

### 3.a) Building the Docker file

> docker build -t ml-batchservice-api -f Dockerfile .

```
PS C:\Users\Munjala Hari Krishna\Desktop\SEDS\Part-B\Qualities in Intelligent Systems\Assignment W-13 W-14\Part-II Batch Serving of a ML model\Model_Batch_Service
> docker build -t ml-batchservice-api -f Dockerfile .
2024/04/18 16:24:08 http2: server: error reading preface from client //./pipe/docker_engine: file has already been closed
[+] Building 3.7s (13/13) FINISHED
=> [internal] load build definition from Dockerfile                                docker:default
=> => transferring dockerfile: 225B                                              0.0s
=> [internal] load metadata for docker.io/jupyter/scipy-notebook:latest          0.0s
=> [auth] jupyter/scipy-notebook:pull token for registry-1.docker.io            2.0s
=> [internal] load .dockerignore                                                  0.0s
=> => transferring context: 2B                                                    0.0s
=> [1/7] FROM docker.io/jupyter/scipy-notebook:latest@sha256:fca4bcc9cbd49d9a15e0e4df6c666adf17776c950da9fa94a4f0a045d5c4ad33 0.0s
=> [internal] load build context                                                0.0s
=> => transferring context: 6.04kB                                              0.0s
=> CACHED [2/7] RUN pip install joblib                                          0.0s
=> CACHED [3/7] COPY train.csv ./train.csv                                     0.0s
=> CACHED [4/7] COPY test.csv ./test.csv                                       0.0s
=> [5/7] COPY train.py ./train.py                                              0.0s
=> [6/7] COPY inference.py ./inference.py                                     0.1s
=> [7/7] RUN python3 train.py                                                  1.3s
=> exporting to image                                                         0.1s
=> => exporting layers                                                         0.1s
=> => writing image sha256:c9aef8304ea98e52ab1ce2ad900ba45f3d594c1199af5bee10de0a4aa8fb3f7f 0.0s
=> => naming to docker.io/library/ml-batchservice-api                         0.0s
```

### 3.b) Running the Docker container

> docker run ml-batchservice-api python3 inference.py

### 3.c) Screenshots of the output

```
> docker run ml-batchservice-api python3 inference.py
Linux-5.15.133.1-microsoft-standard-WSL2-x86_64-with-glibc2.35
Python 3.11.6 | packaged by conda-forge | (main, Oct 3 2023, 10:40:35) [GCC 12.3.0]
NumPy 1.24.4
SciPy 1.11.3
Shape of the test data
(1300, 160)
(1300,)
knc.joblib
KNC score and classification:
0.4530769230769231
```

knc.joblib

KNC score and classification:

0.4530769230769231

KNC Prediction: [ 0 0 0 ... 25 25 24]

KNC Classification Report: precision recall f1-score support

0	0.70	0.86	0.77	50
1	1.00	0.64	0.78	50
2	0.30	0.38	0.34	50
3	0.12	0.34	0.18	50
4	0.19	0.10	0.13	50
5	0.16	0.14	0.15	50
6	0.21	0.20	0.20	50
7	0.08	0.08	0.08	50
8	0.13	0.14	0.14	50
9	0.12	0.06	0.08	50
10	0.39	0.30	0.34	50
11	0.26	0.12	0.16	50
12	0.50	0.40	0.44	50
13	0.19	0.22	0.21	50
14	0.37	0.20	0.26	50
15	0.07	0.06	0.06	50
16	0.11	0.18	0.13	50
17	0.87	0.94	0.90	50
18	1.00	1.00	1.00	50
19	1.00	1.00	1.00	50
20	1.00	1.00	1.00	50
21	1.00	1.00	1.00	50
22	0.69	0.62	0.65	50
23	0.76	0.56	0.64	50
24	0.54	0.98	0.70	50
25	0.62	0.26	0.37	50
accuracy			0.45	1300
macro avg	0.48	0.45	0.45	1300
weighted avg	0.48	0.45	0.45	1300

gnb.joblib

GNB score and classification:

0.4623076923076923

GNB Prediction: [ 0 25 25 ... 25 25 24]

GNB Classification Report:

		precision	recall	f1-score	support
0	0.91	0.20	0.33	50	
1	1.00	0.90	0.95	50	
2	0.78	0.90	0.83	50	
3	0.15	0.32	0.20	50	
4	0.12	0.14	0.13	50	
5	0.21	0.12	0.15	50	
6	0.30	0.18	0.23	50	
7	0.14	0.08	0.10	50	
8	0.07	0.14	0.09	50	
9	0.82	0.36	0.50	50	
10	0.49	0.42	0.45	50	
11	0.00	0.00	0.00	50	
12	0.36	0.40	0.38	50	
13	0.33	0.26	0.29	50	
14	0.34	0.24	0.28	50	
15	0.00	0.00	0.00	50	
16	0.00	0.00	0.00	50	
17	0.70	0.84	0.76	50	
18	1.00	1.00	1.00	50	
19	1.00	1.00	1.00	50	
20	1.00	1.00	1.00	50	
21	1.00	1.00	1.00	50	
22	0.56	0.50	0.53	50	
23	0.85	0.34	0.49	50	
24	0.70	0.98	0.82	50	
25	0.41	0.70	0.52	50	
accuracy			0.46	1300	
macro avg	0.51	0.46	0.46	1300	
weighted avg	0.51	0.46	0.46	1300	