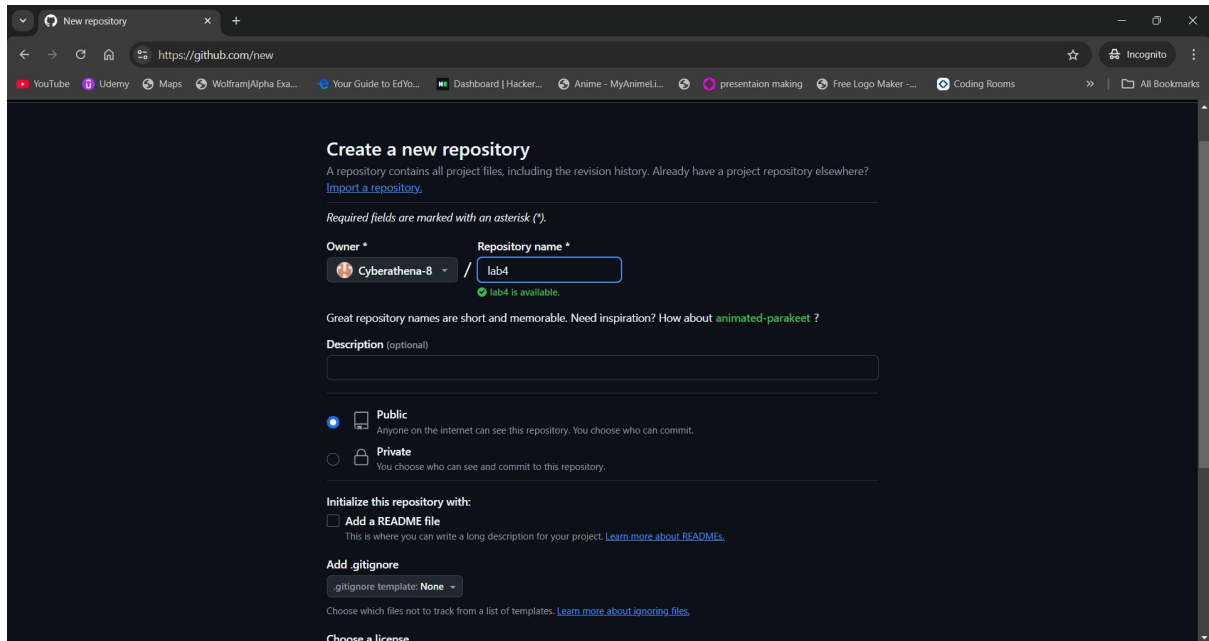


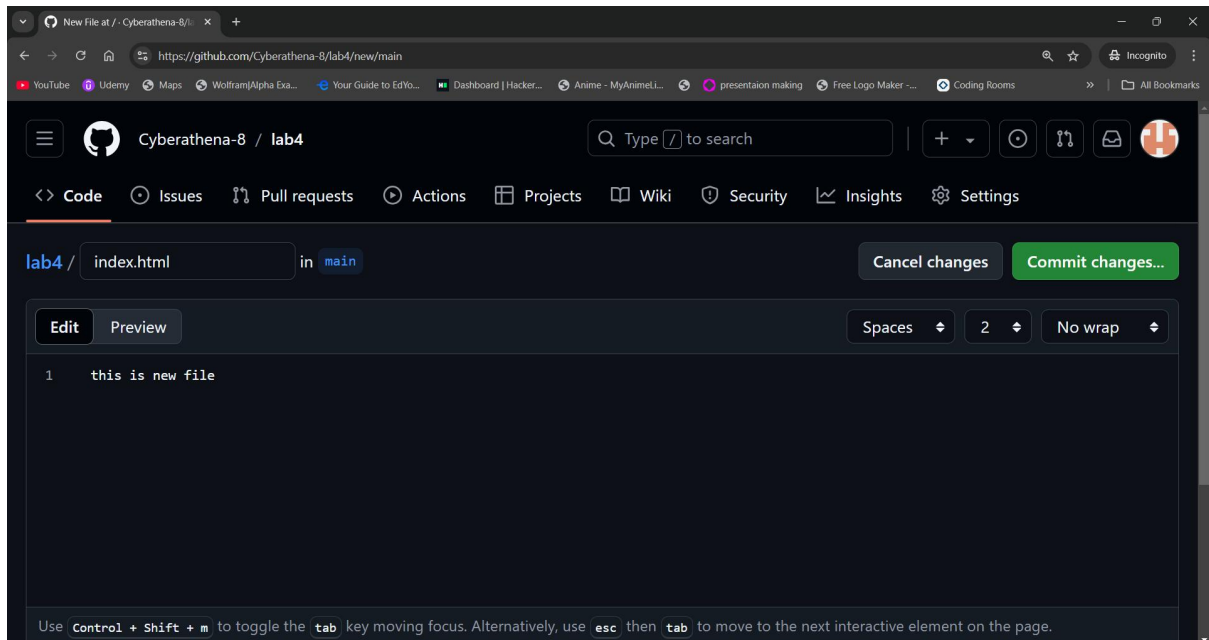
Assignment 4

Creating the repository on GitHub



The screenshot shows the GitHub 'Create a new repository' page. The browser address bar shows 'https://github.com/new'. The page title is 'Create a new repository'. Below the title, it says 'A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)'. A note states 'Required fields are marked with an asterisk (*)'. The 'Owner' dropdown is set to 'Cyberathena-8'. The 'Repository name' field contains 'lab4', with a green checkmark and the text 'lab4 is available.' below it. A tip suggests 'Great repository names are short and memorable. Need inspiration? How about [animated-parakeet](#) ?'. The 'Description (optional)' field is empty. Under 'Visibility', the 'Public' radio button is selected, with the text 'Anyone on the internet can see this repository. You choose who can commit.' Below it, the 'Private' option is unselected, with the text 'You choose who can see and commit to this repository.' Under 'Initialize this repository with:', the 'Add a README file' checkbox is unchecked, with the text 'This is where you can write a long description for your project. [Learn more about READMEs.](#)'. The 'Add .gitignore' section shows a dropdown menu set to 'None', with the text 'Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)'. At the bottom, there is a 'Choose a license' link.

Creating new file



The screenshot shows the GitHub repository page for 'Cyberathena-8 / lab4'. The browser address bar shows 'https://github.com/Cyberathena-8/lab4/new/main'. The page has a navigation bar with links for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. Below the navigation bar, the file path 'lab4 / index.html' is shown, along with 'in main' and buttons for 'Cancel changes' and 'Commit changes...'. The 'Edit' tab is selected, and the file content is visible in a text editor. The content is '1 this is new file'. The editor has settings for 'Spaces' (set to 2) and 'No wrap'. At the bottom, a footer note says 'Use **Control + Shift + m** to toggle the **tab** key moving focus. Alternatively, use **esc** then **tab** to move to the next interactive element on the page.'

Cloning the laboratory

```
pushpak@MSI: ~/new_repo
pushpak@MSI:~/assig$ cd
pushpak@MSI:~$ mkdir new_repo
pushpak@MSI:~$ cd new_repo/
pushpak@MSI:~/new_repo$ git clone https://github.com/Cyberathena-8/lab4
Cloning into 'lab4'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
pushpak@MSI:~/new_repo$ ls
lab4
pushpak@MSI:~/new_repo$ |
```

Creating changes and pushing to origin

```
pushpak@MSI: ~/new_repo/lab4$ cat index.html
this is new file

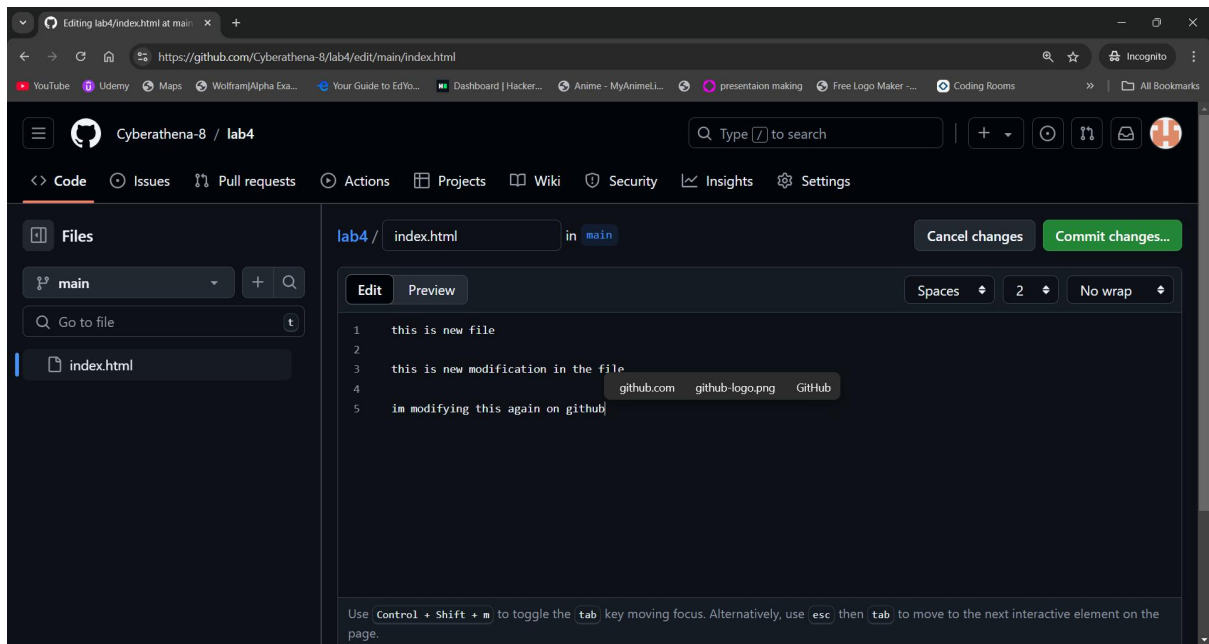
this is new modification in the file
pushpak@MSI:~/new_repo/lab4$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.html

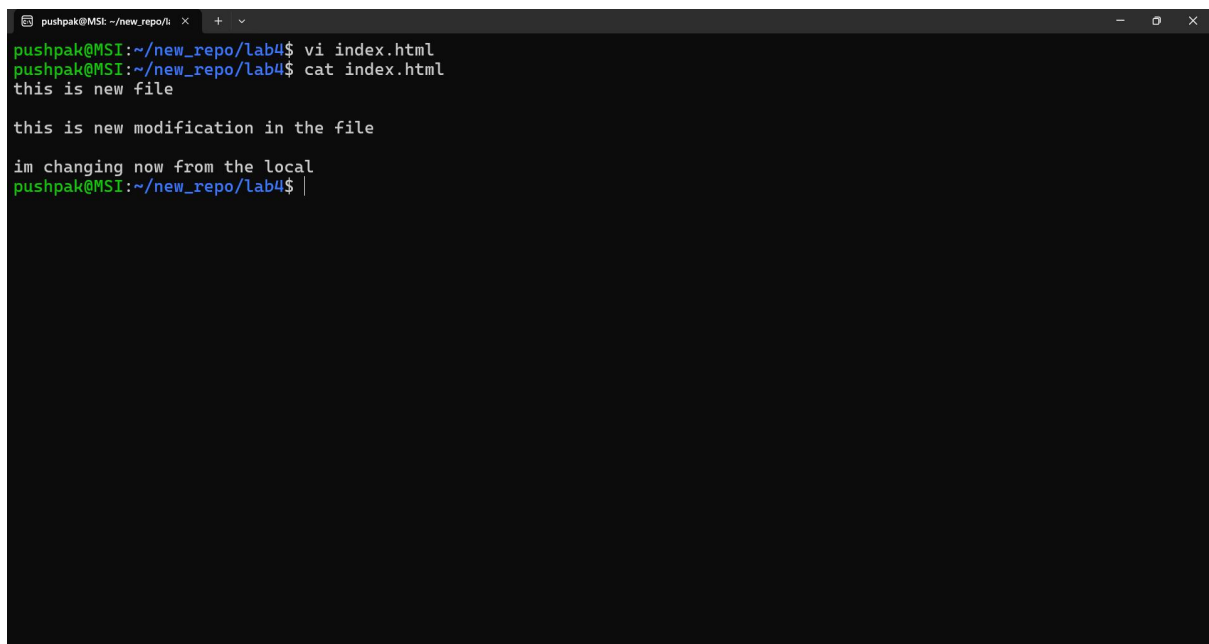
no changes added to commit (use "git add" and/or "git commit -a")
pushpak@MSI:~/new_repo/lab4$ git add index.html
pushpak@MSI:~/new_repo/lab4$ git commit -m "Modified index.html locally"
[main 249f621] Modified index.html locally
 1 file changed, 2 insertions(+)
pushpak@MSI:~/new_repo/lab4$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
pushpak@MSI:~/new_repo/lab4$ git push origin main
Username for 'https://github.com': Pushpak-23
Password for 'https://Pushpak-23@github.com':
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
```

Modifying on GitHub



Modifying locally



Trying to push

```
pushpak@MSI: ~/new_repo/lab4$ vi index.html
pushpak@MSI:~/new_repo/lab4$ cat index.html
this is new file

this is new modification in the file

im changing now from the local
pushpak@MSI:~/new_repo/lab4$ git add index.html
pushpak@MSI:~/new_repo/lab4$ git commit -m "Another local modification"
[main e9bdb04] Another local modification
1 file changed, 2 insertions(+)
pushpak@MSI:~/new_repo/lab4$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)

nothing to commit, working tree clean
pushpak@MSI:~/new_repo/lab4$ git push origin main
Username for 'https://github.com': Pushpak-23
Password for 'https://Pushpak-23@github.com':
To https://github.com/Cyberathena-8/lab4
! [rejected]        main -> main (fetch first)
error: failed to push some refs to 'https://github.com/Cyberathena-8/lab4'
hint: Updates were rejected because the remote contains work that you do
hint: not have locally. This is usually caused by another repository pushing
hint: to the same ref. You may want to first integrate the remote changes
hint: (e.g., 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
pushpak@MSI:~/new_repo/lab4$
```

Pull changes from GitHub

```
pushpak@MSI: ~/new_repo/lab4$ git pull origin main
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 944 bytes | 236.00 KiB/s, done.
From https://github.com/Cyberathena-8/lab4
* branch                main       -> FETCH_HEAD
249f621..f34c645 main       -> origin/main
hint: You have divergent branches and need to specify how to reconcile them.
hint: You can do so by running one of the following commands sometime before
hint: your next pull:
hint:
hint:   git config pull.rebase false  # merge (the default strategy)
hint:   git config pull.rebase true   # rebase
hint:   git config pull.ff only        # fast-forward only
hint:
hint: You can replace "git config" with "git config --global" to set a default
hint: preference for all repositories. You can also pass --rebase, --no-rebase,
hint: or --ff-only on the command line to override the configured default per
hint: invocation.
fatal: Need to specify how to reconcile divergent branches.
pushpak@MSI:~/new_repo/lab4$ vi index.html
pushpak@MSI:~/new_repo/lab4$ nano index.html
pushpak@MSI:~/new_repo/lab4$ git add results.txt
fatal: pathspec 'results.txt' did not match any files
pushpak@MSI:~/new_repo/lab4$ git add index.html
pushpak@MSI:~/new_repo/lab4$ git commit -m "Resolved conflict in index.html by keeping both changes"
On branch main
Your branch and 'origin/main' have diverged,
and have 1 and 1 different commits each, respectively.
```

Successfully pushing

```
pushpak@MSI: ~/new_repo/li  x + v
pushpak@MSI:~/new_repo/lab4$ cat index.html
this is new file

this is new modification in the file

im changing now from the local
Another local modification
Modification on GitHub
pushpak@MSI:~/new_repo/lab4$ git add results.txt
fatal: pathspec 'results.txt' did not match any files
pushpak@MSI:~/new_repo/lab4$ git add index.html
pushpak@MSI:~/new_repo/lab4$ git commit -m "Resolved conflict in results.txt by keeping both changes"
On branch main
Your branch and 'origin/main' have diverged,
and have 2 and 1 different commits each, respectively.
(use "git pull" to merge the remote branch into yours)

nothing to commit, working tree clean
pushpak@MSI:~/new_repo/lab4$ git commit -m "Resolved conflict in results.txt by keeping both changes"
On branch main
Your branch and 'origin/main' have diverged,
and have 2 and 1 different commits each, respectively.
(use "git pull" to merge the remote branch into yours)

nothing to commit, working tree clean
pushpak@MSI:~/new_repo/lab4$ |
```

Question 2

Creating directory on GitHub

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 * Cyberathena-8 Repository name * demo

Great repository names are short and memorable. Need inspiration? How about [effective-enigma](#)?

Description (optional)

☐ Public
Anyone on the internet can see this repository. You choose who can commit.

☐ Private
You choose who can see and commit to this repository.

Initialize this repository with:

☐ Add a README file
This is where you can write a long description for your project. [Learn more about READMEs](#).

Add .gitignore

.gitignore template: None

Choose which files not to track from a list of templates. [Learn more about ignoring files](#).

Choose a license

License: None

A license tells others what they can and can't do with your code. [Learn more about licenses](#).

☐ You are creating a public repository in your personal account.

Create repository

Creating a local repository

```
pushpak@osboxes:~/assign$ mkdir hpcsa
pushpak@osboxes:~/assign$ cd hpcsa/
pushpak@osboxes:~/assign/hpcsa$ ls
pushpak@osboxes:~/assign/hpcsa$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/pushpak/assign/hpcsa/.git/
pushpak@osboxes:~/assign/hpcsa$ echo "This is the first commit" > README.md
pushpak@osboxes:~/assign/hpcsa$ git add README.md
pushpak@osboxes:~/assign/hpcsa$ git commit -m "Initial commit with README.md"
[master (root-commit) a00a2bb] Initial commit with README.md
1 file changed, 1 insertion(+)
create mode 100644 README.md
pushpak@osboxes:~/assign/hpcsa$
```

Link local repository to git

```
pushpak@osboxes: ~/assign/hpcs$ git remote add origin https://github.com/Cyberathena-8/demo.git
pushpak@osboxes: ~/assign/hpcs$ vi index.html
pushpak@osboxes: ~/assign/hpcs$ cat index.html
<!DOCTYPE html>
<html>
<body>

<h2>HTML Buttons</h2>
<p>HTML buttons are defined with the button tag:</p>

<button>Click me</button>

</body>
</html>

pushpak@osboxes: ~/assign/hpcs$ git add index.html
pushpak@osboxes: ~/assign/hpcs$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   index.html

pushpak@osboxes: ~/assign/hpcs$ git commit -m "Add index.html file"
[master 141ab05] Add index.html file
1 file changed, 12 insertions(+)
create mode 100644 index.html
```

Pushing to the GitHub

```
pushpak@osboxes: ~/assign/hpcs$ git push -u origin master
Username for 'https://github.com': Cyberathena-8
Password for 'https://Cyberathena-8@github.com':
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 615 bytes | 615.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Cyberathena-8/demo.git
 * [new branch]      master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
pushpak@osboxes: ~/assign/hpcs$
```

Question 3

Creating the Container

```
pushpak@osboxes:~$ docker run -it --name my_ubuntu_container ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
ff65ddf9395b: Pull complete
Digest: sha256:99c35190e22d294cdace2783ac55effc69d32896daaa265f0bbedbcde4fbc3e5
Status: Downloaded newer image for ubuntu:latest
root@70caa0137454:/# apt update
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble InRelease [256 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [574 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/main amd64 Packages [1808 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [15.3 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [542 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [331 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [720 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [117 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [19.3 MB]
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [18.4 kB]
Get:14 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [930 kB]
Get:15 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [793 kB]
Get:16 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [542 kB]
Get:17 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [11.8 kB]
Fetched 26.4 MB in 54s (489 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
3 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@70caa0137454:/#
```

Installing python

```
root@70caa0137454:/# python3 --version
Python 3.12.3
root@70caa0137454:/#
```


Creating image from the container

```
root@70caa0137454:/# python3 --version
Python 3.12.3
root@70caa0137454:/# exit
exit
pushpak@osboxes:~$ docker commit my_ubuntu_container ubuntu-python
sha256:e94f769976f2aa53b9fbc6729f306110fb36978fbf951e901d803a9f8616c93d
pushpak@osboxes:~$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
ubuntu-python        latest              e94f769976f2        14 seconds ago     161MB
ubuntu               latest              59ab366372d5        4 weeks ago        78.1MB
pushpak@osboxes:~$
```

Running python in new container

```
pushpak@osboxes:~$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
ubuntu-python        latest              e94f769976f2        2 minutes ago      161MB
ubuntu               latest              59ab366372d5        4 weeks ago        78.1MB
pushpak@osboxes:~$ docker run -it ubuntu-python python3
Python 3.12.3 (main, Sep 11 2024, 14:17:37) [GCC 13.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Question 4

Creating container with 9000 port

```
pushpak@osboxes:~$ docker run -d --name httpd_container -p 9000:80 httpd
Unable to find image 'httpd:latest' locally
latest: Pulling from library/httpd
a480a496ba95: Pull complete
3a2663e66670: Pull complete
4f4fb700ef54: Pull complete
dbde712f81fb: Pull complete
867b2ea3628d: Pull complete
6bd9d3710aae: Pull complete
Digest: sha256:bbea29057f25d9543e6a96a8e3cc7c7c937206d20eab2323f478fdb2469d536d
Status: Downloaded newer image for httpd:latest
70af31f25a0b48b970f188df783c7b28405a71950c6a9644a6be8c48bf60d84e
pushpak@osboxes:~$
```

Checking the URL

```
pushpak@osboxes:~$ docker run -d --name httpd_container -p 9000:80 httpd
Unable to find image 'httpd:latest' locally
latest: Pulling from library/httpd
a480a496ba95: Pull complete
3a2663e66670: Pull complete
4f4fb700ef54: Pull complete
dbde712f81fb: Pull complete
867b2ea3628d: Pull complete
6bd9d3710aae: Pull complete
Digest: sha256:bbea29057f25d9543e6a96a8e3cc7c7c937206d20eab2323f478fdb2469d536d
Status: Downloaded newer image for httpd:latest
70af31f25a0b48b970f188df783c7b28405a71950c6a9644a6be8c48bf60d84e
pushpak@osboxes:~$ sudo apt install curl -y
[sudo] password for pushpak:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
curl is already the newest version (7.81.0-1ubuntu1.18).
0 upgraded, 0 newly installed, 0 to remove and 598 not upgraded.
pushpak@osboxes:~$ curl http://localhost:9000
<html><body><h1>It works!</h1></body></html>
pushpak@osboxes:~$
```

