

```
gcloud config set project jasmeetsingh-bdp-project
```

```
ls
```

```
mkdir Assignment10
```

```
ls /home
```

```
cd /home/jasmeetsingh/Assignment10
```

```
===== Upload Docker File =====
```

Assignment10 > Dockerfile

```
1 FROM python:slim
2 RUN python -m pip install pandas
3
4 WORKDIR /home/jasmeetsingh/Assignment10
5 COPY script.py ./
6 CMD ["python", "script.py"]
7
8
```

```
===== Upload Python File =====
```

Dockerfile script.py x

Assignment10 > script.py > ...

```
1 import pandas as pd
2
3 data = \
4 [
5     ['BHT', 8],
6     ['ADB', 9],
7     ['WSN', 8],
8     ['Socio', 9],
9     ['Photovoltaic', 7],
10    ['Project', 8],
11    ['TIC', 8],
12    ['ML', 8],
13    ['ICDWA', 10],
14    ['Nano', 8],
15    ['Seminar', 7],
16    ['OS', 7],
17    ['OODAD', 9],
18    ['CNS', 6],
19    ['Graphics', 7],
20    ['Programming', 9],
21    ['CA', 9],
22    ['CPP', 8],
23    ['CN', 7],
24    ['CD', 9],
25 ]
26
27 df = pd.DataFrame(data, columns = ['courses', 'ratings'])
28
29 ratings_mean = df['ratings'].mean()
30 print("Mean ratings:", ratings_mean)
31
32 ratings_highest = df[df['ratings'] == max(df['ratings'])].iloc[0]
33 print("Max ratings:\n", ratings_highest)
34
35 ratings_lowest = df[df['ratings'] == min(df['ratings'])].iloc[0]
36 print("Min ratings:\n", ratings_lowest)
```

docker image build -t python_bdp_hwrk:v_inside /home/jasmeetsingh/Assignment10

```
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ docker image build -t python_bdp_hwrk:v_inside /home/jasmeetsingh/Assignment10
Sending build context to Docker daemon  3.584kB
Step 1/5 : FROM python:slim
--> 626d06aea490
Step 2/5 : RUN python -m pip install pandas
--> Using cache
--> 6cd4f37e648a
Step 3/5 : WORKDIR /home/jasmeetsingh/Assignment10
--> Using cache
--> 0af818ce4f33
Step 4/5 : COPY script.py ./
--> 42e1362169e1
Step 5/5 : CMD ["python", "script.py"]
--> Running in 7f946653cde9
Removing intermediate container 7f946653cde9
--> 204ded91a699
Successfully built 204ded91a699
Successfully tagged python_bdp_hwrk:v_inside
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ ||
```

docker container run --rm python_bdp_hwrk:v_inside

```
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ docker container run --rm python_bdp_hwrk:v_inside
Mean ratings: 8.05
Max ratings:
  courses    ICDWA
  ratings     10
Name: 8, dtype: object
Min ratings:
  courses    CNS
  ratings     6
Name: 13, dtype: object
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ ||
```

docker image build -t python_bdp_hwrk:v_mounted /home/jasmeetsingh/Assignment10

```
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ docker image build -t python_bdp_hwrk:v_mounted /home/jasmeetsingh/Assignment10
Sending build context to Docker daemon  3.584kB
Step 1/5 : FROM python:slim
--> 626d06aea490
Step 2/5 : RUN python -m pip install pandas
--> Using cache
--> 6cd4f37e648a
Step 3/5 : WORKDIR /home/jasmeetsingh/Assignment10
--> Using cache
--> 0af818ce4f33
Step 4/5 : COPY script.py ./
--> Using cache
--> 42e1362169e1
Step 5/5 : CMD ["python", "script.py"]
--> Using cache
--> 204ded91a699
Successfully built 204ded91a699
Successfully tagged python_bdp_hwrk:v_mounted
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ ||
```

docker run -v /home/jasmeetsingh/Assignment10/script.py:/DockerRes python_bdp_hwrk:v_mounted

```
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ docker run -v /home/jasmeetsingh/Assignment10/script.py:/DockerRes python_bdp_hwrk:v_mounted
Mean ratings: 8.05
Max ratings:
  courses    ICDWA
  ratings     10
Name: 8, dtype: object
Min ratings:
  courses    CNS
  ratings     6
Name: 13, dtype: object
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ ||
```

docker images

```
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
python_bdp_hwrk	v_inside	204ded91a699	5 minutes ago	313MB
python_bdp_hwrk	v_mounted	204ded91a699	5 minutes ago	313MB

docker system prune -a

docker images

```
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
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```
jasmeetsingh@cloudshell:~/Assignment10 (jasmeetsingh-bdp-project)$ | |
```