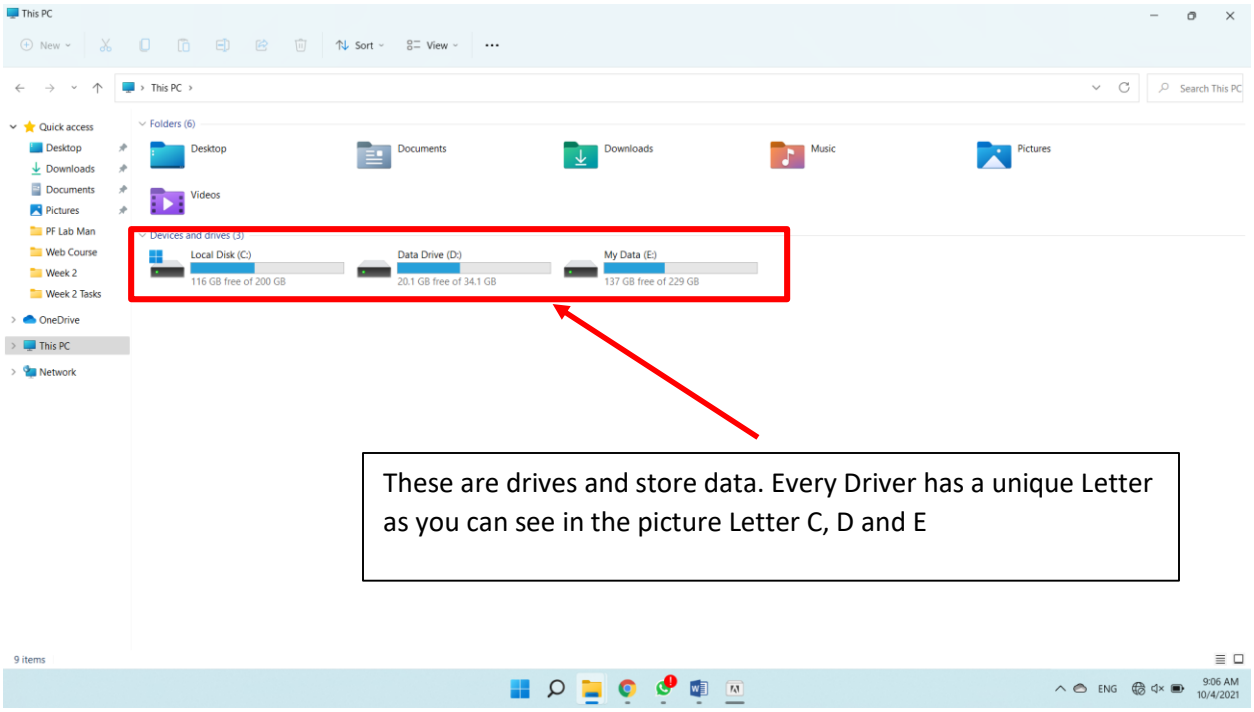


This image is showing the new created folders



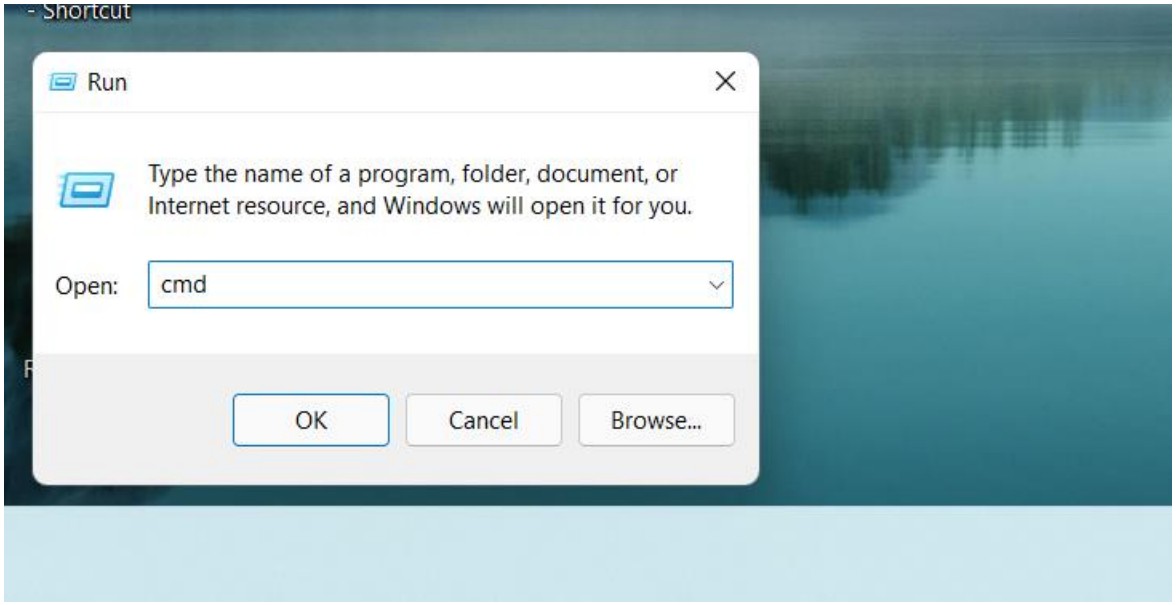
Ali you are computer Science Student you should know to use the computer with Command Line Interface (CLI)

Do the same thing in CLI

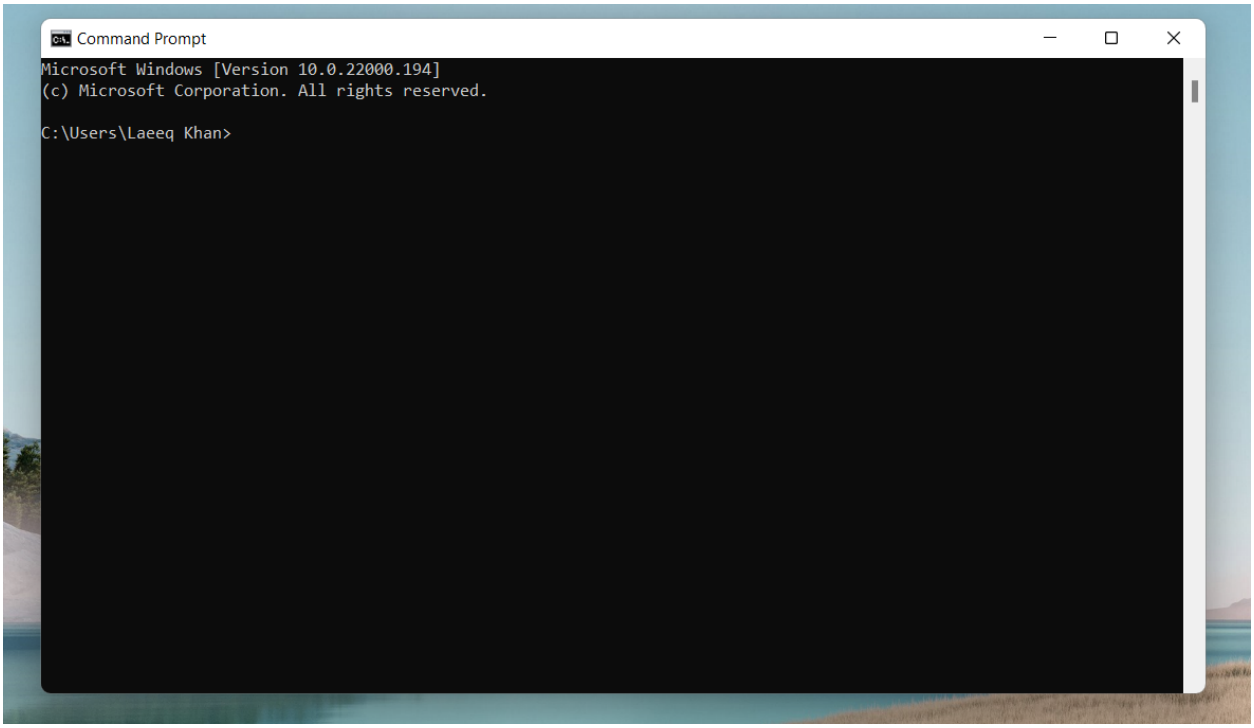


To open the CLI in your computer Press **Widow + R** (It means keep pressing window button and then press R button from the keyboard and release the buttons)

Write **cmd** keyword in the run and press Ok or hit Enter Button from the keyboard.

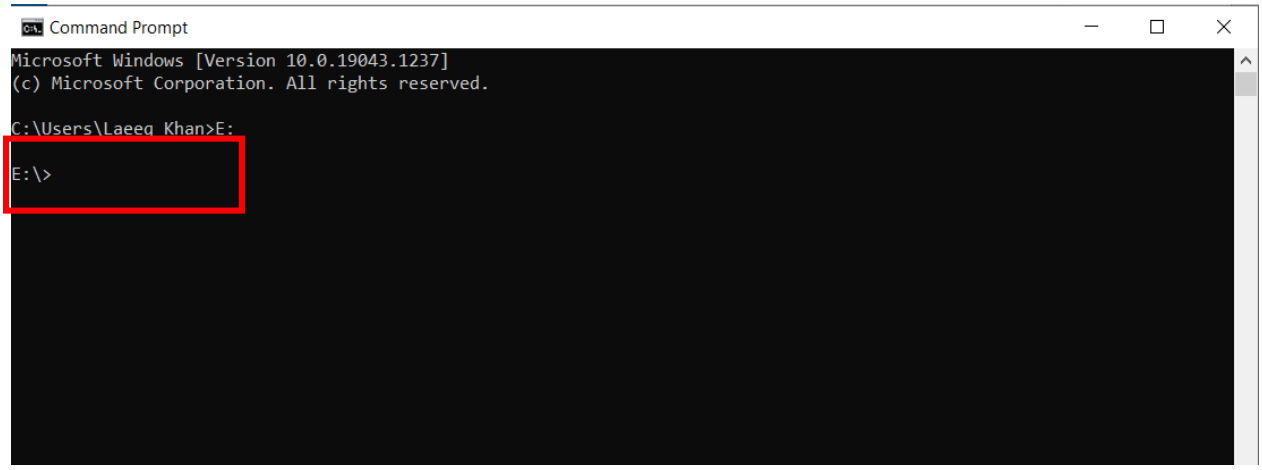


It will appear the CMD on the screen as you can see in the picture

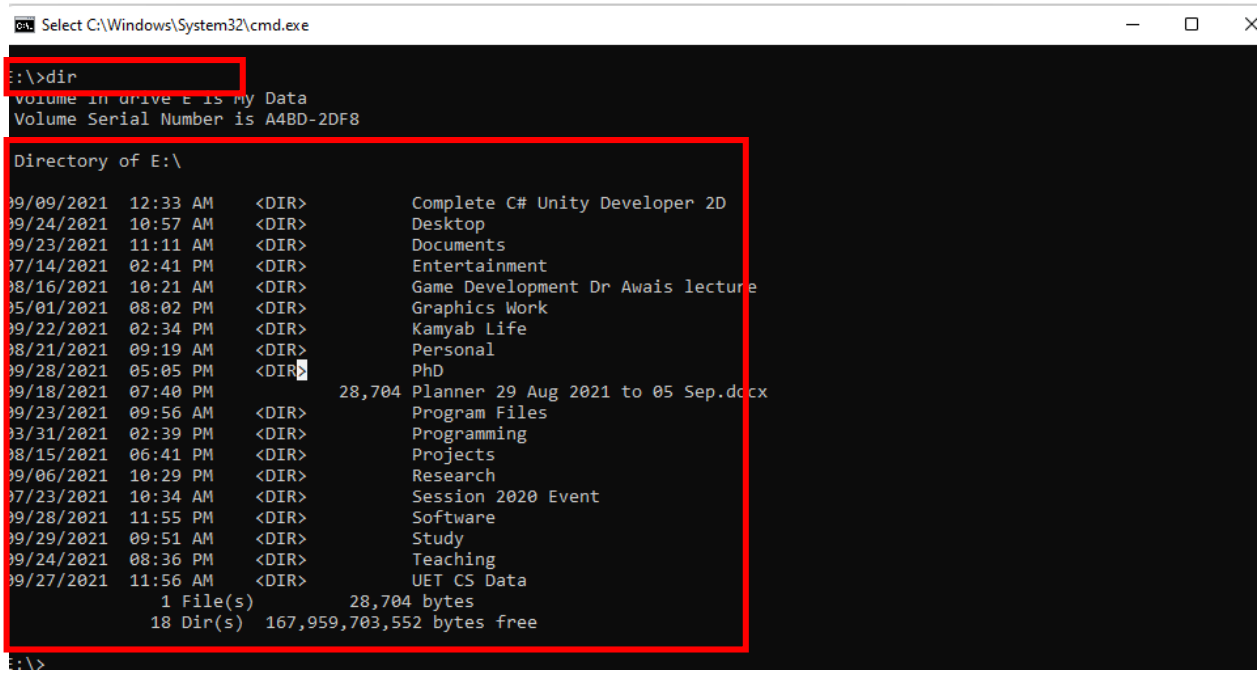


Write the Drive letter and Colon and hit the Enter button.

For example, I want to access drive E so I write **E:** and hit Enter.



To see the available files inside any folder or drive use **dir** command.



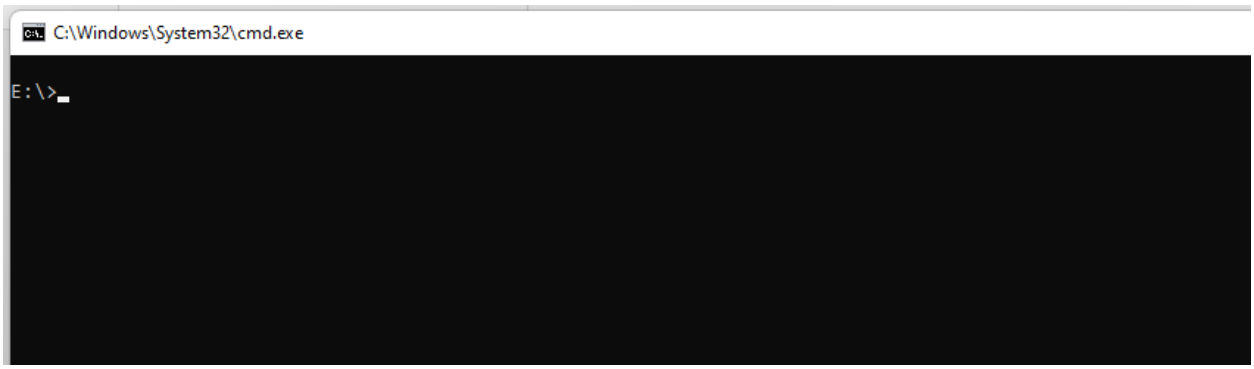
The **dir** command is used to display all the available folders and files inside a folder/drive.

There is too much text on the console screen. To clear all the stuff there is command **cls**.

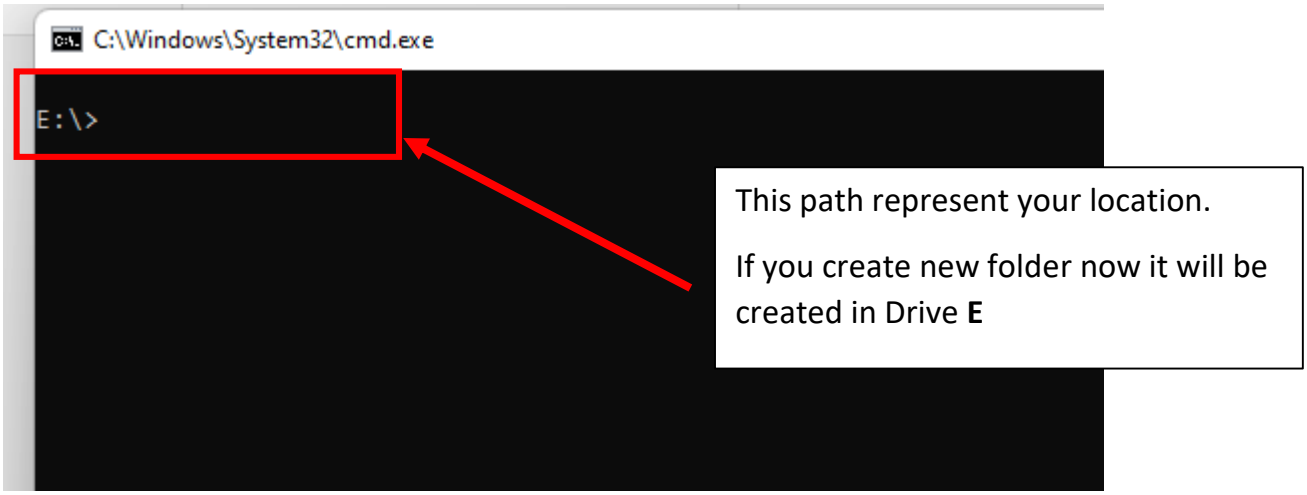
Clear screen.

Syntax: cls

Write cls and hit enter. It will clear the CLI screen.



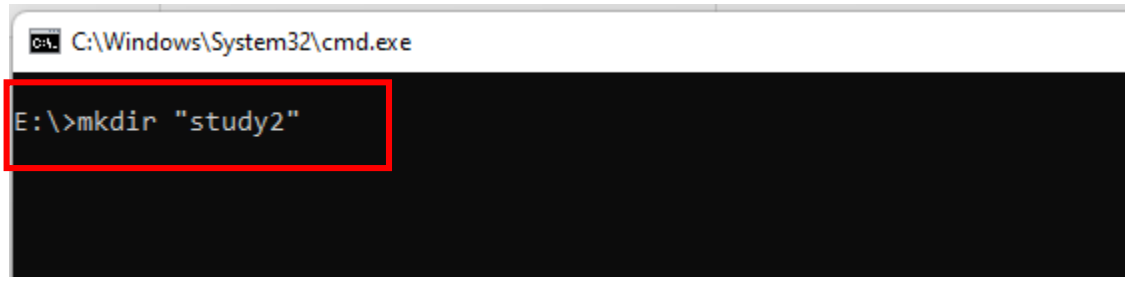
Before creating your folder first see the location



Now learn to create the folder with CLI.

mkdir command is use to create a folder

Syntax: mkdir "Folder name"

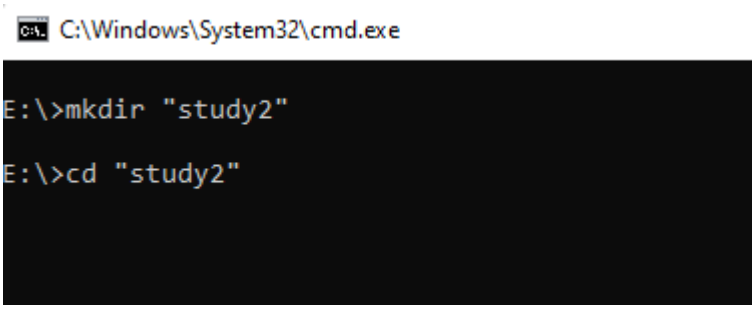


Write the mkdir **"study2"** command and hit the Enter button from the keyboard.

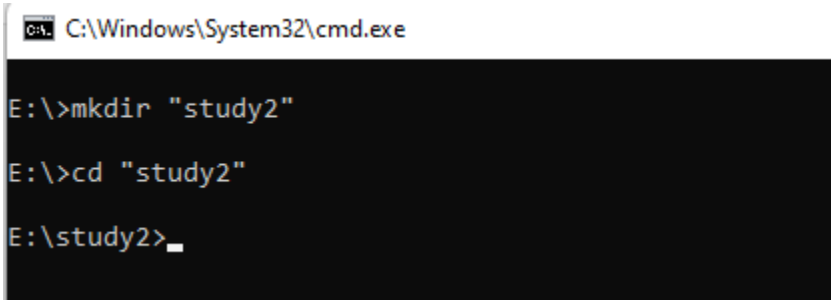
Now navigate to the **study2** folder.

To navigate between folders use command **cd** stand for change directory.

Syntax: cd “folder name”



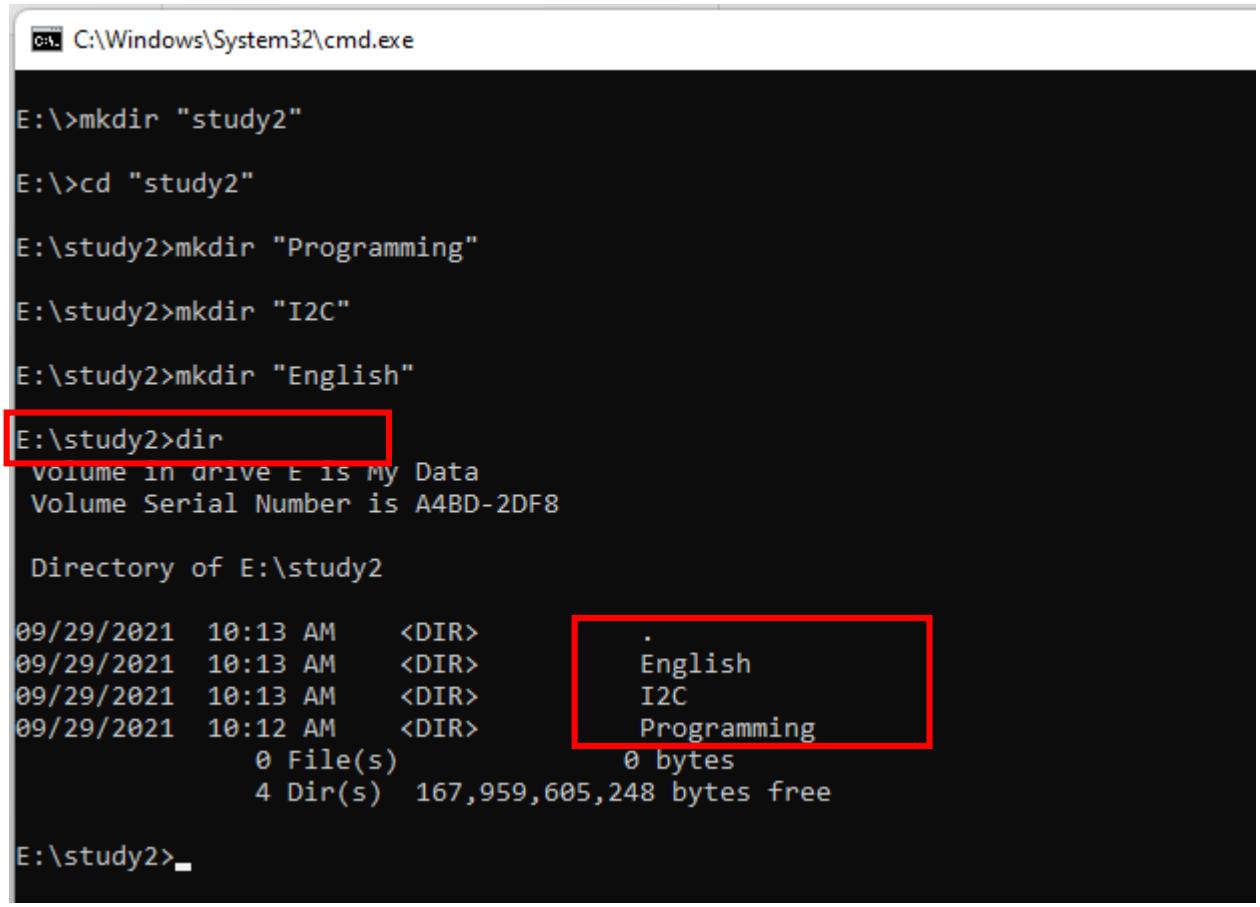
See now we are in folder **study2**

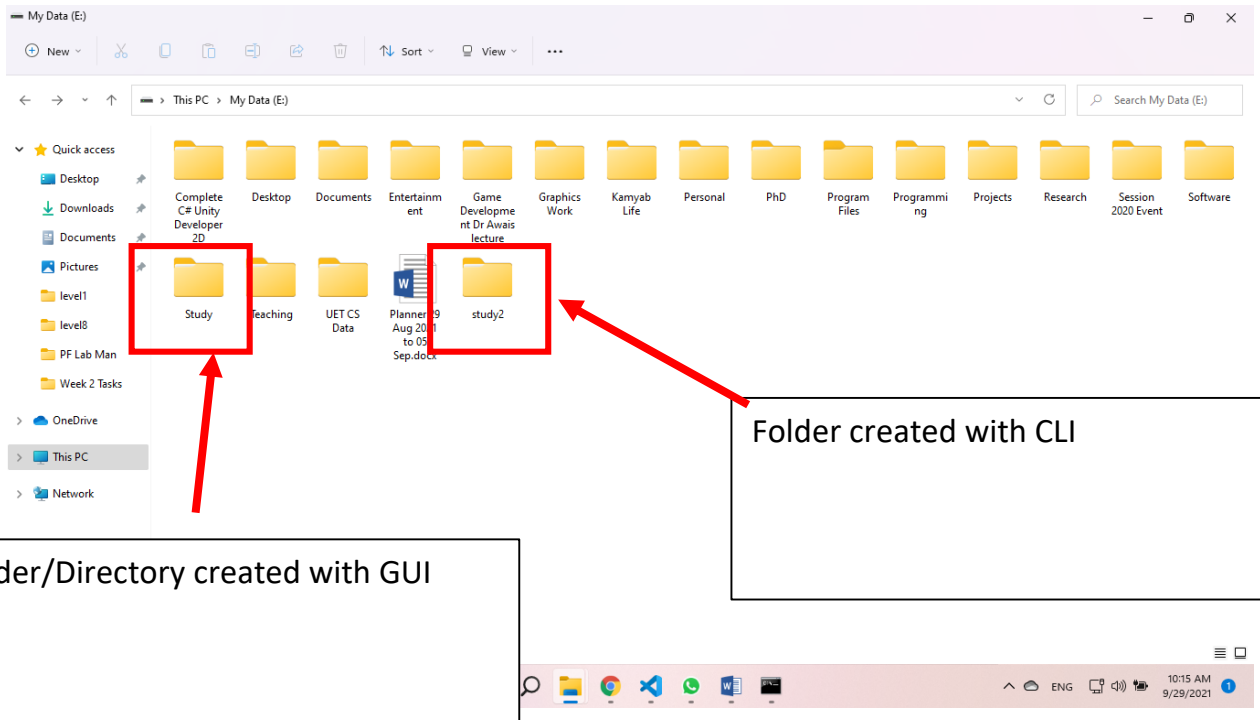


Let’s make three folders in this folder using the mkdir command.

Write following commands to create three folders with names mentioned in CLI.

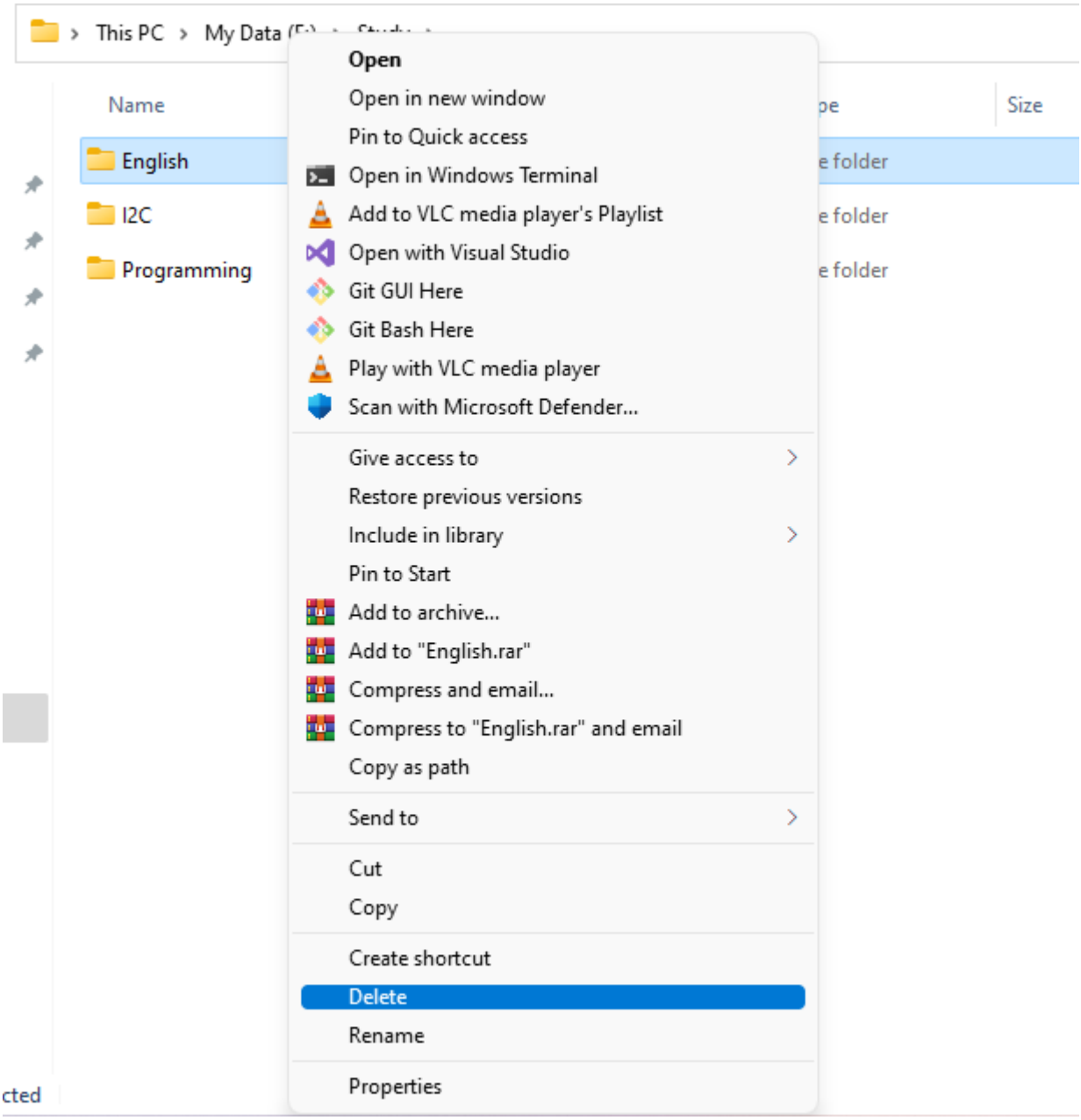
Now use the dir command to see the created folders.





Ali's friend told him they are not studying English this semester. So he does not need an English folder, he wants to delete it. Let's Help Ali to delete the folder with both techniques

Right click on the folder you want to delete and choose the delete option from the list.



Let’s learn to delete the folder with CLI.

Before deleting the folder make sure you are in the right folder.

We want to delete the folder that is available in the study2 folder so make sure the folder path is on CLI.

```
E:\study2>
```

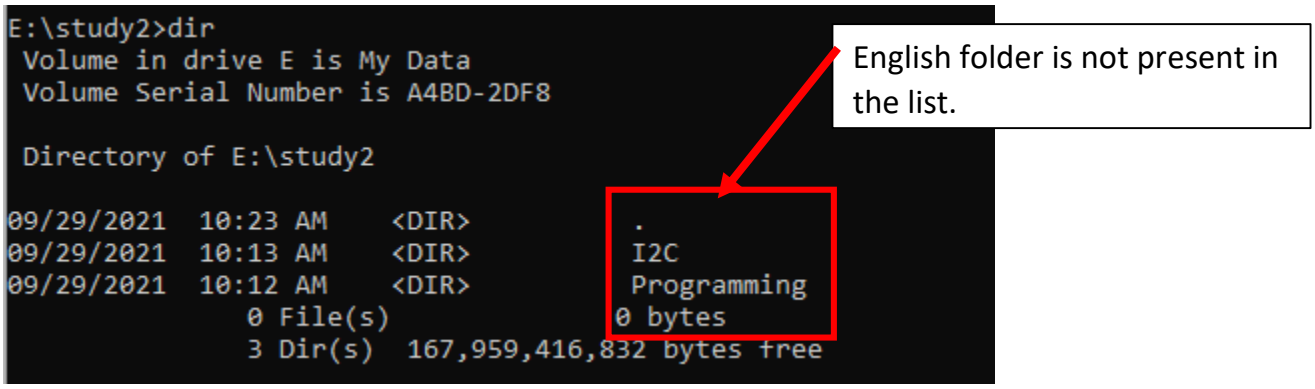
rmdir command is used to remove/delete the folder.

Syntax: rmdir “Folder name”

```
E:\study2>rmdir "English"
```

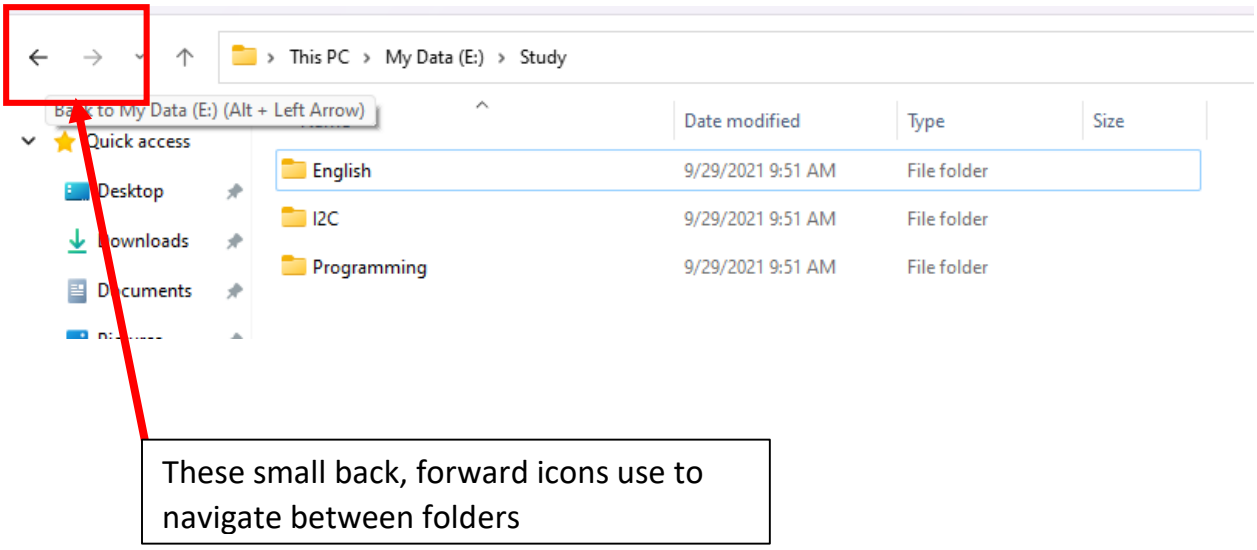
Write the above command and hit the enter button.

Now use the dir command to see the available folders in the study2 folder.



Good job Ali. You are a genius , you learned a lot.

Let’s see how to go back to the previous folder



To go back to the folder in CLI use double dots with cd command.

Syntax: cd .. (it will move you back one step)

```
E:\study2>cd ..
```

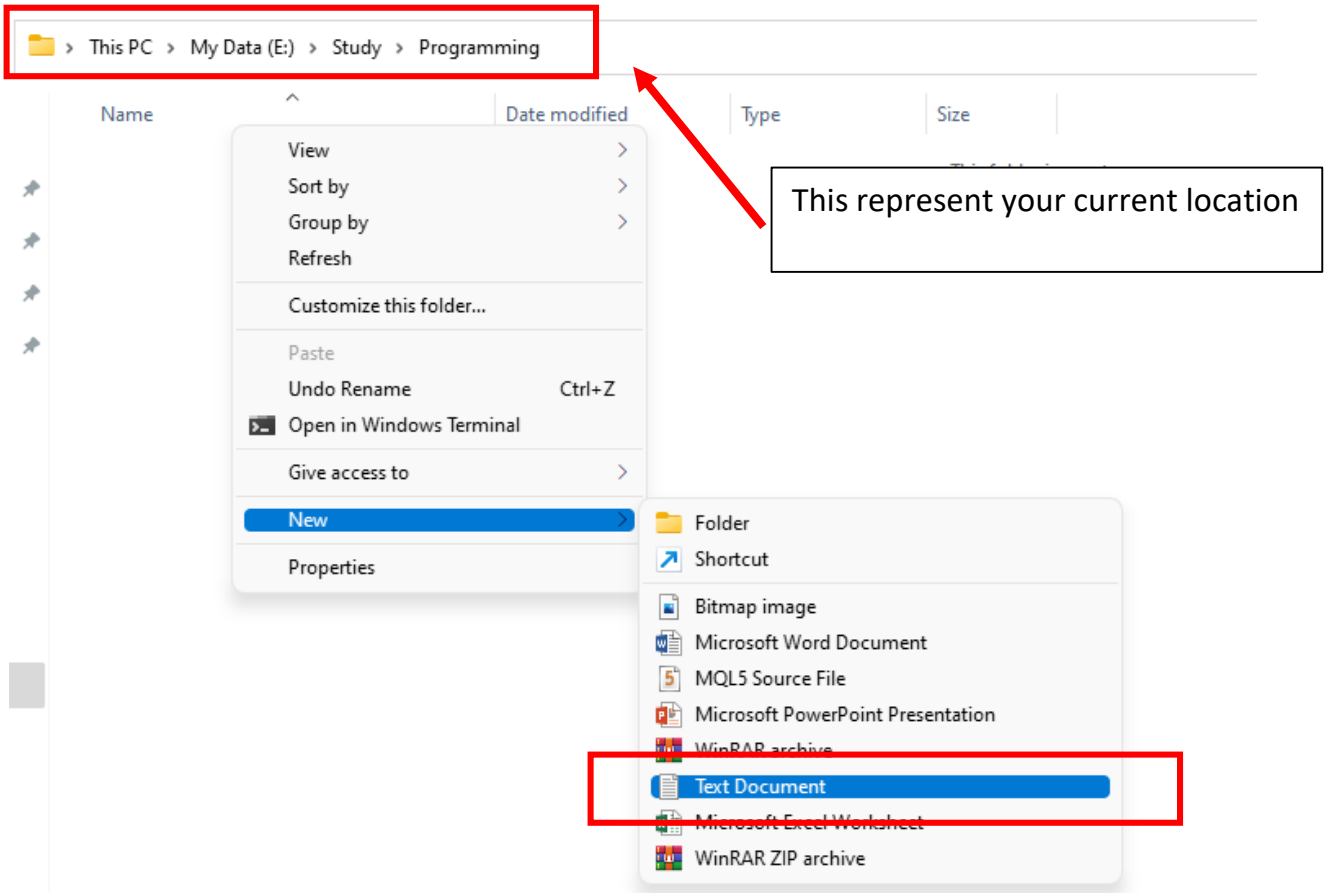
It will move you one step back.

```
E:\>
```

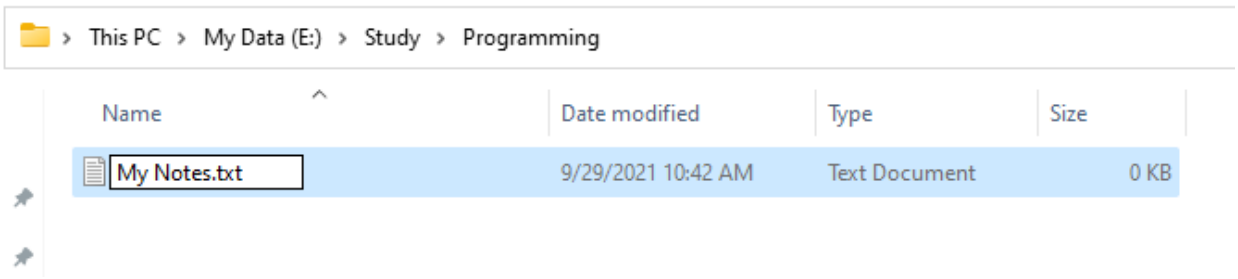
Ali wants to make notes for every subject inside the computer. He needs a text file for that. Let's help him to create a text file and write some notes.

Navigate to the folder where you want to create the file. Ali has a Programming assignment so help him to make a file in the programming folder.

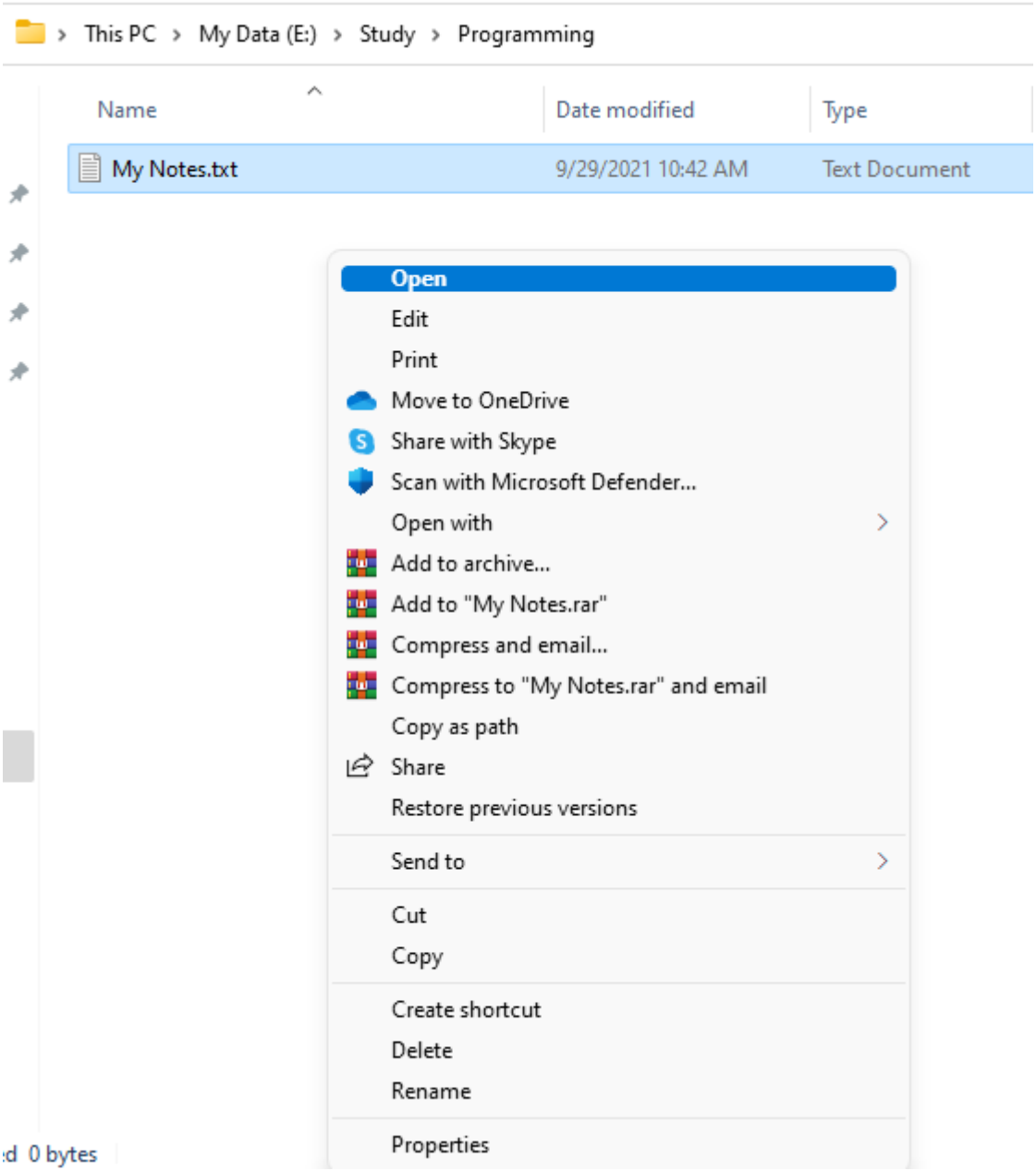
Using your previous knowledge, move to the programming folder and click on black space.



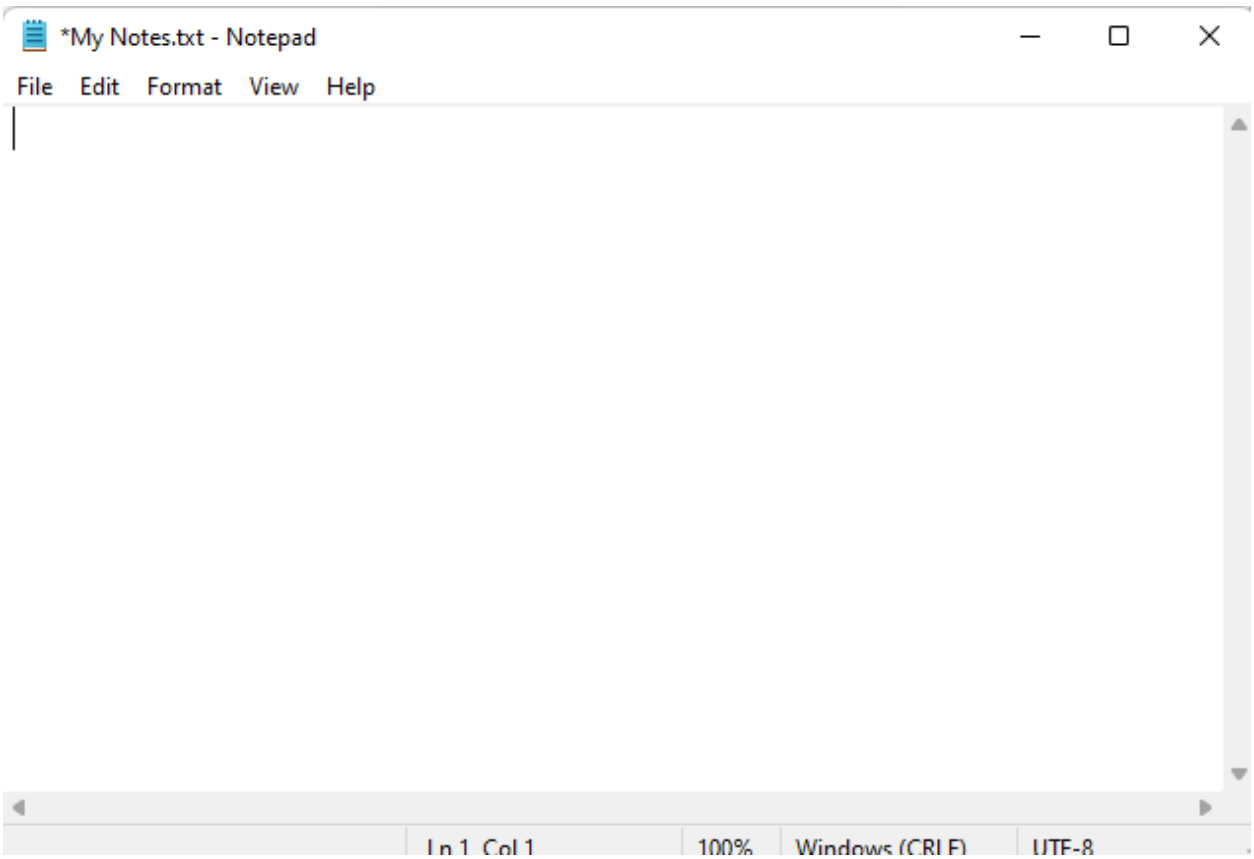
Give it a name of your choice.



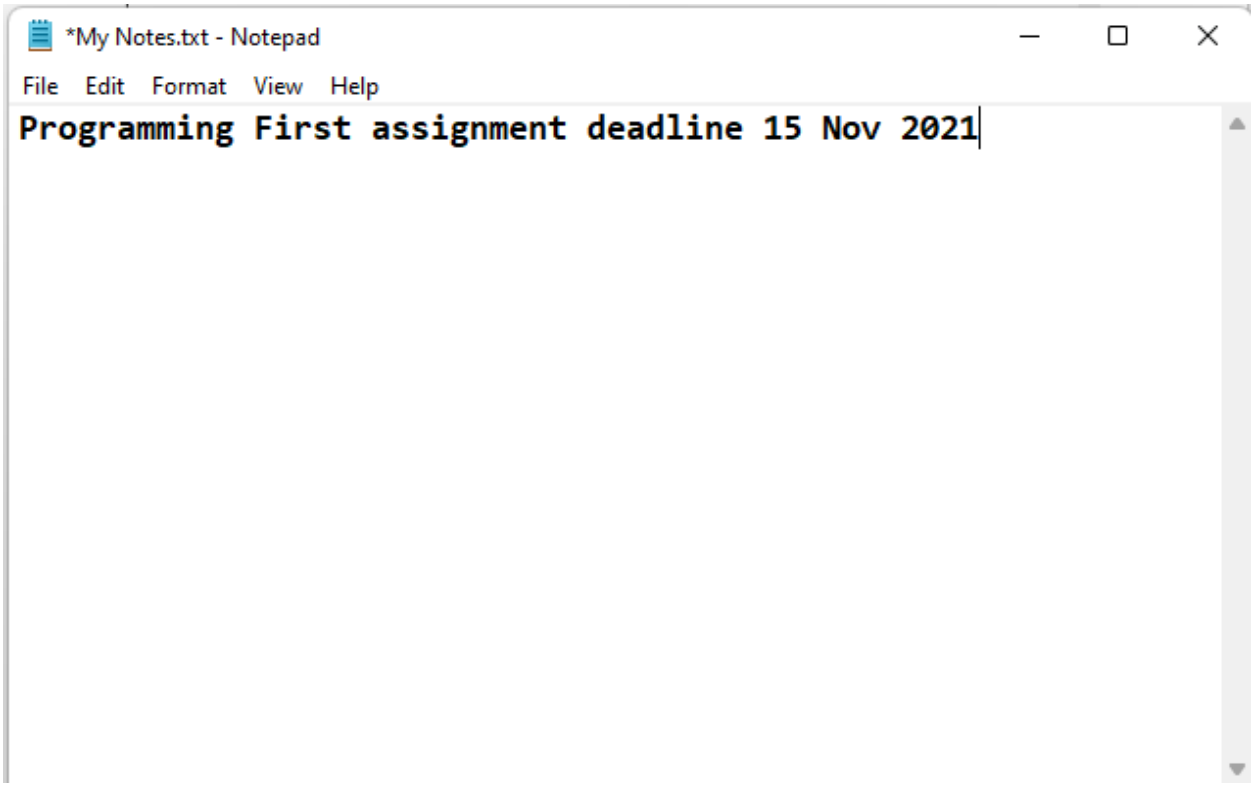
Double click on the file or Right click on the file and choose the **open** option from the list. It will open the file.



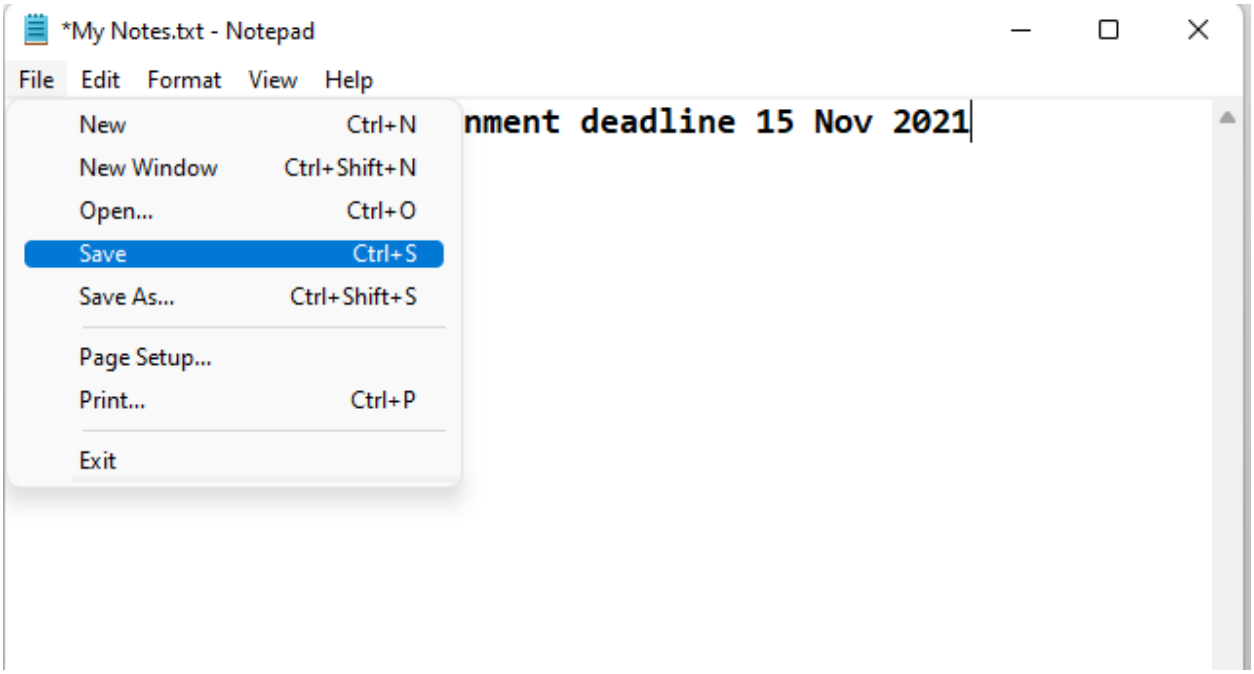
It will open the notepad as shown below.



Write some text inside the file.



Choose **File** option and select the **Save** option



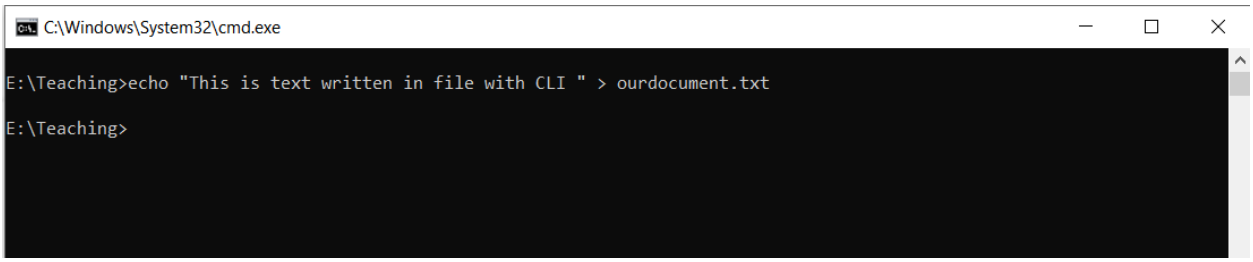
Do the same with CLI.

Write **echo** and then write any text you want inside your document. At the end write

> documentname.txt

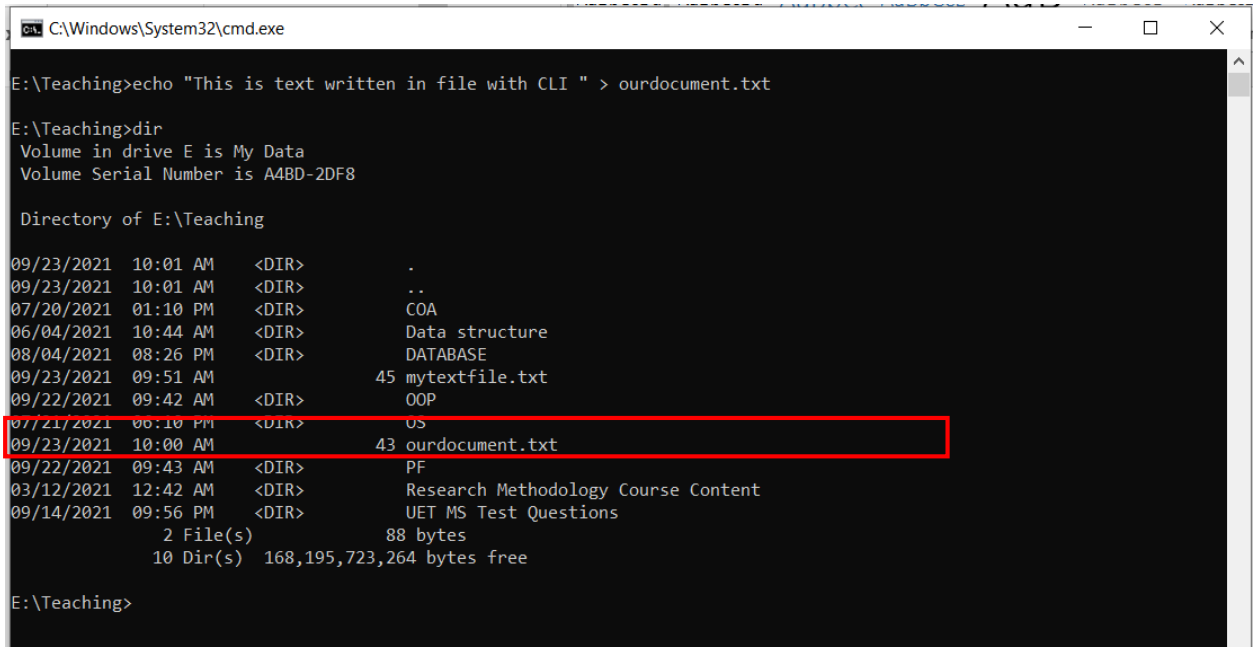
You can give any name to your document for example if I want to write some text in a document name or document so the command will look like this

echo "This is text document created with CLI " > outdocument.txt



Now Dir and see the file created or not.

You can see the text file with ourdocument.txt is created.



To see the contents of the file write the following command with the file name.

Type command is used to see the contents of the file.

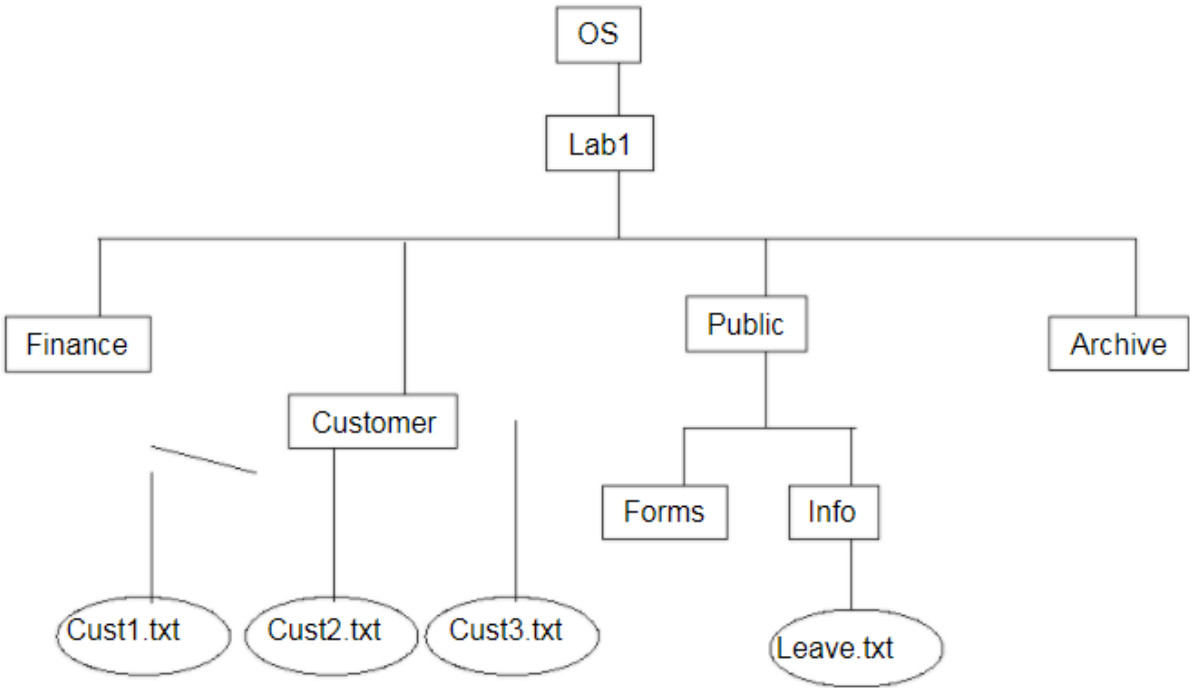
Format of command: **type filename.txt**

You can see the command printed the text inside **ourdocument.txt** file on CLI

Lab Task using CLI

1. Using the commands listed above, which you have read out and practiced in the lab.
2. **Create the following structure on your home directory.** The Square boxes are folders, while the lines represent folders contained inside each one. As can be seen in the diagram below, the structure looks like a hierarchy and this is what the use of folders provides for – a hierarchy of where data should be saved and stored.
   Before you start, using any application you like (e.g. Notepad), create three text files: **cust1.txt; cust2.txt and cust3.txt** and two documents **leave.txt**. These should be created and saved at the top/root of your home directory.
   Now, using the windows command prompt only, implement the following folder structure.

   Write down the sequence of commands that allow you to create the structure below:



   Now that you have created the directory structure, write the commands that control it in the following ways (3 – 12).

3. Move the three customer files to the **Customer** directory.
4. Copy the three customer files to the **Archive** directory using a single command.
5. Move the file **leave.txt** to the archive directory and rename it **leave_old.txt**.
6. Place leave_old.txt in the **Forms** directory.
7. Change to the **Customer** directory and check that it contains the three customer files.
8. Change to the **Archive** directory and check it contains the three customer files that you copied.

9. Change back to the **Customer** directory and delete the three customer files.
10. Display the contents of the text files in the command prompt window one at a time.
11. Clear the screen.
12. Exit the command prompt window.