HEROKU DEPLOYMENT

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Batch code: LISUM33

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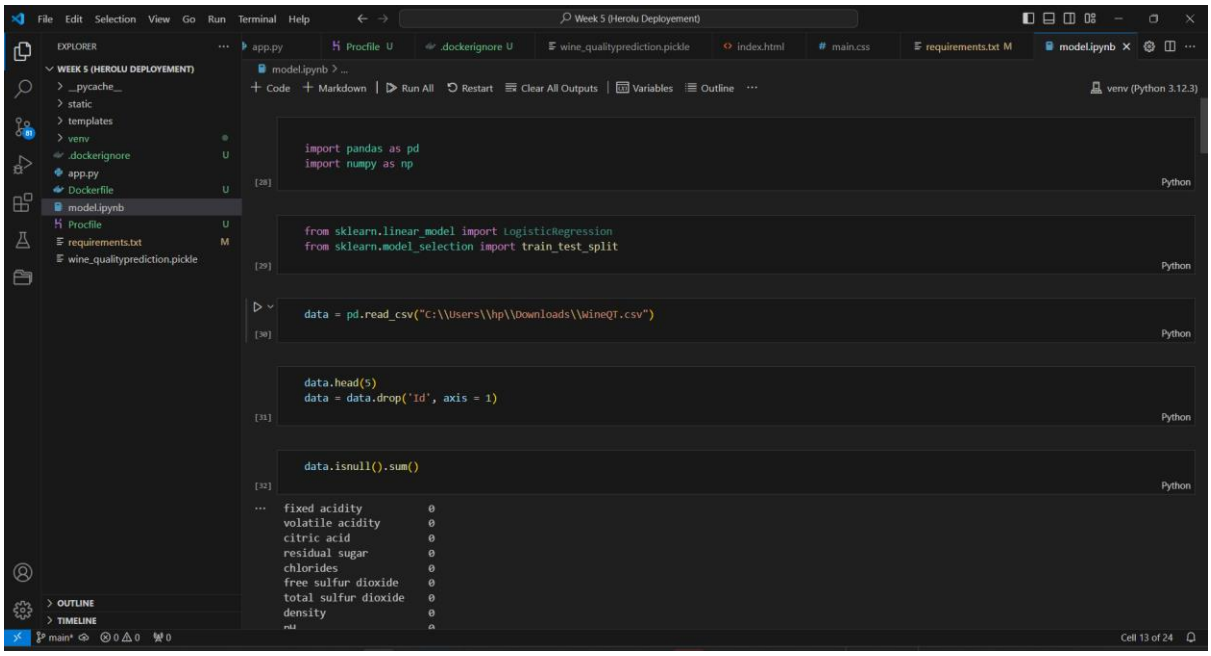
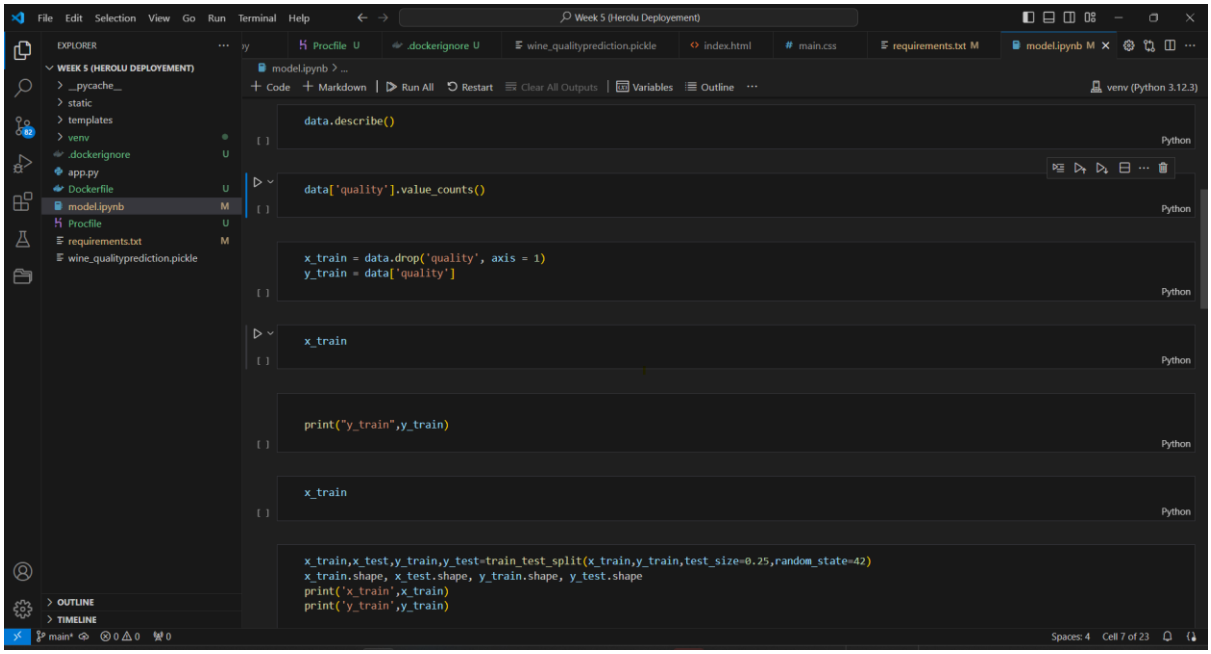
Submitted To: Tutor

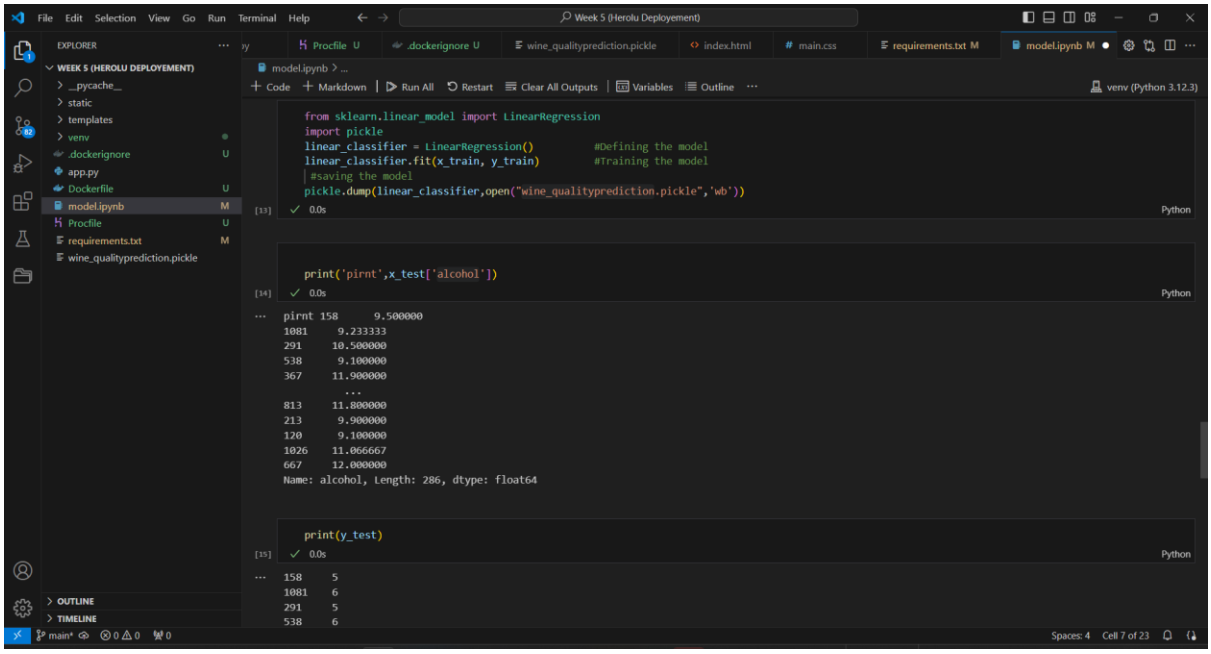
Step 1: Creating the wine_qaulity prediction model.



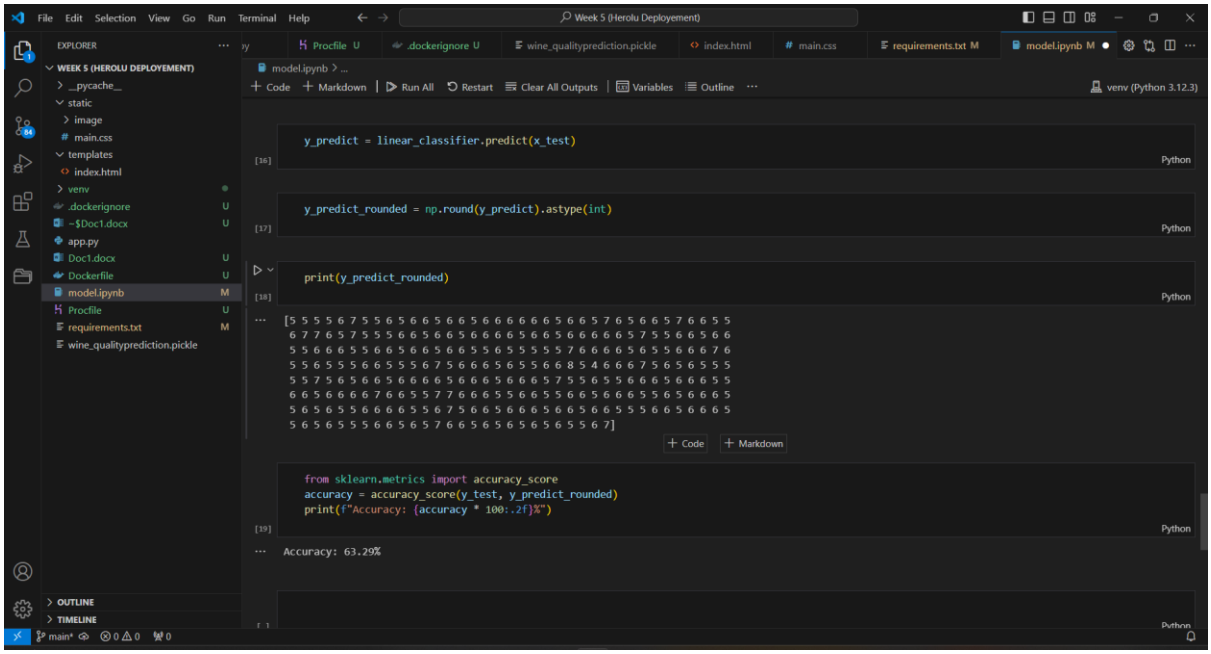
Step 2 : Performing EDA on Wine quality dataset



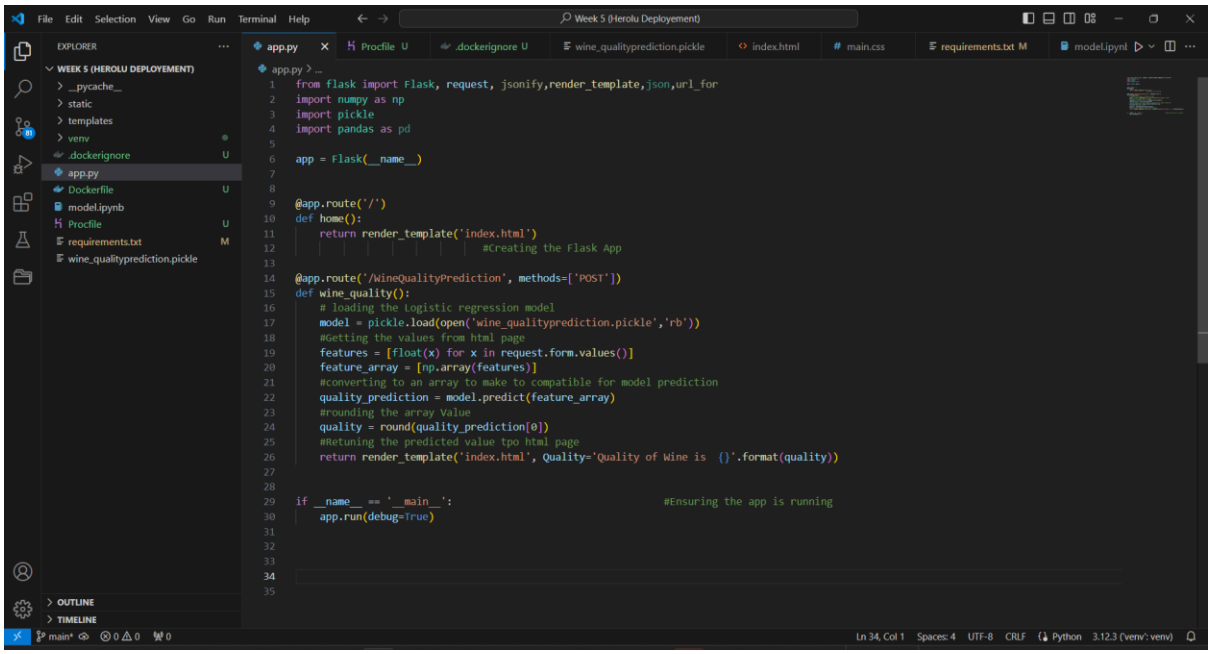
Step 3: Defining the Linear Regression model , training the dataset and saving.



Step 4: Testing the model prediction with test data .

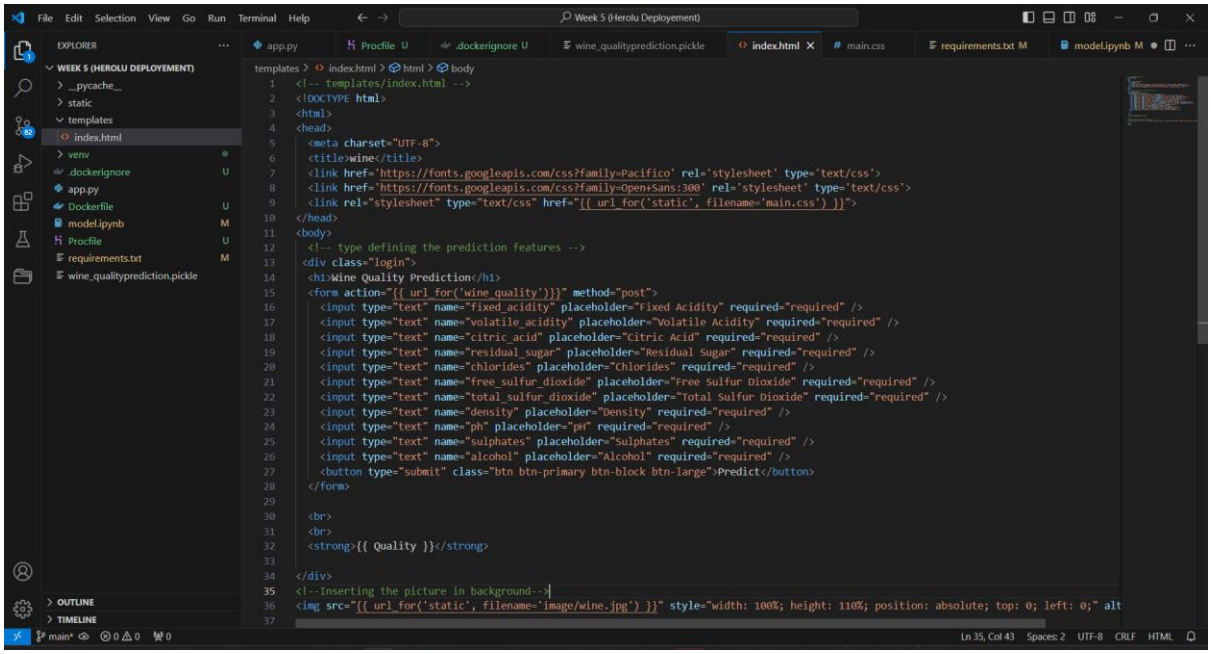


Step 5 : Creating the Flask app routes in app.py



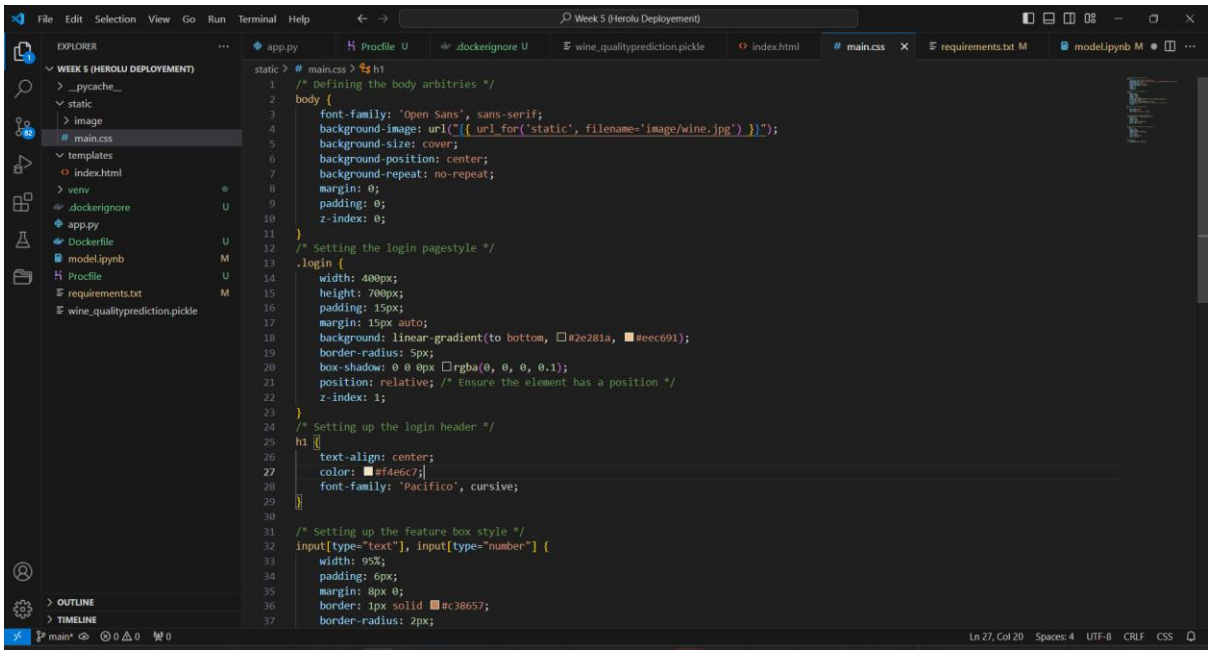
```python
from flask import Flask, request, jsonify,render_template,json,url_for
import numpy as np
import pickle
import pandas as pd

app = Flask(__name__)


@app.route('/')
def home():
    return render_template('index.html')
                                        #Creating the Flask App

@app.route('/WineQualityPrediction', methods=['POST'])
def wine_quality():
    # loading the logistic regression model
    model = pickle.load(open('wine_qualityprediction.pickle','rb'))
    #Getting the values from html page
    features = [float(x) for x in request.form.values()]
    feature_array = [np.array(features)]
    #converting to an array to make to compatible for model prediction
    quality_prediction = model.predict(feature_array)
    #rounding the array Value
    quality = round(quality_prediction[0])
    #Retuning the predicted value tpo html page
    return render_template('index.html', Quality='Quality of Wine is  {}'.format(quality))


if __name__ == '__main__':                                  #Ensuring the app is running
    app.run(debug=True)
```

Step 6: Creating the Index.html

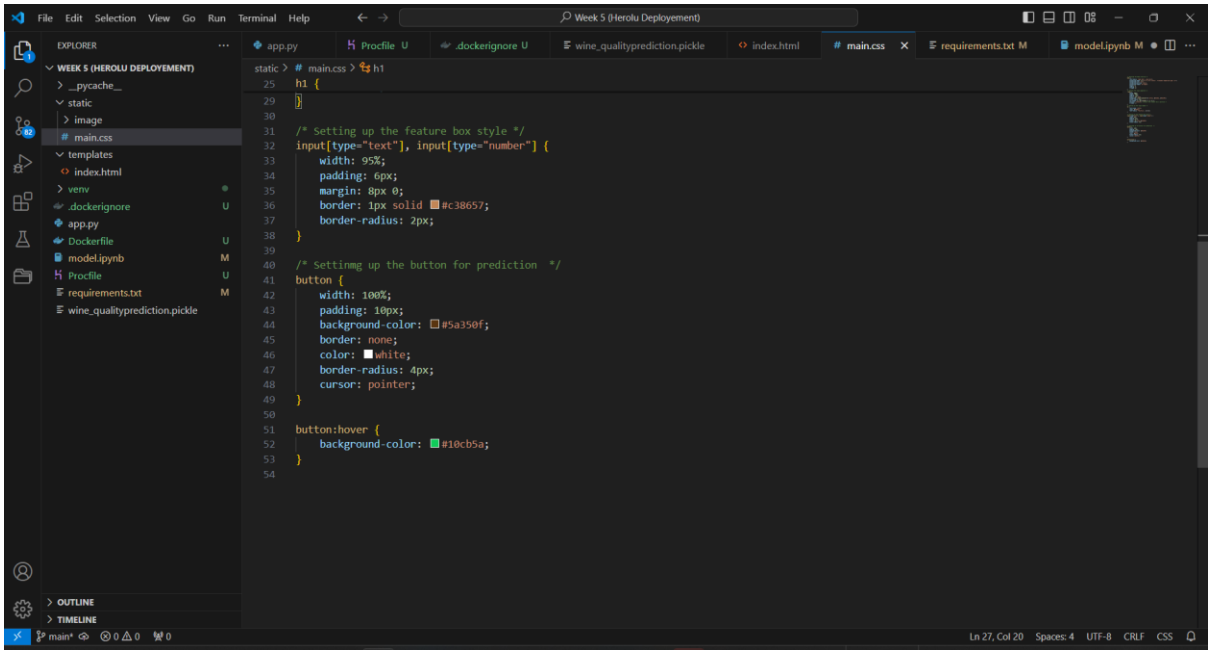


```html
<!-- templates/index.html -->
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
  <title>wine</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Open+Sans:300' rel='stylesheet' type='text/css'>
  <link rel="stylesheet" type="text/css" href="{{ url_for('static', filename='main.css') }}">
</head>
<body>
  <!-- type defining the prediction features -->
  <div class="login">
    <h1>Wine Quality Prediction</h1>
    <form action="{{ url_for('wine_quality')}}" method="post">
      <input type="text" name="fixed_acidity" placeholder="Fixed Acidity" required="required" />
      <input type="text" name="volatile_acidity" placeholder="Volatile Acidity" required="required" />
      <input type="text" name="citric_acid" placeholder="Citric Acid" required="required" />
      <input type="text" name="residual_sugar" placeholder="Residual Sugar" required="required" />
      <input type="text" name="chlorides" placeholder="Chlorides" required="required" />
      <input type="text" name="free_sulfur_dioxide" placeholder="Free Sulfur Dioxide" required="required" />
      <input type="text" name="total_sulfur_dioxide" placeholder="Total Sulfur Dioxide" required="required" />
      <input type="text" name="density" placeholder="Density" required="required" />
      <input type="text" name="ph" placeholder="pH" required="required" />
      <input type="text" name="sulphates" placeholder="Sulphates" required="required" />
      <input type="text" name="alcohol" placeholder="Alcohol" required="required" />
      <button type="submit" class="btn btn-primary btn-block btn-large">Predict</button>
    </form>

    <br>
    <br>
    <strong>{{ Quality }}</strong>

  </div>
  <!--Inserting the picture in background-->
  <img src="{{ url_for('static', filename='image/wine.jpg') }}" style="width: 100%; height: 110%; position: absolute; top: 0; left: 0;" alt
```

Step 7 : Create the CSS file for defining the stylesheet.

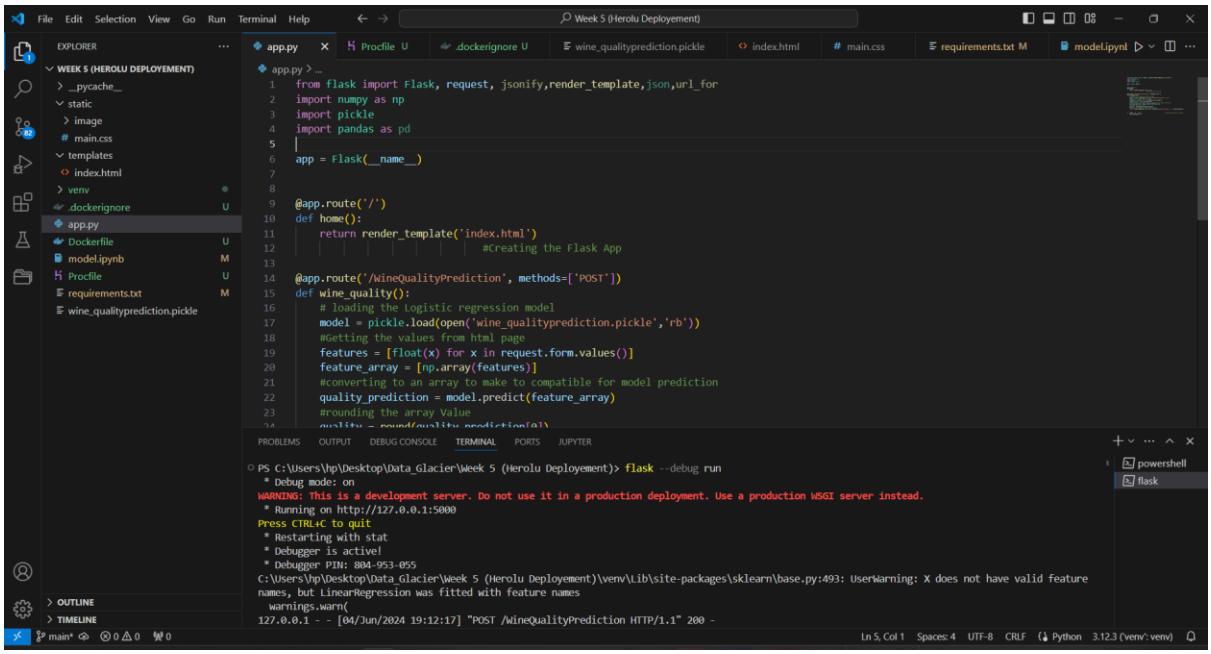


```
/* Defining the body arbitries */
body {
    font-family: 'Open Sans', sans-serif;
    background-image: url("{{ url_for('static', filename='image/wine.jpg') }}");
    background-size: cover;
    background-position: center;
    background-repeat: no-repeat;
    margin: 0;
    padding: 0;
    z-index: 0;
}
/* Setting the login pagestyle */
.login {
    width: 400px;
    height: 700px;
    padding: 15px;
    margin: 15px auto;
    background: linear-gradient(to bottom, #2e281a, #eec691);
    border-radius: 5px;
    box-shadow: 0 0 0px rgba(0, 0, 0, 0.1);
    position: relative; /* Ensure the element has a position */
    z-index: 1;
}
/* Setting up the login header */
h1 {
    text-align: center;
    color: #f4e6c7;
    font-family: 'Pacifico', cursive;
}

/* Setting up the feature box style */
input[type="text"], input[type="number"] {
    width: 95%;
    padding: 6px;
    margin: 8px 0;
    border: 1px solid #c38657;
    border-radius: 2px;
```

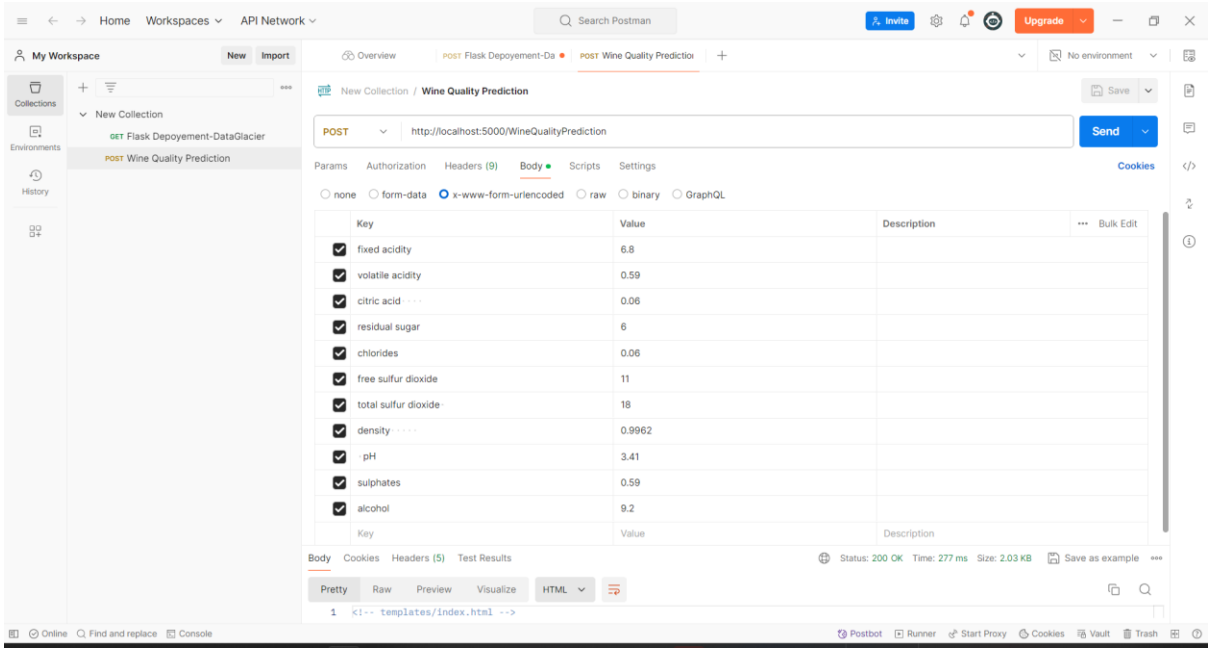


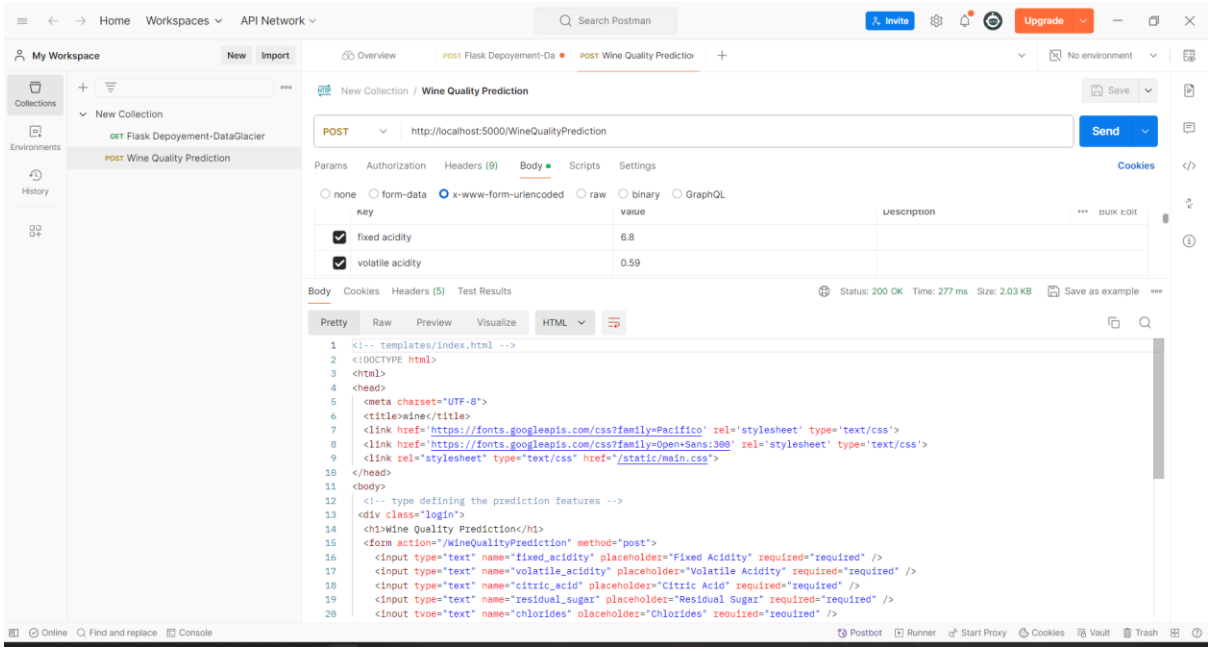
```
h1 {
}

/* Setting up the feature box style */
input[type="text"], input[type="number"] {
    width: 95%;
    padding: 6px;
    margin: 8px 0;
    border: 1px solid #c38657;
    border-radius: 2px;
}

/* Settinmg up the button for prediction  */
button {
    width: 100%;
    padding: 10px;
    background-color: #5a350f;
    border: none;
    color: white;
    border-radius: 4px;
    cursor: pointer;
}

button:hover {
    background-color: #10cb5a;
}
```

Step 8 : Running the flask app in localhost

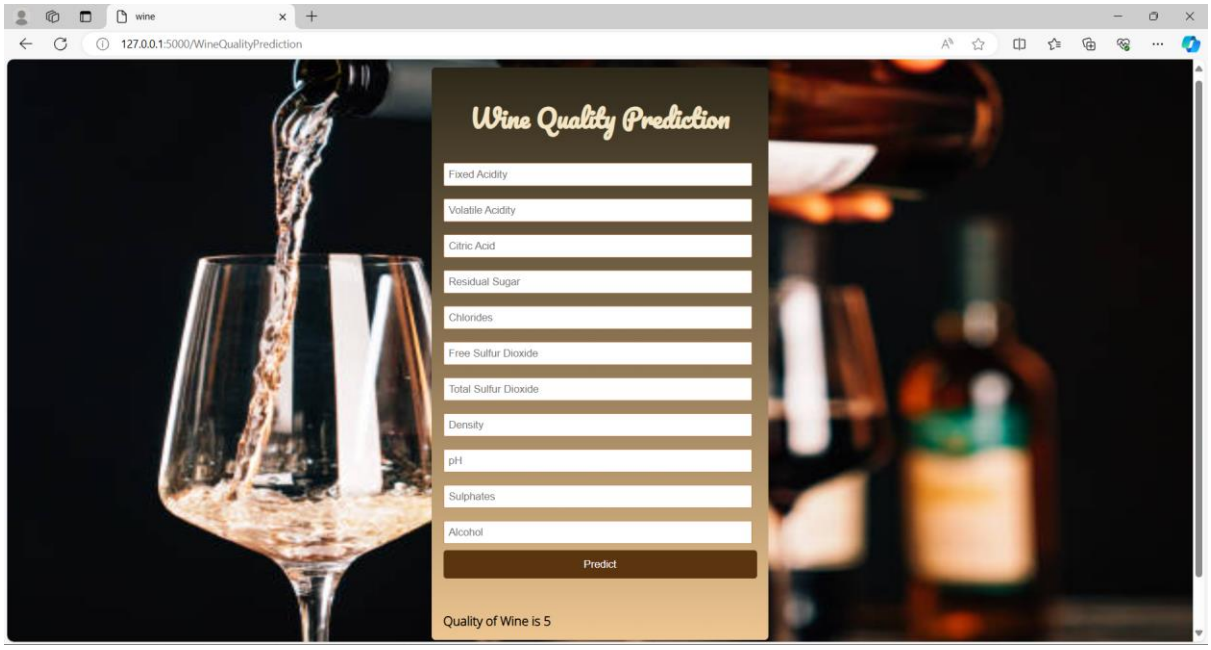


Step 8 : Testing the endpoints in postman

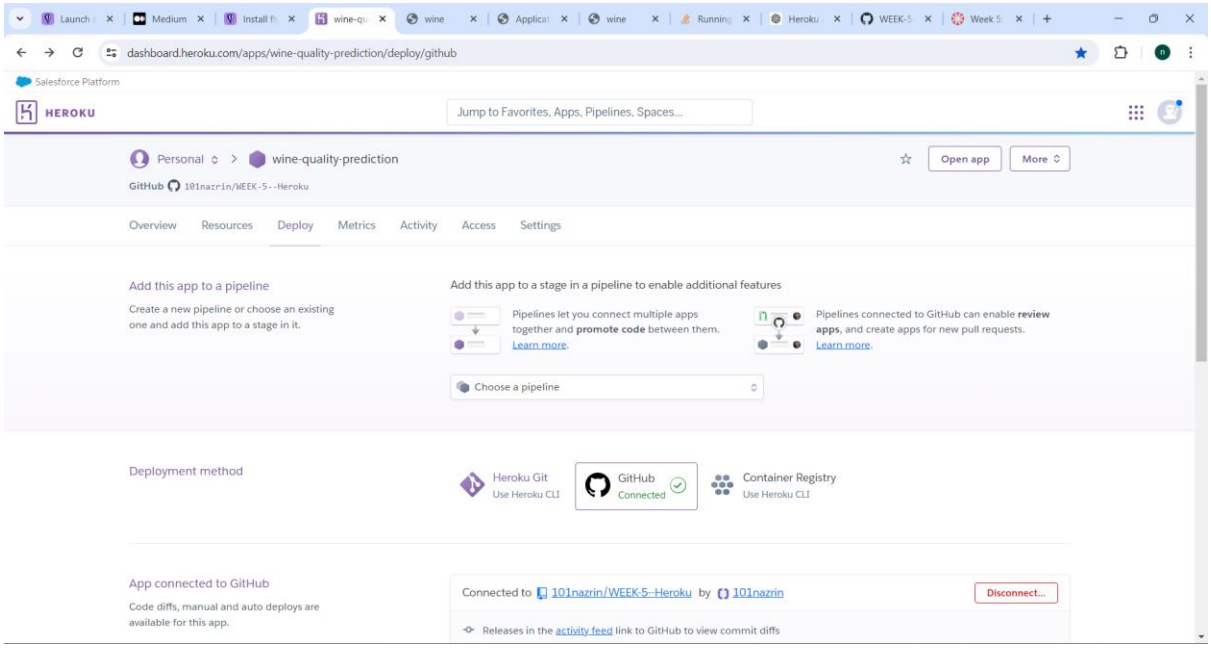




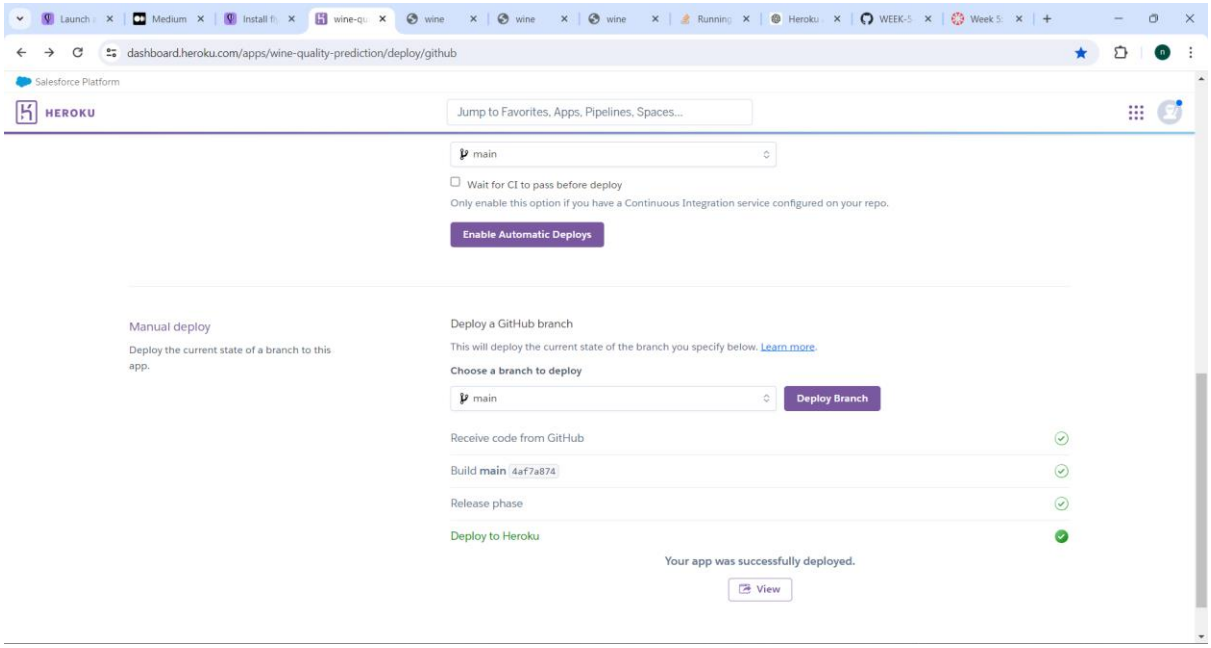
Step 9 : Webpage wine at localhost.



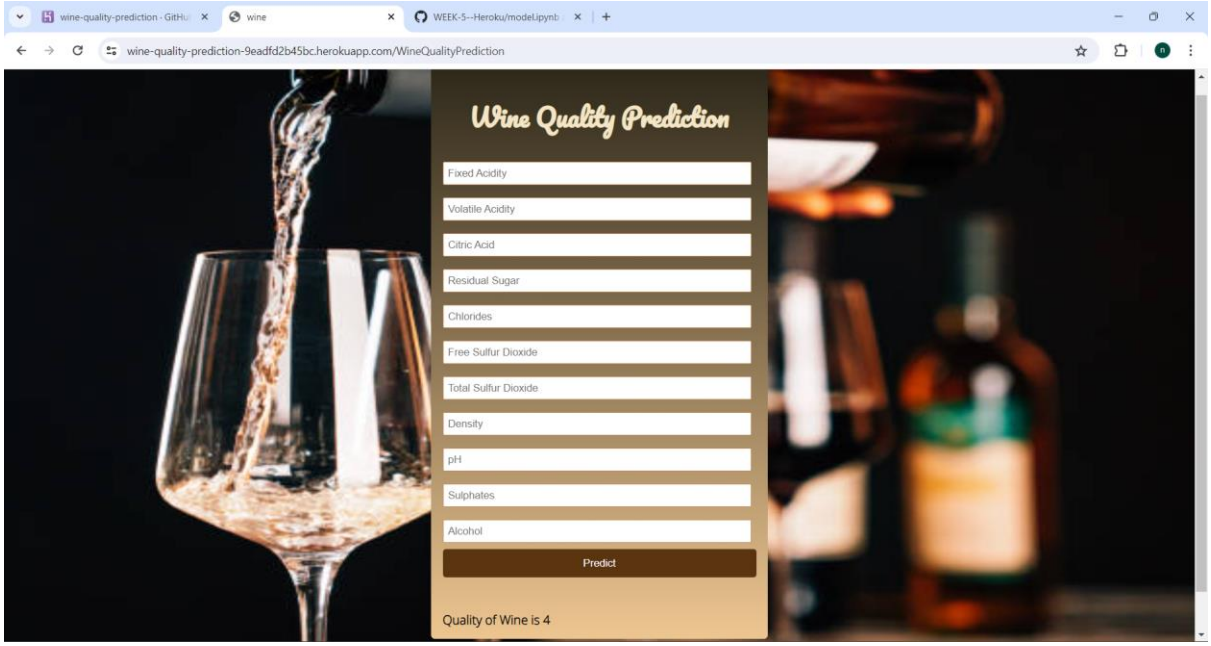
Step 10 : Connecting Heroko to the git repository where the app resides.



Step 11 : Deployment successful



Step 12 : Viewing the website and testing the quality of wine with Xtest value at https://wine-quality-prediction-9eadfd2b45bc.herokuapp.com/ .Obtained the predicted Quality of wine as **4**.



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