

Task 4 – Model Deployment

1. Commands used for deploying the flask application on the ec2 instance

The following commands were used to deploy the application in EC2.

- i) `sudo service docker start`
- ii) `sudo docker build -t capstone_deployment .`

```
[ec2-user@ip-172-31-26-87 Flask_Deployment]$ sudo docker build -t capstone_deployment .
Sending build context to Docker daemon  2.712MB
Step 1/12 : FROM python:3.7-slim
--> eal2296513d7
Step 2/12 : COPY ./requirements.txt /app/
--> Using cache
--> 88c36ffe404b
Step 3/12 : RUN python -m pip install -r /app/requirements.txt
--> Using cache
--> ed6cbcbcb6b4
Step 4/12 : COPY ./app.py /app/
--> Using cache
--> 7fa8a5fcb1a9
Step 5/12 : COPY ./model_gender_scenario1_XGBoost.pkl /app/
--> Using cache
--> 566b3e9f71ea
Step 6/12 : COPY ./model_age_scenario1_XGBoost.pkl /app/
--> Using cache
--> fce5fc824b2e
Step 7/12 : COPY ./test_data_scenario_1.csv /app/
--> Using cache
--> 30a217fb86c8
Step 8/12 : COPY templates/ /app/templates/
--> 89544bf898d0
Step 9/12 : WORKDIR /app/
--> Running in 9d7fa9ea8971
Removing intermediate container 9d7fa9ea8971
--> 461f69af7382
Step 10/12 : ENTRYPOINT ["python"]
--> Running in 43fa59032673
Removing intermediate container 43fa59032673
--> 80939d2abfe8
Step 11/12 : CMD ["app.py"]
--> Running in 9050bb01b0ef
Removing intermediate container 9050bb01b0ef
--> 33d956922525
Step 12/12 : EXPOSE 5000
--> Running in c29807c3192e
Removing intermediate container c29807c3192e
--> d3ea70e44d69
Successfully built d3ea70e44d69
Successfully tagged capstone_deployment:latest
```

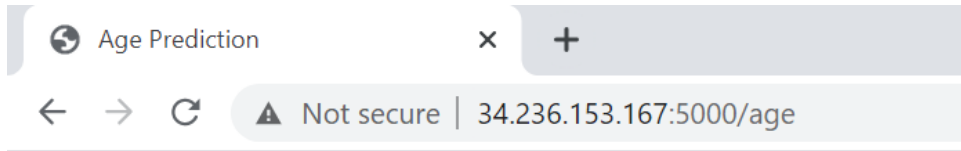
- iii) `docker run -p 5000:5000 capstone_deployment`

```
[ec2-user@ip-172-31-26-87 Flask_Deployment]$ docker run -p 5000:5000 capstone_deployment
* Serving Flask app "app" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://0.0.0.0:5000/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 186-365-788
```

2. The screenshot of the final output for predicting the campaigns for the 50 customers

We had used htm file to format the output into a tabular format by converting the dataframe to json format.

Age Prediction screenshot after launching the URL for Age prediction :



S.No	Device id	Age Group Predicted	Action Campaign
1	-9051903700674900000	32+	Campaign 6
2	-6320200463468170000	32+	Campaign 6
3	-8983709377077180000	24-32	Campaign 5
4	5046139485700040000	32+	Campaign 6
5	-6756881769890340000	24-32	Campaign 5
6	6995219615811850000	24-32	Campaign 5
7	-8099289646600440000	32+	Campaign 6
8	-4826068017221520000	32+	Campaign 6
9	3588953055431950000	24-32	Campaign 5
10	-3387379872775050000	24-32	Campaign 5
11	-4050972029321580000	24-32	Campaign 5
12	-6809712355052840000	24-32	Campaign 5
13	-3242071858053410000	24-32	Campaign 5
14	-5057935060457030000	24-32	Campaign 5
15	4294753544473110000	24-32	Campaign 5
16	4913874360661090000	24-32	Campaign 5
17	-6096615357726460000	32+	Campaign 6
18	-2169638930871080000	32+	Campaign 6
19	-5762160808948310000	32+	Campaign 6
20	5929786679970440000	32+	Campaign 6
21	-3405216707862200000	32+	Campaign 6
22	-7154432501773600000	24-32	Campaign 5
23	5106657779454980000	24-32	Campaign 5
24	2817741159427770000	24-32	Campaign 5
25	-2499163070132570000	32+	Campaign 6
26	-3661439779862720000	32+	Campaign 6
27	-4485781454523950000	32+	Campaign 6
28	-1858458687678460000	24-32	Campaign 5
29	1053716841535470000	24-32	Campaign 5
30	-5457006839206730000	32+	Campaign 6
31	2791952732243750000	32+	Campaign 6
32	-2341165671089170000	24-32	Campaign 5
33	8701467796968020000	32+	Campaign 6
34	8352622445351470000	24-32	Campaign 5
35	4145139388274290000	0-24	Campaign 4
36	-4593454329603640000	32+	Campaign 6
37	7963559654838140000	24-32	Campaign 5
38	3540669247213200000	32+	Campaign 6
39	-2525148510460880000	24-32	Campaign 5
40	-6329419905830000000	24-32	Campaign 5
41	-1376334466275660000	32+	Campaign 6
42	-6485094870820150000	32+	Campaign 6
43	8125715068360950000	24-32	Campaign 5
44	-6800849790908050000	24-32	Campaign 5
45	4835140273719210000	32+	Campaign 6
46	-4836746630592260000	32+	Campaign 6
47	-7636820808807140000	32+	Campaign 6
48	-5514649265001110000	24-32	Campaign 5
49	-8264412248895160000	24-32	Campaign 5

Gender Prediction screenshot after launching the URL for Gender prediction :

Gender Prediction			
Not secure 34.236.153.167:5000/gender			
S.No	Device id	Gender Predicted	Action Campaign
1	-7520263808541200000	M	Campaign 3
2	1593984981330920000	M	Campaign 3
3	-8537071843704760000	M	Campaign 3
4	-1997576523626390000	M	Campaign 3
5	2568083806355370000	M	Campaign 3
6	-6190918471714710000	M	Campaign 3
7	-3925678886511320000	M	Campaign 3
8	8611513471254200000	M	Campaign 3
9	7348310957808950000	M	Campaign 3
10	-8237639017401810000	M	Campaign 3
11	-5127867223099470000	M	Campaign 3
12	7752507241977290000	M	Campaign 3
13	7707975303126140000	M	Campaign 3
14	-3599160425194810000	M	Campaign 3
15	-7619158856929310000	M	Campaign 3
16	-1387833299547080000	M	Campaign 3
17	-3293695202801830000	M	Campaign 3
18	8903463043112700000	M	Campaign 3
19	-2368881771023760000	M	Campaign 3
20	6388835113072390000	M	Campaign 3
21	1293370421553680000	M	Campaign 3
22	-1418792188551080000	M	Campaign 3
23	-991250918475365000	M	Campaign 3
24	1500048808747790000	M	Campaign 3
25	6878657208197410000	F	Campaign 1, Campaign 2
26	-5672212688669480000	M	Campaign 3
27	-3630727808678290000	M	Campaign 3
28	5735310373854710000	M	Campaign 3
29	3271538568457310000	M	Campaign 3
30	-5075235445357090000	M	Campaign 3
31	-2583528184516860000	M	Campaign 3
32	2366047595700040000	M	Campaign 3
33	-4315155399452810000	M	Campaign 3
34	-5710465318351640000	M	Campaign 3
35	7246819265417100000	M	Campaign 3
36	4604164660900020000	F	Campaign 1, Campaign 2
37	7220555311291440000	M	Campaign 3
38	-8793095361596290000	M	Campaign 3
39	-8309521033676460000	M	Campaign 3
40	-3588865410416910000	M	Campaign 3
41	-2802131021308890000	M	Campaign 3
42	537272472540925000	M	Campaign 3
43	-1227933520082640000	M	Campaign 3
44	6428543206524510000	M	Campaign 3
45	-9169899275162680000	M	Campaign 3
46	7256622423963570000	M	Campaign 3
47	-1182887723410340000	M	Campaign 3
48	-1057803575924280000	M	Campaign 3
49	-7364543959535800000	M	Campaign 3