Assignment 1:

Registration Page using HTML for students

1. Create registration page in html with username, email and phone number and by using POST method display it in next html page.

Code:

Registration.html

```
<html>
    <body>
        <form method="POST" action="serv1">
            <fieldset>
                <legend>User Details:</legend>
                <h3>Username: </h3>
                <input type="text" name="uname">
                <h3>Email: </h3>
                <input type="email" name="email">
                <h3>Phone Number: </h3>
                <input type="number" name="pno">
                <br><br><br>
                <input type="submit">
            </fieldset>
        </form>
    </body>
</html>
```

Display.java

```
import javax.servlet.*;
import javax.servlet.http.*;
import javax.servlet.http.HttpSession;
import java.util.*;
import java.io.*;

public class display extends HttpServlet{
```

```
    public void doPost(HttpServletRequest req,
HttpServletResponse res){

        String uname = req.getParameter("uname");
        String pno = req.getParameter("pno");
        String email = req.getParameter("email");

        try{

            res.setContentType("text/html");
            PrintWriter pw = res.getWriter();

            pw.print("<h3>Username: <h3>" + uname);
            pw.print("<h3>Phone Number: <h3>" + pno);
            pw.print("<h3>Email: <h3>"+ email);
        }
        catch(Exception e){
            System.out.println(e);
        }
    }
}
```

2. Develop a flask program which should contain atleast 5 packages used from pypi.org.

Packages used: NumPy, Pandas, Sklearn, Pendulum, Matplotlib

Code:

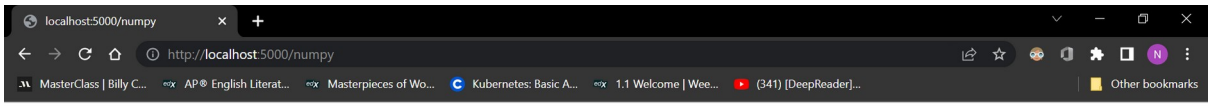
```
import io
from flask import Response, Flask, jsonify
from matplotlib.backends.backend_agg import
FigureCanvasAgg as FigureCanvas
from matplotlib.figure import Figure
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier
from sklearn import metrics
import numpy as np
import matplotlib.pyplot as plt
```

```
import pandas as pd
import pendulum

app = Flask(__name__)

@app.route('/numpy')
def numpy_display():
   arr = np.array([1, 2, 3, 4, 5])
   return "I have " + str(arr[2]) + " apples with me"

@app.route('/matplotlib')
def matplotlib_display():
   fig = Figure()
   axis = fig.add_subplot(1, 1, 1)
   xs = [10,20,30]
   ys = [20,30,40]
   axis.plot(xs, ys)
   output = io.BytesIO()
   FigureCanvas(fig).print_png(output)
   return Response(output.getvalue(),
mimetype='image/png')

@app.route('/panda')
def panda_display():
   data = {
      "Subject": ["Maths","Physics","Chemistry"],
      "Marks" : [100,87,98]
   }
   df = pd.DataFrame(data)
   return jsonify(df.to_dict(orient="records"))

@app.route('/pendulum')
def pendulum_display():
   utc_time = pendulum.now('UTC')
   kolkata_time = utc_time.in_timezone('Asia/Kolkata')
   str1 = 'Current Date Time in Kolkata =' +
str(kolkata_time)
```

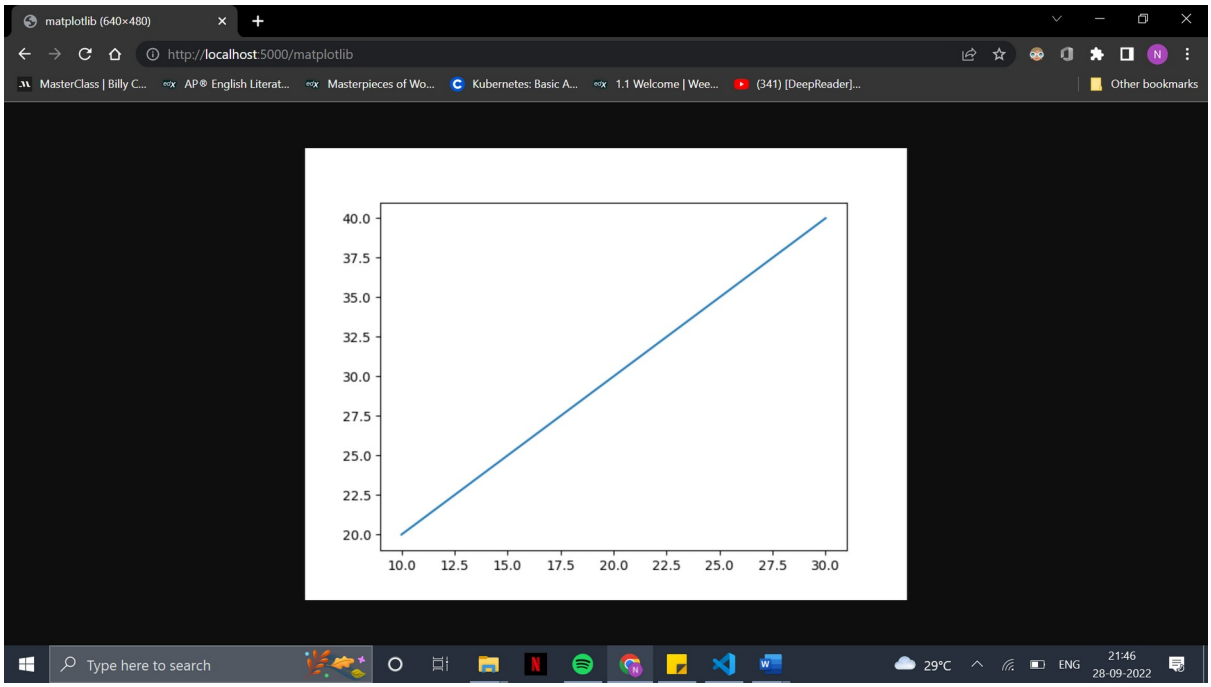
```
    sydney_time =
utc_time.in_timezone('Australia/Sydney')
    str2 = 'Current Date Time in Sydney =' +
str(sydney_time)
    return str1 + "\n" + str2

@app.route('/sklearn')
def sklearn_display():
    iris = load_iris()
    X = iris.data
    y = iris.target
    X_train, X_test, y_train, y_test =
train_test_split(X, y, test_size = 0.4, random_state=1)

    classifier_knn = KNeighborsClassifier(n_neighbors =
3)
    classifier_knn.fit(X_train, y_train)
    y_pred = classifier_knn.predict(X_test)
    str1 = "<h3> Iris Data Set ML Predictions using KNN
</h3>"
    str1 += "<h2> Training Data Input </h2>"
    str1 += str(X_train)
    str1 += "<h2> Training Data Output </h2>"
    str1 += str(y_train)
    str1 += "<h2> Y Predictions: </h2>"
    str1 += "<p>" + str(y_pred) + "</p>"
    str1 += "<h2> Y Test: </h2>"
    str1 += "<p>" + str(y_test) + "</p>"
    str1 += "<h2>" + "Accuracy" + "</h2>" +
str(metrics.accuracy_score(y_test,y_pred))
    return str1
```

Output Screenshots:

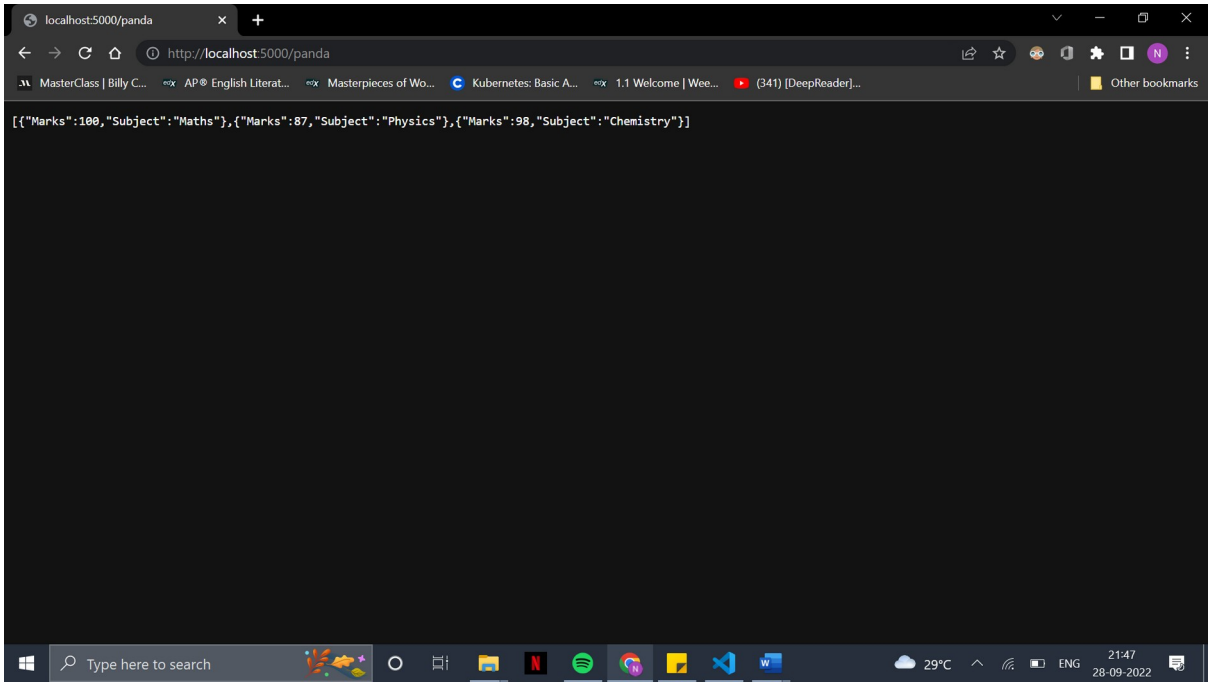
Numpy



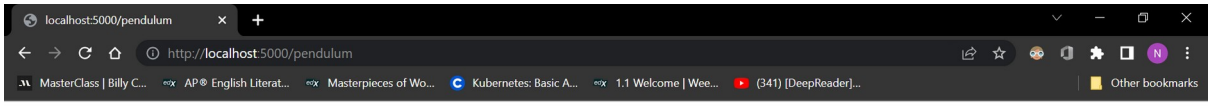
Matplotlib



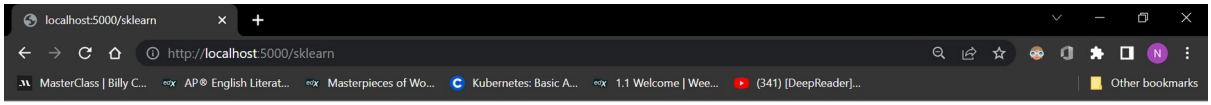
Pandas


localhost:5000/panda
http://localhost:5000/panda
MasterClass | Billy C...
AP® English Literat...
Masterpieces of Wo...
Kubernetes: Basic A...
1.1 Welcome | Wee...
(341) [DeepReader]...
Other bookmarks
[{"Marks":100,"Subject":"Maths"},{"Marks":87,"Subject":"Physics"},{"Marks":98,"Subject":"Chemistry"}]
Type here to search
29°C
ENG
21:47
28-09-2022

Pendulum



Sklearn



Iris Data Set ML Predictions using KNN

Training Data Input

[[4.8 3.4 1.6 0.2] [5.7 2.5 5. 2.] [6.3 2.7 4.9 1.8] [4.8 3. 1.4 0.1] [4.7 3.2 1.3 0.2] [6.5 3. 5.8 2.2] [4.6 3.4 1.4 0.3] [6.1 3. 4.9 1.8] [6.5 3.2 5.1 2.] [6.7 3.1 4.4 1.4] [5.7 2.8 4.5 1.3] [6.7 3.3 5.7 2.5] [6. 3. 4.8 1.8] [5.1 3.8 1.6 0.2] [6. 2.2 4. 1.] [6.4 2.9 4.3 1.3] [6.5 3. 5.5 1.8] [5. 2.3 3.3 1.] [6.3 3.3 6. 2.5] [5.5 2.5 4. 1.3] [5.4 3.7 1.5 0.2] [4.9 3.1 1.5 0.2] [5.2 4.1 1.5 0.1] [6.7 3.3 5.7 2.1] [4.4 3. 1.3 0.2] [6. 2.7 5.1 1.6] [6.4 2.7 5.3 1.9] [5.9 3. 5.1 1.8] [5.2 3.5 1.5 0.2] [5.1 3.3 1.7 0.5] [5.8 2.7 4.1 1.] [4.9 3.1 1.5 0.1] [7.4 2.8 6.1 1.9] [6.2 2.9 4.3 1.3] [7.6 3. 6.6 2.1] [6.7 3. 5.2 2.3] [6.3 2.3 4.4 1.3] [6.2 3.4 5.4 2.3] [7.2 3.6 6.1 2.5] [5.6 2.9 3.6 1.3] [5.7 4.4 1.5 0.4] [5.8 2.7 3.9 1.2] [4.5 2.3 1.3 0.3] [5.5 2.4 3.8 1.1] [6.9 3.1 4.9 1.5] [5. 3.4 1.6 0.4] [6.8 2.8 4.8 1.4] [5. 3.5 1.6 0.6] [4.8 3.4 1.9 0.2] [6.3 3.4 5.6 2.4] [5.6 2.8 4.9 2.] [6.8 3.2 5.9 2.3] [5. 3.3 1.4 0.2] [5.1 3.7 1.5 0.4] [5.9 3.2 4.8 1.8] [4.6 3.1 1.5 0.2] [5.8 2.7 5.1 1.9] [4.8 3.1 1.6 0.2] [6.5 3. 5.2 2.] [4.9 2.5 4.5 1.7] [4.6 3.2 1.4 0.2] [6.4 3.2 5.3 2.3] [4.3 3. 1.1 0.1] [5.6 3. 4.1 1.3] [4.4 2.9 1.4 0.2] [5.5 2.4 3.7 1.] [5. 2. 3.5 1.] [5.1 3.5 1.4 0.2] [4.9 3. 1.4 0.2] [4.9 2.4 3.3 1.] [4.6 3.6 1. 0.2] [5.9 3. 4.2 1.5] [6.1 2.9 4.7 1.4] [5. 3.4 1.5 0.2] [6.7 3.1 4.7 1.5] [5.7 2.9 4.2 1.3] [6.2 2.2 4.5 1.5] [7. 3.2 4.7 1.4] [5.8 2.7 5.1 1.9] [5.4 3.4 1.7 0.2] [5. 3. 1.6 0.2] [6.1 2.6 5.6 1.4] [6.1 2.8 4. 1.3] [7.2 3. 5.8 1.6] [5.7 2.6 3.5 1.] [6.3 2.8 5.1 1.5] [6.4 3.1 5.5 1.8] [6.3 2.5 4.9 1.5] [6.7 3.1 5.6 2.4] [4.9 3.6 1.4 0.1]]

Training Data Output

[0 2 2 0 0 2 0 2 2 1 1 2 2 0 1 1 2 1 2 1 0 0 0 2 0 1 2 2 0 0 1 0 2 1 2 2 1 2 2 1 0 1 0 1 1 0 1 0 0 2 2 2 0 0 1 0 2 0 2 2 0 2 0 1 0 1 1 0 0 1 0 1 1 0 1 1 1 1 2 0 0 2 1 2 1 2 2 1 2 0]

Y Predictions:

[0 1 1 0 2 1 2 0 0 2 1 0 2 1 1 0 1 1 0 0 1 1 1 0 2 1 0 0 1 2 1 2 1 2 2 0 1 0 1 2 2 0 1 2 0 1 2 1 2 0 0 0 1 0 0 2 2 2 2 2 1 2 1]

Y Test:

[0 1 1 0 2 1 2 0 0 2 1 0 2 1 1 0 1 1 0 0 1 1 1 0 2 1 0 0 1 2 1 2 1 2 2 0 1 0 1 2 2 0 1 2 0 2 2 1 2 0 0 0 1 0 0 2 2 2 2 2 1 2 1]

Accuracy

0.9833333333333333