

Experiment No : 5

Title: Implementation of Docker commands

Objectives: To implement Docker commands.

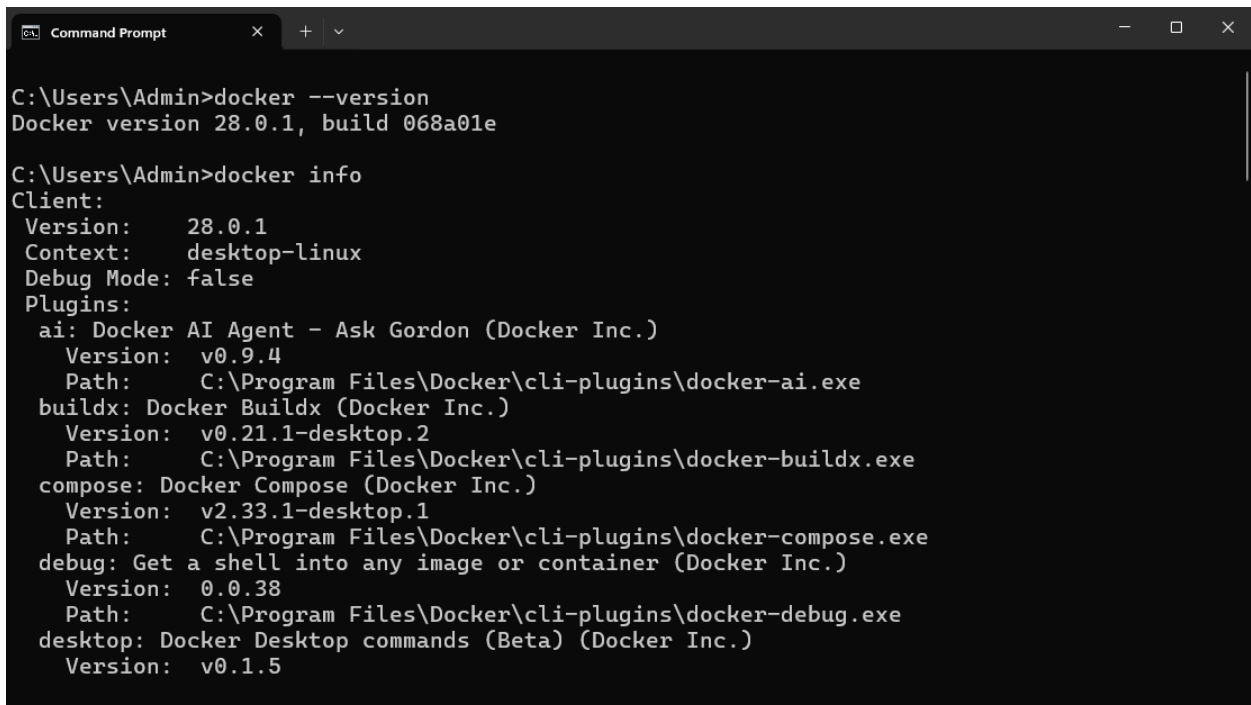
Steps

Step 1: Install Docker on Windows

Verify Installation

Open Command Prompt (cmd) and run

Check if Docker Daemon is Running

A screenshot of a Windows Command Prompt window. The title bar says "Command Prompt". The command prompt shows the following text:

```
C:\Users\Admin>docker --version
Docker version 28.0.1, build 068a01e

C:\Users\Admin>docker info
Client:
Version:      28.0.1
Context:      desktop-linux
Debug Mode:   false
Plugins:
ai: Docker AI Agent - Ask Gordon (Docker Inc.)
   Version:   v0.9.4
   Path:      C:\Program Files\Docker\cli-plugins\docker-ai.exe
buildx: Docker Buildx (Docker Inc.)
   Version:   v0.21.1-desktop.2
   Path:      C:\Program Files\Docker\cli-plugins\docker-buildx.exe
compose: Docker Compose (Docker Inc.)
   Version:   v2.33.1-desktop.1
   Path:      C:\Program Files\Docker\cli-plugins\docker-compose.exe
debug: Get a shell into any image or container (Docker Inc.)
   Version:   0.0.38
   Path:      C:\Program Files\Docker\cli-plugins\docker-debug.exe
desktop: Docker Desktop commands (Beta) (Docker Inc.)
   Version:   v0.1.5
```

Step 2: Log in to Docker Hub

```
Command Prompt
C:\Users\Admin>docker login
Authenticating with existing credentials... [Username: sangaleakshata16]

Info → To login with a different account, run 'docker logout' followed by 'docker login'

Stored credentials invalid or expired

USING WEB-BASED LOGIN

Info → To sign in with credentials on the command line, use 'docker login -u <username>'

Your one-time device confirmation code is: SXZB-XKRW
Press ENTER to open your browser or submit your device code here: https://login.docker.com/activate

Waiting for authentication in the browser...
Error response from daemon: Get "https://registry-1.docker.io/v2/": unauthorized: incorrect username or password

C:\Users\Admin>
```

```
C:\Users\Admin>docker login -u sangaleakshata16

Info → A Personal Access Token (PAT) can be used instead.
       To create a PAT, visit https://app.docker.com/settings

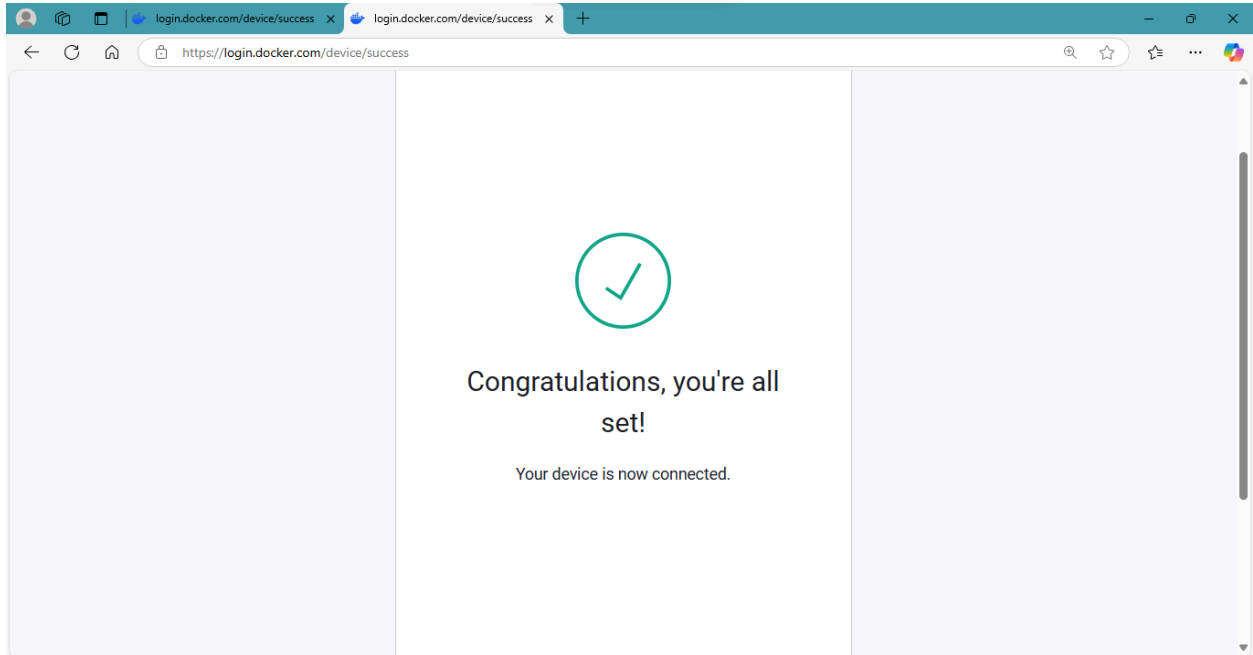
Password:
Login Succeeded

C:\Users\Admin>docker login
Authenticating with existing credentials... [Username: sangaleakshata16]

Info → To login with a different account, run 'docker logout' followed by 'docker login'

Login Succeeded

C:\Users\Admin>S
```



Step 3: Pull an Image from Docker Hub

```
Command Prompt

Password:
Login Succeeded

C:\Users\Admin>docker login
Authenticating with existing credentials... [Username: sangaleakshata16]

Info → To login with a different account, run 'docker logout' followed by 'docker login'

Login Succeeded

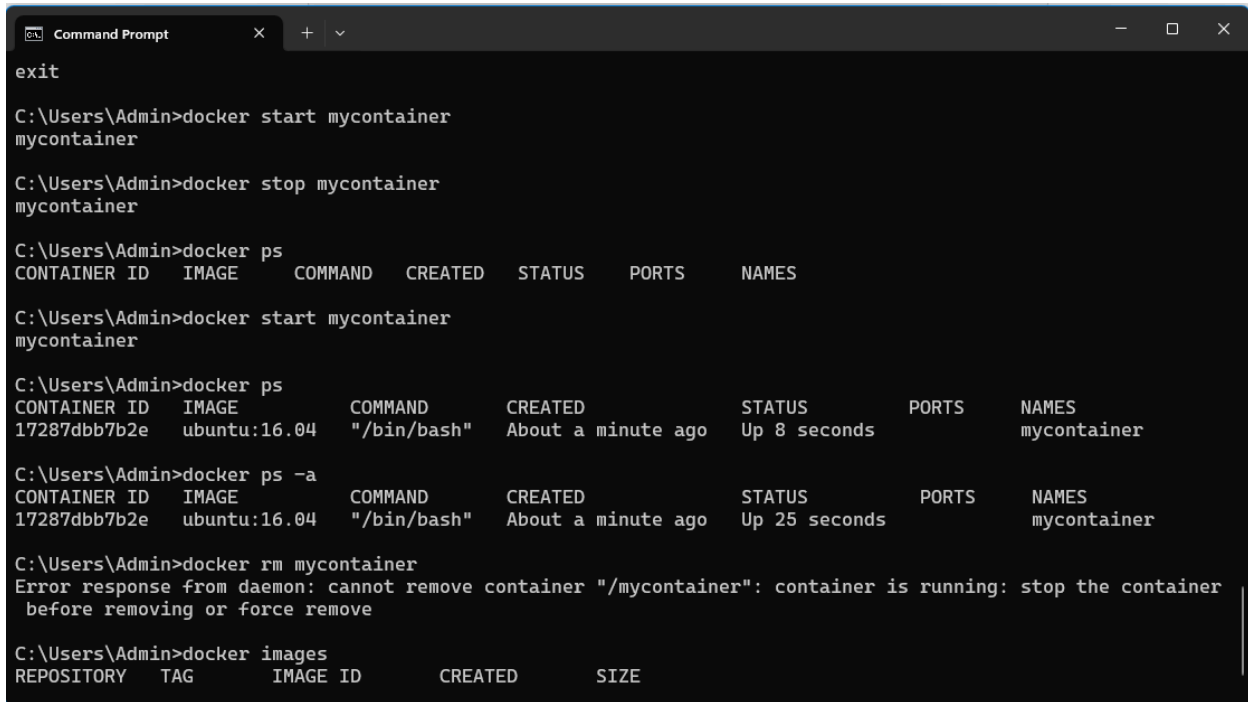
C:\Users\Admin>docker pull ubuntu:16.04
16.04: Pulling from library/ubuntu
fb15d46c38dc: Pull complete
b51569e7c507: Pull complete
58690f9b18fc: Pull complete
da8ef40b9eca: Pull complete
Digest: sha256:1f1a2d56de1d604801a9671f301190704c25d604a416f59e03c04f5c6ffee0d6
Status: Downloaded newer image for ubuntu:16.04
docker.io/library/ubuntu:16.04

C:\Users\Admin>
```

Step 4: Run a Container

```
C:\Users\Admin>docker run --name mycontainer -it ubuntu:16.04 /bin/bash
root@17287dbb7b2e:/# exit
exit
C:\Users\Admin>
```

Step 5: Start and Stop a Container



```
exit

C:\Users\Admin>docker start mycontainer
mycontainer

C:\Users\Admin>docker stop mycontainer
mycontainer

C:\Users\Admin>docker ps
CONTAINER ID   IMAGE          COMMAND         CREATED        STATUS        PORTS          NAMES
17287dbb7b2e   ubuntu:16.04   "/bin/bash"     About a minute ago    Up 8 seconds          mycontainer

C:\Users\Admin>docker start mycontainer
mycontainer

C:\Users\Admin>docker ps
CONTAINER ID   IMAGE          COMMAND         CREATED        STATUS        PORTS          NAMES
17287dbb7b2e   ubuntu:16.04   "/bin/bash"     About a minute ago    Up 25 seconds          mycontainer

C:\Users\Admin>docker rm mycontainer
Error response from daemon: cannot remove container "/mycontainer": container is running: stop the container before removing or force remove

C:\Users\Admin>docker images
REPOSITORY    TAG        IMAGE ID        CREATED        SIZE
```

Step 6: List Containers

Step 7: Remove a Container

```
Command Prompt
mycontainer

C:\Users\Admin>docker stop mycontainer
mycontainer

C:\Users\Admin>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
C:\Users\Admin>docker start mycontainer
mycontainer

C:\Users\Admin>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
17287dbb7b2e   ubuntu:16.04  "/bin/bash"             About a minute ago    Up 8 seconds        mycontainer

C:\Users\Admin>docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
17287dbb7b2e   ubuntu:16.04  "/bin/bash"             About a minute ago    Up 25 seconds        mycontainer

C:\Users\Admin>docker rm mycontainer
Error response from daemon: cannot remove container "/mycontainer": container is running: stop the container before removing or force remove

C:\Users\Admin>docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
ubuntu        16.04     1f1a2d56de1d   3 years ago    195MB

C:\Users\Admin>
```

```
C:\Users\Admin>docker tag ubuntu:16.04 sangaleakshata16/myubuntu:latest

C:\Users\Admin>docker push sangaleakshata16/myubuntu:latest
The push refers to repository [docker.io/sangaleakshata16/myubuntu]
fb15d46c38dc: Mounted from library/ubuntu
58690f9b18fc: Mounted from library/ubuntu
b51569e7c507: Mounted from library/ubuntu
da8ef40b9eca: Mounted from library/ubuntu
latest: digest: sha256:a3785f78ab8547ae2710c89e627783cfa7ee7824d3468cae6835c9f4eae23ff7 size: 1150

Info -> Not all multiplatform-content is present and only the available single-platform image was pushed
sha256:1f1a2d56de1d604801a9671f301190704c25d604a416f59e03c04f5c6ffee0d6 -> sha256:a3785f78ab8547ae2710c89e627783cfa7ee7824d3468cae6835c9f4eae23ff7

C:\Users\Admin>
```

Step 8: List Images

Step 9: Push an Image to Docker Hub

Step 10: Clean Up Docker

docker rmi ubuntu:16.04

```
container before removing or force remove

C:\Users\Admin>docker images
REPOSITORY      TAG         IMAGE ID      CREATED        SIZE
ubuntu          16.04      1f1a2d56de1d  3 years ago   195MB

C:\Users\Admin>docker tag ubuntu:16.04 sangaleakshata16/myubuntu:latest

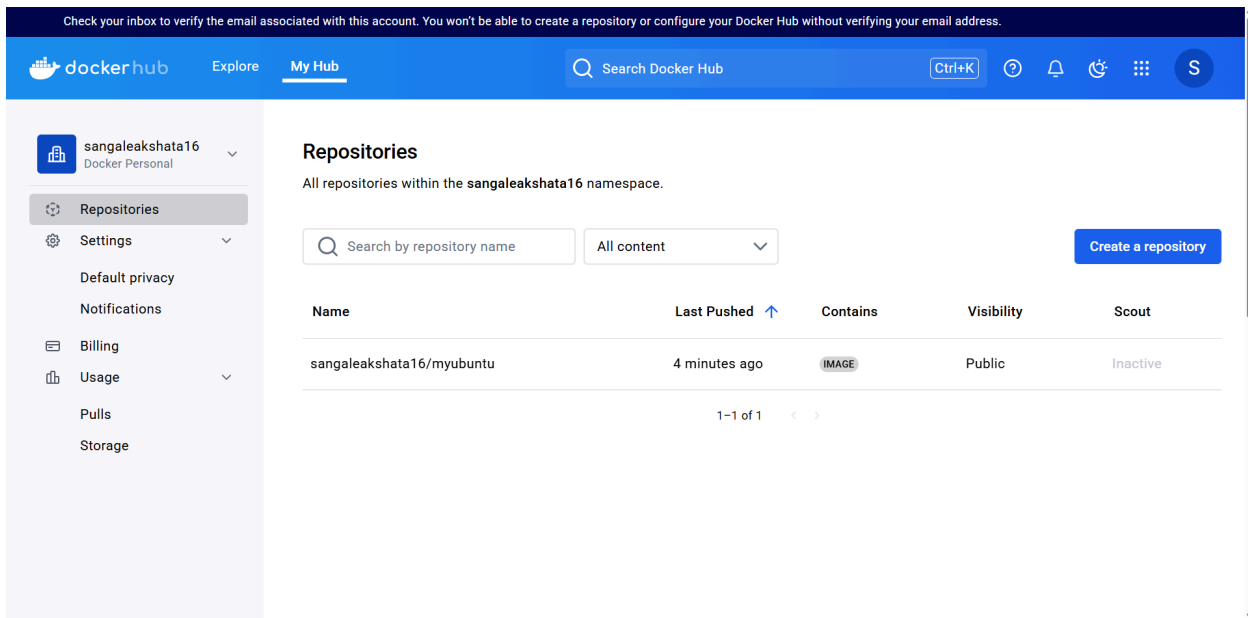
C:\Users\Admin>docker push sangaleakshata16/myubuntu:latest
The push refers to repository [docker.io/sangaleakshata16/myubuntu]
fb15d46c38dc: Mounted from library/ubuntu
58690f9b18fc: Mounted from library/ubuntu
b51569e7c507: Mounted from library/ubuntu
da8ef40b9eca: Mounted from library/ubuntu
latest: digest: sha256:a3785f78ab8547ae2710c89e627783cfa7ee7824d3468cae6835c9f4eae23ff7 size: 1150

Info → Not all multiplatform-content is present and only the available single-platform image was pushed
sha256:1f1a2d56de1d604801a9671f301190704c25d604a416f59e03c04f5c6ffee0d6 -> sha256:a3785f78ab8547ae2710c89e627783cfa7ee7824d3468cae6835c9f4eae23ff7

C:\Users\Admin>docker rmi ubuntu:16.04
Untagged: ubuntu:16.04

C:\Users\Admin>
```

Step 11: to chek the successfully uplod on the Docker



Ask Gordon

Containers

Images

Volumes

Builds

Docker Hub

Docker Scout

Extensions

Containers

View all your running containers and applications.

Container CPU usage

0.00% / 1200% (12 CPUs available)

Container memory usage

1.21MB / 7.46GB

Show charts

Q Search

Only show running containers

	Name	Container ID	Image	Port(s)	CPU (%)	Last started	Actions
<input type="checkbox"/>	mycontainer	17287dbb7b2e	ubuntu:16.04		0%	12 minutes ago	<div></div> <div></div> <div></div>

Showing 1 Item

Engine running | RAM 0.89 GB CPU 0.08% Disk: 1.26 GB used (limit 1006.65 GB) | Terminal Update

Ask Gordon

Containers

Images

Volumes

Builds

Docker Hub

Docker Scout

Extensions

Images

sangaleakshata16/myubuntu:latest

1f1a2d56de1d

CREATED

4 years ago

SIZE

195.13 MB

Recommended fixes

Run

Analysed by Docker Scout

Vulnerabilities (0)

Packages (133)

Give feedback

Q Package or CVE name

Fixable

Show excepted

Reset filters

CVE ID	Severity	Fixable	Present in	Affected package(s)
No vulnerabilities were introduced in the selected layers.				
0-0 of 0				

Layers (5)

ubuntu:16.04

0 0 0 0 0

0	ADD file:11b425d4c08e81a3e0cb2e0345d27cd5fc844dd83f1096af4cc05f6358...	148.5 MB
1	set -xe && echo '#!/bin/sh' > /usr/sbin/policy-rc.d && echo 'exit 101' >> /usr/sbin...	86.02 KB
2	rm -rf /var/lib/apt/lists/*	20.48 KB
3	mkdir -p /run/systemd && echo 'docker' > /run/systemd/container	16.38 KB
4	CMD ["/bin/bash"]	0 B

Engine running | RAM 0.97 GB CPU 0.00% Disk: 1.26 GB used (limit 1006.65 GB) | Terminal Update

```
Command Prompt
Untagged: ubuntu:16.04

C:\Users\Admin>docker search sangaleakshata16/myubuntu
NAME                                DESCRIPTION                                STARS    OFFICIAL
sangaleakshata16/myubuntu          0
smakam/myubuntu                    0
isa14687/myubuntu                  0
kaushikjha5001/myubuntu            0
daniele786/myubuntu                0
lumjjb/myubuntu                    0
lmengxing/myubuntu                2
cyteldockerdemo/myubuntu           0
snorlaxh/myubuntu                  0
sandhyadocker9/myubuntu            0
quang227/myubuntu                  0
mahesh591w/myubuntu                0
educafe/myubuntu                   0
gsengun/myubuntu                   0
tnaga/myubuntu                     0
chetanatole/myubuntu               0
cbweb/myubuntu                     0
doch101/myubuntu                   0
apinar/myubuntu                    0
aagret/myubuntu                    0
xgaia/myubuntu                     0
A docker image containing a custom environme...
```

```
C:\Users\Admin>docker pull sangaleakshata16/myubuntu
Using default tag: latest
latest: Pulling from sangaleakshata16/myubuntu
Digest: sha256:a3785f78ab8547ae2710c89e627783cfa7ee7824d3468cae6835c9f4eae23ff7
Status: Downloaded newer image for sangaleakshata16/myubuntu:latest
docker.io/sangaleakshata16/myubuntu:latest

C:\Users\Admin>
```

Conclusion:

In this experiment, we successfully executed various Docker commands for container management, including pulling images, running, starting, stopping, and removing containers. We also listed available images, pushed an image to Docker Hub, and verified the process. This helped us understand containerization and how Docker simplifies application deployment.