

Practical - 5

AIM : Deployment of ML project using Flask.

Deploying machine learning models with Flask in an ML lab is crucial because it enables researchers and data scientists to turn their models into accessible APIs or web applications. This facilitates collaboration, testing, and real-world usage of ML models, making them more practical and applicable to various domains. Flask provides a lightweight, flexible framework for building and deploying these interfaces quickly and efficiently.

Task 1: Install the required libraries

```
C:\Users\Tirth>pip install flask
Requirement already satisfied: flask in c:\users\tirth\appdata\local\programs\python\python310\lib\site-packages (2.1.2)
Requirement already satisfied: Werkzeug>=2.0 in c:\users\tirth\appdata\local\programs\python\python310\lib\site-packages (from flask) (2.1.2)
Requirement already satisfied: Jinja2>=3.0 in c:\users\tirth\appdata\local\programs\python\python310\lib\site-packages (from flask) (3.1.2)
Requirement already satisfied: itsdangerous>=2.0 in c:\users\tirth\appdata\local\programs\python\python310\lib\site-packages (from flask) (2.1.2)
Requirement already satisfied: click>=8.0 in c:\users\tirth\appdata\local\programs\python\python310\lib\site-packages (from flask) (8.1.3)
Requirement already satisfied: colorama in c:\users\tirth\appdata\local\programs\python\python310\lib\site-packages (from click>=8.0->flask) (0.4.5)
Requirement already satisfied: MarkupSafe>=2.0 in c:\users\tirth\appdata\local\programs\python\python310\lib\site-packages (from Jinja2>=3.0->flask) (2.1.1)
```

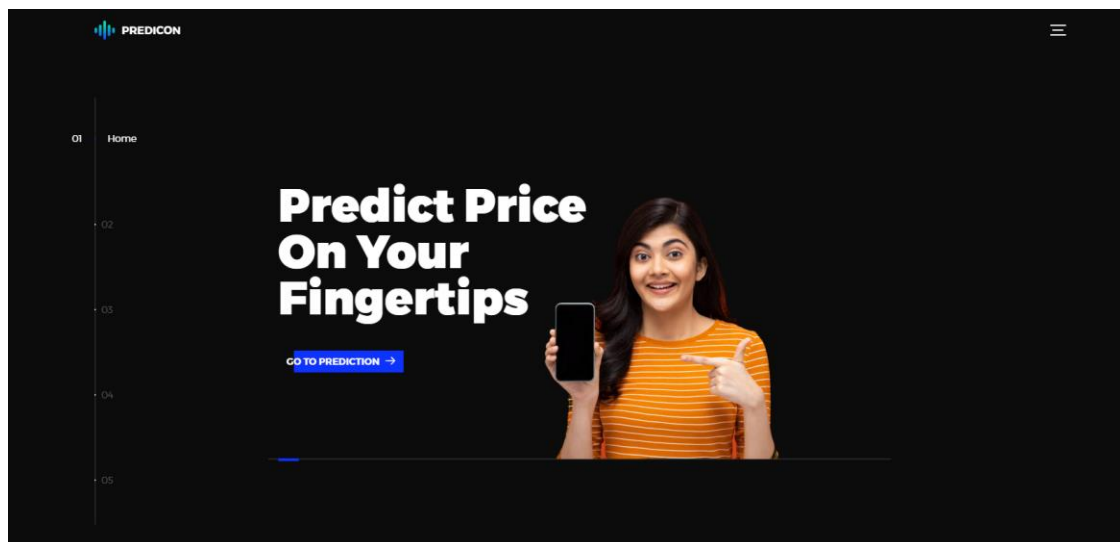
Task 2: Follow the steps described in theory material to deploy the model using Flask. Run the flask application to execute the deployed model.

Step :1 Create Template

Name	Type	Size
static	File folder	
templates	File folder	
app_final.py	Python Source File	5 KB

car.html	Chrome HTML Do...	29 KB
cpp.html	Chrome HTML Do...	8 KB
index.html	Chrome HTML Do...	15 KB
information.html	Chrome HTML Do...	7 KB
lap.html	Chrome HTML Do...	33 KB
lpp.html	Chrome HTML Do...	10 KB
README.md	Markdown Source ...	1 KB
style.css	CSS Source File	21 KB
style.css.map	Linker Address Map	11 KB

User Interface :



Car Price Prediction

Company Name

Hyundai

Model

Transmission Type

Automatic

Year Of Purchase

2021

Fuel type

Petrol

Kms Travelled

Enter No of kms Driven

Predict Price



ISUZU



HONDA



Step: 2 Import the Model, Dataset, and Scalar objects into the project folder.

	Datasets	30-06-2023 06:57 PM	File folder
	Group Members	30-12-2022 07:43 PM	File folder
	Laptop_Price_Prediction	07-05-2023 06:36 AM	File folder
	model	30-12-2022 08:13 PM	File folder
	PPT	27-12-2022 02:54 PM	File folder
	README	01-07-2023 07:21 PM	File folder
	Report	02-05-2023 12:48 PM	File folder
	UI	28-06-2023 02:38 PM	File folder

Step: 3 Create the app.py file to serve the deployment

```

app_final.py X
D: > Capstone Project-1 > UI > New UI > app_final.py > ...
You, 5 months ago | 1 author (You)
1 from flask import Flask , render_template,request,url_for
2 from flask_cors import CORS,cross_origin
3 import pandas as pd
4 import numpy as np
5 import pickle
6
7 app = Flask(__name__)
8 cors=CORS(app)
9 model1=pickle.load(open("D:\Capstone Project-1\Car Price Prediction\LinearRegressionModel.pkl",'rb'))
10 pipe = pickle.load(open("D:\Capstone Project-1\Laptop Price Prediction\pipe.pkl",'rb'))
11 # df = pickle.load(open('df.pkl','rb'))
12 # model1='LinearRegressionModel.pkl'
13 car=pd.read_csv("D:\Capstone Project-1\Car Price Prediction\cardekho_updated.csv")
14 # df=pd.read_csv("D:\Capstone Project-1\Laptop Price Prediction\Laptop_data_final.csv")
15 df=pd.read_csv("D:\Capstone Project-1\Laptop Price Prediction\lappy.csv")
16
17 You, 7 months ago * temp_harshil
18 #Main Page
19 @app.route('/')
20 def index():
21     return render_template('index.html')
22

```

Code : app.py

```

from flask import Flask , render_template,request,url_for
from flask_cors import CORS,cross_origin
import pandas as pd
import numpy as np
import pickle

```

```

app = Flask(__name__)
cors=CORS(app)
model1=pickle.load(open("D:\Capstone Project-1\Car Price
Prediction\LinearRegressionModel.pkl",'rb'))

```

```

car=pd.read_csv("D:\Capstone Project-1\Car Price Prediction\cardekho_updated.csv")

```

```

#Main Page
@app.route('/')
def index():
    return render_template('index.html')

```

```

#Car Price Prediction
@app.route('/cpp')
def cpp():
    #model=sorted(car['full_name'].unique())
    car_models=sorted(car['full_name'].unique())
    companies=(car['company'].unique())
    transmission_type=sorted(car['transmission_type'].unique())
    year=sorted(car['year'].unique(),reverse=True)
    fuel_type=car['fuel_type'].unique()

```

```
km_driven=(request.form.get('km_driven'))

return
render_template('car.html',companies=companies,car_models=car_models,transmission_type
=transmission_type, year=year, fuel_type=fuel_type,km_driven=km_driven)

if __name__=="__main__":
    app.run(debug=True)
```

Output :

