

NAME: DIVYA SANJEEVARADDI JALIKOPPA

USN : 2KE20EC028

DOCKER ASSAIGNMENT

ASSAIGNMENT 1:

Install yum utils package

```
[DivyaJ@localhost ~]$ sudo yum install -y yum-utils
```

Install the latest version of docker

```
nothing to do  
[DivyaJ@localhost ~]$ sudo yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo  
Loaded plugins: fastestmirror  
adding repo from: https://download.docker.com/linux/centos/docker-ce.repo
```

Installed:

```
containerd.io.x86_64 0:1.6.22-3.1.el7  
docker-buildx-plugin.x86_64 0:0.11.2-1.el7  
docker-ce.x86_64 3:24.0.6-1.el7  
docker-ce-cli.x86_64 1:24.0.6-1.el7  
docker-compose-plugin.x86_64 0:2.21.0-1.el7
```

Dependency Installed:

```
audit-libs-python.x86_64 0:2.8.5-4.el7  
checkpolicy.x86_64 0:2.5-8.el7  
container-selinux.noarch 2:2.119.2-1.911c772.el7_8  
docker-ce-rootless-extras.x86_64 0:24.0.6-1.el7  
fuse-overlayfs.x86_64 0:0.7.2-6.el7_8  
fuse3-libs.x86_64 0:3.6.1-4.el7  
libcgroup.x86_64 0:0.41-21.el7  
libsemanage-python.x86_64 0:2.5-14.el7  
policycoreutils-python.x86_64 0:2.5-34.el7  
python-IPy.noarch 0:0.75-6.el7  
setools-libs.x86_64 0:3.3.8-4.el7  
slirp4netns.x86_64 0:0.4.3-4.el7_8
```

Complete!

Start docker

Run helloworld

```
[DivyaJ@localhost ~]$ sudo systemctl start docker
[DivyaJ@localhost ~]$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
719385e32844: Pull complete
Digest: sha256:dcba6daec718f547568c562956fa47e1b03673dd010fe6ee58ca806767031d1c
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it
   to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash
```

List and sort versions

```
[DivyaJ@localhost ~]$ sudo yum list docker-ce--showduplicates | sort -r
```

Enter the following content in Dockerfile

```
FROM centos:7

RUN yum -y install epel-release
RUN yum -y update
RUN yum -y install nginx

ADD index.html /usr/share/nginx/html/index.html

CMD ["nginx", "-g", "daemon off;"]
```

Enter below content in index.html file

```
Command Prompt - ssh Divya: x + v - □ ×

|:DOCTYPE html>
<html>
<head>
<title>Divya S Jalikoppa - Resume</title>
</head>
<body>
<h1>About Me</h1>
<p>
<strong>Name:</strong> Divya S Jalikoppa<br>
<strong>Student:</strong><br>
<strong>Contact:</strong> Phone no.: 8123838840<br>
Email: <a href="mailto:divyajalikoppa@gmail.com">divyajalikoppa@gmail.com</a><br>
<strong>Address:</strong> Near court, Ramapur, Saundatti-591126, Dist: Belagavi, Karnataka
</p>
<h1>Education</h1>
<p>
<strong>Bachelor of Engineering and Technology</strong><br>
2021-2024<br>
MLE Institute of Technology, Hubballi<br>
<em>Courses:</em> Electronics and Communication Engineering<br>
<em>CGPA:</em> 8.3
</p>
<p>
<strong>Pre-University College</strong><br>
2018-2020<br>
MLE's Pre-rana PU College, Hubballi<br>
<em>Courses:</em> PCB<br>
<em>Percentage:</em> 85.66%
</p>
<p>
<strong>Shri Kumarashwar School, Saundatti</strong><br>
<em>Percentage:</em> 90.88%
</p>
<h1>About Me</h1>
<p>
As a tech enthusiast with a solid foundation in electronics as well as proficiency in computers. I combine a passion for exploring cutting-edge technologies with a proactive approach and problem-solving mindset, driving impactful outcomes in diverse technical domains.
</p>
<h1>Projects</h1>
<p>
<strong>Project 1: Solar Tracker System</strong><br>
Conducted interactive solar tracker system demos built using Arduino, illustrating its autonomous sun-tracking capabilities and superior energy yield.
</p>
<p>
<strong>Project 2: Sound Detector</strong><br>
Developed a sound detector using IC741, demonstrating proficiency in analog circuit design. Successfully detected and processed audio signals, highlighting a strong sensor interfacing understanding of operational amplifier-based circuits.
</p>
<h1>Certificates</h1>
<ul>
<li>Internship at Verzeo based on VLSI</li>
<li>Completed Cloud Computing Course on Coursera</li>
</ul>
<h1>Skills</h1>
<ul>
<li>VLSI</li>
<li>Linux OS</li>
<li>Cloud Computing</li>
<li>Basics of Python</li>
<li>Basics of C</li>
</ul>
<h1>Languages</h1>
<ul>
<li>English</li>
<li>Kannada</li>
<li>Hindi</li>
</ul>
</body>
</html>
```

Build the image

```
[DivyaJ@localhost DOCKER_ASSIGNMENT]$ sudo docker build -t docker_a1 .
[+] Building 3.8s (10/10) FINISHED
=> [internal] load build definition from Dockerfile 0.2s
=> == transferring dockerfile: 277B 0.1s
=> [internal] load .dockerignore 0.2s
=> == transferring context: 2B 0.1s
=> [internal] load metadata for docker.io/library/centos:7 3.1s
=> [1/5] FROM docker.io/library/centos:7@sha256:be65f488b7764ad3638f236b7b515b3678369a5124c47b8d32916d6487418ea4 0.0s
=> [internal] load build context 0.0s
=> == transferring context: 91B 0.0s
=> CACHED [2/5] RUN yum -y install epel-release 0.0s
=> CACHED [3/5] RUN yum -y update 0.0s
=> CACHED [4/5] RUN yum -y install nginx 0.0s
=> CACHED [5/5] ADD index.html /usr/share/nginx/html/index.html 0.0s
=> exporting to image 0.0s
=> == exporting layers 0.0s
=> == writing image sha256:f0c8eaffa54c8848c9250f91f5129398b9922feebd6edb6b85083ca0df194089 0.0s
=> == naming to docker.io/library/docker_a1 0.0s
```

Verify the docker image is created

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT]$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
docker_a1           latest             f0c8eafffa54c      About an hour ago   1.04GB
<none>              <none>            ccd2ffe35400       About an hour ago   1.04GB
cronjob_html        latest             dce385e38352       30 hours ago        1.04GB
indexx              latest             e0fdd9c67a14       30 hours ago        1.04GB
hello-world         latest             9c7a54a9a43c       4 months ago        13.3kB
[DivyaJ@localhost DOCKER_ASSAIGNMENT]$
```

Run the docker image

Start the container

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT]$ sudo docker run -d -p 80:80 --name container_docker_a1 docker_a1
e57a080c9a77ca142dae01caac237698212387ec1e467064f5d6a58e449d2fd8
[DivyaJ@localhost DOCKER_ASSAIGNMENT]$ sudo docker start container_docker_a1
container_docker_a1
```

View status

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT]$ sudo docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                               NAMES
e57a080c9a77   docker_a1   "nginx -g 'daemon of..." About a minute ago Up 58 seconds 0.0.0.0:80->80/tcp, :::80->80/tcp container_docker_a1
159ea4c66b94   indexx      "nginx -g 'daemon of..." 28 hours ago   Exited (1) 28 hours ago
64b8f7eaebcd   cronjob_html "nginx -g\u00a0daemon\u00a0off;" 29 hours ago   Exited (1) 28 hours ago
521c027992b3   hello-world "/hello"                30 hours ago   Exited (0) 30 hours ago
```

Using curl you can get the content to display contents of nginx

```
Command Prompt - ssh Divy. x + v
[DivyaJ@localhost DOCKER_ASSAIGNMENT]$ curl http://localhost
<!DOCTYPE html>
<html>
<head>
<title>Divya S Jalikoppa - Resume</title>
</head>
<body>
<h1>About Me</h1>
<p>
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<strong>Student</strong><br>
<strong>Contact:</strong> Phone no.: 8123038840<br>
Email: <a href="mailto:divyajalikoppa@gmail.com">divyajalikoppa@gmail.com</a><br>
<strong>Address:</strong> Near court, Ramapur, Saundatti-591126, Dist: Belagavi, Karnataka
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</p>
<p>
<strong>Pre-University College</strong><br>
2018-2020<br>
KLE's Prerana PU College, Hubballi<br>
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</p>
<h1>Projects</h1>
<p>
<strong>Project 1: Solar Tracker System</strong><br>
superior energy yield.
</p>
<p>
```

ASSAIGNMENT 2

Make directory and Dockerfile in the directory

```
[DivyaJ@localhost ~]$ mkdir DOCKER_ASSAIGNMENT2
[DivyaJ@localhost ~]$ cd DOCKER_ASSAIGNMENT2
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ sudo vi Dockerfile
[sudo] password for DivyaJ:
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ |
```

Enter the below content inside Dockerfile

```
FROM centos:7

# Download and extract Mattermost
RUN curl -L https://releases.mattermost.com/6.6.1/mattermost-6.6.1-linux-amd64.tar.gz | tar -xz -C /opt

# Copy the config file
COPY config.json /opt/mattermost/config/config.json

# Create a system user for Mattermost
RUN useradd --system --user-group mattermost

# Set permissions
RUN chown -R mattermost:mattermost /opt/mattermost
RUN chmod -R g+w /opt/mattermost

# Switch to the Mattermost user
USER mattermost

# Define the volume
VOLUME /opt/mattermost/data

# Set the command to start Mattermost
CMD ["/opt/mattermost/bin/mattermost"]
```

Copy contents from config.json to new directory of doocker

```
[DivyaJ@localhost ~]$ sudo cp /opt/mattermost/config/config.json DOCKER_ASSAIGNMENT2/config.json
```

Build mattermost image

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ sudo docker build -t mm-image .
[+] Building 517.8s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> transferring dockerfile: 692B
=> [internal] load .dockerignore
=> transferring context: 2B
=> [internal] load metadata for docker.io/library/centos:7
=> CACHED [1/6] FROM docker.io/library/centos:7@sha256:b665f488b7764ad363bf236b7b515b3678369a5124c47b8d32916d6487418ea4
=> [internal] load build context
=> transferring context: 21.28kB
=> [2/6] RUN curl -L https://releases.mattermost.com/6.6.1/mattermost-6.6.1-linux-amd64.tar.gz | tar -xz -C /opt
=> [3/6] COPY config.json /opt/mattermost/config/config.json
=> [4/6] RUN useradd --system --user-group mattermost
=> [5/6] RUN chown -R mattermost:mattermost /opt/mattermost
=> [6/6] RUN chmod -R g+w /opt/mattermost
=> exporting to image
=> writing image sha256:251eaa5efb881e7175b31849261fb9434e559497d5a56b59df3289491e748adb
=> naming to docker.io/library/mm-image
```

Verify the image created

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ sudo docker images
[sudo] password for DivyaJ:
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
mm-image             latest             251eaa5efb88       About a minute ago 1.62GB
docker_a1            latest             f0c8eafffa54c      18 hours ago       1.04GB
<none>               <none>             ccd2ffe35400       18 hours ago       1.04GB
cronjob_html         latest             dce385e38352       47 hours ago       1.04GB
indexx               latest             e0fdd9c67a14       47 hours ago       1.04GB
hello-world          latest             9c7a54a9a43c       4 months ago       13.3kB
```

Run the docker image

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ sudo systemctl stop mattermost
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ sudo docker run -d -p 8065:8065 --name mattermost-container mm-image
3d6d4804ffddaabccecf0540ce7bd4e459a4f4b7a23f8759d8d9fb4069825eeca4
```

List all the containers

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ sudo docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
3d6d4804ffdd  mm-image      "/opt/mattermost/bin..." 18 seconds ago Up 14 seconds 0.0.0.0:8065->8065/tcp, :::8065->8065/tcp mattermost-container
e57a080c9a77  docker_a1     "nginx -g 'daemon of..." 17 hours ago   Exited (255) 2 hours ago 0.0.0.0:80->80/tcp, :::80->80/tcp tainer_docker_a1
150ea4c66b94  indexx        "nginx -g 'daemon of..." 45 hours ago   Exited (1) 45 hours ago                                new_index_cont
64b0f7eaebcd  cronjob_html  "nginx -g\u000a0daemon\u000a0off;" 46 hours ago   Exited (1) 45 hours ago                                t_d
521c027992b3  hello-world   "/hello"                  47 hours ago   Exited (0) 47 hours ago                                some_wilson
```

Start the container

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ sudo docker start mattermost-container
mattermost-container
```

Check docker ip

```
5: docker0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default
    link/ether 02:42:c9:bc:72:31 brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever
    inet6 fe80::42:c9ff:febc:7231/64 scope link
        valid_lft forever preferred_lft forever
```

Using curl check the content

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT2]$ curl http://172.17.0.1:8065
<!doctype html><html lang="en"><head><meta charset="utf-8"><meta name="viewport" content="width=device-width,initial-scale=1,maximum-scale=1,user-scalable=0"><meta name="robots" content="noindex, nofollow"><meta name="referrer" content="no-referrer"><title>Mattermost</title><meta name="mobile-web-app-capable" content="yes"><meta name="application-name" content="Mattermost"><meta name="format-detection" content="telephone=no"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-16x16.png" sizes="16x16"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-24x24.png" sizes="24x24"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-32x32.png" sizes="32x32"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-64x64.png" sizes="64x64"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-96x96.png" sizes="96x96"><link rel="stylesheet" class="code-theme"><style>.error-screen{font-family: 'Helvetica Neue', Helvetica, Arial, sans-serif;padding-top: 50px;max-width: 750px;font-size: 10px;color: #333;margin:auto;display: none;line-height: 1.5}.error-screen h2{font-size: 30px;font-weight: 400;line-height: 1.2}.error-screen ul{padding-left: 15px;line-height: 1.7;margin-top: 0;margin-bottom: 10px}.error-screen h3{color: #ddd;margin-top: 20px;margin-bottom: 20px;border-top: 1px solid #eee}.error-screen-visible{display: block}</style><meta http-equiv="Content-Security-Policy" content="script-src 'self' cdn.rudderlabs.com/ js.stripe.com /v3"><script defer="defer" src="/static/main.54a384511ae531961ca5.js"></script><link href="/static/main.d4d4065a633f175eb096.css" rel="stylesheet"><meta name="apple-mobile-web-app-title" content="Mattermost" /><meta name="apple-mobile-web-app-capable" content="yes" /><meta name="apple-mobile-web-app-status-bar-style" content="default" /><link rel="apple-touch-icon" sizes="76x76" href="/static/icon_76x76.png" /><link rel="apple-touch-icon" sizes="72x72" href="/static/icon_72x72.png" /><link rel="apple-touch-icon" sizes="60x60" href="/static/icon_60x60.png" /><link rel="apple-touch-icon" sizes="57x57" href="/static/icon_57x57.png" /><link rel="apple-touch-icon" sizes="152x152" href="/static/icon_152x152.png" /><link rel="apple-touch-icon" sizes="144x144" href="/static/icon_144x144.png" /><link rel="apple-touch-icon" sizes="120x120" href="/static/icon_120x120.png" /><link rel="manifest" href="/static/manifest.json" /></head><body class="font--open_sans enable-animations"><div id="root"><div class="error-screen"><h2>Cannot connect to Mattermost</h2><hr><p>We're having trouble connecting to Mattermost. If refreshing this page (Ctrl+R or Command+R) does not work, please verify that your computer is connected to the internet.</p><br></div><div class="loading-screen" style="position: relative"><div class="loading_content"><div class="round round-1"></div><div class="round round-2"></div><div class="round round-3"></div></div></div><div id="root-portal"></div></div><noscript>To use Mattermost, please enable JavaScript.</noscript></body></html>
bash-4.2$ pwd
/
bash-4.2$ exit
exit
```

ASSAIGNMENT 3

Create docker file and init.sql

```
[DivyaJ@localhost ~]$ cd DOCKER_ASSAIGNMENT3
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ ls
Dockerfile  init.sql
```

In Dockerfile enter the content

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ sudo vi Dockerfile
[sudo] password for DivyaJ:
```

In init.sql enter the given content

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ sudo vi init.sql
```

Build image

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ sudo docker build -t mysql-image .
[+] Building 2.3s (7/7) FINISHED                                docker:default
=> [internal] load build definition from Dockerfile             0.1s
=> => transferring dockerfile: 172B                             0.0s
=> [internal] load .dockerignore                                0.1s
=> => transferring context: 2B                                   0.0s
=> [internal] load metadata for docker.io/mysql/mysql-server:latest 1.9s
=> [internal] load build context                                0.0s
=> => transferring context: 241B                                 0.0s
=> CACHED [1/2] FROM docker.io/mysql/mysql-server:latest@sha256:d6c8 0.0s
=> [2/2] COPY init.sql /docker-entrypoint-initdb.d/            0.1s
=> exporting to image                                           0.1s
=> => exporting layers                                          0.1s
=> => writing image sha256:a74376ad5fb95f28cf7750ef76689232e1864361d 0.0s
=> => naming to docker.io/library/mysql-image                  0.0s
```

Verify the image is built

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ sudo docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
mysql-image         latest         a74376ad5fb9   About a minute ago  496MB
<none>              <none>        44723be59bcd   5 days ago     496MB
mm-image            latest         251eaa5efb88   5 days ago     1.62GB
docker_a1           latest         f0c8eaffa54c   6 days ago     1.04GB
<none>              <none>        ccd2ffe35400   6 days ago     1.04GB
cronjob_html        latest         dce385e38352   7 days ago     1.04GB
indexx              latest         e0fdd9c67a14   7 days ago     1.04GB
hello-world         latest         9c7a54a9a43c   4 months ago    13.3kB
```


Run the image to make container up

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ sudo docker run --name=cont-mysql -p 3306:3306 --restart on-failure -d mysql-image
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ docker logs cont-mysql 2>&1 | grep GENERATED
```

Perform docker exec it

```
[DivyaJ@localhost DOCKER_ASSAIGNMENT3]$ sudo docker exec -it mysql-cont mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.32 MySQL Community Server - GPL

Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

Change the root password

```
mysql> ALTER USER 'root'@'localhost' IDENTIFIED BY '2002happy';
Query OK, 0 rows affected (0.35 sec)

mysql> exit
Bye
```

```
[DivyaJ@localhost ~]$ sudo chown -R $(whoami) /opt/mattermost
[DivyaJ@localhost ~]$ cd /opt/mattermost/bin
[DivyaJ@localhost bin]$ chmod +x mattermost
[DivyaJ@localhost bin]$ ./mattermost
{"timestamp":"2023-09-20 05:55:28.762 Z","level":"info","msg":"Server is initializing...","caller":"app/server.go:259","go_version":"go1.16.7"}
{"timestamp":"2023-09-20 05:55:30.262 Z","level":"info","msg":"Pinging SQL","caller":"sqlstore/store.go:218","database":"master"}
{"timestamp":"2023-09-20 05:55:32.108 Z","level":"error","msg":"Failed to ping DB","caller":"sqlstore/store.go:228","error":"Error 1045: Access denied for user 'mmuser'@'172.17.0.1' (using password: YES)","retrying in seconds":10}
{"timestamp":"2023-09-20 05:55:42.831 Z","level":"info","msg":"Pinging SQL","caller":"sqlstore/store.go:218","database":"master"}
{"timestamp":"2023-09-20 05:55:46.120 Z","level":"error","msg":"Failed to ping DB","caller":"sqlstore/store.go:228","error":"Error 1045: Access denied for user 'mmuser'@'172.17.0.1' (using password: YES)","retrying in seconds":10}
{"timestamp":"2023-09-20 05:55:56.570 Z","level":"info","msg":"Pinging SQL","caller":"sqlstore/store.go:218","database":"master"}
{"timestamp":"2023-09-20 05:55:57.712 Z","level":"error","msg":"Failed to ping DB","caller":"sqlstore/store.go:228","error":"Error 1045: Access denied for user 'mmuser'@'172.17.0.1' (using password: YES)","retrying in seconds":10}
```

Grant all privileges on mattermost


```
[DivyaJ@localhost ~]$ sudo docker exec -it mysql-cont mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 85
Server version: 8.0.32 MySQL Community Server - GPL

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

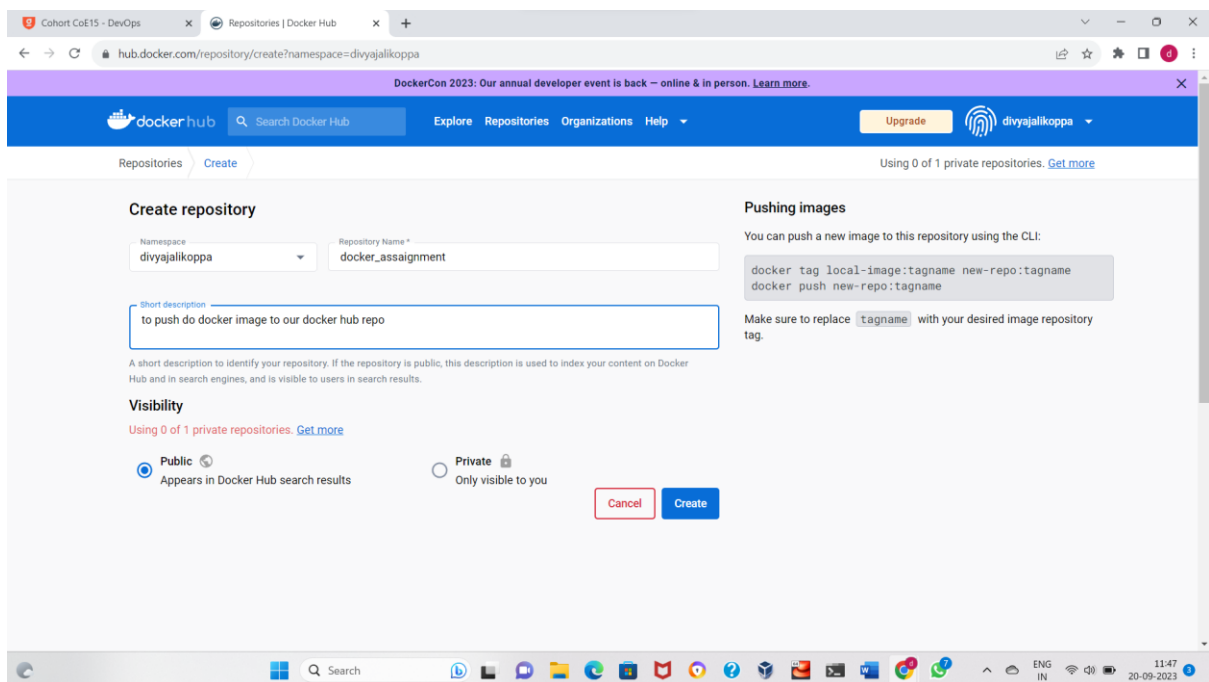
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> GRANT ALL PRIVILEGES ON mattermost.* TO 'mmuser'@'%';
ERROR 1410 (42000): You are not allowed to create a user with GRANT
mysql> GRANT ALL PRIVILEGES ON mattermost.* TO 'mmuser_d'@'%';
Query OK, 0 rows affected (0.26 sec)
```

Assaignment 4

PUSH IMAGE TO DOCKER HUB REPOSITORY

Sign up dockerhub and create new repository



Use docker commit to create a new image from running container

```
[DivyaJ@localhost ~]$ sudo docker commit mysql-cont docker_assignment:dj
sha256:1eab5b1cf91aeed35ff19b874ed1251592ea95c50cd9fb16017fd1affcf6a65f4
[DivyaJ@localhost ~]$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
docker_assignment	dj	1eab5b1cf91a	19 seconds ago	702MB
mysql-image	latest	a74376ad5fb9	2 hours ago	496MB
<none>	<none>	44723be59bcd	5 days ago	496MB
mm-image	latest	251eaa5efb88	6 days ago	1.62GB
docker_a1	latest	f0c8eaffa54c	6 days ago	1.04GB
<none>	<none>	ccd2ffe35400	6 days ago	1.04GB
cronjob_html	latest	dce385e38352	7 days ago	1.04GB
indexx	latest	e0fdd9c67a14	7 days ago	1.04GB
hello-world	latest	9c7a54a9a43c	4 months ago	13.3kB

Login into docker

```
[DivyaJ@localhost ~]$ sudo docker login
Log in with your Docker ID or email address 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.
You can log in with your password or a Personal Access Token (PAT). Using a limited-scope PAT grants better security and is required for organizations using SSO. Learn more at https://docs.docker.com/go/access-tokens/

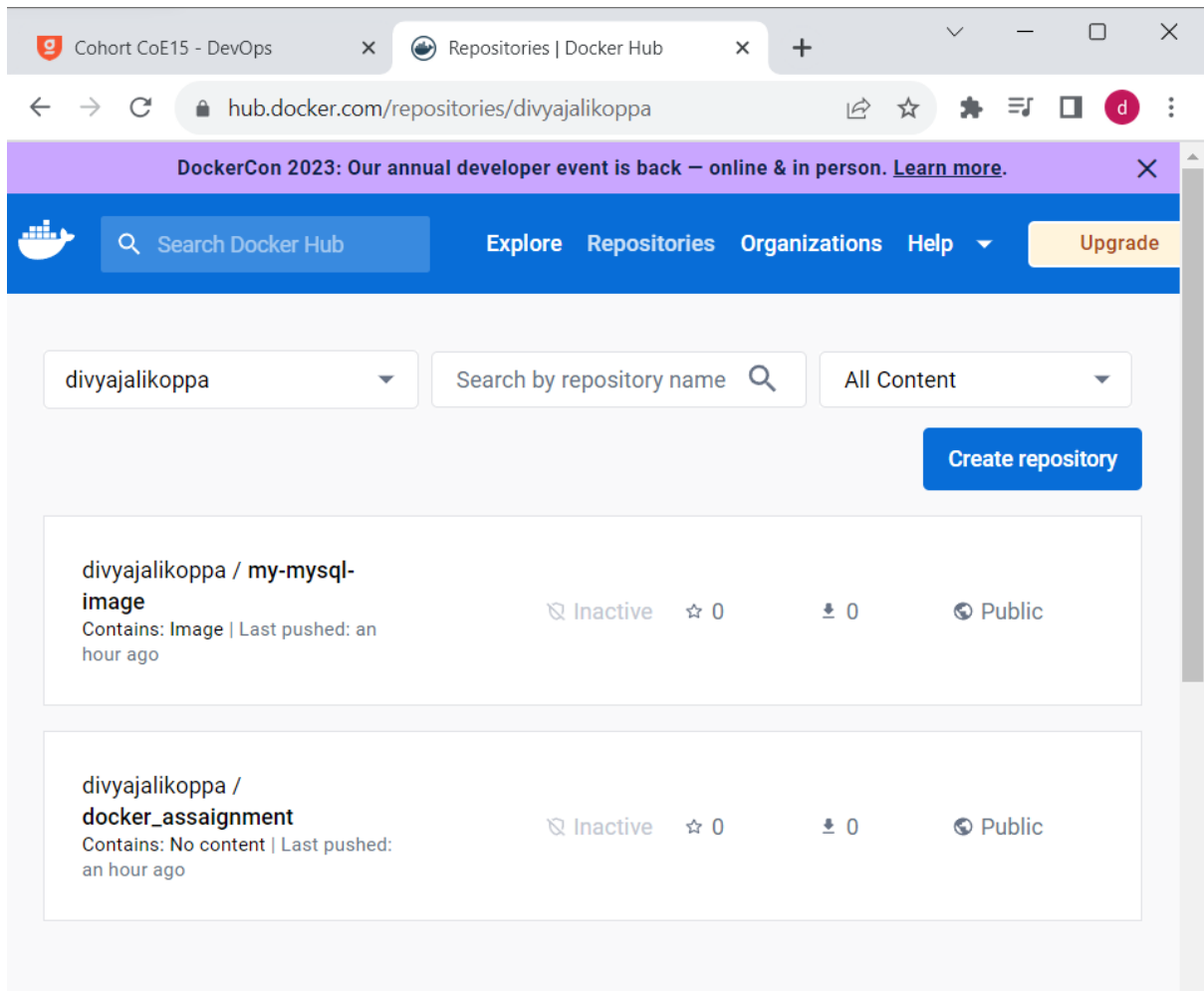
Username: divyajalikoppa
Password:
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
```

Push local repo to docker hub

```
[DivyaJ@localhost ~]$ sudo docker tag mysql-image:latest divyajalikoppa/my-mysql-image:v1.0[DivyaJ@localhost ~]$ sudo docker push divyajalikoppa/my-mysql-image:v1.0
The push refers to repository [docker.io/divyajalikoppa/my-mysql-image]
78a7d702832c: Pushed
981afb24c99d: Pushed
45c3c88db563: Pushed
8602389e3eef: Pushed
2ea517a3514b: Pushed
77e1cee74909: Pushed
13b2c8009ac7: Pushed
e3235af76f17: Pushed
v1.0: digest: sha256:5066494aac640ccee61b17a993bfcc278bb562e5852bb8df2149df2f5dd47545 size: 1989
[DivyaJ@localhost ~]$
[DivyaJ@localhost ~]$ |
```

In docker check that the image is pushed or not
in my case I pushed my-sql-image



Assaignment 5

create a directory structure and create an html filr

```
[DivyaJ@localhost ~]$ mkdir apache-html
[DivyaJ@localhost ~]$ cd apache-html
[DivyaJ@localhost apache-html]$ sudo vi index.html
[sudo] password for DivyaJ:
```

```
Command Prompt - ssh Divy: x + v
<!DOCTYPE html>
<html>
<head>
  <title>My Apache Web Page</title>
</head>
<body>
  <h1>Docker Assaignment5</h1>
  <p> hosting a simple html content using apache web server.</p>
</body>
</html>
```

Create a Dockerfile and enter the content

```
[DivyaJ@localhost apache-html]$ sudo vi Dockerfile
```

```
FROM httpd:latest
COPY ./index.html /usr/local/apache2/htdocs/
```

Build the docker image

```
[DivyaJ@localhost apache-html]$ sudo docker build -t apache-server .
[+] Building 27.0s (8/8) FINISHED                                docker:default
=> [internal] load .dockerignore                                0.5s
=> => transferring context: 2B                                    0.0s
=> [internal] load build definition from Dockerfile              0.5s
=> => transferring dockerfile: 160B                               0.2s
=> [internal] load metadata for docker.io/library/httpd:latest   6.9s
=> [auth] library/httpd:pull token for registry-1.docker.io      0.0s
=> [internal] load build context                                0.2s
=> => transferring context: 298B                                    0.0s
=> [1/2] FROM docker.io/library/httpd:latest@sha256:b5266db310b14c1 17.5s
=> => resolve docker.io/library/httpd:latest@sha256:b5266db310b14c11 0.2s
=> => sha256:b5266db310b14c11197756bf762274651b3de36 1.86kB / 1.86kB 0.0s
=> => sha256:4ffdefc17aef73b626a6e60078083420ba0c0f0 1.37kB / 1.37kB 0.0s
=> => sha256:359570977af25b6ec87f2e0ee1e103e3826bade 9.38kB / 9.38kB 0.0s
=> => sha256:a803e7c4b030119420574a882a52b6431e160 29.12MB / 29.12MB 5.6s
=> => sha256:053327351b4abdb9e49f7fde8334e6883910220be7c 176B / 176B 0.5s
=> => sha256:de42e9dfbbe1f0f05c8f0f90f89013a1227db10 4.19MB / 4.19MB 2.2s
=> => sha256:9d28e265584b6b16b1192425e739bb3003aa1 31.36MB / 31.36MB 9.8s
=> => sha256:ce95f18e49ae35a86ce2eb9a111e6e5e85c48aa28e4 292B / 292B 2.8s
=> => extracting sha256:a803e7c4b030119420574a882a52b6431e160fceb762 6.3s
=> => extracting sha256:053327351b4abdb9e49f7fde8334e6883910220be7c3 0.0s
=> => extracting sha256:de42e9dfbbe1f0f05c8f0f90f89013a1227db104482c 0.4s
=> => extracting sha256:9d28e265584b6b16b1192425e739bb3003aa18d92110 3.2s
=> => extracting sha256:ce95f18e49ae35a86ce2eb9a111e6e5e85c48aa28e44 0.0s
=> [2/2] COPY ./index.html /usr/local/apache2/htdocs/          0.3s
=> exporting to image                                            0.2s
=> => exporting layers                                            0.2s
=> => writing image sha256:5893be9a2727dfa7ae907fa29af70dc7938fe43fe 0.0s
=> => naming to docker.io/library/apache-server                  0.0s
```

Run the docker container and check the contents using curl

```
[DivyaJ@localhost apache-html]$ sudo docker run -d -p 8080:80 apache-server
90147b944c8eb69975fb8a24bf6ec94b2fcf103fef4f042fe67ef9af1878eac8
[DivyaJ@localhost apache-html]$ curl http://localhost:8080
<!DOCTYPE html>
<html>
<head>
  <title>My Apache Web Page</title>
</head>
<body>
  <h1>Docker Assaignment5</h1>
  <p> hosting a simple html content using apache web server.</p>
</body>
</html>

[DivyaJ@localhost apache-html]$
```

Assaignment 6 : Mount a host directory as a docker volume to mysqld server container path /var/lib/mysql (you can mount volume using -v option in the command)

Create a directory and navigate into it

```
[DivyaJ@localhost ~]$ mkdir ~/mysql-data
[DivyaJ@localhost ~]$ cd ~/mysql-data
```

Run mysql container with volume mount

```
[DivyaJ@localhost mysql-data]$ sudo docker run -d \
> --name mysql-container \
> -e MYSQL_ROOT_PASSWORD=2002Happy \
> -v ~/mysql-data:/var/lib/mysql \
> mysql:latest
[sudo] password for DivyaJ:
Unable to find image 'mysql:latest' locally
latest: Pulling from library/mysql
bc377bce3181: Pull complete
80bab949ab51: Pull complete
73682200afb7: Pull complete
d1c32d486523: Pull complete
54341582c90c: Pull complete
7490cd8f4d9b: Pull complete
de967683cb3b: Pull complete
39564f901a1e: Pull complete
c95e6efa291a: Pull complete
8366d05afd7c: Pull complete
Digest: sha256:85ab57eb4a48ada2a341dcf7d96733ce2f370fffb8e8e216991b106e50fa6
434
Status: Downloaded newer image for mysql:latest
84db5f6d6e16325f9b1fe0d8321691989e0abbd7c73da3818260fdcb3b67cdc
```

View status

```
[DivyaJ@localhost mysql-data]$ sudo docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED
STATUS	NAMES	PORTS	
84db5f6d6e16	mysql:latest	"docker-entrypoint.s..."	About a minute ago
Up 53 seconds	mysql-container	3306/tcp, 33060/tcp	
90147b944c8e	apache-server	"httpd-foreground"	16 minutes ago
Up 16 minutes	interesting_bassi	0.0.0.0:8080->80/tcp, :::8080->80/tcp	
04f7b1d0dd03	mysql-image	"/entrypoint.sh mysql..."	13 hours ago
Up 25 minutes (healthy)	mysql-cont	0.0.0.0:3306->3306/tcp, :::3306->3306/tcp, 33060-33061/tcp	

Access mysql

```
[DivyaJ@localhost mysql-data]$ sudo docker exec -it mysql-container mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.1.0 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> ls ~/mysql-data
->
->
-> exit
->
-> ^C
mysql> exit
Bye
[DivyaJ@localhost mysql-data]$ ls ~/mysql-data
```

List to verify

```
[DivyaJ@localhost mysql-data]$ ls ~/mysql-data
auto.cnf          client-key.pem    #innodb_temp     server-cert.pem
binlog.000001     #ib_16384_0.dblwr mysql             server-key.pem
binlog.000002     #ib_16384_1.dblwr mysql.ibd         sys
binlog.index      ib_buffer_pool   mysql.sock        undo_001
ca-key.pem        ibdata1          performance_schema undo_002
ca.pem            ibtmp1           private_key.pem
client-cert.pem   #innodb_redo     public_key.pem
[DivyaJ@localhost mysql-data]$ |
```

Assaignment 7:

```
[DivyaJ@localhost ~]$ mkdir mattermost-compose
[DivyaJ@localhost ~]$ cd mattermost-compose
[DivyaJ@localhost mattermost-compose]$
```

```
[DivyaJ@localhost mattermost-compose]$ sudo vi docker-compose.yml
[DivyaJ@localhost mattermost-compose]$ cd
```

```
[DivyaJ@localhost ~]$ mkdir mattermost-data
[DivyaJ@localhost ~]$ mkdir mysql-data
```

```
[DivyaJ@localhost mattermost-compose]$ sudo docker-compose up -d
Creating network "mattermostcompose_mattermost-net" with the default driver
Pulling database (mysql:5.7)...
5.7: Pulling from library/mysql
70e9ff4420fb: Pull complete
7ca4383b183f: Pull complete
3e282e7651b1: Pull complete
1ffa0e0ca707: Pull complete
6eb790cf6382: Pull complete
b4b277ff2929: Pull complete
692fe4469429: Pull complete
c0d447d97bbd: Pull complete
99ee594517ba: Pull complete
a9ae52de4d77: Pull complete
66cc05a182b5: Pull complete
Digest: sha256:2c23f254c6b9444ecda9ba36051a9800e8934a2f5828ecc8730531db8142af83
Status: Downloaded newer image for mysql:5.7
Pulling mattermost (mattermost/mattermost-preview:latest)...
latest: Pulling from mattermost/mattermost-preview
360eba32fa65: Pull complete
6987678f9780: Pull complete
42299245e905: Pull complete
afcda32ad76a: Pull complete
23d81c750666: Pull complete
c7813914a8b7: Pull complete
876fecb4c432: Pull complete
0a8727713246: Pull complete
86ca3070eaaa: Pull complete
8fe7c279224e: Pull complete
9ee906c6c211: Pull complete
3baddb10b524: Pull complete
1d69d50e495e: Pull complete
2c9a5a684cdd: Pull complete
5e721e64c162: Pull complete
99d564e973cd: Pull complete
```

```
70e9ff4420fb: Pull complete
Digest: sha256:a8f35dce336a536ce7459302f2177454e950fd3443615a98c1d68b3df2780b74
Creating mysql ... done
Creating mattermost ... done
Creating mattermost ...
```



```
[DivyaJ@localhost DOCKER_ASSIGNMENT2]$ curl http://172.17.0.1:8065
<!doctype html><html lang="en"><head><meta charset="utf-8"><meta name="viewport" content="width=device-width,initial-scale=1,maximum-scale=1,user-scalable=0"><meta name="robots" content="noindex, nofollow"><meta name="referrer" content="no-referrer"><title>Mattermost</title><meta name="mobile-web-app-capable" content="yes"><meta name="application-name" content="Mattermost"><meta name="format-detection" content="telephone=no"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-16x16.png" sizes="16x16"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-24x24.png" sizes="24x24"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-32x32.png" sizes="32x32"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-64x64.png" sizes="64x64"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-96x96.png" sizes="96x96"><link rel="stylesheet" class="code_theme"><style>.error-screen{font-family: 'Helvetica Neue', Helvetica, Arial, sans-serif;padding-top:50px;max-width:750px;font-size:10px;color:#333;margin:auto;display:none;line-height:1.5}.error-screen h2{font-size:30px;font-weight:400;line-height:1.2}.error-screen ul{padding-left:15px;line-height:1.7;margin-top:0;margin-bottom:10px}.error-screen h1{color:#ddd;margin-top:20px;margin-bottom:20px;border:0;border-top:1px solid #eee}.error-screen-visible{display:block}</style><meta http-equiv="Content-Security-Policy" content="script-src 'self' cdn.rudderlabs.com/ js.stripe.com/v3"><script defer="defer" src="/static/main.54a384511ae531961ca5.js"></script><link href="/static/main.d4d4065a633f175eb096.css" rel="stylesheet"><meta name="apple-mobile-web-app-title" content="Mattermost" /><meta name="apple-mobile-web-app-capable" content="yes" /><meta name="apple-mobile-web-app-status-bar-style" content="default" /><link rel="apple-touch-icon" sizes="76x76" href="/static/icon_76x76.png" /><link rel="apple-touch-icon" sizes="72x72" href="/static/icon_72x72.png" /><link rel="apple-touch-icon" sizes="60x60" href="/static/icon_60x60.png" /><link rel="apple-touch-icon" sizes="57x57" href="/static/icon_57x57.png" /><link rel="apple-touch-icon" sizes="152x152" href="/static/icon_152x152.png" /><link rel="apple-touch-icon" sizes="144x144" href="/static/icon_144x144.png" /><link rel="apple-touch-icon" sizes="120x120" href="/static/icon_120x120.png" /><link rel="manifest" href="/static/manifest.json" /></head><body class="font--open_sans enable-animations"><div id="root"><div class="error-screen"><h2>Cannot connect to Mattermost</h2><hr/><p>We're having trouble connecting to Mattermost. If refreshing this page (Ctrl+R or Command+R) does not work, please verify that your computer is connected to the internet.</p><br/></div><div class="loading-screen" style="position:relative"><div class="loading_content"><div class="round round-1"></div><div class="round round-2"></div><div class="round round-3"></div></div></div><div id="root-portal"></div><noscript>To use Mattermost, please enable JavaScript.</noscript></body></html>
[DivyaJ@localhost DOCKER_ASSIGNMENT2]$ sudo docker exec -it mattermost-container /bin/bash
bash-4.2$ pwd
/
```