

# Cloud Computing

NAME – ANKUR SHARMA

SRN – PES2UG23CS077

Ss1

```
ankur@JITU:/mnt/c/Users/an  + 
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3$ cd PES2UG23CS077
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ export SRN=PES2UG23CS077
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ echo "SRN: $SRN"
SRN: PES2UG23CS077
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ 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/
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ |
```

Ss2 :

```
ankur@JITU:/mnt/c/Users/an  + 
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/
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS          NAMES
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS          NAMES
d7155d967cb        hello-world        "/hello"           49 seconds ago    Exited (0) 48 seconds ago
fce9b393f5fb       hello-world        "/hello"           6 minutes ago     Exited (0) 6 minutes ago
282b921c0a6        hello-world        "/hello"           14 minutes ago    Exited (0) 14 minutes ago
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ docker images
          IMAGE                  ID         TAG      CREATED      SIZE      PORTS      NAMES
hello-world:latest  05813aedc15f      <none>  25.9kB      9.52kB      U
python:3.10-slim    218027ad8e5a      <none>  185MB      47.1MB      U
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$
```

## Ss3 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ docker pull python:3.10-slim
3.10-slim: Pulling from library/python
Digest: sha256:218027ad8e5a6fb68245ccffcb8bcfa98d9891039bfedd53b1b4666dc48a4bb1
Status: Image is up to date for python:3.10-slim
docker.io/library/python:3.10-slim
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ docker images


| IMAGE              | ID           | DISK USAGE | CONTENT SIZE | EXTRA |
|--------------------|--------------|------------|--------------|-------|
| hello-world:latest | 05813aedc15f | 25.9kB     | 9.52kB       | U     |
| python:3.10-slim   | 218027ad8e5a | 185MB      | 47.1MB       |       |


ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077$ |
```

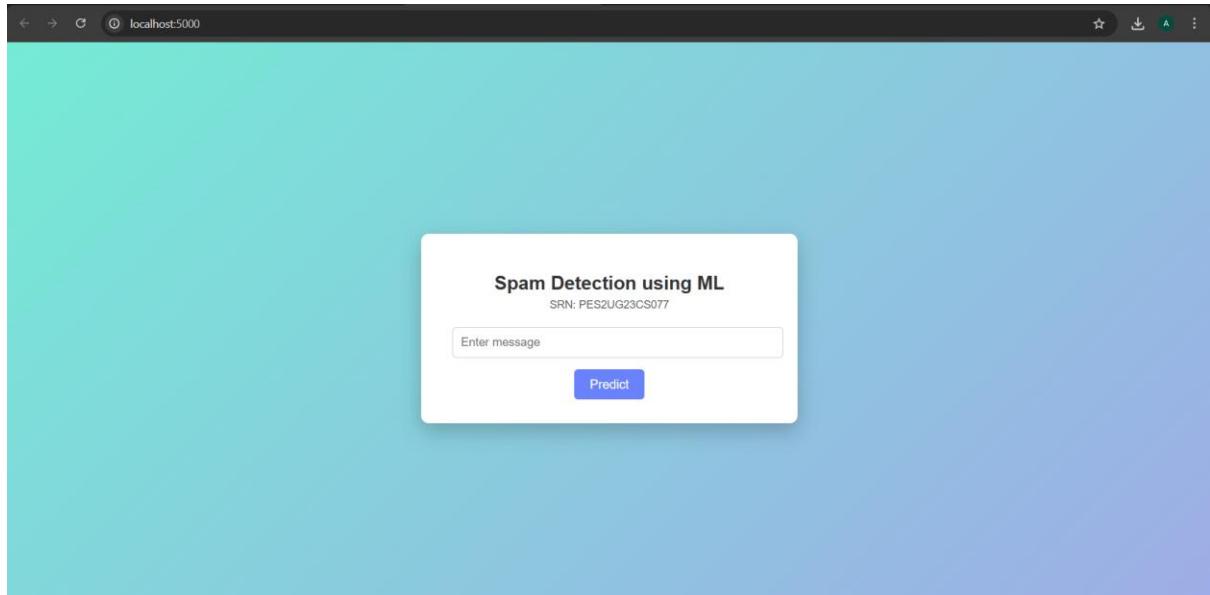
## Ss4 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker build -t spam-web-app-pes2ug23cs077 .
[+] Building 69.7s (12/12) FINISHED
   => [internal] load build definition from Dockerfile
   => => transferring dockerfile: 294B
   => [internal] load metadata for docker.io/library/python:3.10-slim
   => [internal] load .dockerignore
   => => transferring context: 2B
   => [1/7] FROM docker.io/library/python:3.10-slim@sha256:218027ad8e5a6fb68245ccffcb8bcfa98d9891039bfedd53b1b4666d
   => => resolve docker.io/library/python:3.10-slim@sha256:218027ad8e5a6fb68245ccffcb8bcfa98d9891039bfedd53b1b4666d
   => [internal] load build context
   => => transferring context: 184B
   => CACHED [2/7] WORKDIR /app
   => CACHED [3/7] COPY app.py .
   => CACHED [4/7] COPY spam_classifier_model.pkl .
   => CACHED [5/7] COPY tfidf_vectorizer.pkl .
   => CACHED [6/7] COPY templates ./templates
   => [7/7] RUN pip install --no-cache-dir flask scikit-learn joblib
   => exporting to image
   => => exporting layers
   => => exporting manifest sha256:d7e04a916570b55c9ac958f4237b43c689eb49a33debc5c882cb4648ff9c8e39
   => => exporting config sha256:29e96e8a0fa1b47662deecb5349b328d771cd2e91835ef3710213dc4e3f70081
   => => exporting attestation manifest sha256:7368c6befc0516333f936491628be1828f437a6e6c251804094005e2a40c2471
   => => exporting manifest list sha256:4fb839db3a1063641613bab3f07681b0de4513408bb5d9a5c2c32991bd4dad3
   => => naming to docker.io/library/spam-web-app-pes2ug23cs077:latest
   => => unpacking to docker.io/library/spam-web-app-pes2ug23cs077:latest
   => => 2.0s
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ |
```

## Ss5 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker stop ef2674f960e0
docker rm ef2674f960e0
docker run -d -p 5000:5000 spam-web-app-pes2ug23cs077
ef2674f960e0
ef2674f960e0
f875e5cac6a27f6a923ed92c0050dc211e21c264c0f874b281917a9882e9bcd1
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS               NAMES
f875e5cac6a2        spam-web-app-pes2ug23cs077   "python app.py"   15 seconds ago   Up 15 seconds   0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp   admiring_hypati
a
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ |
```

Ss6 :



Ss7 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker login
Authenticating with existing credentials... [Username: pes2ug23cs077]
  Info → To login with a different account, run 'docker logout' followed by 'docker login'

Login Succeeded
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$
```

Ss8 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker tag spam-web-app-pes2ug23cs077 PES2UG23CS077/spam-web-app=p
es2ug23cs077:v1
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker images
  Info → U In Use
IMAGE           ID          DISK USAGE   CONTENT SIZE  EXTRA
PES2UG23CS077/spam-web-app-pes2ug23cs077:1  4fb839db3a1    541MB      125MB   U
hello-world:latest  65813aedc15f   25.9kB     9.52kB   U
python:3.10-slim  218027ad8e5a   185MB     47.1MB   U
spam-web-app-pes2ug23cs077:latest  4fb839db3a1    541MB      125MB   U
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$
```

Ss9 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker push pes2ug23cs077/spam-web-app-pes2ug23cs077:v1
The push refers to repository [docker.io/pes2ug23cs077/spam-web-app-pes2ug23cs077]
d0d1977db485: Mounted from library/python
0c998ddbabef: Pushed
63eb7511fc1: Mounted from library/python
a561ed5ed89e: Pushed
1339e9a854de: Pushed
0c8d55a45c0d: Mounted from library/python
af73e00cfca39: Pushed
3340314a5991: Pushed
e919bd7fea99: Pushed
690eaaffcf0e09: Mounted from library/python
c171aa3d4505: Pushed
v1: digest: sha256:4fb839db3a1063641613bab3f07681b0de4513408bb5d9a5c2c32991bd4dad3 size: 856
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$
```

Ss10 :

The screenshot shows the Docker Hub interface. On the left, there's a sidebar with options like 'Repositories', 'Hardened Images', 'Collaborations', 'Settings', 'Default privacy', 'Notifications', 'Billing', 'Usage', 'Pulls', and 'Storage'. The main area is titled 'Repositories' and shows a single repository: 'pes2ug23cs077/spam-web-app-pes2ug23cs077'. Below the repository name, it says '1 minute ago' and has a 'IMAGE' button. To the right, there are filters for 'Last Pushed', 'Contains', 'Visibility' (set to 'Public'), and 'Scout'. At the bottom, it says '1-1 of 1'.

Ss11 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
f875e5cac6a2 spam=web-app-pes2ug23cs077 "python app.py" 11 minutes ago Up 11 minutes 0.0.0.0:5000->5000/tcp admiring_hypati
a
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker stop f875e5cac6a2
f875e5cac6a2
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ |
```

Ss12 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
f875e5cac6a2 spam=web-app-pes2ug23cs077 "python app.py" 12 minutes ago Exited (137) 42 seconds ago admiring_hypatia
784c40a727b9 spam=web-app-pes2ug23cs077 "python app.py" 13 minutes ago Created hungry_hertz
12b66782ec0f spam=web-app-pes2ug23cs077 "python app.py" 13 minutes ago Created gallant_sammet
8d7155d967cb hello-world "/hello" 35 minutes ago Exited (0) 35 minutes ago romantic_williamson
0ce9b393f5fb hello-world "/hello" 40 minutes ago Exited (0) 40 minutes ago inspiring_jepsen
b28b291c0a6 hello-world "/hello" 48 minutes ago Exited (0) 48 minutes ago determined_archimedes
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker rm f875e5cac6a2
f875e5cac6a2
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
784c40a727b9 spam=web-app-pes2ug23cs077 "python app.py" 14 minutes ago Created hungry_hertz
12b66782ec0f spam=web-app-pes2ug23cs077 "python app.py" 14 minutes ago Created gallant_sammet
8d7155d967cb hello-world "/hello" 36 minutes ago Exited (0) 36 minutes ago romantic_williamson
0ce9b393f5fb hello-world "/hello" 41 minutes ago Exited (0) 41 minutes ago inspiring_jepsen
b28b291c0a6 hello-world "/hello" 49 minutes ago Exited (0) 49 minutes ago determined_archimedes
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ |
```

Ss13 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker images
IMAGE ID DISK USAGE CONTENT SIZE EXTRA
PES2UG23CS077/spam=web-app-pes2ug23cs077:v1 4ffb839db3a1 541MB 125MB U
hello-world:latest 05813aedc15f 25.9kB 9.52kB U
python:3.10-slim 218927ad8e5a 185MB 47.1MB U
spam=web-app-pes2ug23cs077:latest 4ffb839db3a1 541MB 125MB U
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker rmi PES2UG23CS077/spam=web-app-pes2ug23cs077:v1
Untagged: PES2UG23CS077/spam=web-app-pes2ug23cs077:v1
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker images
IMAGE ID DISK USAGE CONTENT SIZE EXTRA
hello-world:latest 05813aedc15f 25.9kB 9.52kB U
python:3.10-slim 218927ad8e5a 185MB 47.1MB U
spam=web-app-pes2ug23cs077:latest 4ffb839db3a1 541MB 125MB U
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ |
```

## Ss14 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker rm 784c40a727b9
784c40a727b9
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker rm 12b66782ec0f
12b66782ec0f
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker rmi spam-web-app-pes2ug23cs077:latest
Untagged: spam-web-app-pes2ug23cs077:latest
Deleted: sha256:4fbb839db3a1063641613bab3f07681b0de4513408bb5d9a5c2c32991bd4dad3
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker ps -a
CONTAINER ID   IMAGE          COMMAND   CREATED          STATUS    PORTS     NAMES
8d7155d967cb   hello-world   "hello"   44 minutes ago  Exited (0) 44 minutes ago  romantic_williamson
0ce9b393f5fb   hello-world   "/hello"  50 minutes ago  Exited (0) 50 minutes ago  inspiring_jepsen
b282b921c0a6   hello-world   "/hello"  58 minutes ago  Exited (0) 58 minutes ago  determined_archimedes
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$
```

## PES2UG23CS077

Yes, Docker provides commands to delete images completely in one go.

The command `docker rmi -f $(docker images -q)` can be used to remove all Docker images from the local system forcefully.

Another useful command is `docker system prune -a`, which removes all unused containers, images, networks, and build cache in one go, helping to free up disk space.

## Ss15 :

```
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$ docker pull pes2ug23cs077/spam-web-app-pes2ug23cs077:v1
v1: Pulling from pes2ug23cs077/spam-web-app-pes2ug23cs077
c471a3d45d5: Pull complete
e919bd7ea99: Pull complete
0e998ddabae7: Pull complete
a561ed5ed89e: Pull complete
334b0314a5991: Pull complete
1339e9a854de: Pull complete
af73e00fcfa30: Download complete
Digest: sha256:4fb839db3a1063641613bab3f07681b0de4513408bb5d9a5c2c32991bd4dad3
Status: Downloaded newer image for pes2ug23cs077/spam-web-app-pes2ug23cs077:v1
docker.io/pes2ug23cs077/spam-web-app-pes2ug23cs077:v1
ankur@JITU:/mnt/c/Users/ankur/Desktop/SEM6/cc-lab3/PES2UG23CS077/ml-docker-PES2UG23CS077$
```