Practical-7

Aim: Deployment of ML project in docker using Streamlit

Task 1: Ensure that the required libraries are installed:

- Install the Docker Command Line Interface Tool from: https://docs.docker.com/desktop/
- Install Streamlit library (https://docs.streamlit.io/library/get-started/installation)

Task 2: Create the docker file using the steps described in theory material.

```
Practical 7 > Dockerfile > ...

# Use an official Python runtime as a parent image

FROM python:3.8-slim

# Set the working directory to /app

WORKDIR /app

# Copy the current directory contents into the container at /app

COPY . /app

# Install any needed packages specified in requirements.txt

RUN pip install --no-cache-dir -r requirements.txt

# Expose the port that Streamlit will run on

EXPOSE 8501

# Run streamlit when the container launches

CMD ["streamlit", "run", "app.py"]
```

Task 3: Create the docker image using docker build command.

```
PS C:\Users\Makul\Downloads\MtOPs\Practicals\Practical 7> docker build -t pr7 .

[+] Building 68.1s (10/10) FINISHED

> [internal] load build definition from Dockerfile

> > transferring dockerfile: 5668

> [internal] load .dockerignore

> > transferring context: 28

> [internal] load metadata for docker.io/library/python:3.8-slim

> [internal] load build context

> (a.65)

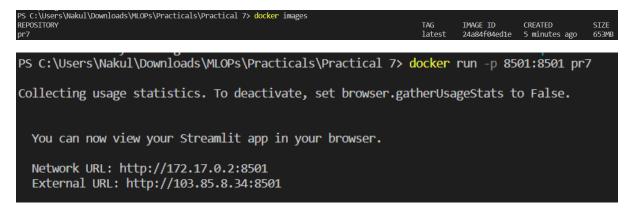
| [internal] load build context

> (b.65)

| [internal] load build context

| (b.67)
| (b.67)
| (c.67)
```

Task 4: Run the docker container to execute the docker image and host the machine learning model using streamlit app server.



Task 5: Compare the performance of the model in docker container and streamlit deployment on local server