

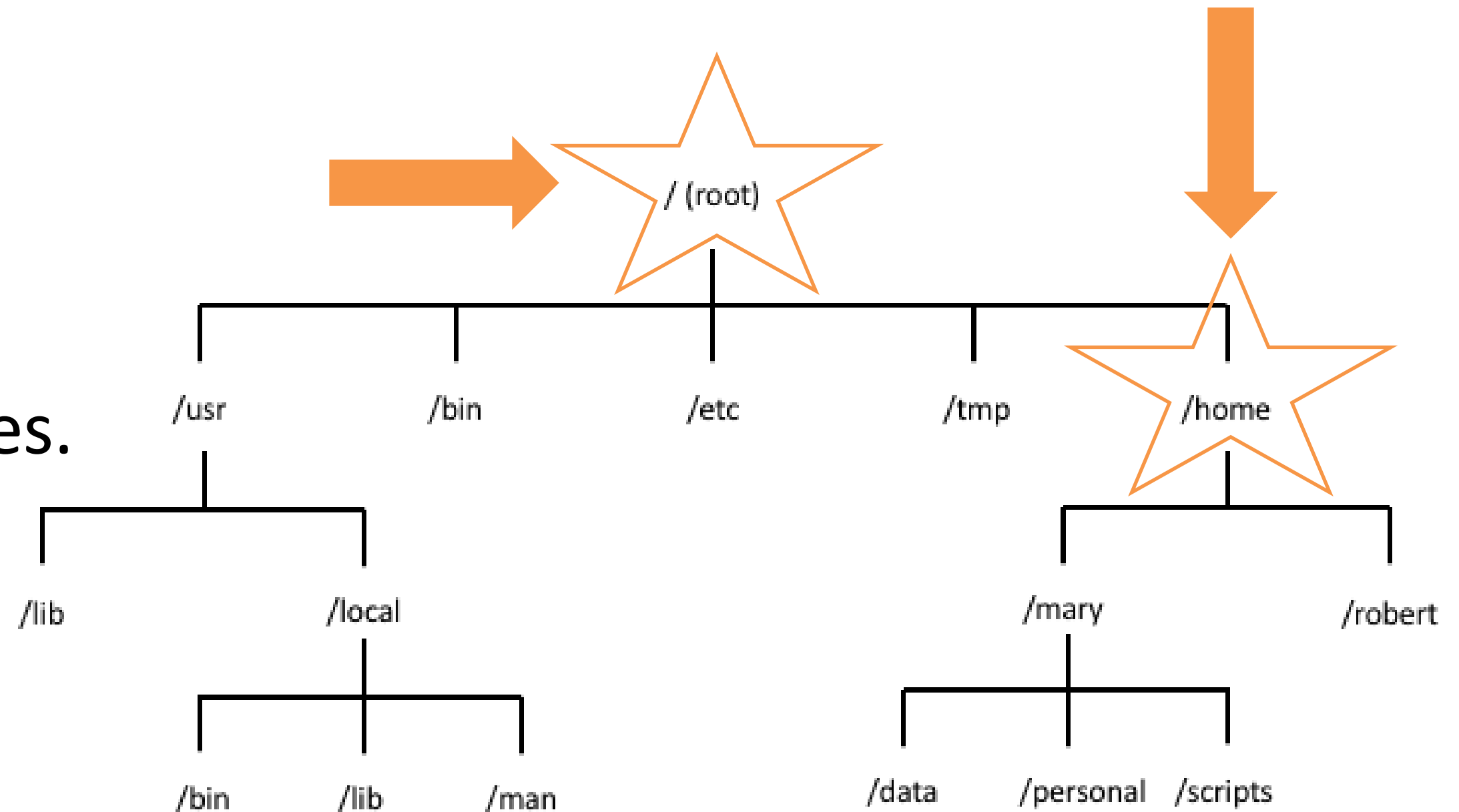
Operating Systems

L A B 5 - W E E K 6

Recap on File System Structure

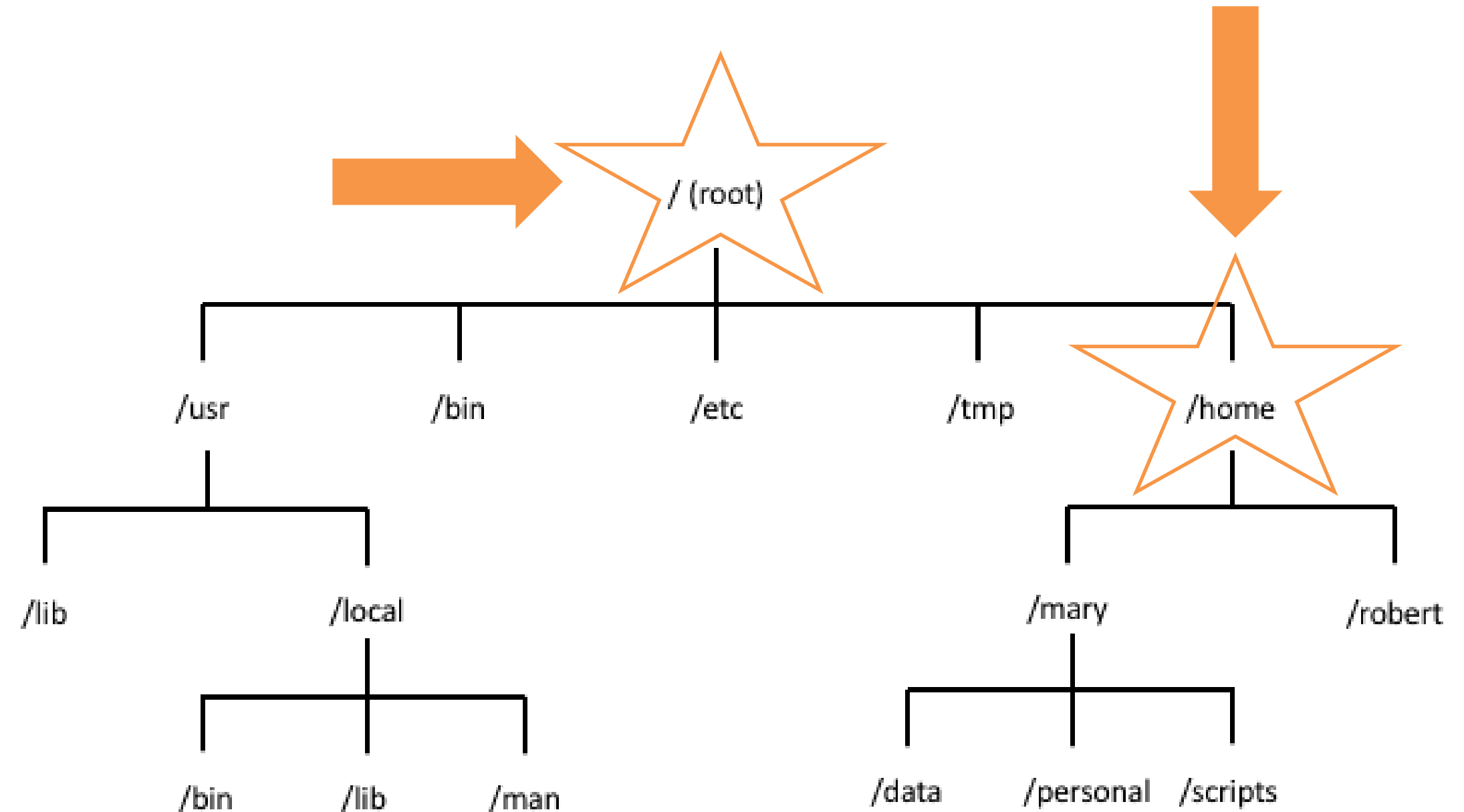
Key directories

- `/` → Root directory.
- `/home` → User directories.



Lets Refresh! Question...

If I want to go to **mary** user directory what should I write in the path ?

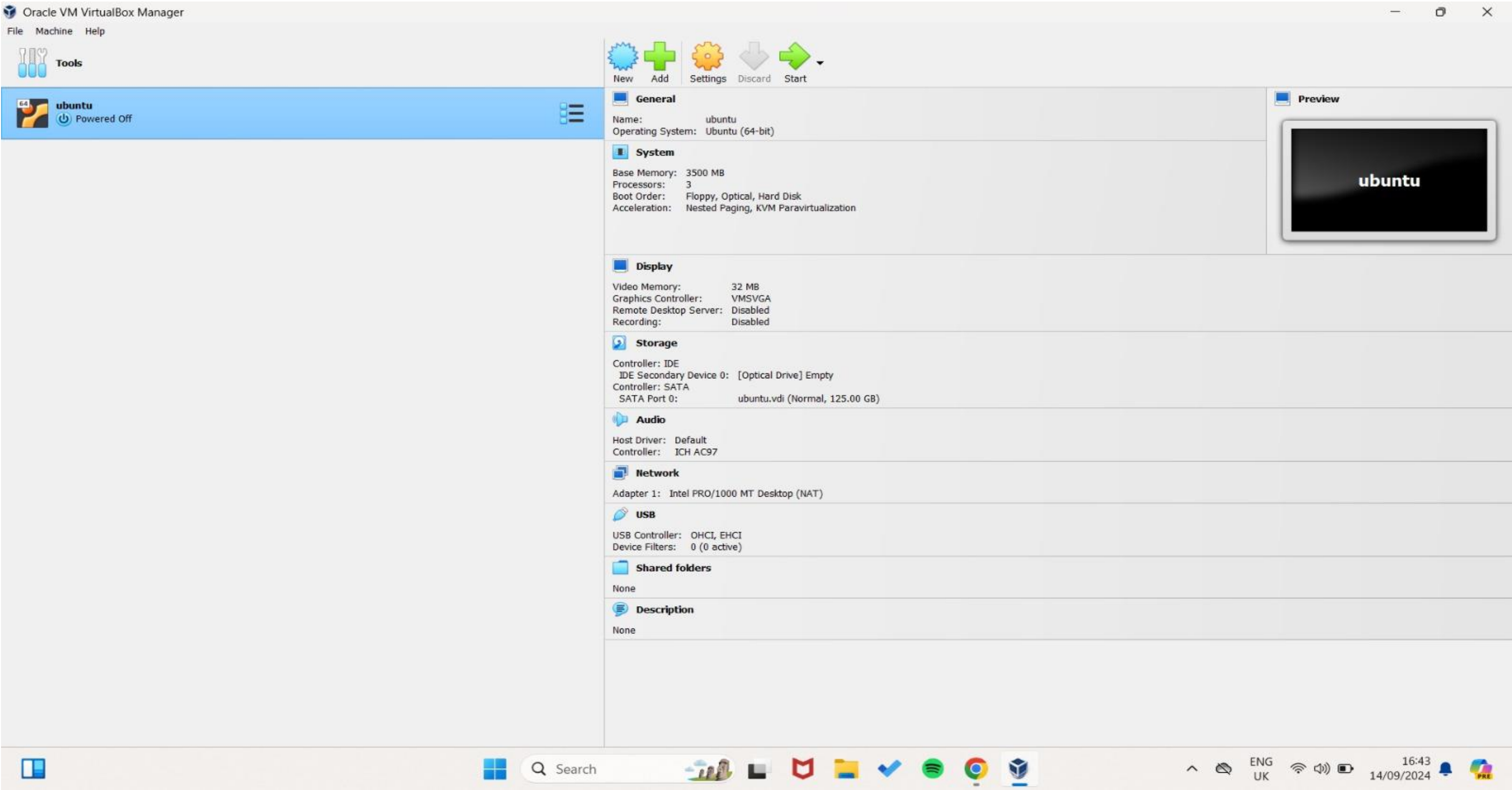


Used for	Commands
Navigating Directories	ls → list files cd → change directory Pwd → print working directory
File Management	cp → copy mv → move rm → remove mkdir → make directory
Viewing Files	cat → read file less → read the first page in a file head → display first 5 rows in file tail → display last 5 rows in file
Creating File	touch
Getting Help about command	man --help

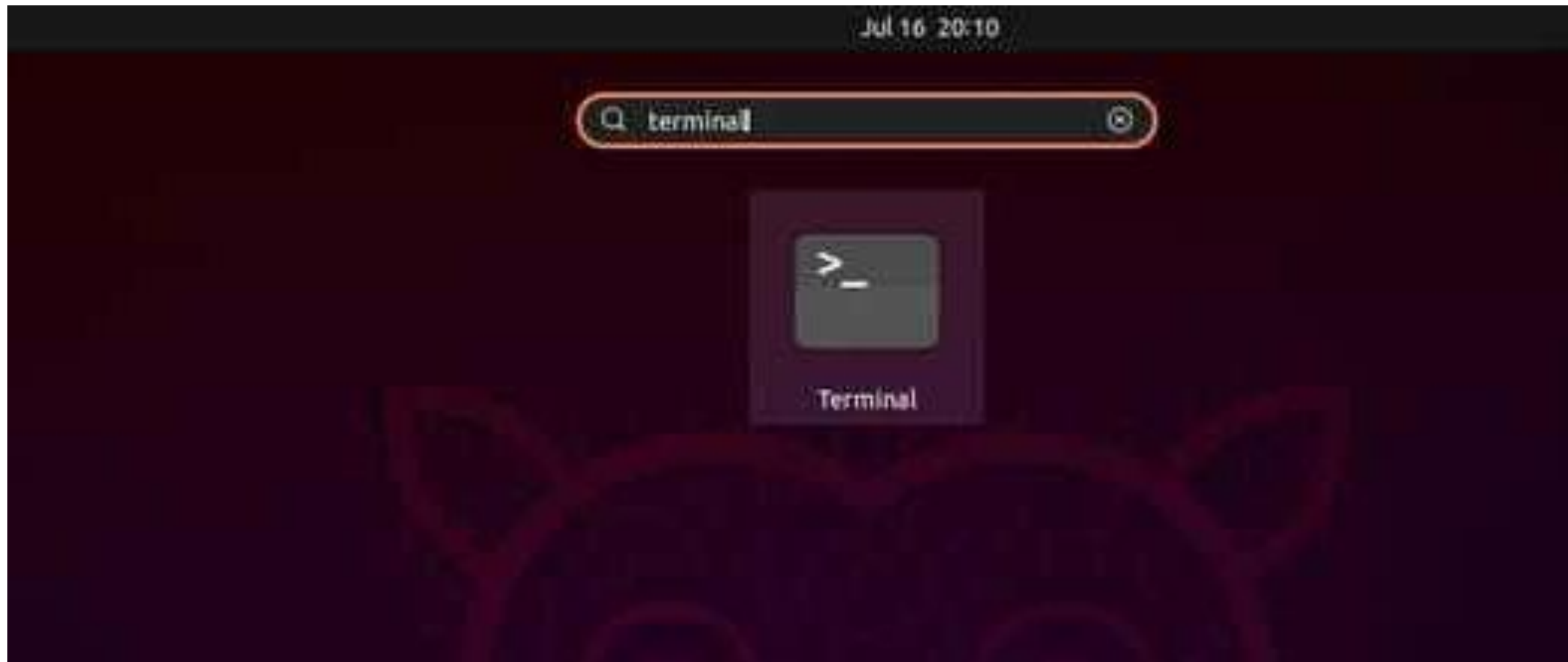
"Have you ever wondered how you could run two operating systems on the same computer at the same time without deleting anything?"

Think of VirtualBox like a house that allows you to build many rooms, each with its own design. In our case, each 'room' is an operating system, and the 'house' is your actual computer

Definition -> VirtualBox is a software that allows you to run multiple operating systems, like Linux, on your existing computer, without the need to restart or delete anything.



Open your terminal in Linux



command: **pwd** – Print current working directory.

```
lenovo@lenovo-VMware-Virtual-Platform:~$ pwd  
/home/lenovo
```

command: **ls** – List files in a directory.

```
lenovo@lenovo-VMware-Virtual-Platform:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
```

command: **cd** /path/to/directory – Change directories.

To go to Downloads for example:

```
lenovo@lenovo-VMware-Virtual-Platform:~$ cd Downloads
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$
```

How to return to home again?

1. Write → **cd**

```
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$ cd
lenovo@lenovo-VMware-Virtual-Platform:~$
```

Or 2. Write → **cd ~**

```
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$ cd ~
lenovo@lenovo-VMware-Virtual-Platform:~$
```

Can we move from root '/' to Downloads directly? **No**

```
lenovo@lenovo-VMware-Virtual-Platform:~$ cd /  
lenovo@lenovo-VMware-Virtual-Platform:/$ cd Downloads  
bash: cd: Downloads: No such file or directory
```

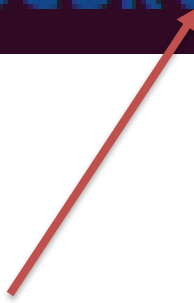
we can by writing the whole path for the downloads like this:

```
lenovo@lenovo-VMware-Virtual-Platform:/$ cd /home/lenovo/Downloads  
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$
```

Or just writing
cd ~/Downloads

command: **mkdir** – Create a directory.

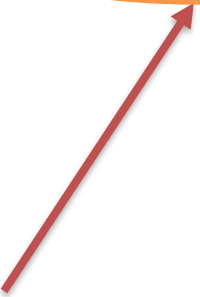
```
lenovo@lenovo-VMware-Virtual-Platform:~$ mkdir course101
lenovo@lenovo-VMware-Virtual-Platform:~$ ls
course101  Documents  Music      Public  Templates
Desktop    Downloads  Pictures   snap    Videos
```



Look here folder created
successfully

command: **touch** filename.txt – Create a file.

```
lenovo@lenovo-VMware-Virtual-Platform:~$ cd course101
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ touch lab_notes.txt
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ ls
lab_notes.txt
```

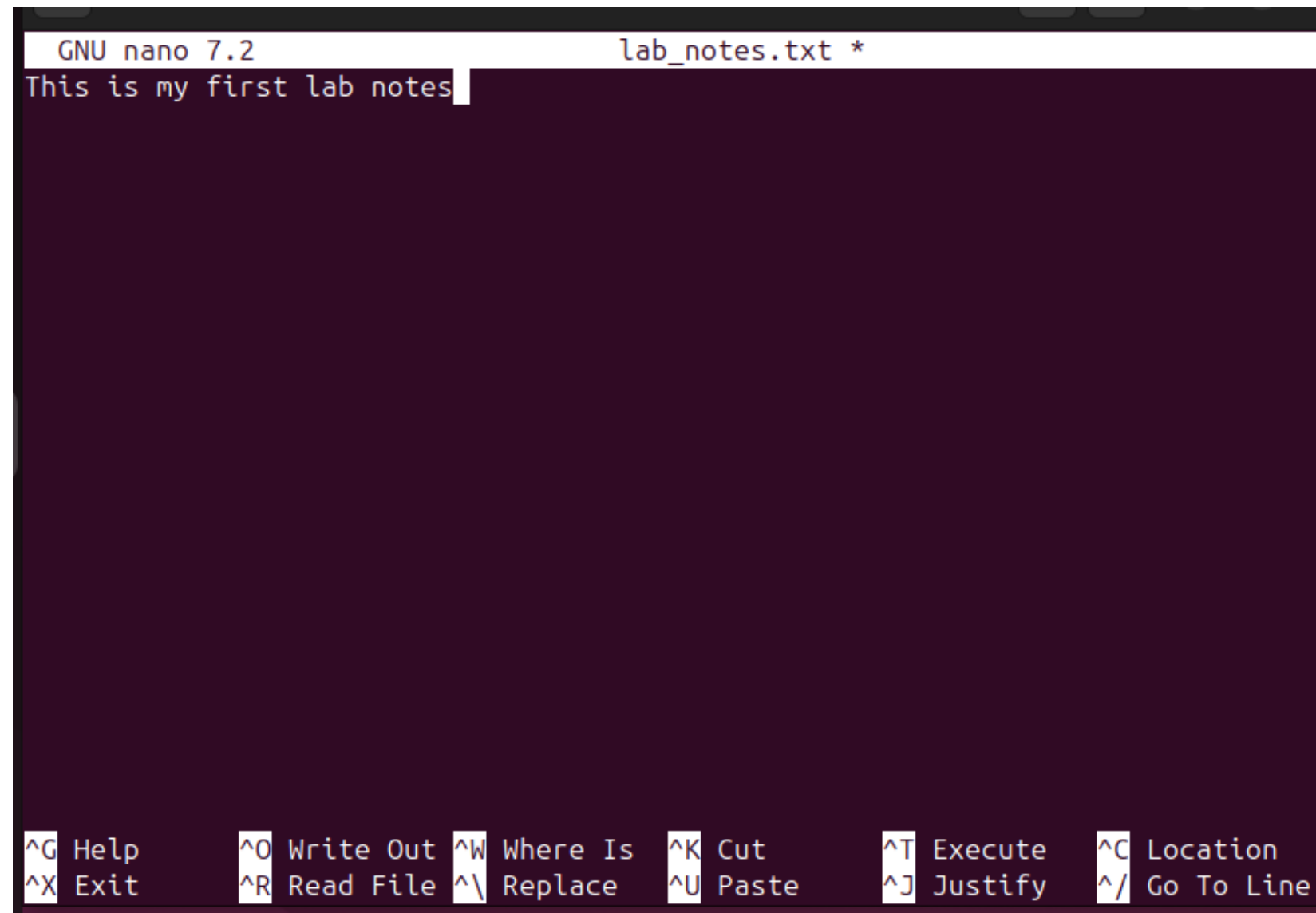


Look here file created
successfully

How to Write in a File: Steps

1. command: **nano** filename.txt

```
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ nano lab_notes.txt
```



```
GNU nano 7.2 lab_notes.txt *
This is my first lab notes
^G Help  ^O Write Out  ^W Where Is  ^K Cut      ^T Execute   ^C Location
^X Exit  ^R Read File  ^\ Replace   ^U Paste    ^J Justify   ^/ Go To Line
```

Then enter

This page
will appear

Write anything here

How to Write in a File: Steps

2. command: **echo** used to display text, but it can also be used to write to a file.

Ex1: `echo "This is my second line in my notes" > lab_notes.txt`

- This will create a file called lab_notes.txt and write "This is my second line in my notes" to it.
- If lab_notes.txt already exists, it will **overwrite** the content of the file.

```
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ echo "This is the second line in my notes" > lab_notes.txt
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ cat lab_notes.txt
This is the second line in my notes
```

Ex2: `echo "This is my second line in my notes" >> lab_notes.txt`

- To add content **without overwriting** the existing file, use >> instead of >.

```
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ echo "This is the second line in my notes" >> lab_notes.txt
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ cat lab_notes.txt
This is my first lab notes
This is the second line in my notes
```


How to View Content of a File: Steps

command: **cat** filename.txt , Also **head**, **tail** and **less** commands are used

```
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ cat lab_notes.txt  
This is my first lab notes
```

Note commands differences

- cat - Display the contents of a file
- head - Display the **first** few lines of a file.
- tail - Display the **last** few lines of a file.
- less - View the contents of a file **page by page**.

How to View Content of a File: Steps

command: **cp** File.txt /copyLocation → Copy a file.

```
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ cp lab_notes.txt ~/Downloads
lenovo@lenovo-VMware-Virtual-Platform:~/course101$ cd ~/Downloads
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$ ls
lab_notes.txt
```

Look file copied from
csci101 folder to
Downloads successfully

command: **mv** File.txt /newLocation → Move a file.

```
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$ mv lab_notes.txt ~/Desktop
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$ ls
lenovo@lenovo-VMware-Virtual-Platform:~/Downloads$ cd ~/Desktop
lenovo@lenovo-VMware-Virtual-Platform:~/Desktop$ ls
lab_notes.txt
```

Look file moved from
Downloads to Desktop
successfully

command: **rm** File.txt → Delete a file.

```
lenovo@lenovo-VMware-Virtual-Platform:~/Desktop$ rm lab_notes.txt
lenovo@lenovo-VMware-Virtual-Platform:~/Desktop$ ls
lenovo@lenovo-VMware-Virtual-Platform:~/Desktop$
```

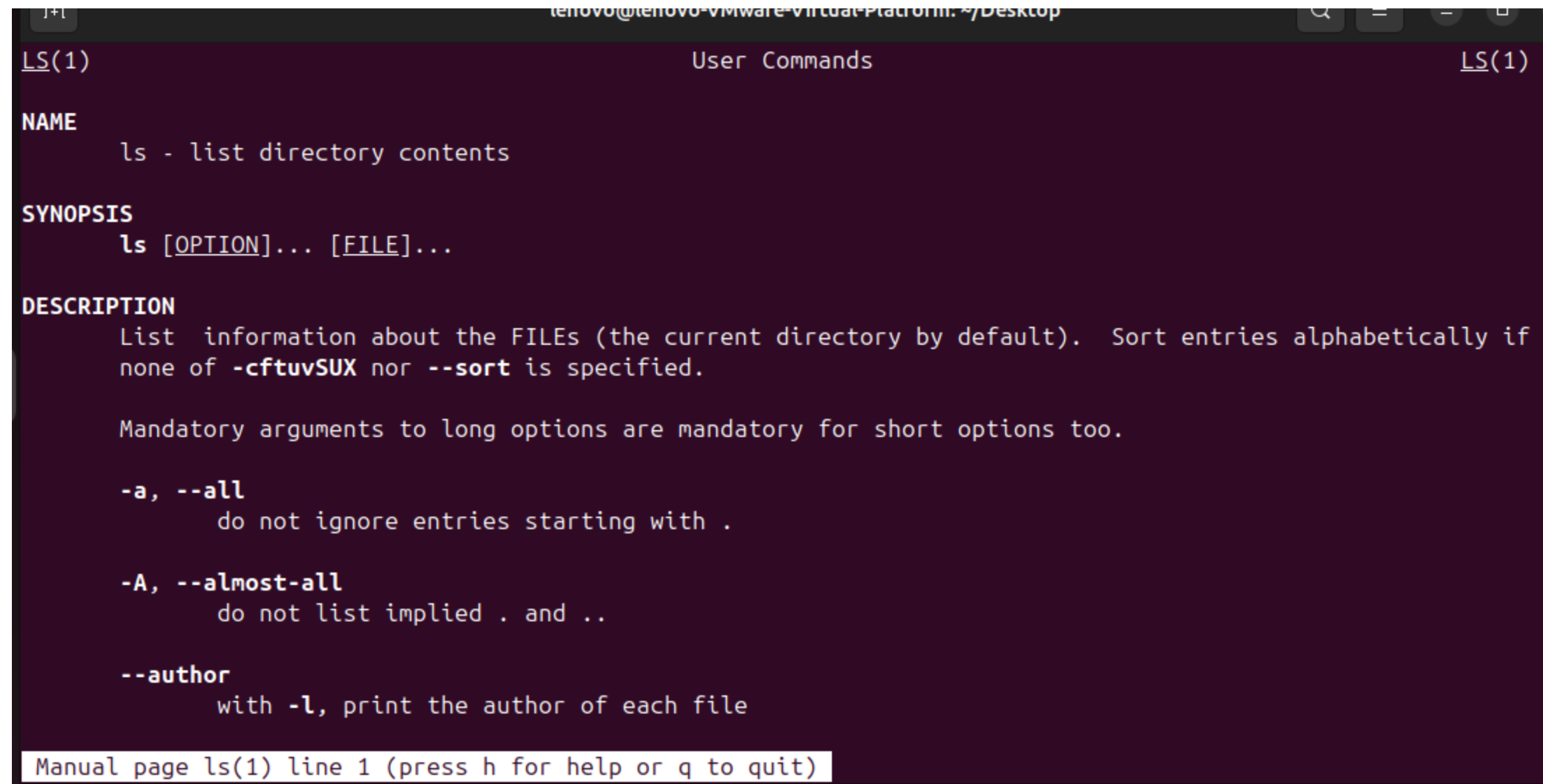
Look deleted successfully

How to Get Help For a Specific Command: Steps

using **man** → Display the manual for a command.

Syntax: `man command_name`

```
lenovo@lenovo-VMware-Virtual-Platform:~/Desktop$ man ls
```



```
lenovo@lenovo-VMware-Virtual-Platform:~/Desktop
LS(1)                                User Commands                                LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILES (the current directory by default).  Sort entries alphabetically if
    none of -cftuvSUX nor --sort is specified.

    Mandatory arguments to long options are mandatory for short options too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
        with -l, print the author of each file

Manual page ls(1) line 1 (press h for help or q to quit)
```

How to Get Help For a Specific Command: Steps

using **man** → Display the manual for a command.

Syntax: `man command_name`

```
lenovo@lenovo-VMware-Virtual-Platform:~/Desktop$ ls --help
Usage: ls [OPTION]... [FILE]...
List information about the FILES (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.
  -a, --all                do not ignore entries starting with .
  -A, --almost-all        do not list implied . and ..
      --author              with -l, print the author of each file
  -b, --escape             print C-style escapes for nongraphic characters
```

Task 1

File Management task

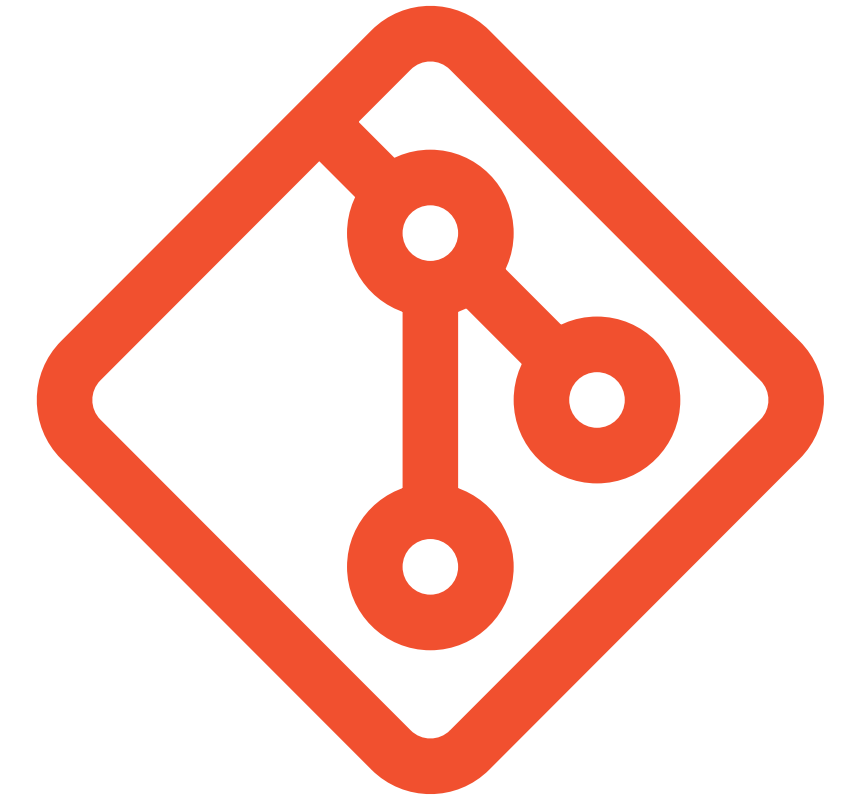
1. Create an empty file called **Task.txt** inside your home directory.
2. Write "**Hello, World!**" into the file **Task.txt** using the echo command.
3. Append "**This is a test.**" to the same file.
4. Copy **Task.txt** to Desktop
5. Remove **Task.txt** from your home directory.



Congratulations on finishing your task

Version Control (Git)

L A B 5 - W E E K 6



CSCI101 Team

Creating Your GitHub Account

Go to github.com

Enter Your Email and Password

Welcome to GitHub!
Let's begin the adventure

Enter your email*

✓ xixili6065@amxyy.com

Create a password*

✓ P@ss123*3875/



Enter a username*

→ User422

Continue

Create your first project
Ready to start building? Create a repository for a new idea or bring over an existing repository to keep contributing to it.

[Create repository](#) [Import repository](#)

Home

[Send feedback](#) [Filter](#)

[Start writing code](#)

Start a new repository for PineapplePieEater

A repository contains all of your project's files, revision history, and collaborator discussion.

Repository name *
name your new repository...

☐ **Public**
Anyone on the internet can see this repository

☒ **Private**
You choose who can see and commit to this repository

[Create a new repository](#)

Introduce yourself with a profile README

Share information about yourself by creating a profile README, which appears at the top of your profile page.

PineapplePieEater / README.md [Create](#)

```
1 - 🙋 Hi, I'm @PineapplePieEater
2 - 👁 I'm interested in ...
3 - 🌱 I'm currently learning ...
4 - 💖 I'm looking to collaborate
5 - 💻 How to reach me ...
6 - 😊 Pronouns: ...
7 - ✨ Fun fact: ...
8
```

Explore repositories

[cataclysmteam / Cataclysm-BN](#) [☆](#)
Cataclysm: Bright Nights, A fork/variant of Cataclysm:DDA by CleverRaven.
☆ 656 C++

[googleapis / google-cloud-go](#) [☆](#)
Google Cloud Client Libraries for Go.
☆ 3.7k Go

[ankidroid / Anki-Android](#) [☆](#)
AnkiDroid: Anki flashcards on Android. Your secret trick to achieve superhuman information retention.
☆ 8.4k Kotlin

[Explore more →](#)

<https://github.com/new>

Name your repository & Create it

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk ().*

Owner *



PineapplePieEater

Repository name *

MyFirstRepository

✔ MyFirstRepository is available.

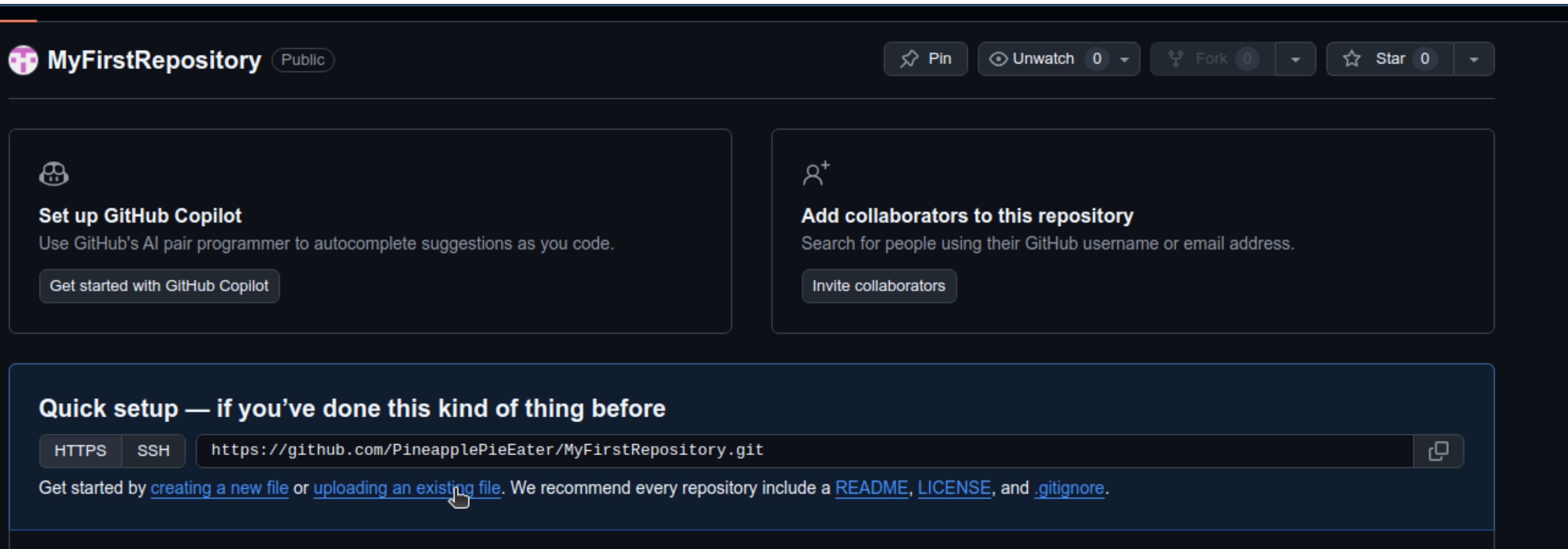
Great repository names are short and memorable. Need inspiration? How about

miniature-octo-computing-machine ?

Description (optional)

Upload Your Document to Your Repository

Choose your file and upload it



The screenshot shows the GitHub interface for a repository named 'MyFirstRepository'. At the top, the repository name is followed by a 'Public' badge. To the right are buttons for 'Pin', 'Unwatch' (with a count of 0), 'Fork' (with a count of 0), and 'Star' (with a count of 0). Below this, there are two main action cards. The left card is for 'Set up GitHub Copilot', featuring a Copilot icon, the title, a description 'Use GitHub's AI pair programmer to autocomplete suggestions as you code.', and a 'Get started with GitHub Copilot' button. The right card is for 'Add collaborators to this repository', featuring a person icon with a plus sign, the title, a description 'Search for people using their GitHub username or email address.', and an 'Invite collaborators' button. At the bottom, there is a 'Quick setup' section with the heading 'Quick setup — if you've done this kind of thing before'. It contains two tabs, 'HTTPS' and 'SSH', and a text input field with the URL 'https://github.com/PineapplePieEater/MyFirstRepository.git'. To the right of the input field is a copy icon. Below the input field, it says 'Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).' A mouse cursor is pointing at the 'uploading an existing file' link.

MyFirstRepository Public

Pin Unwatch 0 Fork 0 Star 0

Set up GitHub Copilot
Use GitHub's AI pair programmer to autocomplete suggestions as you code.
Get started with GitHub Copilot


Add collaborators to this repository
Search for people using their GitHub username or email address.
Invite collaborators

Quick setup — if you've done this kind of thing before

HTTPS SSH `https://github.com/PineapplePieEater/MyFirstRepository.git`

Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

test.txt



Commit changes

Add files via upload

Add an optional extended description...

Commit changes

Cancel

**CONGRATS!
YOU MADE
YOUR FIRST
COMMIT**

Task 1

- Make a pull request on “Task.txt” in this repository <[repo_link](#)>

THANK YOU

A n y Q u e s t i o n s ?