

# Flask Deployment Assignment

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Submitted to: Data Glacier

## Project Summary

Dataset Used:

The dataset used for this project is 'student-scores.csv', containing columns such as 'weekly\_self\_study\_hours' and 'math\_score'.

This data was used to train a simple Linear Regression model to predict student performance.

Model Training:

Using scikit-learn, a Linear Regression model was trained on the dataset.

The 'weekly\_self\_study\_hours' column was used as the feature and 'math\_score' as the target variable.

The model was then saved using joblib as 'student\_score\_model.pkl'.

Flask Web App:

A simple Flask web application was created using 'app.py'. The app loads the saved model, receives input from the user through an HTML form, and returns the predicted score.

HTML Template:


An HTML file 'index.html' was created in a 'templates' folder. It contains a basic form for user input and displays the prediction result.

Flask Deployment & Testing:

The Flask app was successfully run on localhost (127.0.0.1:5000). The user could enter study hours, click 'Predict', and see the predicted score. The app connected the backend model with the frontend seamlessly.

# 1. Jupyter View of the Dataset


(i) localhost:8889/edit/Downloads/app.py?

 jupyter app.py Last Checkpoint: 2 days ago

File Edit View Settings Help

```
1 from flask import Flask, request, render_template
2 import joblib
3 import numpy as np
4
5 # Load model
6 model = joblib.load('student_score_model.pkl')
7
8 app = Flask(__name__)
9
10 @app.route('/')
11 def home():
12     return render_template('index.html')
13
14 @app.route('/predict', methods=['POST'])
15 def predict():
16     hours = float(request.form['hours'])
17     prediction = model.predict(np.array([[hours]]))
18     return render_template('index.html', prediction_text=f'Predicted Score: {prediction[0]:.2f}')
19
20 if __name__ == '__main__':
21     app.run(debug=True)
22
```

## 2. Model Training Code

 jupyter index.html Last Checkpoint: 38 minutes ago

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```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>Student Score Predictor</title>
5 </head>
6 <body>
7   <h2>Enter Study Hours</h2>
8   <form action="/predict" method="POST">
9     <input type="text" name="hours" placeholder="Enter number of hours" required>
10    <input type="submit" value="Predict">
11  </form>
12
13  {% if prediction_text %}
14    <h3>{{ prediction_text }}</h3>
15  {% endif %}
16 </body>
17 </html>
18
```

### 3. Saved Model Confirmation

127.0.0.1:5000

# Enter Study Hours

## 4. app.py Content



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```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\Egbe\Documents> cd Downloads
cd : Cannot find path 'C:\Users\Egbe\Documents\Downloads' because it does not exist.
At line:1 char:1
+ cd Downloads
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (C:\Users\Egbe\Documents\Downloads:String) [Set-Location], ItemNotFoundException
+ FullyQualifiedErrorId : PathNotFound,Microsoft.PowerShell.Commands.SetLocationCommand

PS C:\Users\Egbe\Documents> cd ../Downloads
PS C:\Users\Egbe\Downloads> python app.py
* 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 watchdog (windowsapi)
* Debugger is active!
* Debugger PIN: 136-097-098
127.0.0.1 - - [26/Mar/2025 09:07:56] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [26/Mar/2025 09:07:56] "GET /favicon.ico HTTP/1.1" 404 -
```

## 5. index.html View

Jupyter student\_score\_prediction Last Checkpoint: 2 days ago

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JupyterLab Python [conda env:base] \* ○ ≡ ☰

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Train Model
model = LinearRegression()
model.fit(X_train, y_train)

# Predict
y_pred = model.predict(X_test)

# View first few predictions
print("Predictions:", y_pred[:5])
```

Predictions: [83.85494696 76.10302204 82.56295948 77.82567203 76.53368454]

```
[11]: import joblib

# Save the model
joblib.dump(model, 'student_score_model.pkl')

print("Model saved as student_score_model.pkl")
```

Model saved as student\_score\_model.pkl

```
[ ]:
```

## 6. Terminal Running Flask

```
[1]: import pandas as pd

# Load the CSV (you are already in Downloads)
data = pd.read_csv('student-scores.csv')
data.head()
```

[1]:

	id	first_name	last_name	email	gender	part_time_job	absence_days	extracurricular_activities	weekly_self_study_hours	career_aspirai
0	1	Paul	Casey	paul.casey.1@gslingacademy.com	male	False	3	False	27	Lav
1	2	Danielle	Sandoval	danielle.sandoval.2@gslingacademy.com	female	False	2	False	47	Do
2	3	Tina	Andrews	tina.andrews.3@gslingacademy.com	female	False	9	True	13	Governr Off
3	4	Tara	Clark	tara.clark.4@gslingacademy.com	female	False	5	False	3	A
4	5	Anthony	Campos	anthony.campos.5@gslingacademy.com	male	False	5	False	10	Unknn
5	6	John	Wong	john.wong.6@gslingacademy.com	male	False	1	False	15	Unknn

```
[9]: from sklearn.linear_model import LinearRegression
from sklearn.model_selection import train_test_split
import pandas as pd

# Load data
data = pd.read_csv('student-scores.csv')

# Features and Target
X = data[['weekly_self_study_hours']] # <-- This is the correct column
y = data['math_score'] # You can also try 'english_score' or others

# Split into train/test
```



# 7. Web App Screenshot

Jupyter student-scores.csv Last Checkpoint: 2 days ago

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Delimiter: ,

	id	first_name	last_name	email	gender	part_time_job	absence_days	extracurricular_acti
1	1	Paul	Casey	py.1@gslingacademy.com	male	False	3	F
2	2	Danielle	Sandoval	al.2@gslingacademy.com	female	False	2	F
3	3	Tina	Andrews	rs.3@gslingacademy.com	female	False	9	F
4	4	Tara	Clark	rk.4@gslingacademy.com	female	False	5	F
5	5	Anthony	Campos	rs.5@gslingacademy.com	male	False	5	F
6	6	Kelly	Wade	le.6@gslingacademy.com	female	False	2	F
7	7	Anthony	Smith	th.7@gslingacademy.com	male	False	3	
8	8	George	Short	rt.8@gslingacademy.com	male	True	2	
9	9	Stanley	Gutierrez	rz.9@gslingacademy.com	male	False	6	F
10	10	Audrey	Simpson	i.10@gslingacademy.com	female	False	3	
11	11	Gabrielle	White	rs.11@gslingacademy.com	female	False	2	F
12	12	Clinton	Randolph	i.12@gslingacademy.com	male	False	1	F
13	13	Patricia	Gomez	i.13@gslingacademy.com	female	True	7	F
14	14	Pamela	Jackson	i.14@gslingacademy.com	female	False	10	F
15	15	Laura	Jackson	i.15@gslingacademy.com	female	False	3	F
16	16	Roger	Wiley	rs.16@gslingacademy.com	male	False	6	F
17	17	Vicki	Thompson	i.17@gslingacademy.com	female	False	3	
18	18	Maxwell	Davidson	i.18@gslingacademy.com	male	False	2	
19	19	Jonathan	Werner	rs.19@gslingacademy.com	male	False	1	F
20	20	Angela	Rios	i.20@gslingacademy.com	female	False	2	F
21	21	Tim	Nichols	i.21@gslingacademy.com	male	True	3	F
22	22	Kyle	Willis	i.22@gslingacademy.com	male	False	8	F
23	23	Shannon	Simpson	i.23@gslingacademy.com	female	False	9	F