VIT Vidyalankar institute of Technology ACCREDITED A+ BY NAAC	Department of Information Technology

Semester	BE Semester VIII– INFT Engineering
Subject	Devops Lab
Lab Professor In-charge	Prof. Rohit Barve

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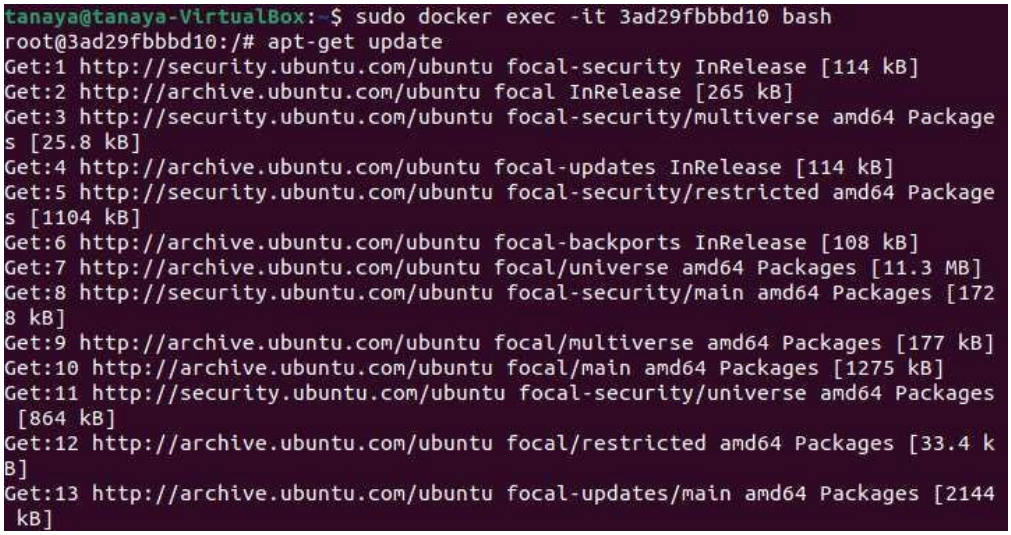
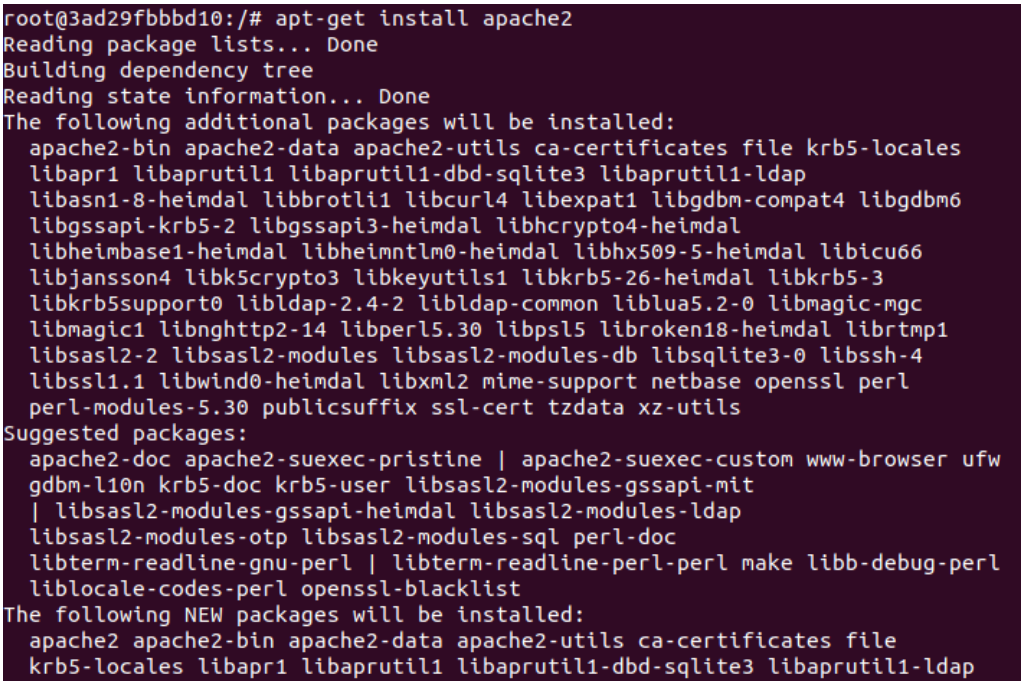
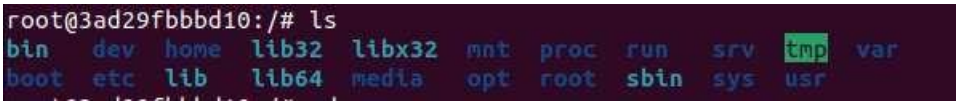
Grade and Subject Teacher's Signature		

Experiment Number	4	
Experiment Title	Using Docker Hub for saving container repositories.	
Resources / Apparatus Required	**Hardware :** Laptop / Desktop	**Software :** Linux Operating System
Theory	**DOCKER** Docker is an open source containerization platform. It enables developers to package applications into containers—standardized executable components combining application source code with the operating system (OS) libraries and dependencies required to run that code in any environment. Containers simplify delivery of distributed applications, and have become increasingly popular as organizations shift to cloud-native development and hybrid multicloud environments. Developers can create containers without Docker, but the platform makes it easier, simpler, and safer to build, deploy and manage containers. Docker is essentially a toolkit that enables developers to build, deploy, run, update, and stop containers using simple commands and work-saving automation through a single API. **CONTAINER** Containers are made possible by process isolation and virtualization capabilities built into the Linux kernel. These capabilities - such as control *groups* (Cgroups) for allocating resources among processes and *namespaces* for restricting a processes access or visibility into other resources or areas of the system - enable multiple application components to share the resources of a single instance of the host operating system in much the same way that a hypervisor enables multiple virtual machines (VMs) to share the CPU, memory and other resources of a single hardware server.	

Commands	**apt-get update** This method updates packages from the Internet on to the Linux system.  **apt-get install apache2** This command installs the apache2 web server.  **ls** This command list all the containers in docker. 

service apache2 start
This command starts the apache2 web server.

```
root@3ad29fbbbd10:/# service apache2 start
 * Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified dom
ain name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress
 this message
 *
```

sudo docker login
This command is used to login to the docker hub repository.

```
tanaya@tanaya-VirtualBox:~$ sudo docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't
 have a Docker ID, head over to https://hub.docker.com to create one.
Username: tanayadesai
Password:
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
```

sudo docker commit 3ad29fbbbd10 tanayadesai/ubuntunew
This command creates a new image of an edited container on the local system.

```
tanaya@tanaya-VirtualBox:~$ sudo docker commit 3ad29fbbbd10 tanayadesai
sha256:0aadb498b2d13e750a1e1125b2018bfa4438c5bfd97d5b74e34b77de5f56b9fc
```

sudo docker images
This command lists all the locally stored docker images.

```
tanaya@tanaya-VirtualBox:~$ sudo docker images
REPOSITORY    TAG       IMAGE ID       CREATED          SIZE
tanayadesai   latest    0aadb498b2d1   4 seconds ago    221MB
<none>        <none>    41a009e4768d   54 seconds ago   221MB
ubuntu        latest    825d55fb6340   34 hours ago     72.8MB
```

sudo docker push
This command is used to push an image to the docker hub repository.

```
tanaya@tanaya-VirtualBox:~$ sudo docker push tanayadesai/ubuntunew
Using default tag: latest
The push refers to repository [docker.io/tanayadesai/ubuntunew]
6b0f16b4e868: Pushing  24.68MB/148.3MB
6b0f16b4e868: Pushed
c5ec52c98b31: Pushed
latest: digest: sha256:5c47ebbd201231c77f201a1a667794c6bda8f2ac4497cba0aaf4794f
bf1040af size: 741
```

sudo docker ps -a

This command is used to show all the running and exited containers.