

# CLOUD COMPUTING

## LAB 3

**NAME : CHARAN M REDDY**

**SRN : PES2UG23CS146**

**SECTION : C**

**DATE : 27/01/2026**

**SS1**

```
pes2ug23cs146@pes2ug23cs146: ~/CC_PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146$ export SRN=PES2UG23CS146
pes2ug23cs146:~/CC_PES2UG23CS146$ echo "SRN: $SRN"
SRN: PES2UG23CS146
pes2ug23cs146:~/CC_PES2UG23CS146$ docker run hello-world

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

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/
```

## SS2

```
pes2ug23cs146@pes2ug23cs146:~/CC_PES2UG23CS146 $ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
pes2ug23cs146:~/CC_PES2UG23CS146 $ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS
PORTS NAMES
37ba21a08f75 hello-world "/hello" 4 minutes ago Exited (0) 4 minutes ago
hardcore_feynman
5452b7a277fd hello-world "/hello" 4 minutes ago Exited (0) 4 minutes ago
dazzling_jones
2e1fb534a6e5 hello-world "/hello" 26 minutes ago Exited (0) 26 minutes ago
musing_beaver
ab578cbed137 hello-world "/hello" 26 minutes ago Exited (0) 26 minutes ago
ecstatic_margulis
pes2ug23cs146:~/CC_PES2UG23CS146 $ docker images
IMAGE ID DISK USAGE CONTENT SIZE
hello-world:latest 05813aedc15f 25.9kB 9.52kB
EXTRA U
pes2ug23cs146:~/CC_PES2UG23CS146 $
```

## SS3

```
pes2ug23cs146@pes2ug23cs146:~/CC_PES2UG23CS146 $ docker pull python:3.10-slim
3.10-slim: Pulling from library/python
ed8cf59ed51: Pull complete
47c2bec0e44b: Pull complete
119d43eec815: Pull complete
af233a02f79e: Pull complete
f81c64c75055: Download complete
b3e684e4d1bb: Download complete
Digest: sha256:f5d029fe39146b08200bcc73595795ac19b85997ad0e5001a02c7c32e8769efa
Status: Downloaded newer image for python:3.10-slim
docker.io/library/python:3.10-slim
pes2ug23cs146:~/CC_PES2UG23CS146 $ docker images
IMAGE ID DISK USAGE CONTENT SIZE
hello-world:latest 05813aedc15f 25.9kB 9.52kB
EXTRA U
python:3.10-slim f5d029fe3914 185MB 47.1MB
pes2ug23cs146:~/CC_PES2UG23CS146 $
```

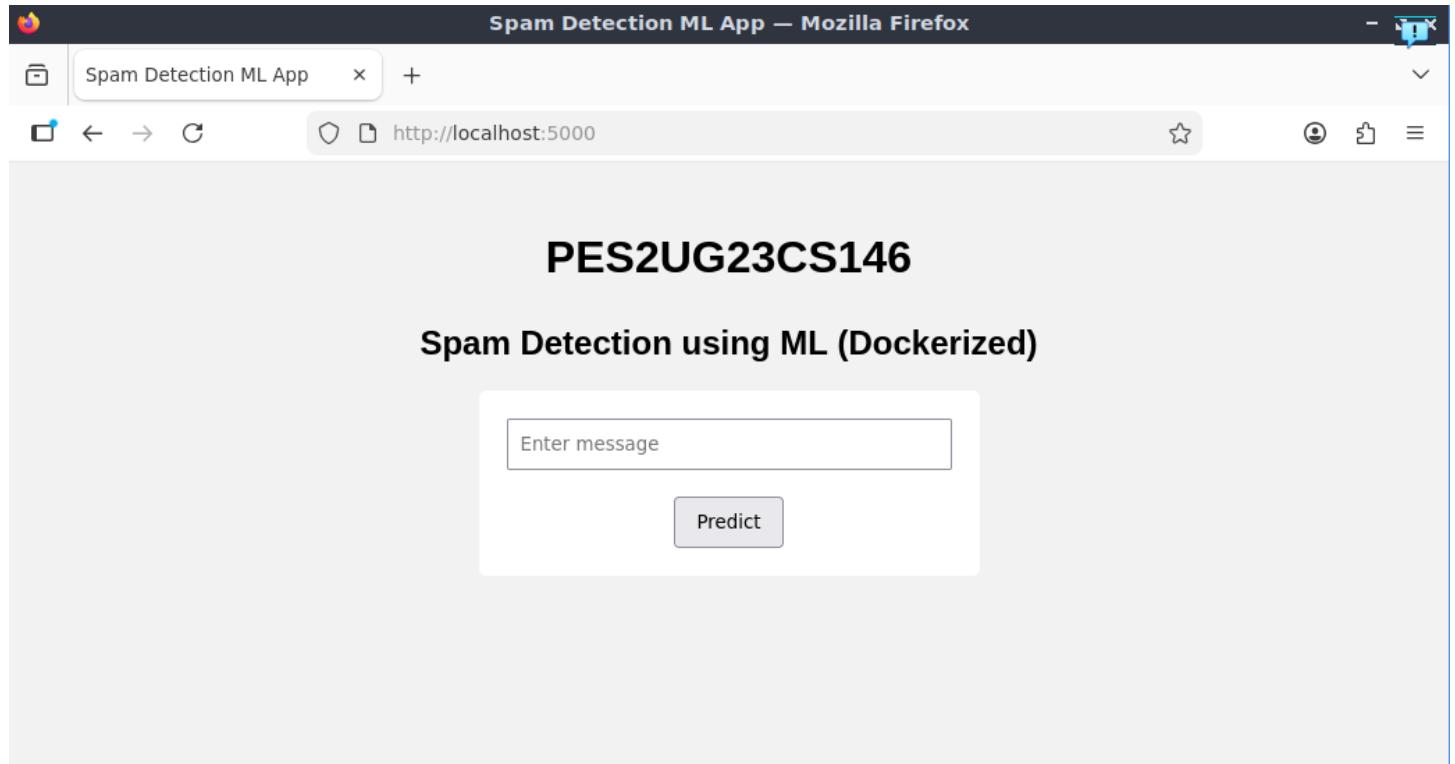
## SS4

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146$ docker build -t spam-web-
app-pes2ug23cs146 .
[+] Building 96.2s (12/12) FINISHED                                            docker:default
=> [internal] load build definition from Dockerfile                         0.1s
=> => transferring dockerfile: 754B                                         0.0s
=> [internal] load metadata for docker.io/library/python:3.10-slim          0.1s
=> [internal] load .dockerignore                                         0.0s
=> => transferring context: 2B                                         0.0s
=> [1/7] FROM docker.io/library/python:3.10-slim@sha256:f5d029fe39146b08200b 0.3s
=> => resolve docker.io/library/python:3.10-slim@sha256:f5d029fe39146b08200b 0.1s
=> [internal] load build context                                         0.2s
=> => transferring context: 400.41kB                                     0.0s
=> [2/7] WORKDIR /app                                                 0.1s
=> [3/7] COPY app.py ./                                              0.1s
=> [4/7] COPY spam_classifier_model.pkl ./                            0.1s
=> [5/7] COPY tfidf_vectorizer.pkl ./                                0.1s
=> [6/7] COPY templates ./templates                                    0.1s
=> [7/7] RUN pip install --no-cache-dir flask scikit-learn joblib      61.8s
=> exporting to image                                                 32.8s
=> => exporting layers                                              27.5s
=> => exporting manifest sha256:835cfbe539a2fe386a11b83dc49891141e9d974f6f1e 0.0s
=> => exporting config sha256:7a23cd5b63a58d0ea95111756c1fed02f786b4720a2854 0.0s
=> => exporting attestation manifest sha256:05152c72d09cf32c8fb81f9bf9ca7527 0.1s
=> => exporting manifest list sha256:89cad19ac293294a366d1a89da7958a02e9a5f8 0.0s
=> => naming to docker.io/library/spam-web-app-pes2ug23cs146:latest     0.0s
=> => unpacking to docker.io/library/spam-web-app-pes2ug23cs146:latest    5.0s
```

## SS5

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146$ docker run -d -p 5000:500
0 spam-web-app-pes2ug23cs146
a519610c5647a4b8d4209cab081453c85592229437256dc454843b3c73c0798
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146$ docker ps
CONTAINER ID   IMAGE           COMMAND          CREATED        STATUS
S              PORTS          NAMES
a519610c5647   spam-web-app-pes2ug23cs146   "python app.py"   45 seconds ago   Up 45
seconds      0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp   zen_sanderson
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146$ █
```

## SS6



## SS7

```
s2ug23cs14...46/ml-docker-PES2UG23CS146 ✘ pes2ug23cs146@pes2ug23cs146: ~/CC_PES2UG23CS146 ✘ ⟲ ⟳
pes2ug23cs146:~/CC_PES2UG23CS146$ docker login
Authenticating with existing credentials... [Username: pes2ug23cs146]

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

Login Succeeded
pes2ug23cs146:~/CC_PES2UG23CS146$
```

## SS8

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker tag spam-web-app-pes2ug23cs146 pes2ug23cs146/spam-web-app-pes2ug23cs146:v1
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker images


| IMAGE                                       | ID           | DISK USAGE | CONTENT SIZE | EXTRA |
|---------------------------------------------|--------------|------------|--------------|-------|
| hello-world:latest                          | 05813aedc15f | 25.9kB     | 9.52kB       | U     |
| pes2ug23cs146/spam-web-app-pes2ug23cs146:v1 | 89cad19ac293 | 541MB      | 125MB        | U     |
| python:3.10-slim                            | f5d029fe3914 | 185MB      | 47.1MB       | U     |
| spam-web-app-pes2ug23cs146:latest           | 89cad19ac293 | 541MB      | 125MB        | U     |


pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ █
```

## SS9

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker push pes2ug23cs146
/pes2ug23cs146/spam-web-app-pes2ug23cs146:v1
The push refers to repository [docker.io/pes2ug23cs146/spam-web-app-pes2ug23cs146]
119d43eec815: Mounted from library/python
7bd5155f79aa: Pushed
47c2bec0e44b: Mounted from library/python
f7d51d0876c9: Pushed
c291b514c882: Pushed
af233a02f79e: Mounted from library/python
8f1521f2cd91: Pushed
92ab38aaefca: Pushed
ce04f1305b3f: Pushed
ed8cf59ed51: Mounted from library/python
2adeb7a18c99: Pushed
v1: digest: sha256:89cad19ac293294a366d1a89da7958a02e9a5f8c0e94048cde5bc3546d40a5ef
size: 856
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ █
```

## SS10

The screenshot shows the Docker Hub interface. In the top navigation bar, 'My Hub' is selected. The main area is titled 'Repositories' and displays a single repository entry:

Name	Last Pushed	Contains	Visibility	Scout
pes2ug23cs146/spam-web-app-pes2...	1 minute ago	IMAGE	Public	Inactive

The left sidebar shows the user's profile 'pes2ug23cs146' and various account management options like Repositories, Hardened Images, Collaborations, Settings, Billing, Usage, Pulls, and Storage.

## SS11

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ~
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS
S                  PORTS
a519610c5647        spam-web-app-pes2ug23cs146   "python app.py"    11 minutes ago   Up 11
minutes           0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp   zen_sanderson
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker stop a519610c5647
a519610c5647
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS
S                  PORTS
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$
```

## SS12

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS                 NAMES
ATUS                spam-web-app-pes2ug23cs146   "python app.py"    15 minutes ago     Exited (137) 2 minutes ago
a519610c5647        hello-world          "/hello"            About an hour ago
37ba21a08f75        hello-world          "/hello"            About an hour ago
ited (0) About an hour ago
5452b7a277fd        hello-world          "/hello"            About an hour ago
ited (0) About an hour ago
2e1fb534a6e5        hello-world          "/hello"            About an hour ago
ited (0) About an hour ago
ab578cbed137        hello-world          "/hello"            About an hour ago
ited (0) About an hour ago
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker rm a519610c5647
a519610c5647
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS
PORTS                 NAMES
37ba21a08f75        hello-world          "/hello"            About an hour ago
ago                  hardcore_feynman
5452b7a277fd        hello-world          "/hello"            About an hour ago
ago                  dazzling_jones
2e1fb534a6e5        hello-world          "/hello"            About an hour ago
ago                  musing_beaver
ab578cbed137        hello-world          "/hello"            About an hour ago
ago                  ecstatic_margulis
```

## SS13

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker images
IMAGE                   ID                  DISK USAGE       CONTENT SIZE      EXTRA
hello-world:latest      05813aedc15f    25.9kB          9.52kB           U
pes2ug23cs146/spam-web-app-pes2ug23cs146:v1
                                         89cad19ac293    541MB          125MB
python:3.10-slim         f5d029fe3914    185MB          47.1MB
spam-web-app-pes2ug23cs146:latest      89cad19ac293    541MB          125MB
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker rmi spam-web-app-p
es2ug23cs146:latest
Untagged: spam-web-app-pes2ug23cs146:latest
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker images
IMAGE                   ID                  DISK USAGE       CONTENT SIZE      EXTRA
hello-world:latest      05813aedc15f    25.9kB          9.52kB           U
pes2ug23cs146/spam-web-app-pes2ug23cs146:v1
                                         89cad19ac293    541MB          125MB
python:3.10-slim         f5d029fe3914    185MB          47.1MB
```

## SS14

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker images


| IMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ID           | DISK USAGE | CONTENT SIZE | EXTRA        |       |                    |              |        |        |   |                  |              |       |        |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|--------------|--------------|-------|--------------------|--------------|--------|--------|---|------------------|--------------|-------|--------|--|
| hello-world:latest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 05813aedc15f | 25.9kB     | 9.52kB       | U            |       |                    |              |        |        |   |                  |              |       |        |  |
| pes2ug23cs146/spam-web-app-pes2ug23cs146:v1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 89cad19ac293 | 541MB      | 125MB        |              |       |                    |              |        |        |   |                  |              |       |        |  |
| python:3.10-slim                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | f5d029fe3914 | 185MB      | 47.1MB       |              |       |                    |              |        |        |   |                  |              |       |        |  |
| pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-\$ docker rmi pes2ug23cs146/ spam-web-app-pes2ug23cs146:v1 Untagged: pes2ug23cs146/spam-web-app-pes2ug23cs146:v1 Deleted: sha256:89cad19ac293294a366d1a89da7958a02e9a5f8c0e94048cde5bc3546d40a5ef pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-\$ docker images <table border="1"> <thead> <tr><th>IMAGE</th><th>ID</th><th>DISK USAGE</th><th>CONTENT SIZE</th><th>EXTRA</th></tr> </thead> <tbody> <tr><td>hello-world:latest</td><td>05813aedc15f</td><td>25.9kB</td><td>9.52kB</td><td>U</td></tr> <tr><td>python:3.10-slim</td><td>f5d029fe3914</td><td>185MB</td><td>47.1MB</td><td></td></tr> </tbody> </table> | IMAGE        | ID         | DISK USAGE   | CONTENT SIZE | EXTRA | hello-world:latest | 05813aedc15f | 25.9kB | 9.52kB | U | python:3.10-slim | f5d029fe3914 | 185MB | 47.1MB |  |
| IMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ID           | DISK USAGE | CONTENT SIZE | EXTRA        |       |                    |              |        |        |   |                  |              |       |        |  |
| hello-world:latest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 05813aedc15f | 25.9kB     | 9.52kB       | U            |       |                    |              |        |        |   |                  |              |       |        |  |
| python:3.10-slim                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | f5d029fe3914 | 185MB      | 47.1MB       |              |       |                    |              |        |        |   |                  |              |       |        |  |


```

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ×
GNU nano 6.2                                         answer.txt *
PES2UG23CS146

to remove all the images which arent being used by any containers :
docker rmi $(docker images -q)

to remove any existing images , being used or not :
docker image prune -a -f
```

## SS15

```
pes2ug23cs146@pes2ug23cs14...46/ml-docker-PES2UG23CS146 ✘
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker pull pes2ug23cs146
spam-web-app-pes2ug23cs146:v1
v1: Pulling from pes2ug23cs146/spam-web-app-pes2ug23cs146
8f1521f2cd91: Pull complete
ce04f1305b3f: Pull complete
f7d51d0876c9: Pull complete
92ab38aaefca: Pull complete
7bd5155f79aa: Pull complete
c291b514c882: Pull complete
2adeb7a18c99: Download complete
Digest: sha256:89cad19ac293294a366d1a89da7958a02e9a5f8c0e94048cde5bc3546d40a5ef
Status: Downloaded newer image for pes2ug23cs146/spam-web-app-pes2ug23cs146:v1
docker.io/pes2ug23cs146/spam-web-app-pes2ug23cs146:v1
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ docker images
          i Info → U In Use
IMAGE           ID      DISK USAGE   CONTENT SIZE   EXTRA
hello-world:latest 05813aedc15f    25.9kB       9.52kB     U
pes2ug23cs146/spam-web-app-pes2ug23cs146:v1        89cad19ac293    541MB      125MB
python:3.10-slim      f5d029fe3914    185MB      47.1MB
pes2ug23cs146:~/CC_PES2UG23CS146/ml-docker-PES2UG23CS146-$ █
```