Flask Deployment Assignment

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Batch Code: LISUM43

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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

localhost:8889/edit/Downloads/app.py?

jupyter app.py Last Checkpoint: 2 days ago

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

# Load model
model = joblib.load('student_score_model.pkl')

app = Flask(__name__)

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

@app.route('/predict', methods=['POST'])
def predict():
    hours = float(request.form['hours'])
    prediction = model.predict(np.array([[hours]]))
    return render_template('index.html', prediction_text=f'Predicted Score: {prediction[0]:.2f}')

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

2. Model Training Code

jupyter index.html Last Checkpoint: 38 minutes ago

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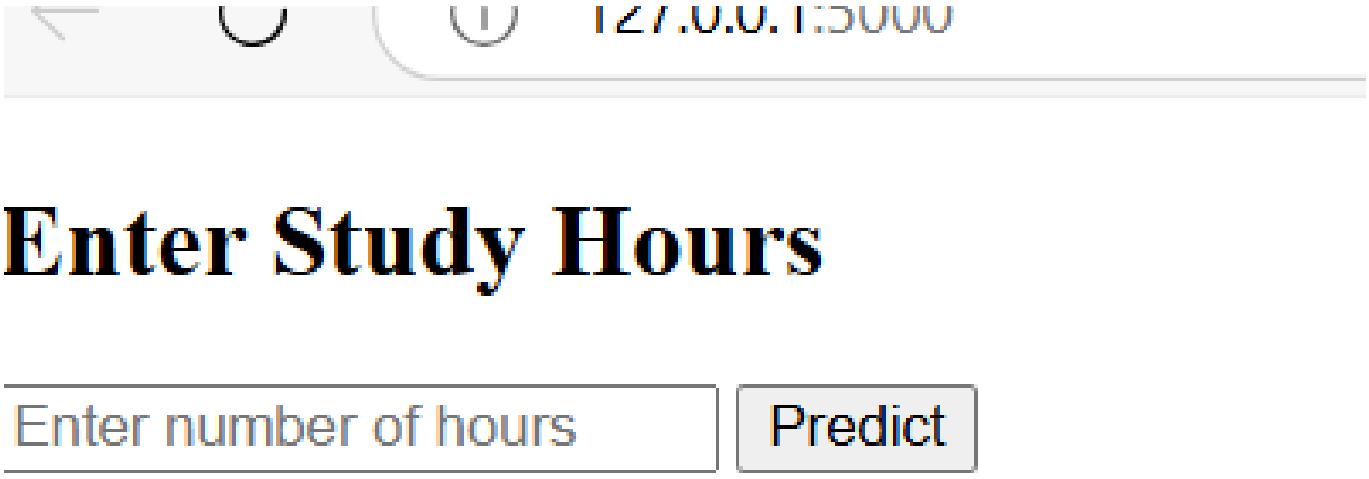
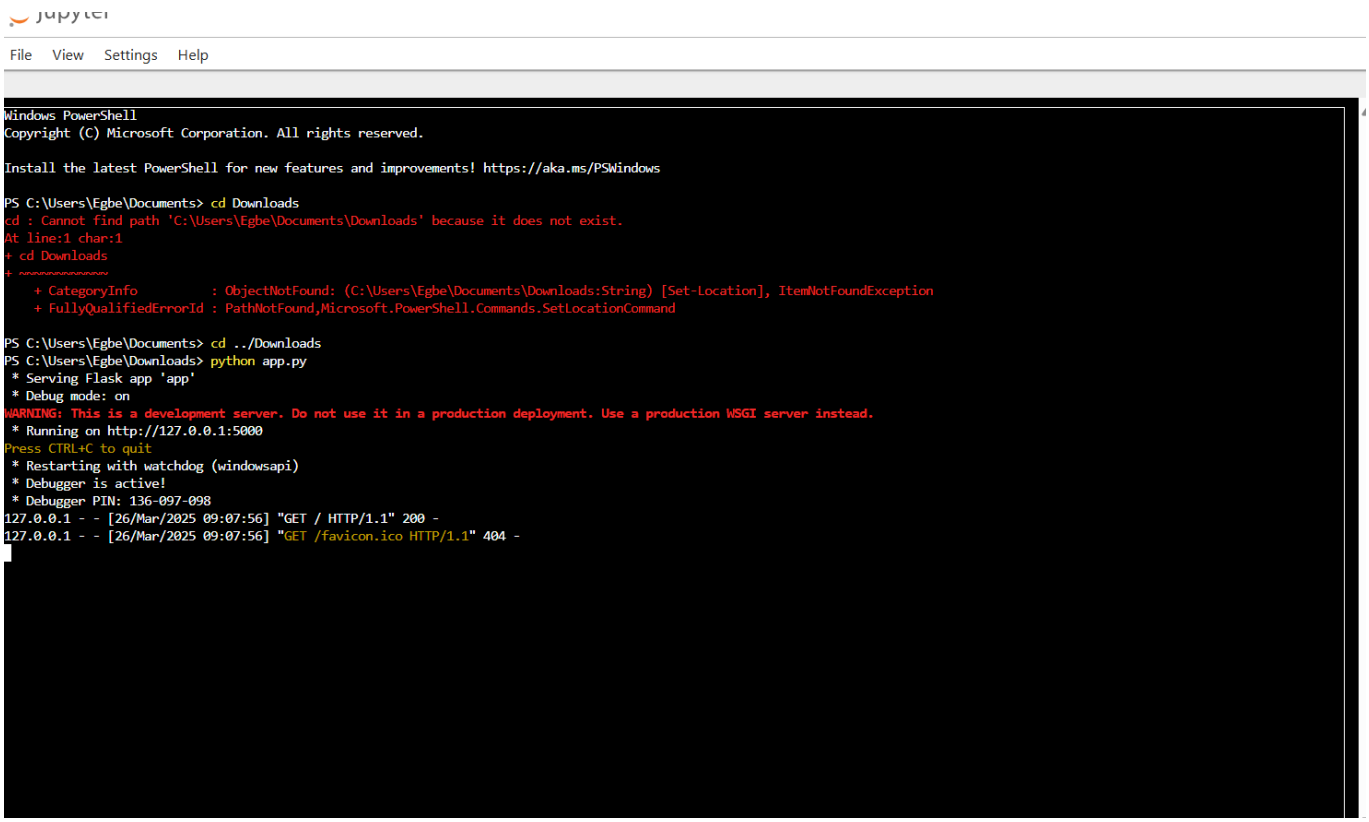
```
<!DOCTYPE html>
<html>
<head>
    <title>Student Score Predictor</title>
</head>
<body>
    <h2>Enter Study Hours</h2>
    <form action="/predict" method="POST">
        <input type="text" name="hours" placeholder="Enter number of hours" required>
        <input type="submit" value="Predict">
    </form>

    {% if prediction_text %}
        <h3>{{ prediction_text }}</h3>
    {% endif %}
</body>
</html>

```

3. Saved Model Confirmation



4. app.py Content



5. index.html View

6. Terminal Running Flask

jupyter student_score_prediction Last Checkpoint: 2 days ago

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Code JupyterLab Python [conda env:base] *

[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_aspirat
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	Governn Offi
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	Unkn

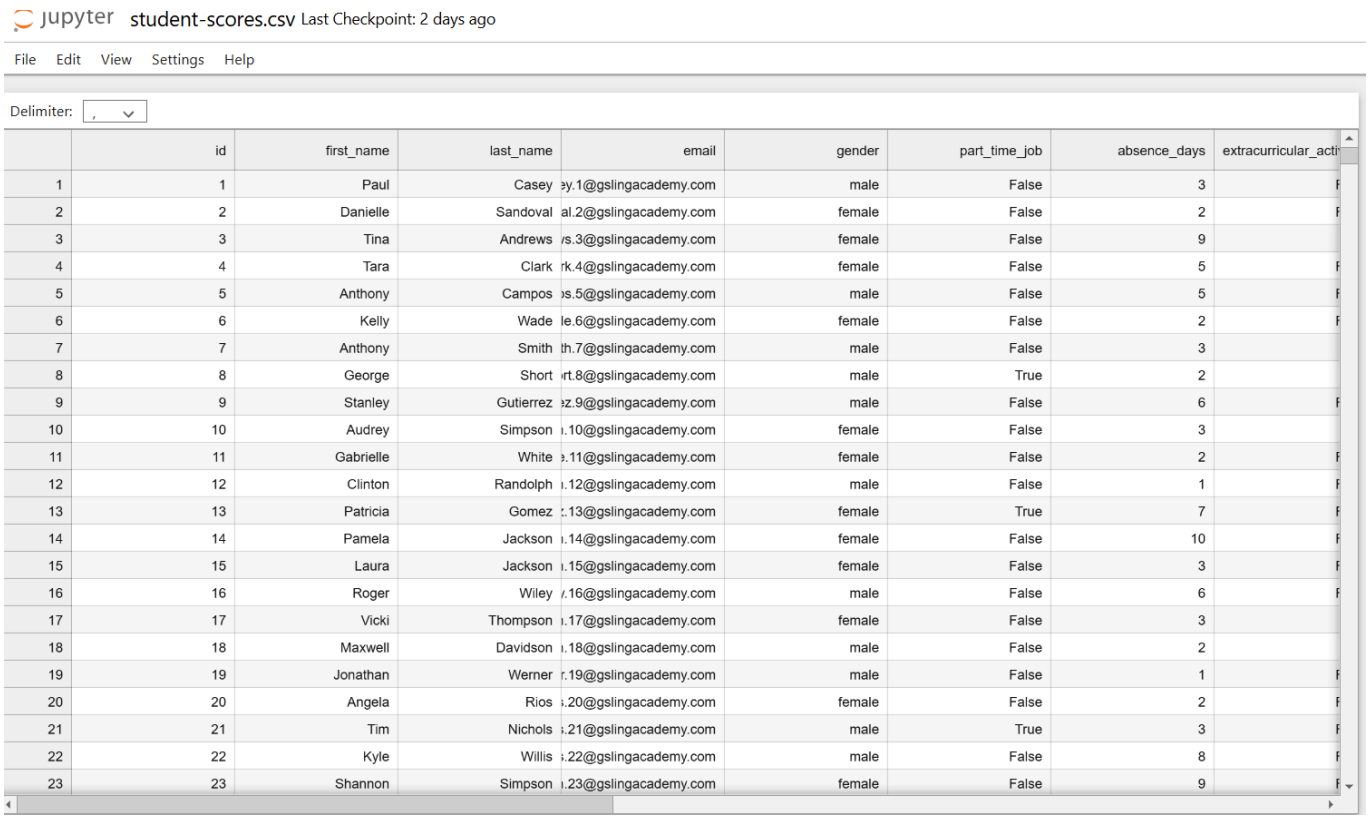
[9]:
```
from sklearn.linear_model import LinearRegression
from sklearn.model_selection import train_test_split
import pandas as pd

# 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



	id	first_name	last_name	email	gender	part_time_job	absence_days	extracurricular_acti
1	1	Paul	Casey	ey.1@gslingacademy.com	male	False	3	F
2	2	Danielle	Sandoval	al.2@gslingacademy.com	female	False	2	F
3	3	Tina	Andrews	s.3@gslingacademy.com	female	False	9	
4	4	Tara	Clark	rk.4@gslingacademy.com	female	False	5	F
5	5	Anthony	Campos	os.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	ez.9@gslingacademy.com	male	False	6	F
10	10	Audrey	Simpson	n.10@gslingacademy.com	female	False	3	
11	11	Gabrielle	White	e.11@gslingacademy.com	female	False	2	F
12	12	Clinton	Randolph	n.12@gslingacademy.com	male	False	1	F
13	13	Patricia	Gomez	z.13@gslingacademy.com	female	True	7	F
14	14	Pamela	Jackson	n.14@gslingacademy.com	female	False	10	F
15	15	Laura	Jackson	n.15@gslingacademy.com	female	False	3	F
16	16	Roger	Wiley	y.16@gslingacademy.com	male	False	6	F
17	17	Vicki	Thompson	n.17@gslingacademy.com	female	False	3	
18	18	Maxwell	Davidson	n.18@gslingacademy.com	male	False	2	
19	19	Jonathan	Werner	r.19@gslingacademy.com	male	False	1	F
20	20	Angela	Rios	s.20@gslingacademy.com	female	False	2	F
21	21	Tim	Nichols	s.21@gslingacademy.com	male	True	3	F
22	22	Kyle	Willis	s.22@gslingacademy.com	male	False	8	F
23	23	Shannon	Simpson	n.23@gslingacademy.com	female	False	9	F