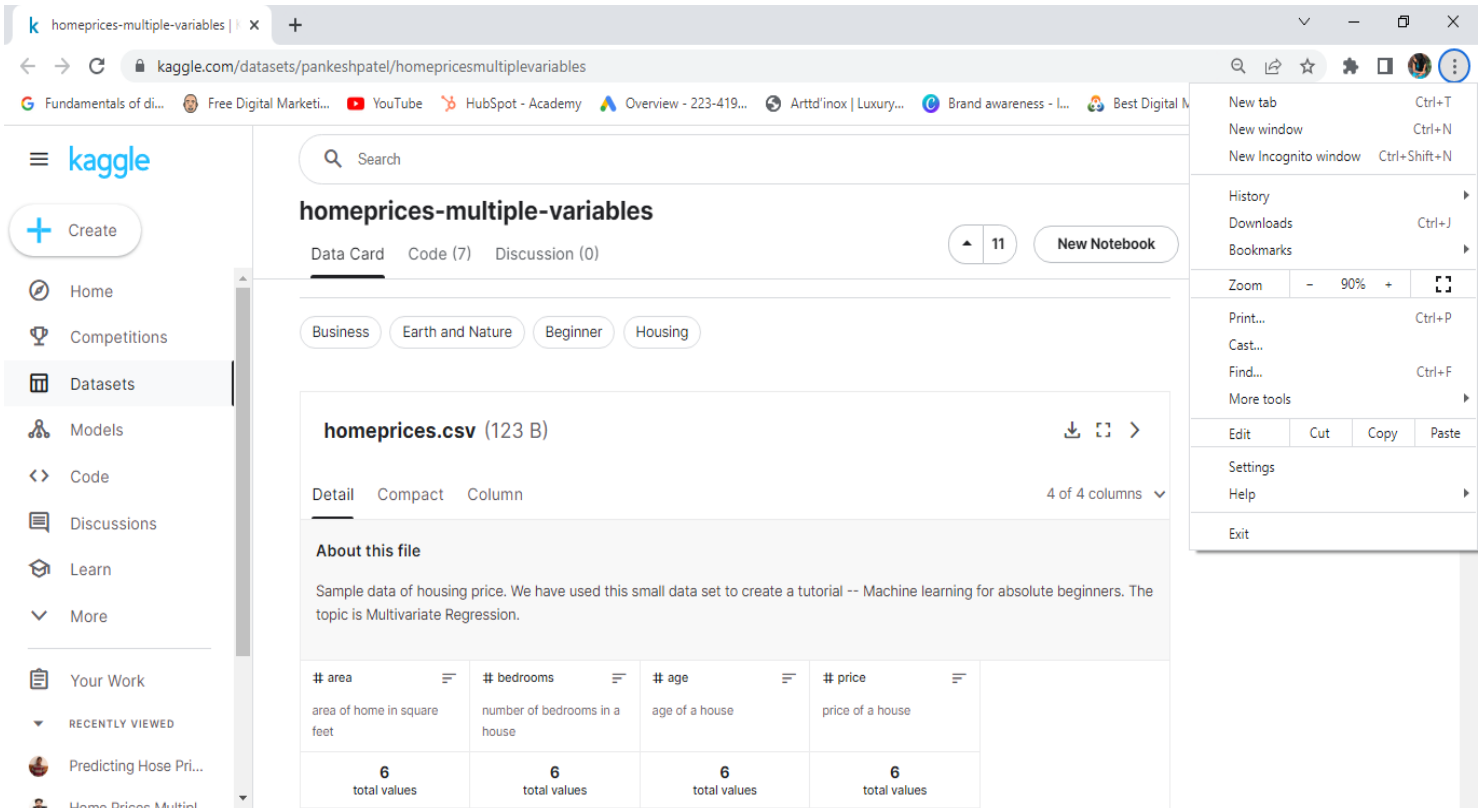
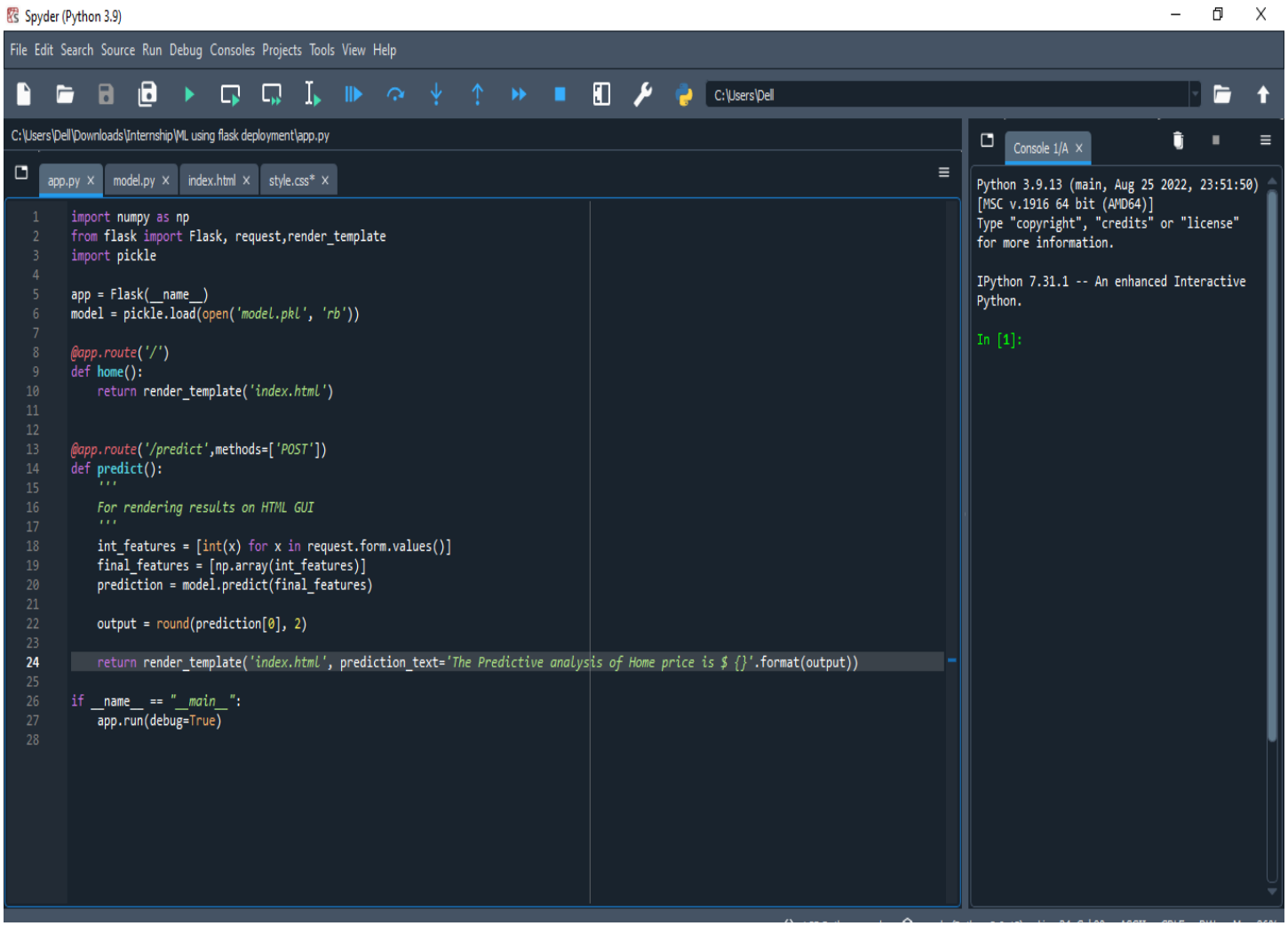
Project Title: Flask deployment (Predictive analysis on House Prices)
Report date: 27th March 2023
Internship Batch: LISUM19
Version: 1.0
Name: B. Harika
Submitted to: Data Glacier
Data storage location:
https://github.com/HarikaReddyB/ML_model_deployment_on_Flask

Downlaoding the dataset by Kaggle datasets:

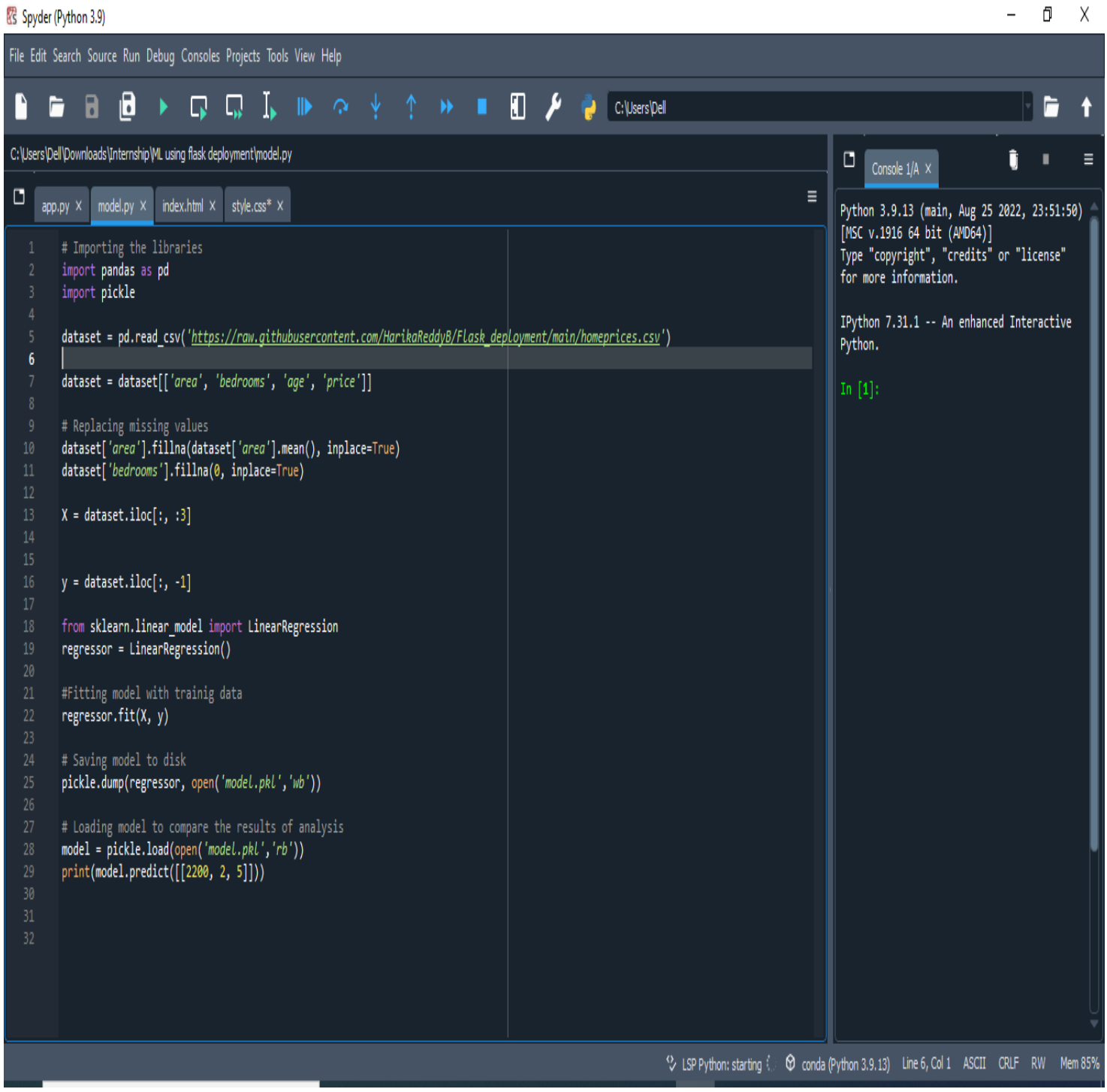


app.py for flask deployment

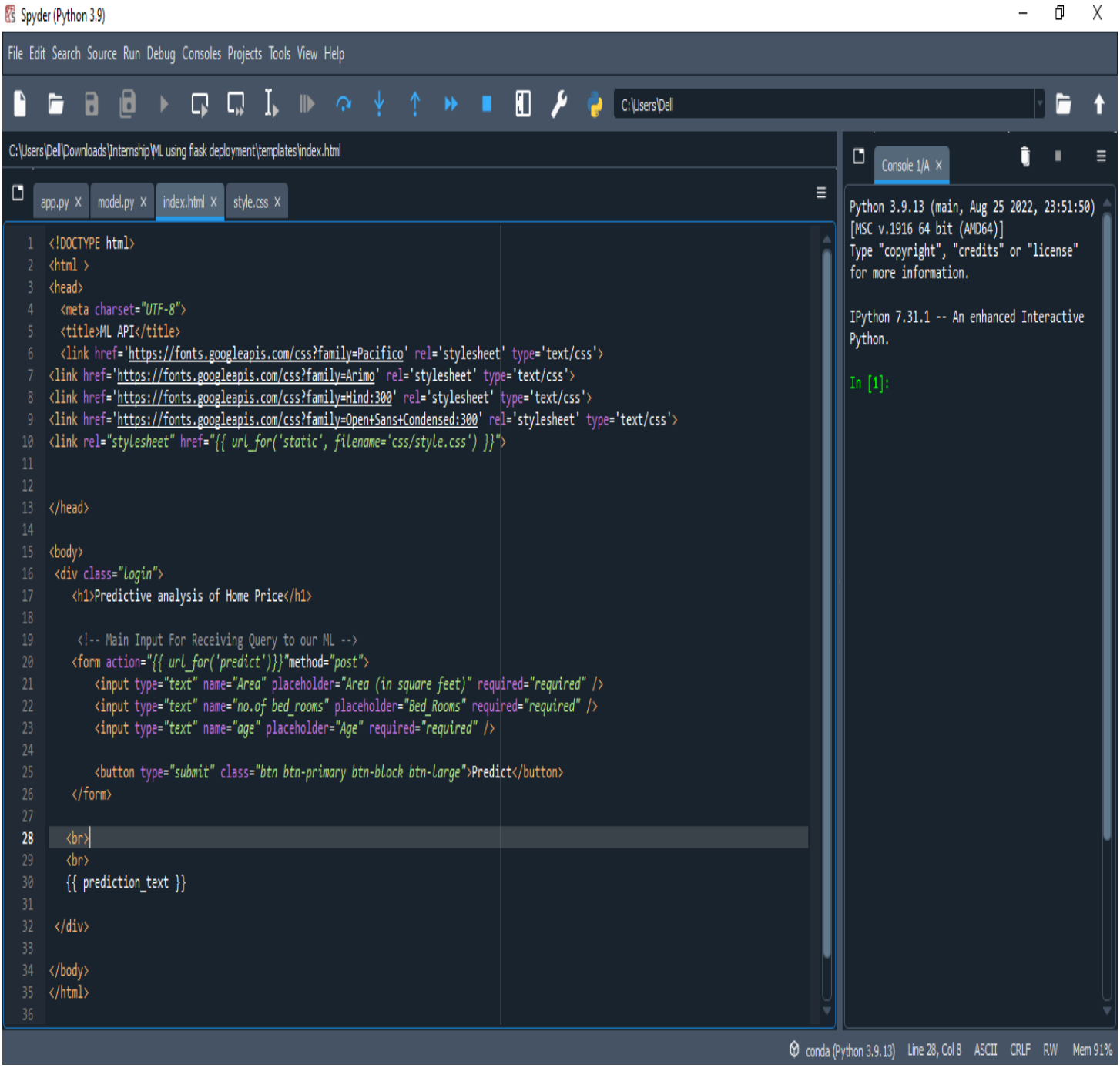



```python
import numpy as np
from flask import Flask, request,render_template
import pickle

app = Flask(__name__)
model = pickle.load(open('model.pkl', 'rb'))

@app.route('/')
def home():
    return render_template('index.html')


@app.route('/predict',methods=['POST'])
def predict():
    '''
    For rendering results on HTML GUI
    '''
    int_features = [int(x) for x in request.form.values()]
    final_features = [np.array(int_features)]
    prediction = model.predict(final_features)

    output = round(prediction[0], 2)

    return render_template('index.html', prediction_text='The Predictive analysis of Home price is $ {}'.format(output))

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

Model.py

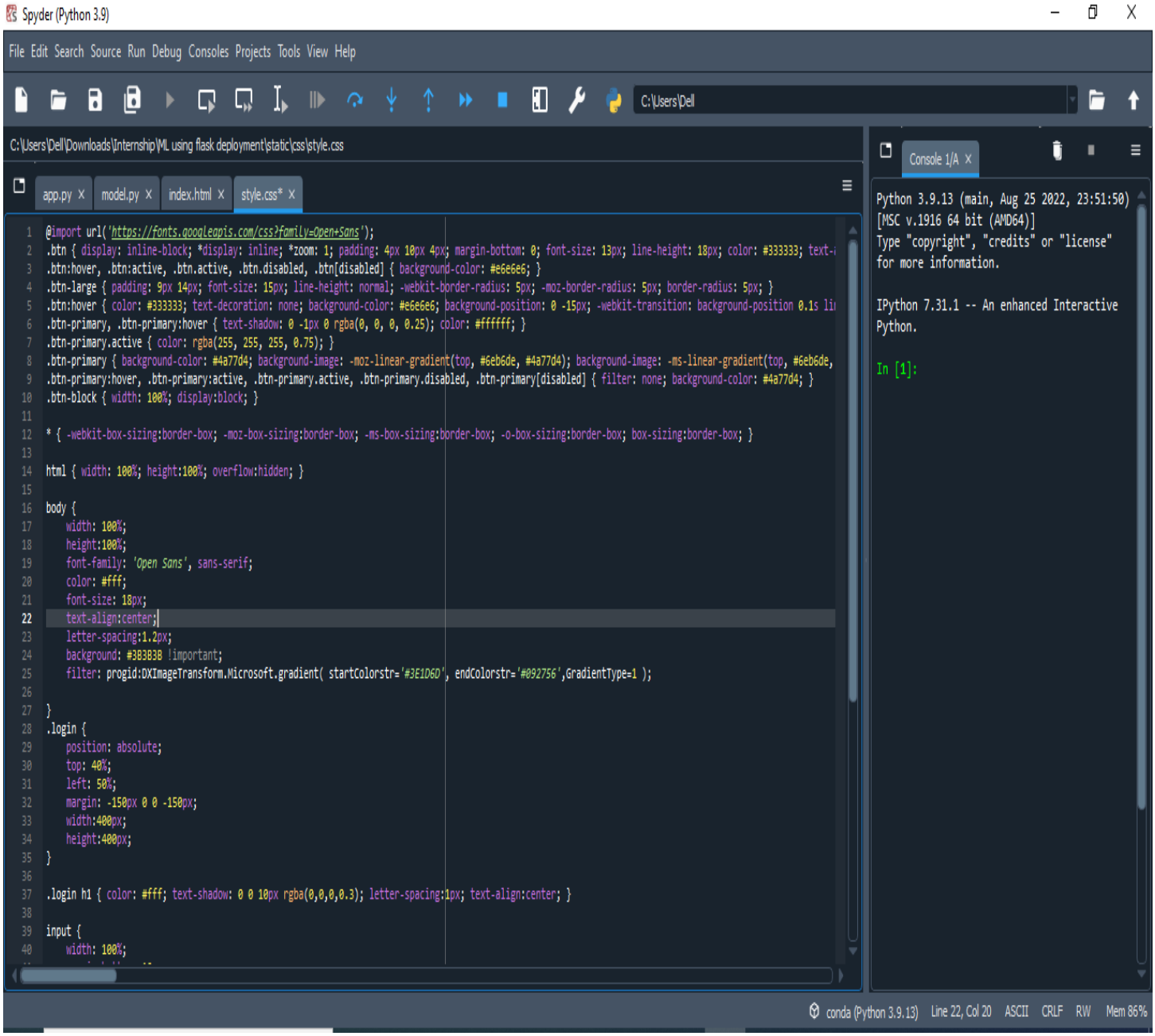

Spyder (Python 3.9)
File Edit Search Source Run Debug Consoles Projects Tools View Help
C:\Users\Dell
C:\Users\Dell\Downloads\Internship\ML using flask deployment\model.py
app.py
model.py
index.html
style.css*
# Importing the libraries
import pandas as pd
import pickle
dataset = pd.read_csv('https://raw.githubusercontent.com/HarikaReddyB/Flask_deployment/main/homeprices.csv')
dataset = dataset[['area', 'bedrooms', 'age', 'price']]
# Replacing missing values
dataset['area'].fillna(dataset['area'].mean(), inplace=True)
dataset['bedrooms'].fillna(0, inplace=True)
X = dataset.iloc[:, :3]
y = dataset.iloc[:, -1]
from sklearn.linear_model import LinearRegression
regressor = LinearRegression()
#Fitting model with trainig data
regressor.fit(X, y)
# Saving model to disk
pickle.dump(regressor, open('model.pkl','wb'))
# Loading model to compare the results of analysis
model = pickle.load(open('model.pkl','rb'))
print(model.predict([[2200, 2, 5]]))
Console 1/A
Python 3.9.13 (main, Aug 25 2022, 23:51:50)
[MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license"
for more information.
IPython 7.31.1 -- An enhanced Interactive
Python.
In [1]:
LSP Python: starting
conda (Python 3.9.13)
Line 6, Col 1
ASCII
CRLF
RW
Mem 85%

Index.html




```
<!DOCTYPE html>
<html >
<head>
  <meta charset="UTF-8">
  <title>ML API</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='stylesheet' type='text/css'>
<link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">


</head>

<body>
 <div class="login">
    <h1>Predictive analysis of Home Price</h1>

     <!-- Main Input For Receiving Query to our ML -->
    <form action="{{ url_for('predict')}}"method="post">
        <input type="text" name="Area" placeholder="Area (in square feet)" required="required" />
        <input type="text" name="no.of bed_rooms" placeholder="Bed_Rooms" required="required" />
        <input type="text" name="age" placeholder="Age" required="required" />

        <button type="submit" class="btn btn-primary btn-block btn-large">Predict</button>
    </form>

   <br>
   <br>
   {{ prediction_text }}

 </div>

</body>
</html>
```

Style.css

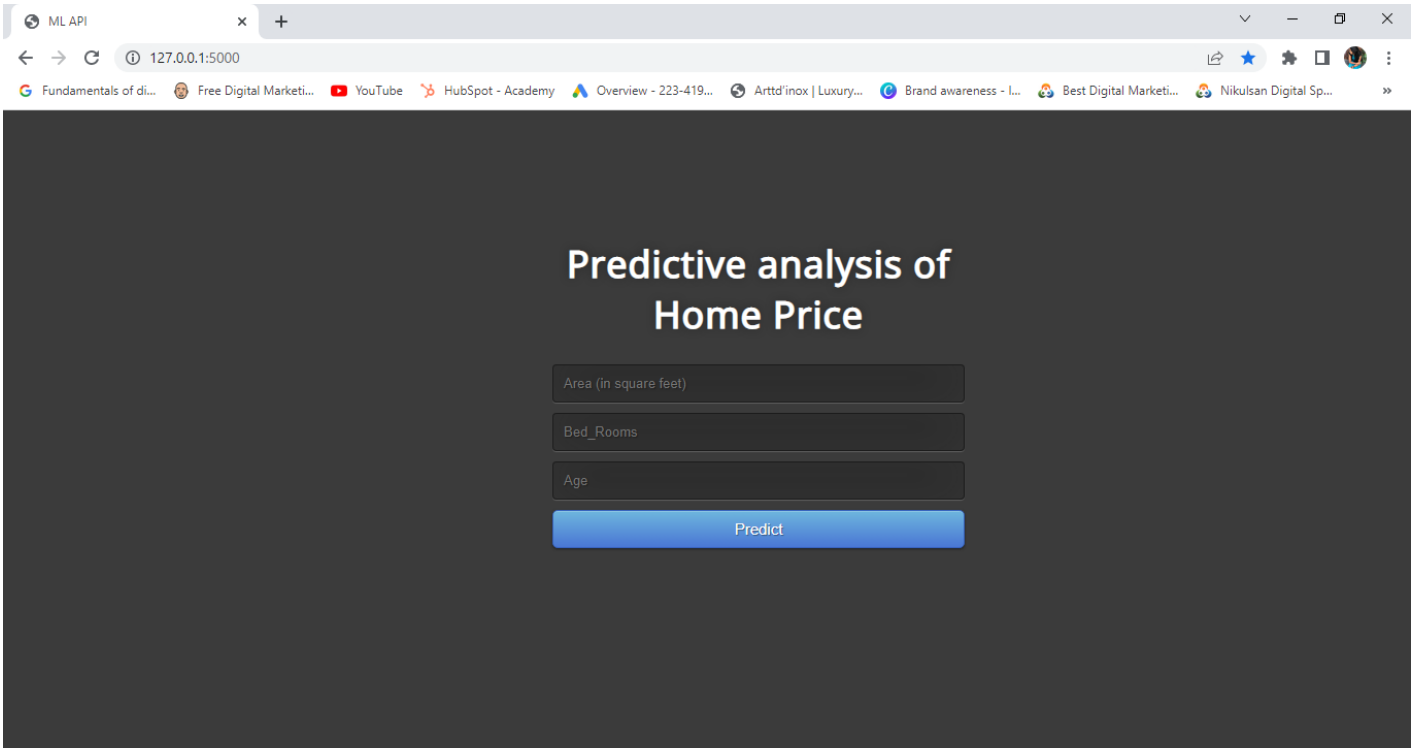


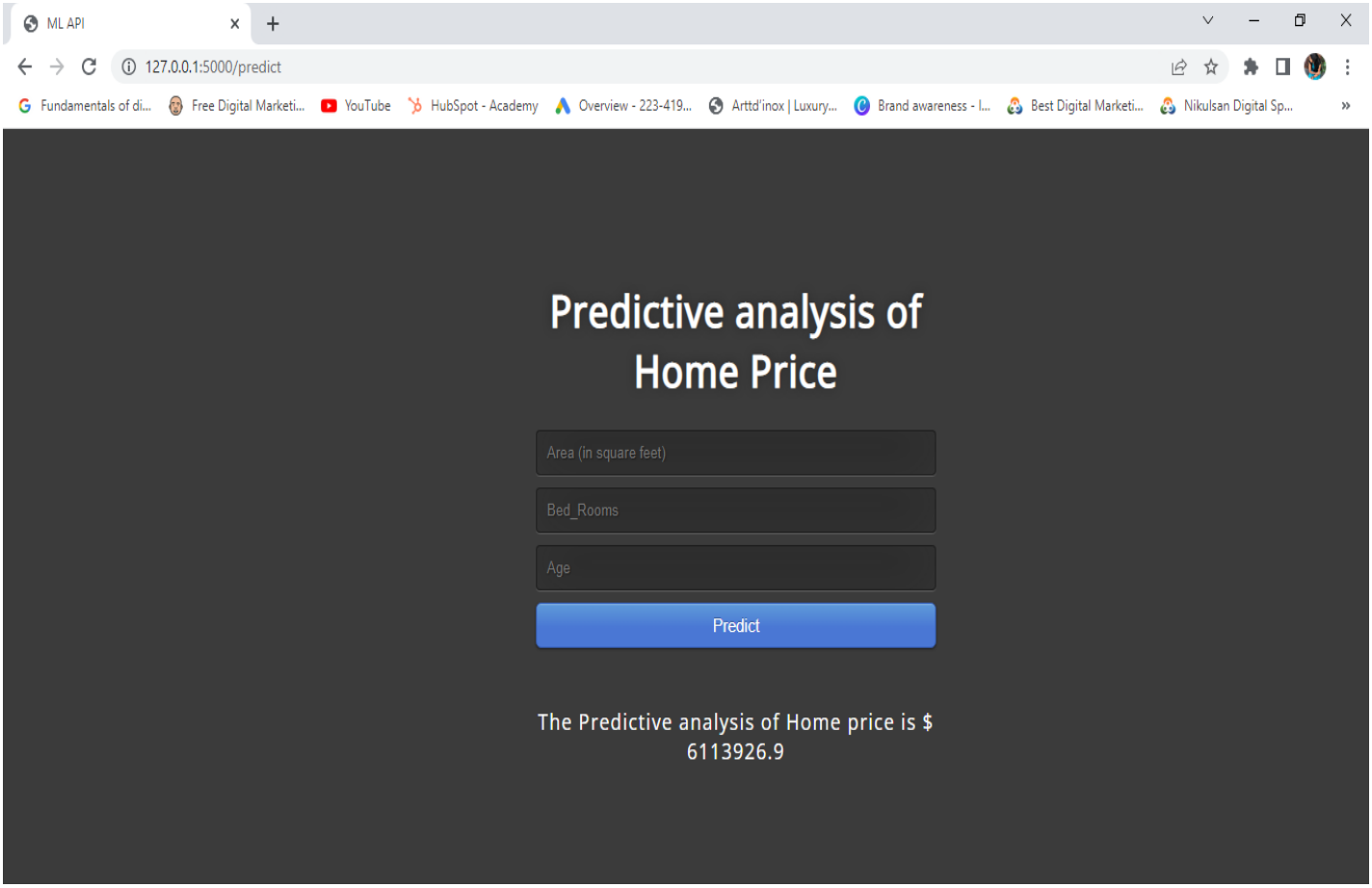

```
@import url('https://fonts.googleapis.com/css?family=Open+Sans');
.btn { display: inline-block; *display: inline; *zoom: 1; padding: 4px 10px 4px; margin-bottom: 0; font-size: 13px; line-height: 18px; color: #333333; text-
.btn:hover, .btn:active, .btn.active, .btn.disabled, .btn[disabled] { background-color: #e6e6e6; }
.btn-large { padding: 9px 14px; font-size: 15px; line-height: normal; -webkit-border-radius: 5px; -moz-border-radius: 5px; border-radius: 5px; }
.btn:hover { color: #333333; text-decoration: none; background-color: #e6e6e6; background-position: 0 -15px; -webkit-transition: background-position 0.1s li
.btn-primary, .btn-primary:hover { text-shadow: 0 -1px 0 rgba(0, 0, 0, 0.25); color: #ffffff; }
.btn-primary.active { color: rgba(255, 255, 255, 0.75); }
.btn-primary { background-color: #4a77d4; background-image: -moz-linear-gradient(top, #6eb6de, #4a77d4); background-image: -ms-linear-gradient(top, #6eb6de,
.btn-primary:hover, .btn-primary:active, .btn-primary.active, .btn-primary.disabled, .btn-primary[disabled] { filter: none; background-color: #4a77d4; }
.btn-block { width: 100%; display:block; }

* { -webkit-box-sizing:border-box; -moz-box-sizing:border-box; -ms-box-sizing:border-box; -o-box-sizing:border-box; box-sizing:border-box; }

html { width: 100%; height:100%; overflow:hidden; }

body {
    width: 100%;
    height:100%;
    font-family: 'Open Sans', sans-serif;
    color: #fff;
    font-size: 18px;
    text-align:center;
    letter-spacing:1.2px;
    background: #3B3B3B !important;
    filter: progid:DXImageTransform.Microsoft.gradient( startColorstr='#3E1D6D', endColorstr='#092756',GradientType=1 );

}
.login {
    position: absolute;
    top: 40%;
    left: 50%;
    margin: -150px 0 0 -150px;
    width:400px;
    height:400px;
}

.login h1 { color: #fff; text-shadow: 0 0 10px rgba(0,0,0,0.3); letter-spacing:1px; text-align:center; }

input {
    width: 100%;
```

Executing the Flask on Command Prompt

```
Command Prompt - python app.py
C:\Users\Dell\Downloads>cd internship

C:\Users\Dell\Downloads\Internship>cd ml using flask deployment

C:\Users\Dell\Downloads\Internship\ML using flask deployment>python app.py
C:\Users\Dell\AppData\Local\Programs\Python\Python311\Lib\site-packages\sklearn\base.py:318: UserWarning: Trying to unpickle estimator LinearRegression from version 0.2
2.1 when using version 1.2.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
  warnings.warn(
 * Serving Flask app 'app'
 * Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
 * Running on http://127.0.0.1:5000
Press CTRL+C to quit
 * Restarting with stat
C:\Users\Dell\AppData\Local\Programs\Python\Python311\Lib\site-packages\sklearn\base.py:318: UserWarning: Trying to unpickle estimator LinearRegression from version 0.2
2.1 when using version 1.2.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
  warnings.warn(
 * Debugger is active!
 * Debugger PIN: 252-841-195
127.0.0.1 - - [27/Mar/2023 12:15:59] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [27/Mar/2023 12:16:01] "GET /static/css/style.css HTTP/1.1" 200 -
127.0.0.1 - - [27/Mar/2023 12:16:22] "POST /predict HTTP/1.1" 200 -
127.0.0.1 - - [27/Mar/2023 12:16:23] "GET /static/css/style.css HTTP/1.1" 304 -
127.0.0.1 - - [27/Mar/2023 12:16:38] "POST /predict HTTP/1.1" 200 -
127.0.0.1 - - [27/Mar/2023 12:16:38] "GET /static/css/style.css HTTP/1.1" 304 -
127.0.0.1 - - [27/Mar/2023 12:16:43] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [27/Mar/2023 12:16:43] "GET /static/css/style.css HTTP/1.1" 304 -
```

Testing for analysis:




ML API
127.0.0.1:5000/predict
Fundamentals of di...
Free Digital Marketi...
YouTube
HubSpot - Academy
Overview - 223-419...
Arttd'inox | Luxury...
Brand awareness - I...
Best Digital Marketi...
Nikulsan Digital Sp...
Predictive analysis of Home Price
Area (in square feet)
Bed_Rooms
Age
Predict
The Predictive analysis of Home price is $ 6113926.9