Docker Image Creation

1. Creating Docker Image

Command: docker image build -t mlops .

Here, mlops is the image name, and . represents the current repository

```
e:\MLOps\churnprediction>docker ps
CONTAINER ID    IMAGE      COMMAND    CREATED    STATUS    PORTS      NAMES

e:\MLOps\churnprediction>docker ps -a
CONTAINER ID    IMAGE      COMMAND    CREATED    STATUS    PORTS      NAMES

e:\MLOps\churnprediction>docker image build -t mlops .
[+] Building 278.6s (8/8) FINISHED                                                          docker:default
 => [internal] load .dockerignore                                                                   0.0s
 => => transferring context: 2B                                                                     0.0s
 => [internal] load build definition from Dockerfile                                                0.0s
 => => transferring dockerfile: 179B                                                                0.0s
 => [internal] load metadata for docker.io/library/python:3.9-slim-buster                           5.6s
 => [1/4] FROM docker.io/library/python:3.9-slim-buster@sha256:320a7a4250aba4249f458872adecf92eea88dc6abd2d76dc5c0f01cac9b53990   0.0s
 => [internal] load build context                                                                   6.0s
 => => transferring context: 1.72MB                                                                 5.4s
 => CACHED [2/4] WORKDIR /app                                                                        0.0s
 => [3/4] COPY . .                                                                                  19.9s
 => ERROR [4/4] RUN pip install -r requirement.txt                                                247.0s
------
 > [4/4] RUN pip install -r requirement.txt:
7.655 Collecting alembic==1.11.1
8.502    Downloading alembic-1.11.1-py3-none-any.whl (224 kB)
8.715    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 224.5/224.5 kB 1.1 MB/s eta 0:00:00
8.867 Collecting blinker==1.6.2
9.368    Downloading blinker-1.6.2-py3-none-any.whl (13 kB)
9.584 Collecting certifi==2023.5.7
9.786    Downloading certifi-2023.5.7-py3-none-any.whl (156 kB)
9.903    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 157.0/157.0 kB 1.4 MB/s eta 0:00:00
10.59 Collecting charset-normalizer==3.2.0
10.70    Downloading charset_normalizer-3.2.0-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (202 kB)
```

2. Testing and Running Docker Images

```
e:\MLOps\churnprediction>docker ps
CONTAINER ID    IMAGE      COMMAND    CREATED    STATUS    PORTS      NAMES

e:\MLOps\churnprediction>docker ps -a
CONTAINER ID    IMAGE      COMMAND    CREATED    STATUS    PORTS      NAMES

e:\MLOps\churnprediction>docker images
REPOSITORY    TAG        IMAGE ID       CREATED      SIZE
mlops         latest     107f6a21a80a   4 hours ago  1.47GB
nginx         latest     021283c8eb95   12 days ago  187MB
alpine        latest     c1aabb73d233   4 weeks ago  7.33MB

e:\MLOps\churnprediction>docker ps -a
CONTAINER ID    IMAGE      COMMAND    CREATED    STATUS    PORTS      NAMES

e:\MLOps\churnprediction>docker images
REPOSITORY    TAG        IMAGE ID       CREATED      SIZE
mlops         latest     107f6a21a80a   5 hours ago  1.47GB
nginx         latest     021283c8eb95   12 days ago  187MB
alpine        latest     c1aabb73d233   4 weeks ago  7.33MB

e:\MLOps\churnprediction>
```

```
e:\MLOps\churnprediction>docker run mlops
2023/07/17 13:45:25 WARNING mlflow.utils.git_utils: Failed to import Git (the Git executable is probably not on your PATH), so Git SHA is not a
vailable. Error: Failed to initialize: Bad git executable.
The git executable must be specified in one of the following ways:
    - be included in your $PATH
    - be set via $GIT_PYTHON_GIT_EXECUTABLE
    - explicitly set via git.refresh()

All git commands will error until this is rectified.

This initial warning can be silenced or aggravated in the future by setting the
$GIT_PYTHON_REFRESH environment variable. Use one of the following values:
    - quiet|q|silence|s|none|n|0: for no warning or exception
    - warn|w|warning|1: for a printed warning
    - error|e|raise|r|2: for a raised exception

Example:
    export GIT_PYTHON_REFRESH=quiet

              precision    recall  f1-score   support

           0       0.87      0.98      0.92       566
           1       0.62      0.18      0.28       101

    accuracy                           0.86       667
   macro avg       0.75      0.58      0.60       667
weighted avg       0.83      0.86      0.82       667

Churn
0    2284
1    2284
Name: count, dtype: int64
              precision    recall  f1-score   support
```

```
    - error|e|raise|r|2: for a raised exception

Example:
    export GIT_PYTHON_REFRESH=quiet

              precision    recall  f1-score   support

           0       0.87      0.98      0.92       566
           1       0.62      0.18      0.28       101

    accuracy                           0.86       667
   macro avg       0.75      0.58      0.60       667
weighted avg       0.83      0.86      0.82       667

Churn
0    2284
1    2284
Name: count, dtype: int64
              precision    recall  f1-score   support

           0       0.95      0.78      0.86       566
           1       0.39      0.79      0.52       101

    accuracy                           0.78       667
   macro avg       0.67      0.79      0.69       667
weighted avg       0.87      0.78      0.81       667
```