

Week 5

Heroku Deployment

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- Batch code: LISUM17
- Submission date: 01/02/2023
- Submitted to: GitHub link submitted on dashboard

Notes: git repo has this document containing screenshots of deployment (submission_pdf_week_5). It also contains the .py scripts and templates needed to deploy the model.

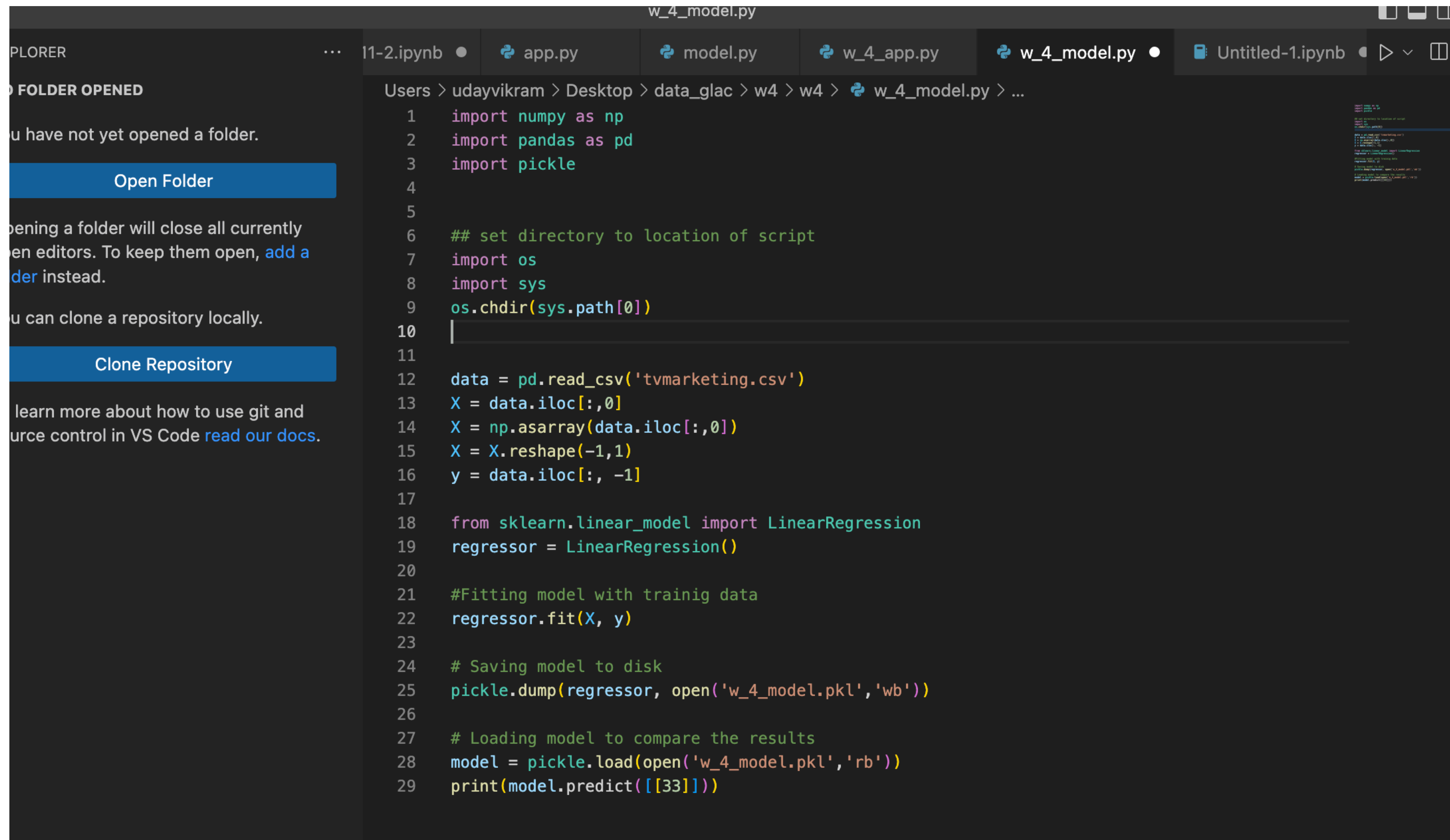
The model and app code is based on example provided in Heroku Deployment Code section of Resources in dashboard.

Changes had to be made to the requirements.txt file, runtime.txt had to be added, Profile had to be changed.

Data

- Name: tvmarketing.csv
- Columns: TV (marketing budget), Sales
- Rows: 200
- Source: <https://www.kaggle.com/datasets/devzohaib/tvmarketingcsv>
- About: Data has only one independent variable (X). This makes it suitable for a toy model.

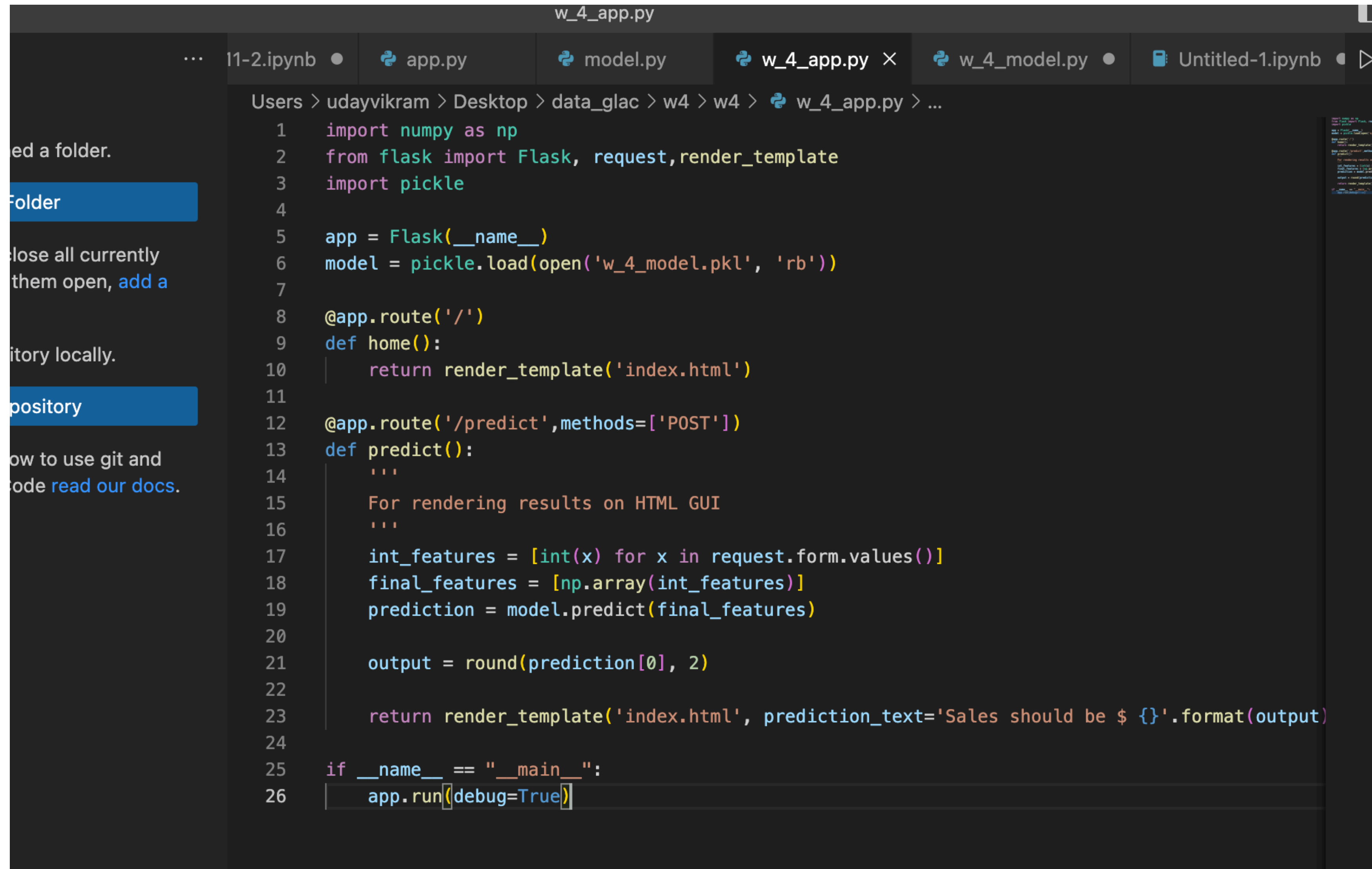
Load data and Build Model



The image shows a VS Code editor window with a dark theme. The Explorer sidebar on the left is partially visible, showing a message about opening a folder. The main editor area displays a Python file named `w_4_model.py`. The code in the file is as follows:

```
1  import numpy as np
2  import pandas as pd
3  import pickle
4
5
6  ## set directory to location of script
7  import os
8  import sys
9  os.chdir(sys.path[0])
10 |
11
12 data = pd.read_csv('tvmarketing.csv')
13 X = data.iloc[:,0]
14 X = np.asarray(data.iloc[:,0])
15 X = X.reshape(-1,1)
16 y = data.iloc[:, -1]
17
18 from sklearn.linear_model import LinearRegression
19 regressor = LinearRegression()
20
21 #Fitting model with trainig data
22 regressor.fit(X, y)
23
24 # Saving model to disk
25 pickle.dump(regressor, open('w_4_model.pkl','wb'))
26
27 # Loading model to compare the results
28 model = pickle.load(open('w_4_model.pkl','rb'))
29 print(model.predict([[33]]))
```

Write app for deployment






```
w_4_app.py
11-2.ipynb • app.py model.py w_4_app.py × w_4_model.py • Untitled-1.ipynb ▶
Users > udayvikram > Desktop > data_glac > w4 > w4 > w_4_app.py > ...
1 import numpy as np
2 from flask import Flask, request, render_template
3 import pickle
4
5 app = Flask(__name__)
6 model = pickle.load(open('w_4_model.pkl', 'rb'))
7
8 @app.route('/')
9 def home():
10     return render_template('index.html')
11
12 @app.route('/predict', methods=['POST'])
13 def predict():
14     '''
15     For rendering results on HTML GUI
16     '''
17     int_features = [int(x) for x in request.form.values()]
18     final_features = [np.array(int_features)]
19     prediction = model.predict(final_features)
20
21     output = round(prediction[0], 2)
22
23     return render_template('index.html', prediction_text='Sales should be $ {}'.format(output))
24
25 if __name__ == "__main__":
26     app.run(debug=True)
```










Edit HTML to ask correct prompt (based on dataset)




```
index.html
... 11-2.ipynb ●  app.py  model.py  w_4_app.py  <> index.html ×  w_4_model.py ●  [icon]
Users > udayvikram > Desktop > data_glac > w4 > w4 > templates > <> index.html > [icon] html > [icon] body > [icon] div.login > [icon]
1  <!DOCTYPE html>
2  <html >
3  <head>
4      <meta charset="UTF-8">
5      <title>ML API</title>
6      <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
7      <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
8      <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
9      <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='stylesheet' type='text/css'>
10     <link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">
11
12 </head>
13
14 <body>
15     <div class="login">
16         <h1>Predict Sales Based on Marketing Budget</h1>
17
18         <!-- Main Input For Receiving Query to our ML -->
19         <form action="{{ url_for('predict') }}" method="post">
20
21             <input type="text" name="TV" placeholder="Marketing Budget" required="required" />
22
23             <button type="submit" class="btn btn-primary btn-block btn-large">Predict</button>
24         </form>
25
26         <br>
27         <br>
28         {{ prediction_text }}
29
30     </div>
31     
32
33 </body>
34 </html>
35
```

Upload required files to repo



 **gitkym** / **dg_week_5** Public










 Pin  U

 **Code**  Issues  Pull requests  Actions  Projects  Wiki  Security  Insights  Settings


 main  1 branch  0 tags

[Go to file](#) [Add file](#) [Code](#)

 **gitkym** Add files via upload d470366 now  2 commits

 static	Add files via upload	now
 templates	Add files via upload	now
 LICENSE	Initial commit	6 minutes ago
 README.md	Initial commit	6 minutes ago
 requirements.txt	Add files via upload	now
 tvmarketing.csv	Add files via upload	now
 w_4_app.py	Add files via upload	now
 w_4_model.pkl	Add files via upload	now
 w_4_model.py	Add files via upload	now

Create new app in Heroku


Personal

New

You don't have any apps yet

Every app and pipeline you create or become a collaborator on will appear here

Create new app

Looking for help getting started?

Get started by reading one of our language guides in the Dev Center

Choose a language guide...

Personal > dg-w5-heroku ☆ [Open app](#) [More](#)

Overview Resources **Deploy** Metrics Activity Access Settings

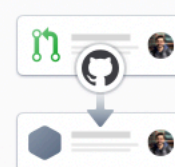
Add this app to a pipeline

Create a new pipeline or choose an existing one and add this app to a stage in it.

Add this app to a stage in a pipeline to enable additional features



Pipelines let you connect multiple apps together and **promote code** between them. [Learn more.](#)



Pipelines connected to GitHub can enable **review apps**, and create apps for new pull requests. [Learn more.](#)

Choose a pipeline

Deployment method



Heroku Git

Use Heroku CLI



GitHub

Connect to GitHub



Container Registry

Use Heroku CLI

Link to GitHub

Deployment method



Heroku Git
Use Heroku CLI



GitHub
Connect to GitHub



Container Registry
Use Heroku CLI

Connect to GitHub

Connect this app to GitHub to enable code diffs and deploys.

Search for a repository to connect to



gitkym



dg_week_5|

Search

Missing a GitHub organization? [Ensure Heroku Dashboard has team access.](#)

Deployment method



Heroku Git
Use Heroku CLI



GitHub
Connected



Container Registry
Use Heroku CLI

App connected to GitHub

Code diffs, manual and auto deploys are available for this app.

Connected to [gitkym/dg_week_5](#) by [gitkym](#)

Disconnect...

Releases in the [activity feed](#) link to GitHub to view commit diffs

Deploy app and install dependencies

☐ Wait for CI to pass before deploy

Only enable this option if you have a Continuous Integration service configured on your repo.

Enable Automatic Deploys

Manual deploy

Deploy the current state of a branch to this app.

Deploy a GitHub branch

This will deploy the current state of the branch you specify below. [Learn more](#).

Choose a branch to deploy

 main

Deploy Branch

Manual deploy

Deploy the current state of a branch to this app.

Deploy a GitHub branch

This will deploy the current state of the branch you specify below. [Learn more](#).

Choose a branch to deploy

 main

Deploy Branch

Receive code from GitHub



Build **main** d470366f



Release phase



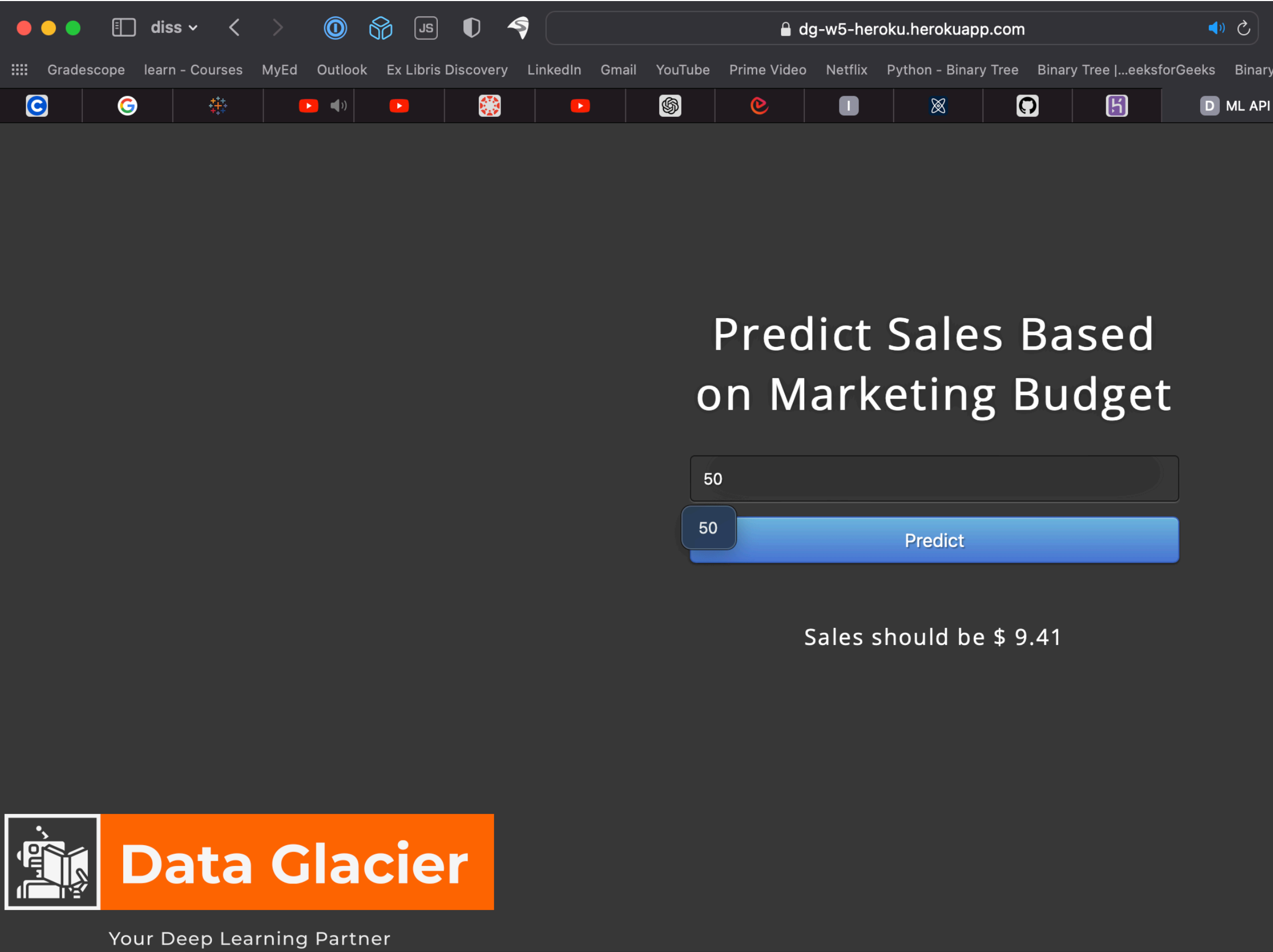
Deploy to Heroku



Your app was successfully deployed.

 View

View app in browser and test it for different predictions




A screenshot of a web browser displaying the Data Glacier app. The browser's address bar shows the URL `dg-w5-heroku.herokuapp.com`. The app's main heading is "Predict Sales Based on Marketing Budget". Below this, there is a horizontal slider input with the value "50" displayed on the left. A blue "Predict" button is positioned to the right of the slider. The prediction result is shown as "Sales should be \$ 9.41". At the bottom left, the Data Glacier logo is visible, consisting of a stylized icon and the text "Data Glacier". Below the logo, the tagline "Your Deep Learning Partner" is displayed.

Predict Sales Based on Marketing Budget

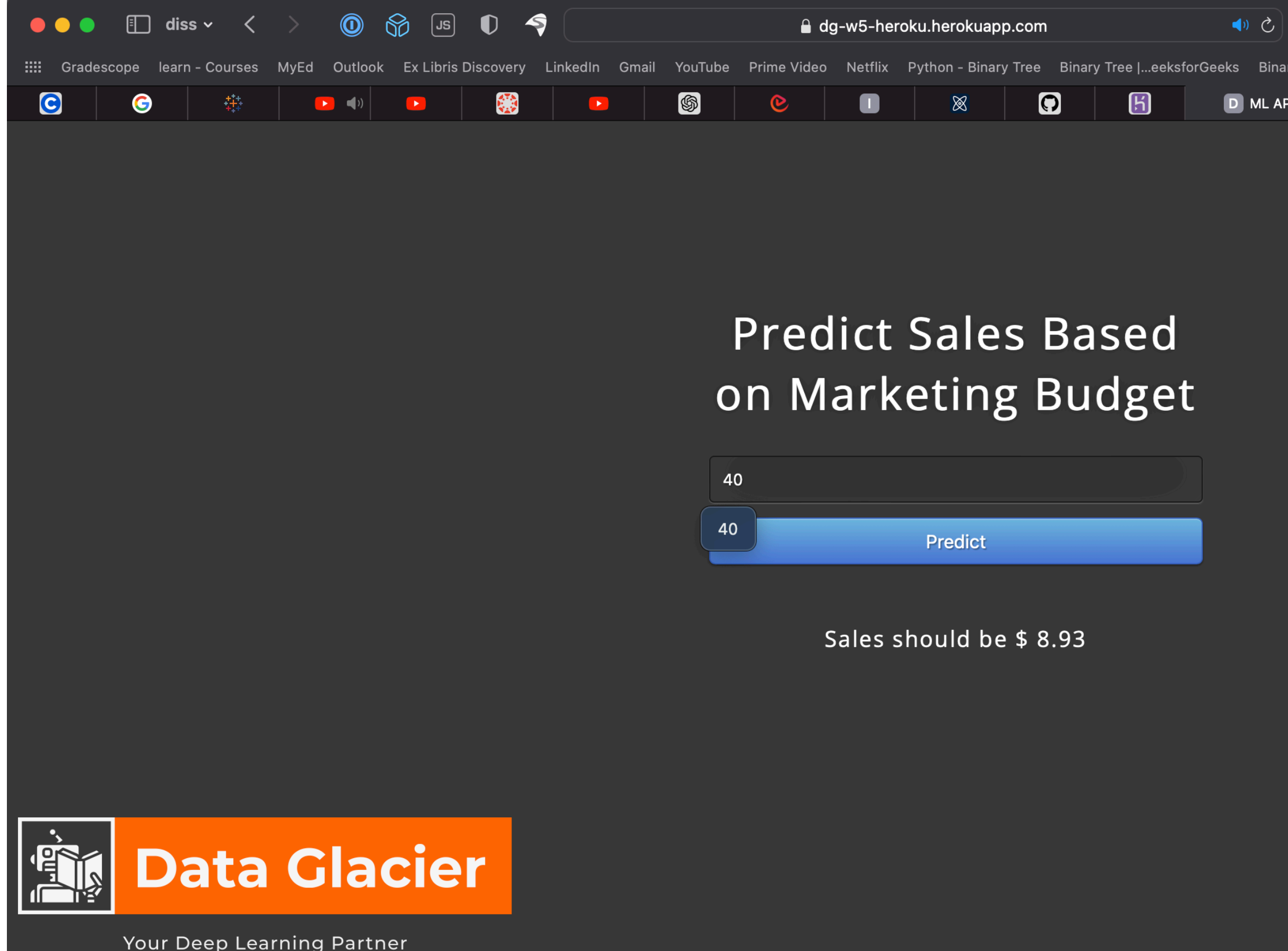
50

50 Predict

Sales should be \$ 9.41

 **Data Glacier**

Your Deep Learning Partner




A screenshot of the same Data Glacier app interface, but with the slider input set to "40". The "Predict" button remains visible. The prediction result is now "Sales should be \$ 8.93". The Data Glacier logo and tagline "Your Deep Learning Partner" are still present at the bottom left.

Predict Sales Based on Marketing Budget

40

40 Predict

Sales should be \$ 8.93

 **Data Glacier**

Your Deep Learning Partner