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Docker Demonstration

I have an web application which was created in flask app in python.

In this activity im going to containerize the application using Docker.

Project structure:

```
✓ FAKE-NEWS-DETECTOR-APP
  ↘ static
    > js
    > sass
    > templates
  ⌂ .dockerignore      U
  ⌂ .gitattributes
  ⌂ .gitignore
  ⌂ app.py            M
  ⌂ comparative_tes... U
  ⌂ compare_accura... U
  ⌂ config.py         M
  ⌂ Dockerfile        U
  ⌂ Fake News Prediction....
  ⌂ Fake.csv          U
  ⌂ fetch_new_data.py
  ⌂ forms.py          M
  ⌂ manual_fake_da... M
  ⌂ manual_real_dat... M
    ⌂ model_Eensemle.pkl
    ⌂ model_LogisticRegres...
    ⌂ model_MultinomialN...
    ⌂ model_PassiveAggres...
    ⌂ model_PassiveAggres...
    ⌂ model_RandomForest...
    ⌂ model_SVC.pkl
    ⌂ model_XGBoost.pkl
    ⌂ model.pkl          M
    ⌂ model2.pkl
  ⌂ new_real_news_data.c...
  ⌂ nltk.txt
  ⌂ prediction_model.py
  ⌂ Procfile
  ⌂ random_dataset.csv
  ⓘ README.md
  ⌂ requirements.txt     M
  ⌂ tfidfvect.pkl       M
```

```
📄 Dockerfile U X
```

```
📄 Dockerfile
1 # Use Python base image
2 FROM python:3.11
3
4 # Set work directory
5 WORKDIR /app
6
7 # Copy project files
8 COPY . /app
9
10 # Install system dependencies for newspaper / lxml
11 RUN apt-get update && apt-get install -y \
12     build-essential \
13     python3-dev \
14     libxml2-dev \
15     libxslt-dev \
16     libjpeg-dev \
17     zlib1g-dev \
18     && rm -rf /var/lib/apt/lists/*
19
20 # Install Python dependencies
21 RUN pip install --upgrade pip
22 RUN pip install -r requirements.txt
23 RUN python -m nltk.downloader stopwords wordnet
24
25 # Expose Flask port
26 EXPOSE 5000
27
28 # Command to run the app
29 CMD ["python", "app.py"]
30
```

Terminal commands:

- PS D:\tarp\Fake-News-Detector-App> **docker build -t newstruth-ai .**

```
[+] Building 493.6s (13/13) FINISHED          docker:desktop-linux
  => [internal] load build definition from Dockerfile      0.1s
  => => transferring dockerfile: 648B      0.1s
  => [internal] load metadata for docker.io/library/python:3.11    5.1s
  => [auth] library/python:pull token for registry-1.docker.io    0.0s
  => [internal] load .dockerignore      0.1s
  => => transferring context: 2B      0.0s
  => [1/7] FROM docker.io/library/python:3.11@sha256:ad77565590  163.7s
  => => resolve docker.io/library/python:3.11@sha256:ad775655904e  0.1s
  => => sha256:63cba8532b81effb821612694cdbd767acb289  249B / 249B  0.7s
  => => sha256:261f8b25888853b200f9e6fbcb2f7f62  23.95MB / 23.95MB  34.6s
  => => sha256:c1cbb58b63c885ea3a48f7a44cd6b653ce  6.09MB / 6.09MB  4.9s
  => => sha256:23d55a674b2e3641a37b7f2053f0  235.94MB / 235.94MB  144.5s
  => => sha256:72e8e93b0d018b135d833207c6feaba  67.78MB / 67.78MB  86.1s
  => => sha256:13cc39f8244ac66bf1dd9149e1da421  49.29MB / 49.29MB  70.5s
  => => sha256:e3143549f2b8b3ad8d79efdc4782464  25.62MB / 25.62MB  39.7s
  => => extracting sha256:13cc39f8244ac66bf1dd9149e1da421ab1bbc80  3.4s
  => => extracting sha256:e3143549f2b8b3ad8d79efdc47824641c677179  1.5s
  => => extracting sha256:72e8e93b0d018b135d833207c6feaba205653ac  5.0s
  => => extracting sha256:23d55a674b2e3641a37b7f2053f00af6fe4f2a  15.5s
  => => extracting sha256:c1cbb58b63c885ea3a48f7a44cd6b653ceca164  0.7s
  => => extracting sha256:261f8b25888853b200f9e6fbcb2f7f622f129c91  2.1s
  => => extracting sha256:63cba8532b81effb821612694cdbd767acb289c  0.1s
  => [internal] load build context      208.7s
  => => transferring context: 729.95MB      208.2s
  => [2/7] WORKDIR /app      1.0s
  => [3/7] COPY . /app      30.1s
  => [4/7] RUN apt-get update && apt-get install -y      build-es  22.0s
  => [5/7] RUN pip install --upgrade pip      7.2s
  => [6/7] RUN pip install -r requirements.txt      79.6s
  => [7/7] RUN python -m nltk.download stopwords wordnet      10.9s
  => exporting to image      127.6s
  => => exporting layers      77.8s
  => => exporting manifest sha256:089c16c7e9d0fb3cdce47e0a3fbe08f  0.1s
  => => exporting config sha256:8ff10d4e617dc46b4078bce0294361d76  0.1s
  => => exporting attestation manifest sha256:9617a415a2553b98b69  0.1s
  => => exporting manifest list sha256:0edf729a58b15efa78e5ada058  0.1s
  => => naming to docker.io/library/newstruth-ai:latest      0.0s
  => => unpacking to docker.io/library/newstruth-ai:latest      48.7s
```

```
② PS D:\tarp\Fake-News-Detector-App> docker run -p 5000:5000 newstruth-ai
>>
Loaded tfidfvect.pkl
Loaded model_PassiveAggressive.pkl
Loaded model_SVC.pkl
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment!
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 761-211-637
172.17.0.1 - - [04/Nov/2025 17:56:44] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [04/Nov/2025 17:56:44] "GET /favicon.ico HTTP/1.1" 404 -
172.17.0.1 - - [04/Nov/2025 17:56:48] "GET /live_news_feed HTTP/1.1" 200 -
```

```
PS D:\tarp\Fake-News-Detector-App> docker push kaushik016/newstruth-ai:latest
>>
The push refers to repository [docker.io/kaushik016/newstruth-ai]
>>
The push refers to repository [docker.io/kaushik016/newstruth-ai]
e3143549f2b8: Pushed
72e8e93b0d01: Pushed
23d55a674b2e: Pushed
37ee766dedee: Pushed
460eff661029: Pushed
ba24e63e5449: Pushed
e3143549f2b8: Pushed
72e8e93b0d01: Pushed
23d55a674b2e: Pushed
37ee766dedee: Pushed
460eff661029: Pushed
ba24e63e5449: Pushed
694800a1476c: Pushed
23d55a674b2e: Pushed
37ee766dedee: Pushed
460eff661029: Pushed
ba24e63e5449: Pushed
694800a1476c: Pushed
63bcc49d42f6: Pushed
4aa67241fe23: Pushed
37ee766dedee: Pushed
460eff661029: Pushed
ba24e63e5449: Pushed
694800a1476c: Pushed
63bcc49d42f6: Pushed
4aa67241fe23: Pushed
13cc39f8244a: Pushed
694800a1476c: Pushed
63bcc49d42f6: Pushed
4aa67241fe23: Pushed
13cc39f8244a: Pushed
63bcc49d42f6: Pushed
4aa67241fe23: Pushed
13cc39f8244a: Pushed
13cc39f8244a: Pushed
c1cbb58b63c8: Pushed
c1cbb58b63c8: Pushed
261f8b258888: Pushed
63cba8532b81: Pushed
ba74340702db: Pushed
latest: digest: sha256:0edf729a58b15efa78e5ada058faf450b59e90400f2c36e584a756832664f98c size: 856
PS D:\tarp\Fake-News-Detector-App> 
```

Link for the docker app in DockerHub:

<https://hub.docker.com/r/kaushik016/newstruth-ai>

Docker Desktop:

