



| Lab 233

Working with the File System

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Bootcamp: Forge AWS re/Start UYMON5

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Objectives

In this lab, you will:

- Create a folder structure that this lab provides
- Create files
- Copy and move files and directories
- Delete files and directories

Accessing the AWS Management Console

1. At the top of these instructions, choose **Start Lab** to launch your lab. A **Start Lab** panel opens, and it displays the lab status.

Tip: If you need more time to complete the lab, choose the **Start Lab** button again to restart the timer for the environment.

2. Wait until you see the message *Lab status: ready*, then close the **Start Lab** panel by choosing the X.
3. At the top of these instructions, choose **AWS**. This opens the AWS Management Console in a new browser tab. The system will automatically log you in.

Tip: If a new browser tab does not open, a banner or icon is usually at the top of your browser with a message that your browser is preventing the site from opening pop-up windows. Choose the banner or icon and then choose **Allow pop ups**.

4. Arrange the AWS Management Console tab so that it displays alongside these instructions. Ideally, you will be able to see both browser tabs at the same time so that you can follow the lab steps more easily.

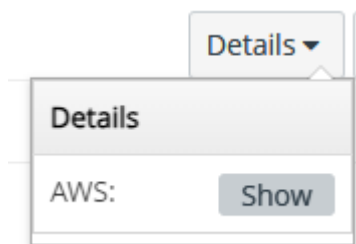


Task 1: Use SSH to connect to an Amazon Linux EC2 instance

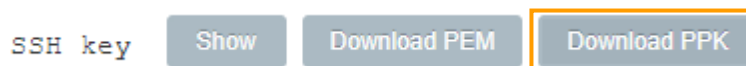
In this task, you will connect to a Amazon Linux EC2 instance. You will use an SSH utility to perform all of these operations.

Windows Users: Using SSH to Connect

1. Select the **Details** drop-down menu above these instructions you are currently reading, and then select **Show**. A Credentials window will be presented.



2. Select the **Download PPK** button and save the **labsuser.ppk** file.



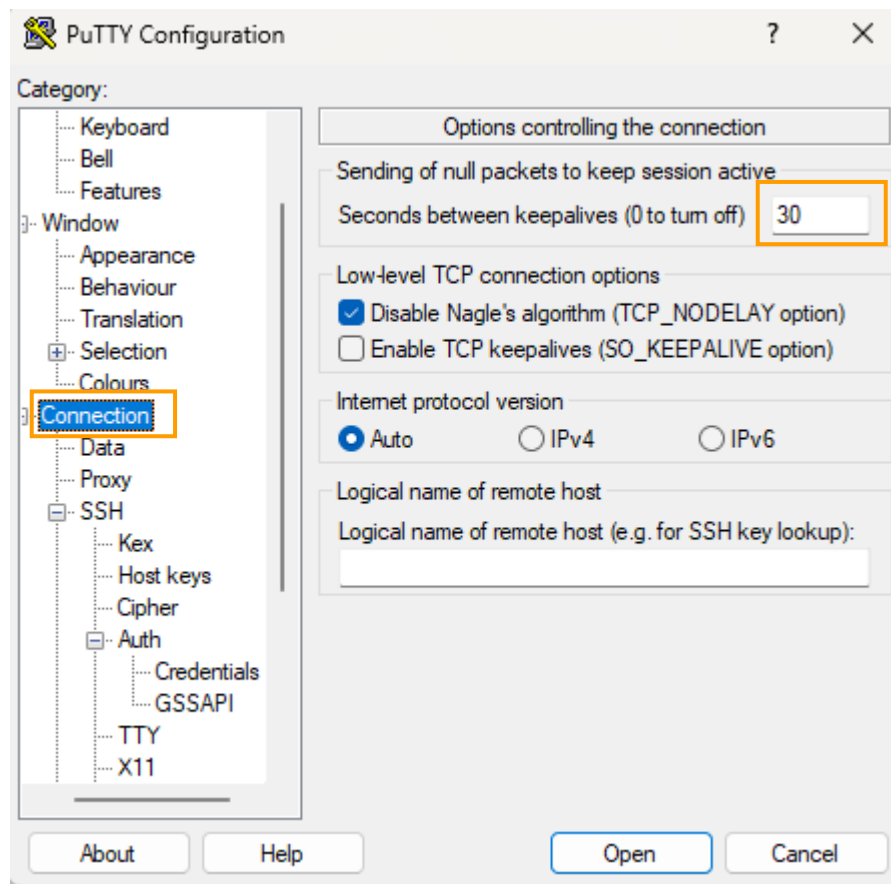
3. Make a note of the **PublicIP** address.

PublicIP 52.34.82.18

4. Then exit the Details panel by selecting the X.
5. Download **PuTTY** to SSH into the Amazon EC2 instance. If you do not have PuTTY installed on your computer.
6. Open **putty.exe**



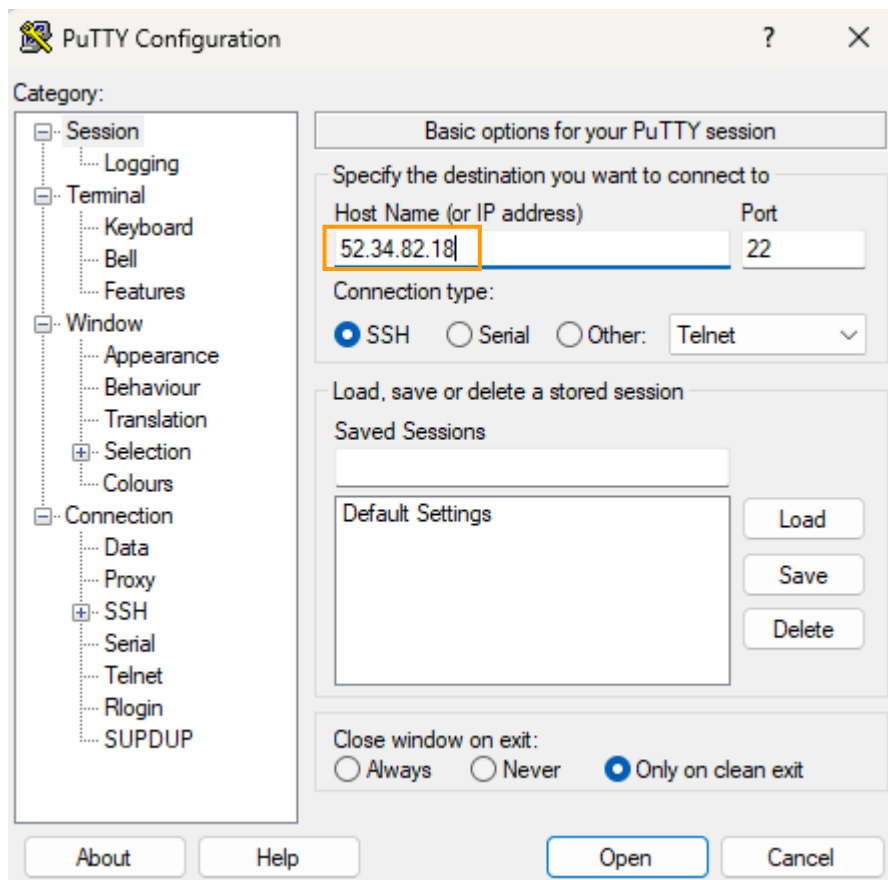
7. Configure PuTTY timeout to keep the PuTTY session open for a longer period of time.
 - Select **Connection**
 - Set **Seconds between keepalives** to 30





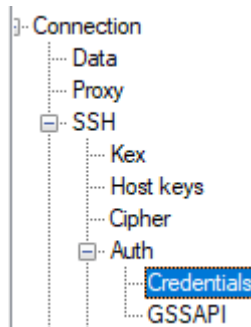
8. Configure your PuTTY session:

- Select **Session**
- **Host Name (or IP address):** Paste the **Public DNS or IPv4 address** of the instance you made a note of earlier. Alternatively, return to the EC2 Console and select **Instances**. Check the box next to the instance you want to connect to and in the *Description* tab copy the **IPv4 Public IP** value

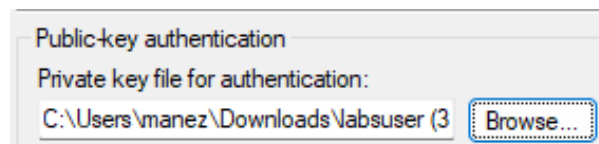




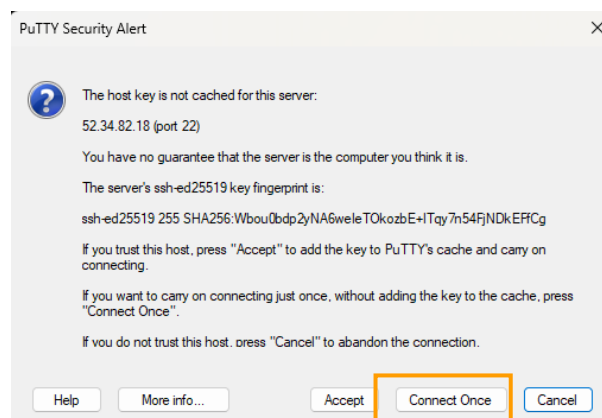
- Back in PuTTY, in the **Connection** list, expand **SSH** and select **Auth** (*don't expand it*)



- Select **Browse** and select the lab#.ppk file that you downloaded



- Select **Open** to select it and then select **Open** again.
9. Select **Yes**, to trust and connect to the host.





10. When prompted **login as**, enter: `ec2-user` This will connect you to the EC2 instance.

```
ec2-user@ip-10-0-10-137:~  
login as: ec2-user  
Authenticating with public key "imported-openssh-key"  
#  
~\  ##### Amazon Linux 2  
~~ \#####  
~~  \####  
~~   \#/ AL2 End of Life is 2025-06-30.  
~~    V~' '->  
~~~~  
~~~~ A newer version of Amazon Linux is available!  
~~~~  
~~~~ Amazon Linux 2023, GA and supported until 2028-03-15.  
~~~~ https://aws.amazon.com/linux/amazon-linux-2023/  
~~~~  
~/m/'  
[ec2-user@ip-10-0-10-137 ~]$
```

Task 2: Create a Folder Structure

In this task, you create a specific folder structure. A picture of the files and folders is provided, and your task is to recreate the structure in the new machine.

Using the terminal, you recreate the following structure on the Linux machine.

```
/home/ec2-user/CompanyA/  
/home/ec2-user/CompanyA/Finance/  
/home/ec2-user/CompanyA/Finance/ProfitAndLossStatements.csv  
/home/ec2-user/CompanyA/Finance/Salary.csv  
/home/ec2-user/CompanyA/HR/  
/home/ec2-user/CompanyA/HR/Assessments.csvv  
/home/ec2-user/CompanyA/HR/TrialPeriod.csv  
/home/ec2-user/CompanyA/Management/  
/home/ec2-user/CompanyA/Management/Managers.csv  
home/ec2-user/CompanyA/Management/Schedule.csv
```

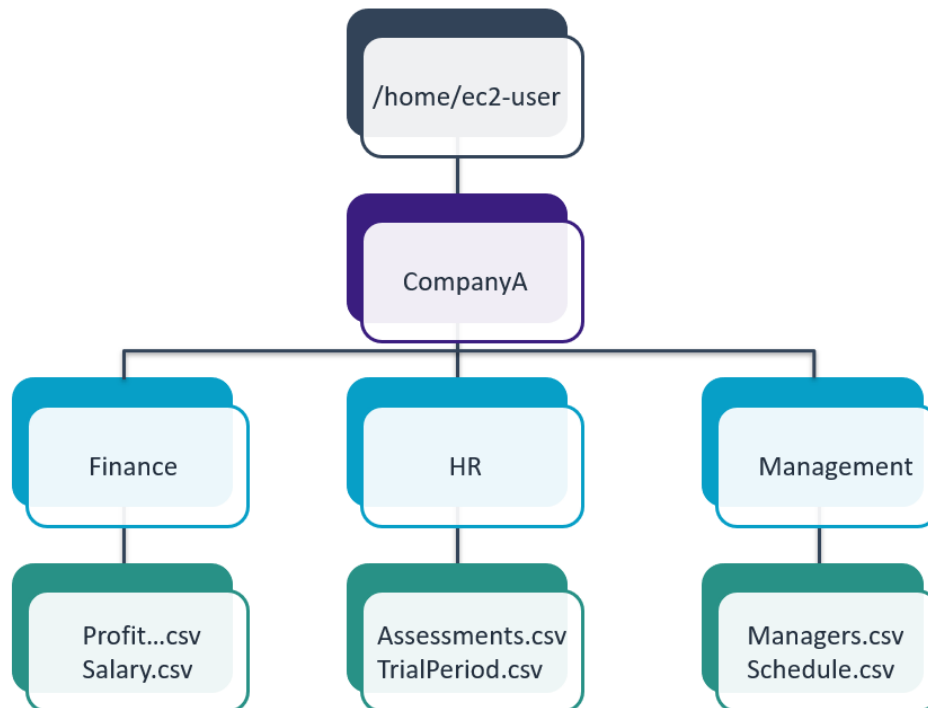


Figure: The folder structure starts with the `/home/ec2-user` folder. Within this folder, you will make a `CompanyA` directory. Within `Company A` directory, there will be three directories: `Finance`, `HR`, and `Management`. In the `finance` folder, you will see a `Salary.csv` and a `ProfitAndLossStatements.csv` files. In the `HR` folder, you will see an `Assessments.csv` and `TrialPeriod.csv` files. Within the `Management` folder, you will see `Managers.csv` and `Schedule.csv` files.

Helpful Hint

Use the `ls` and `pwd` commands after each step to validate that you have created the files correctly.



24. To validate that you are in the home folder of your current user, enter `pwd` and press Enter. If you're not in the home folder, enter `cd /home/ec2-user`

```
[ec2-user@ip-10-0-10-5 ~]$ pwd
/home/ec2-user
```

25. In the terminal, enter `mkdir CompanyA` and press Enter to create the top-level folder.

```
[ec2-user@ip-10-0-10-5 ~]$ mkdir CompanyA
[ec2-user@ip-10-0-10-5 ~]$
```

26. To change directories, enter `cd CompanyA` and press Enter.

```
[ec2-user@ip-10-0-10-5 ~]$ cd CompanyA
[ec2-user@ip-10-0-10-5 CompanyA]$
```

27. To create all the sub folders, enter `mkdir Finance HR Management` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ mkdir Finance HR Management
[ec2-user@ip-10-0-10-5 CompanyA]$
```

28. To validate that the folders were created, enter `ls` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ ls
Finance  HR  Management
```

29. To change your current directory to the `HR` directory, enter `cd HR` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ cd HR
[ec2-user@ip-10-0-10-5 HR]$
```

30. To create the empty files inside the `HR` folder, enter `touch Assessments.csv TrialPeriod.csv` and press Enter.

```
[ec2-user@ip-10-0-10-5 HR]$ touch Assessments.csv TrialPeriod.csv
[ec2-user@ip-10-0-10-5 HR]$
```



31. To validate that the files were created, enter `ls` and press Enter.

```
[ec2-user@ip-10-0-10-5 HR]$ touch Assessments.csv TrialPeriod.csv
[ec2-user@ip-10-0-10-5 HR]$ ls
Assessments.csv  TrialPeriod.csv
```

32. To change your current directory to **Finance**, enter `cd ../Finance` and press Enter.

```
[ec2-user@ip-10-0-10-5 HR]$ cd ../Finance
[ec2-user@ip-10-0-10-5 Finance]$
```

33. To create the empty files inside the **Finance** folder, enter `touch Salary.csv ProfitAndLossStatements.csv` and press Enter.

```
[ec2-user@ip-10-0-10-5 Finance]$ touch Salary.csv ProfitAndLossStatements.csv
[ec2-user@ip-10-0-10-5 Finance]$
```

34. To validate that the files were created, enter `ls` and press Enter.

```
[ec2-user@ip-10-0-10-5 Finance]$ ls
ProfitAndLossStatements.csv  Salary.csv
```

35. To change directories back one level to the **CompanyA** folder, enter `cd ..` and press Enter.

```
[ec2-user@ip-10-0-10-5 Finance]$ cd ..
[ec2-user@ip-10-0-10-5 CompanyA]$
```

36. To create the new empty files in the **Management** folder, enter `touch Management/Managers.csv Management/Schedule.csv` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ touch Management/Managers.csv Management/Schedule.csv
[ec2-user@ip-10-0-10-5 CompanyA]$
```

37. To validate that the files were created, enter `ls Management` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ ls Management
Managers.csv  Schedule.csv
[ec2-user@ip-10-0-10-5 CompanyA]$
```



Note:

In the previous steps, you used the `touch` and `ls` command two ways:

- Directly in the working folder: The `ls` command lists the current directory, and `touch myFile.csv` creates `myFiles.csv` in the current directory.
- By using a path relative to the current folder: `ls Management` or `touch Management/myFile.csv` work in the `Management` folder inside the current folder.

`cd ../` navigates back to the parent folder and `touch ../Management/myFile.csv` creates the `myFile.csv` file in the `Management` folder located in the parent folder of the current folder.

38. To validate that all the files and folders from the `CompanyA` folder down have been created, enter `ls -laR` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ ls -laR
.:
total 0
drwxrwxr-x 5 ec2-user ec2-user 49 Oct 30 15:55 .
drwx----- 4 ec2-user ec2-user 90 Oct 30 15:54 ..
drwxrwxr-x 2 ec2-user ec2-user 59 Oct 30 15:59 Finance
drwxrwxr-x 2 ec2-user ec2-user 52 Oct 30 15:57 HR
drwxrwxr-x 2 ec2-user ec2-user 46 Oct 30 16:03 Management

./Finance:
total 0
drwxrwxr-x 2 ec2-user ec2-user 59 Oct 30 15:59 .
drwxrwxr-x 5 ec2-user ec2-user 49 Oct 30 15:55 ..
-rw-rw-r-- 1 ec2-user ec2-user 0 Oct 30 15:59 ProfitAndLossStatements.csv
-rw-rw-r-- 1 ec2-user ec2-user 0 Oct 30 15:59 Salary.csv

./HR:
total 0
drwxrwxr-x 2 ec2-user ec2-user 52 Oct 30 15:57 .
drwxrwxr-x 5 ec2-user ec2-user 49 Oct 30 15:55 ..
-rw-rw-r-- 1 ec2-user ec2-user 0 Oct 30 15:57 Assessments.csv
-rw-rw-r-- 1 ec2-user ec2-user 0 Oct 30 15:57 TrialPeriod.csv

./Management:
total 0
drwxrwxr-x 2 ec2-user ec2-user 46 Oct 30 16:03 .
drwxrwxr-x 5 ec2-user ec2-user 49 Oct 30 15:55 ..
-rw-rw-r-- 1 ec2-user ec2-user 0 Oct 30 16:03 Managers.csv
-rw-rw-r-- 1 ec2-user ec2-user 0 Oct 30 16:03 Schedule.csv
[ec2-user@ip-10-0-10-5 CompanyA]$
```



Task 3: Delete and reorganize folders

A few weeks later, you are tasked with reorganizing the content as follows:

Figure: The folder structure starts with the /home/ec2-user folder. Within this folder, the CompanyA folder will stay in the same place. Within CompanyA, HR will still fall directly under it. However, Finance and Management are now moved underneath HR. A new Employee folder is also created under HR as well. In the Finance folder, you will see the following files: ProfitAndLossStatements.csv and Salary.csv. In the newly created Employees folder, you will see Assessments.csv and TrialPeriod.csv files. Within the Management folder you will see Managers.csv and Schedule.csv files.

For this task, you:

- Copy the **Finance** folder and its content to the **HR** folder, and remove the previous **Finance** folder
- Move the **Management** folder inside the **HR** folder
- Create an **Employees** folder inside the **HR** folder, and move the **Assessments.csv** and **TrialPeriod.csv** file inside the **Employees** folder

39. To ensure that you are in the appropriate **CompanyA** folder, enter `pwd` into the terminal and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ pwd
/home/ec2-user/CompanyA
```

40. To copy the **Finance** folder and its content, enter `cp -r Finance HR` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ cp -r Finance HR
[ec2-user@ip-10-0-10-5 CompanyA]$
```



41. To verify that the folder and the content was copied, enter `ls HR/Finance` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ cp -r Finance HR
[ec2-user@ip-10-0-10-5 CompanyA]$ ls HR/Finance
ProfitAndLossStatements.csv  Salary.csv
```

42. To remove the **Finance** folder from the **CompanyA** folder structure, enter `rmdir Finance` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ rmdir Finance
rmdir: failed to remove 'Finance': Directory not empty
```

Note: `rmdir` works only on an empty directory. To remove the folder, you have two options:

- Remove the files inside the folder and then remove the **Finance** folder.
- Use the `rm` command with the `-r` option to recursively delete the folder and its content.

43. To remove the files inside the **Finance** folder, enter `rm Finance/ProfitAndLossStatements.csv Finance/Salary.csv` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ rm Finance/ProfitAndLossStatements.csv Finance/Salary.csv
[ec2-user@ip-10-0-10-5 CompanyA]$
```

44. To verify that the folder is empty, enter `ls Finance` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ ls Finance
[ec2-user@ip-10-0-10-5 CompanyA]$
```

45. To remove the folder, enter `rmdir Finance` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ rmdir Finance
[ec2-user@ip-10-0-10-5 CompanyA]$
```



46. To verify that the folder was removed, enter `ls` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ ls  
HR  Management
```

47. To move the **Management** folder inside the **HR** folder, enter `mv Management HR` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ mv Management HR  
[ec2-user@ip-10-0-10-5 CompanyA]$
```

48. To verify that the folder and files were moved, enter `ls . HR/Management` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ ls . HR/Management  
.:  
HR  
  
HR/Management:  
Managers.csv  Schedule.csv
```

49. To navigate inside the **HR** folder, enter `cd HR` and press Enter.

```
[ec2-user@ip-10-0-10-5 CompanyA]$ cd HR  
[ec2-user@ip-10-0-10-5 HR]$
```

50. To create the **Employees** folder, enter `mkdir Employees` and press Enter.

```
[ec2-user@ip-10-0-10-5 HR]$ mkdir Employees  
[ec2-user@ip-10-0-10-5 HR]$
```

51. To move the files to this folder, enter `mv Assessments.csv TrialPeriod.csv Employees` and press Enter.

```
[ec2-user@ip-10-0-10-5 HR]$ mv Assessments.csv TrialPeriod.csv Employees  
[ec2-user@ip-10-0-10-5 HR]$
```



52. To verify that the files were moved, enter `ls . Employees` and press Enter.

```
[ec2-user@ip-10-0-10-5 HR]$ ls . Employees
.:
Employees  Finance  Management

Employees:
Assessments.csv  TrialPeriod.csv
[ec2-user@ip-10-0-10-5 HR]$
```

Lab Complete



Congratulations! You have completed the lab.

53. Choose **End Lab** at the top of this page, and then select **Yes** to confirm that you want to end the lab.

54. A message *Ended AWS Lab Successfully* is briefly displayed, indicating that the lab has ended.



Commands Used:

On this lab we used several commands to perform different tasks. Here is a summary of the commands used:

Command	Description
pwd	Print the current working directory, showing the path of your current location in the file system.
cp -r	Copy files or directories. The -r flag is used to perform a recursive copy of directories and their contents.
ls	List files and directories in the current directory, displaying their names.
rmdir	Remove directories. It only works on empty directories and removes the specified directory.
mv	Move or rename files and directories. It can be used to change the location of a file or change its name.
mkdir	Create new directories, allowing you to make new folders in the current working directory.
cd	Change the current working directory, enabling you to navigate to a different directory in the file system.