LAB 4.

AIDI 2004

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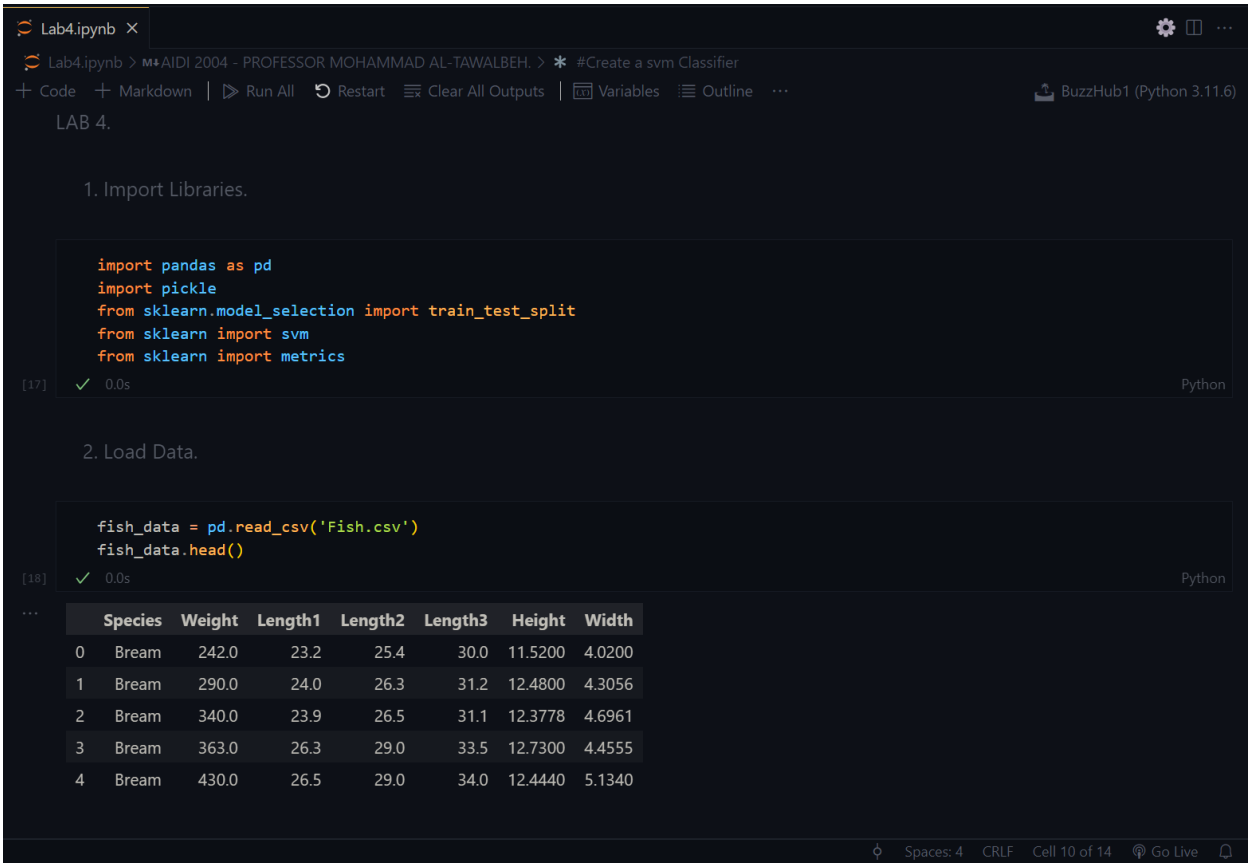
Table of Contents

1) Jupyter Notebook.

These are the actions performed in this file:

- Load the data.
- Split the data.
- Define the model.
- Train the Model.
- Evaluate the model.
- Make predictions with the model.
- Save the model.



3. Split the Data.

```
# Splitting the input and target variable
X = fish_data.drop(columns=['Species'])
y = fish_data['Species']

# Splitting the training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=109)
```

[19] ✓ 0.0s Python

4. Create the model & make a prediction.

```
#Create a svm Classifier
clf = svm.SVC(kernel='linear') # Linear Kernel

#Train the model using the training sets
clf.fit(X_train, y_train)

#Predict the response for test dataset
y_pred = clf.predict(X_test)
print(y_pred)
```

[20] ✓ 0.2s Python

```
['Smelt' 'Bream' 'Perch' 'Roach' 'Perch' 'Bream' 'Bream' 'Whitefish'
 'Perch' 'Perch' 'Roach' 'Smelt' 'Roach' 'Smelt' 'Bream' 'Perch' 'Perch'
 'Perch' 'Perch' 'Parkki' 'Smelt' 'Perch' 'Bream' 'Bream' 'Perch' 'Bream'
 'Perch' 'Perch' 'Bream' 'Perch' 'Pike' 'Smelt' 'Bream' 'Smelt' 'Perch'
 'Smelt' 'Bream' 'Perch' 'Perch' 'Perch' 'Roach' 'Perch' 'Perch' 'Parkki'
```

CRLF Cell 7 of 14 Go Live

Lab4.ipynb ●

Lab4.ipynb > AIDI 2004 - PROFESSOR MOHAMMAD AL-TAWALBEH. > Split the Data.

+ Code + Markdown | Run All Restart Clear All Outputs | Variables Outline ··· BuzzHub1 (Python 3.11.6)


```
#Predict the response for test dataset
y_pred = clf.predict(X_test)
print(y_pred)
```

[20] ✓ 0.2s Python

```
['Smelt' 'Bream' 'Perch' 'Roach' 'Perch' 'Bream' 'Bream' 'Whitefish'
 'Perch' 'Perch' 'Roach' 'Smelt' 'Roach' 'Smelt' 'Bream' 'Perch' 'Perch'
 'Perch' 'Perch' 'Parkki' 'Smelt' 'Perch' 'Bream' 'Bream' 'Perch' 'Bream'
 'Perch' 'Perch' 'Bream' 'Perch' 'Pike' 'Smelt' 'Bream' 'Smelt' 'Perch'
 'Smelt' 'Bream' 'Perch' 'Perch' 'Perch' 'Roach' 'Perch' 'Perch' 'Parkki'
 'Perch' 'Perch' 'Parkki' 'Perch']
```


5. Evaluate Model

```
# Model Accuracy: how often is the classifier correct?
print("Accuracy:",metrics.accuracy_score(y_test, y_pred))
```

[21] ✓ 0.0s Python

```
Accuracy: 0.9166666666666666
```

6. Save Model.

```
with open('Lab4.pkl', 'wb') as file:
    pickle.dump(clf, file)
```

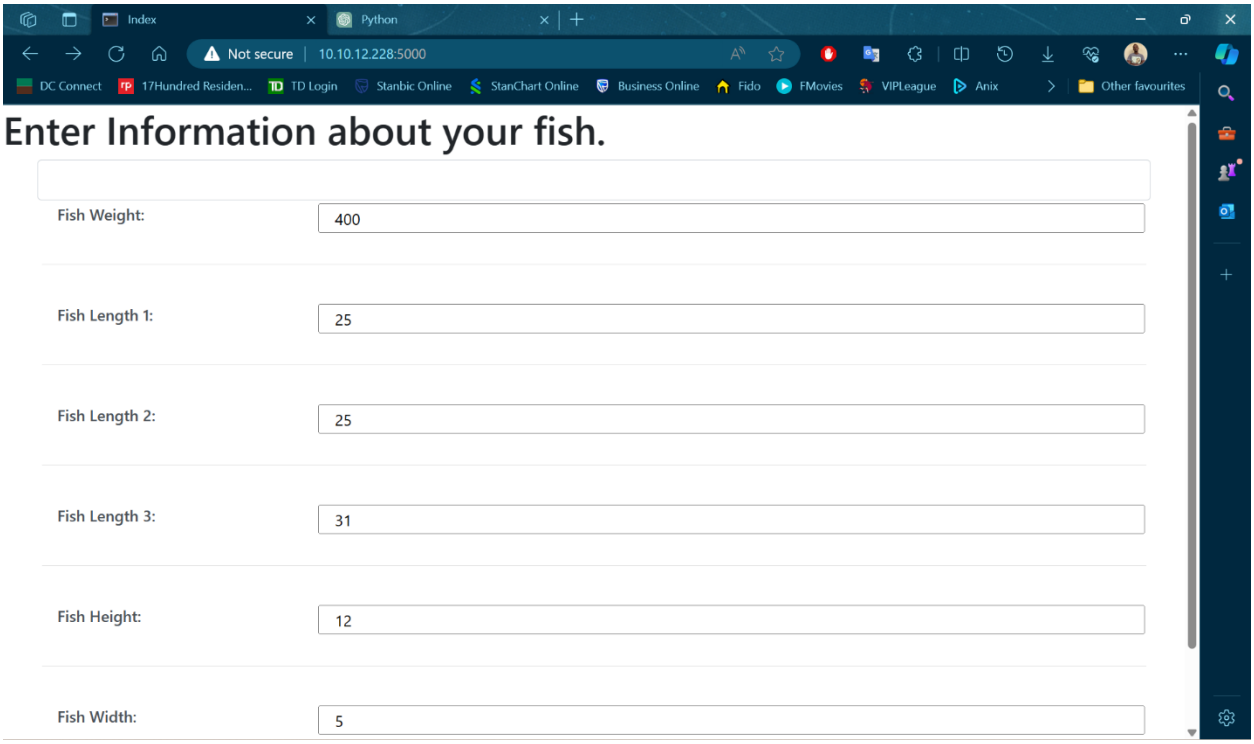
[22] ✓ 0.0s Python

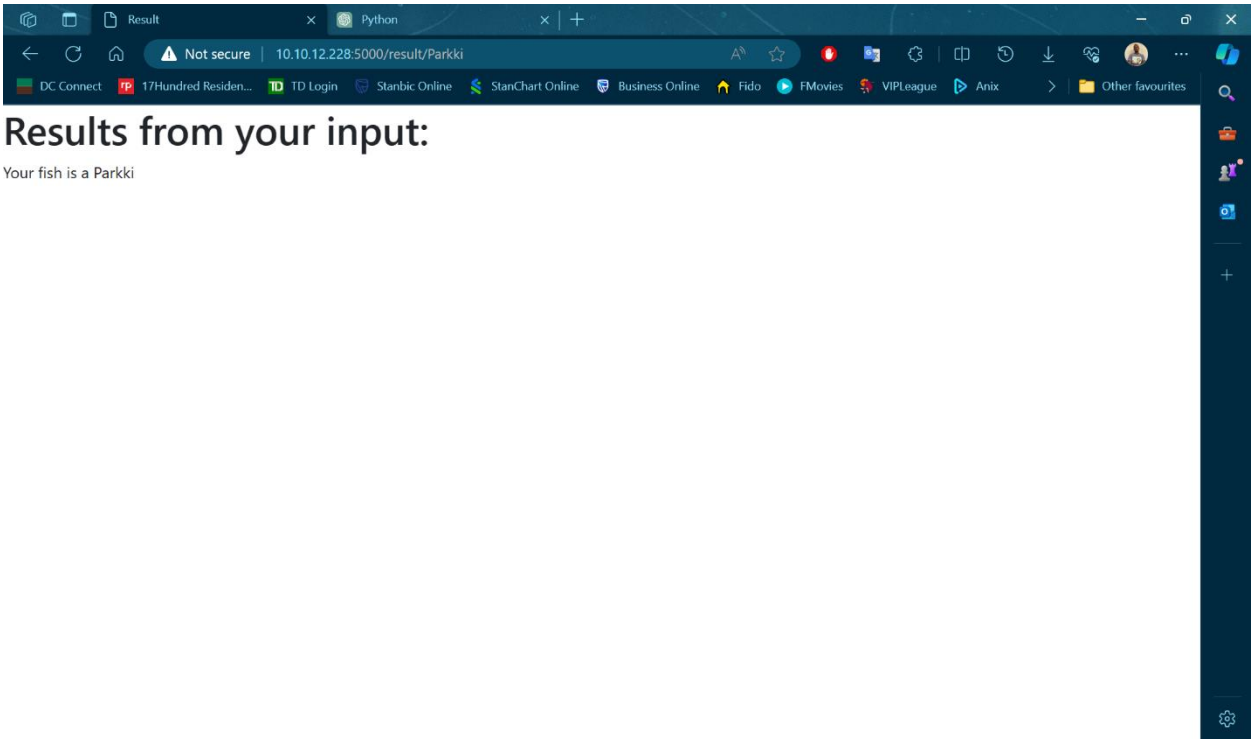
Ln 2, Col 27 Spaces: 4 CRLF Cell 7 of 14 Go Live

2) Flask Application.

These are the actions performed in this section:

- Create a User Interface for users to input information about fish necessary for the Machine Learning Model.
- Display the user's results.



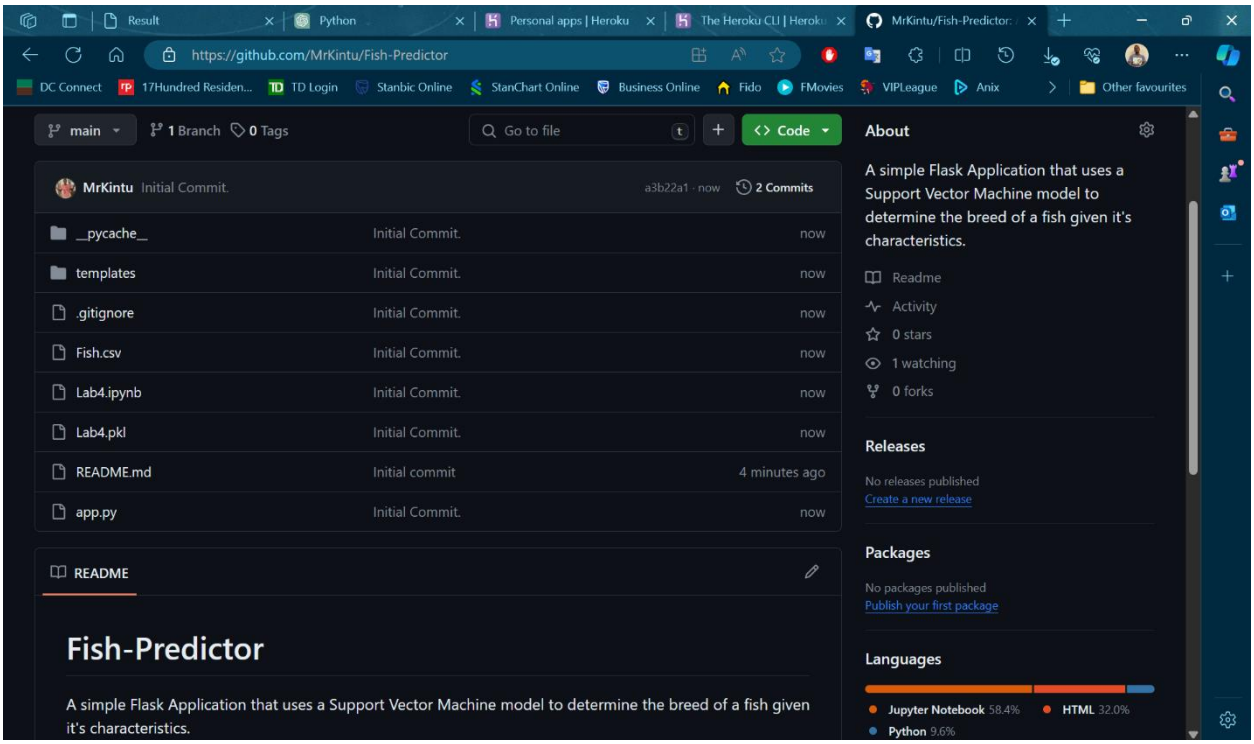

Result
Python
Not secure
10.10.12.228:5000/result/Parkki
DC Connect
17Hundred Residen...
TD Login
Stanbic Online
StanChart Online
Business Online
Fido
FMovies
VIPLeague
Anix
Other favourites
Results from your input:
Your fish is a Parkki

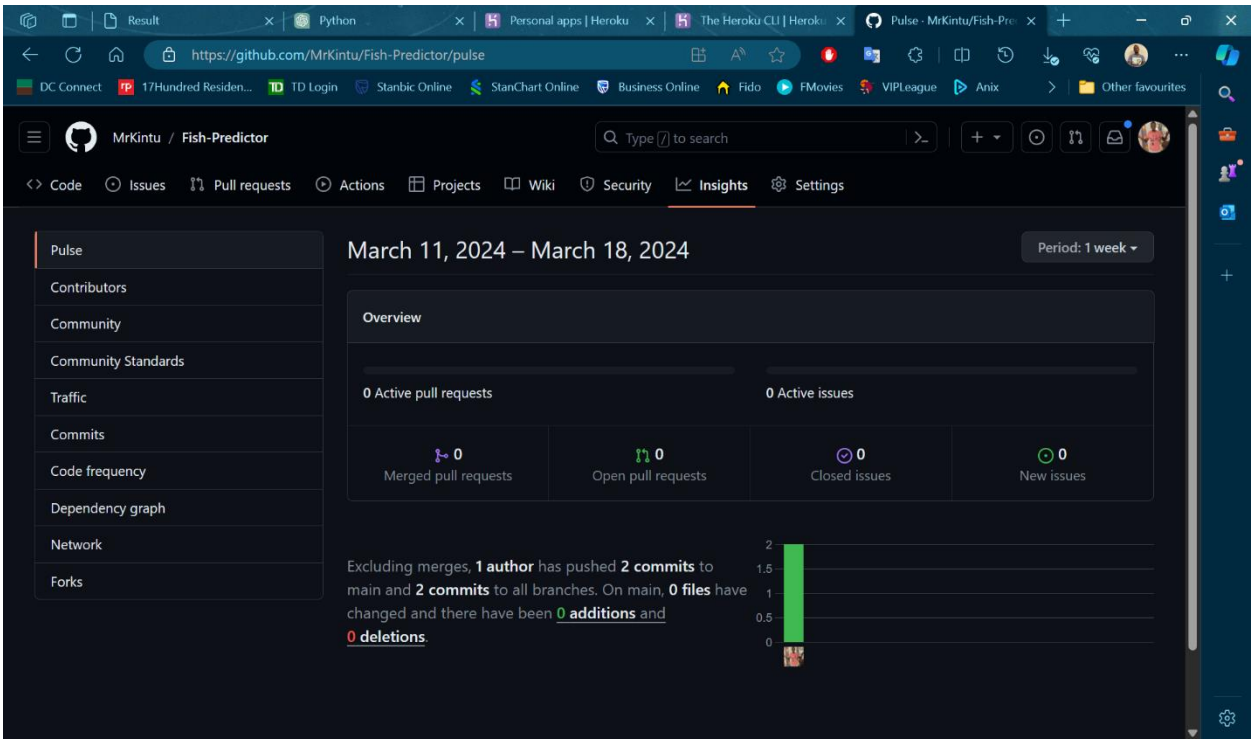
3) GitHub Repository.

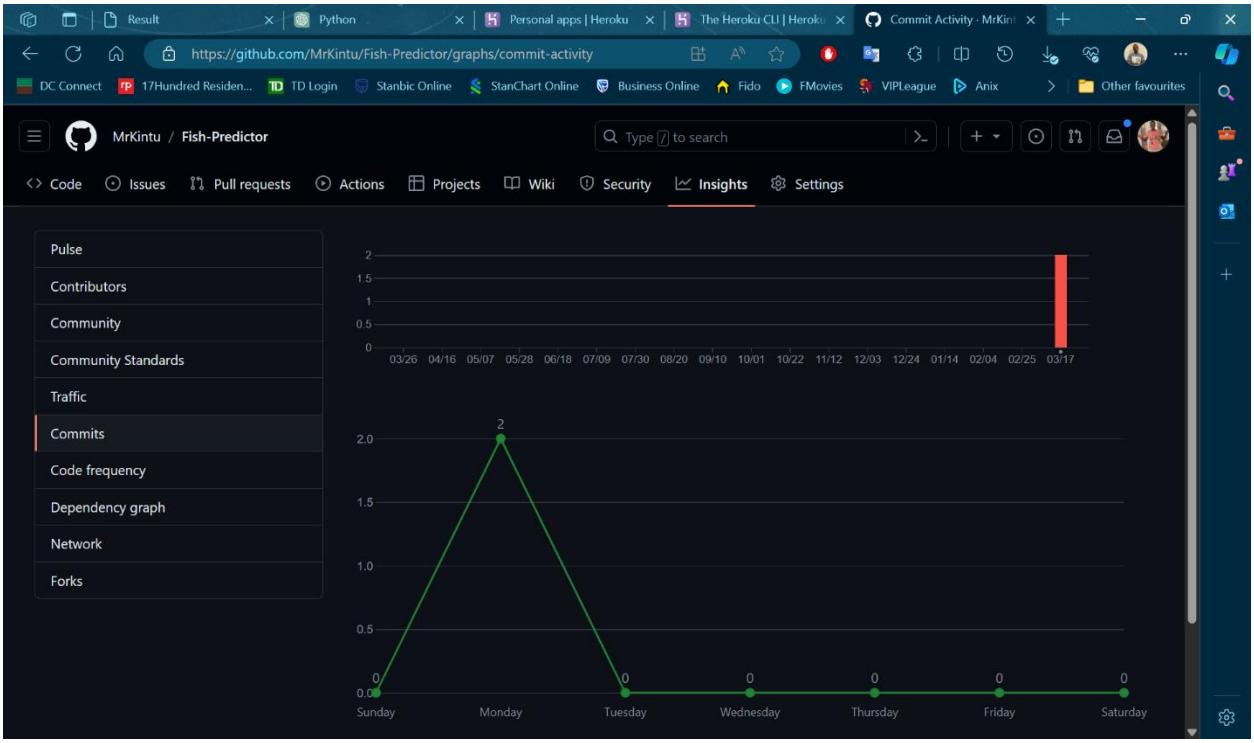
These are the actions performed at this stage:

- Push Source Code to GitHub Repository.

The GitHub repository can be accessed using this link.




https://github.com/MrKintu/Fish-Predictor/pulse
MrKintu / Fish-Predictor
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Pulse
Contributors
Community
Community Standards
Traffic
Commits
Code frequency
Dependency graph
Network
Forks
March 11, 2024 – March 18, 2024
Period: 1 week
Overview
0 Active pull requests
0 Active issues
0 Merged pull requests
0 Open pull requests
0 Closed issues
0 New issues
Excluding merges, 1 author has pushed 2 commits to main and 2 commits to all branches. On main, 0 files have changed and there have been 0 additions and 0 deletions.

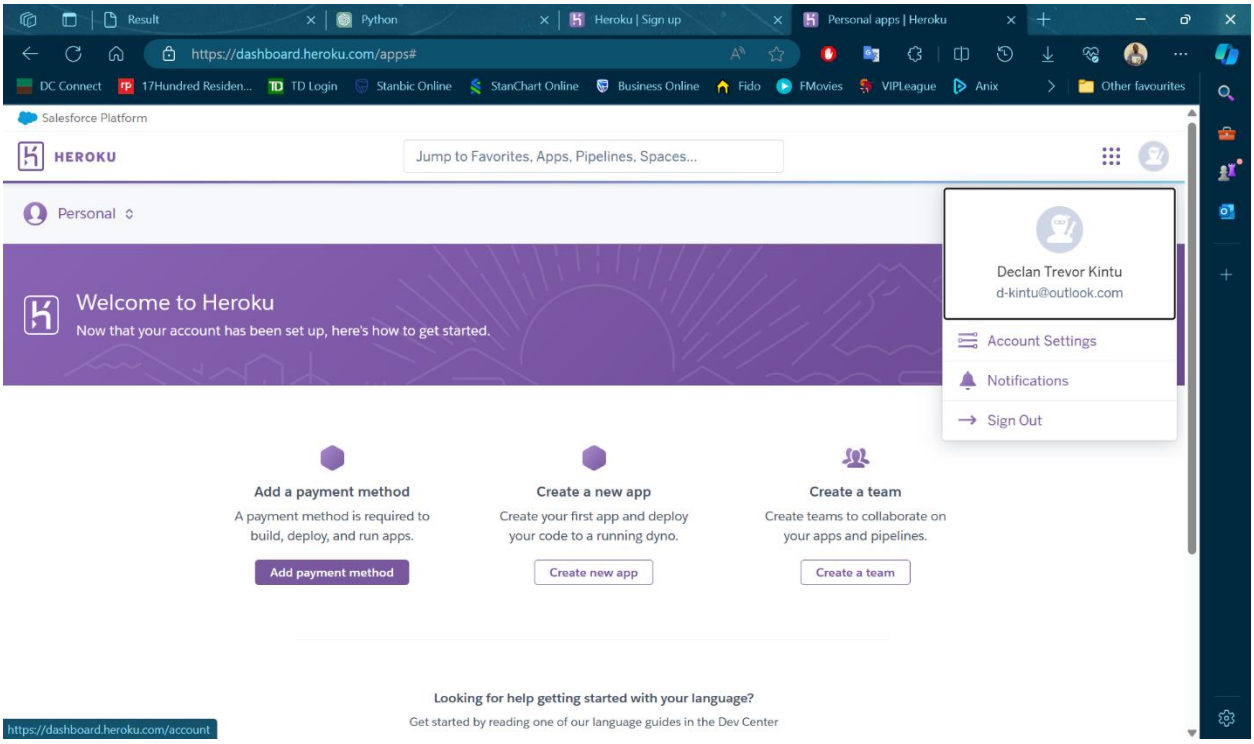

https://github.com/MrKintu/Fish-Predictor/graphs/commit-activity
MrKintu / Fish-Predictor
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Pulse
Contributors
Community
Community Standards
Traffic
Commits
Code frequency
Dependency graph
Network
Forks
03/26 04/16 05/07 05/28 06/18 07/09 07/30 08/20 09/10 10/01 10/22 11/12 12/03 12/24 01/14 02/04 02/25 03/17
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

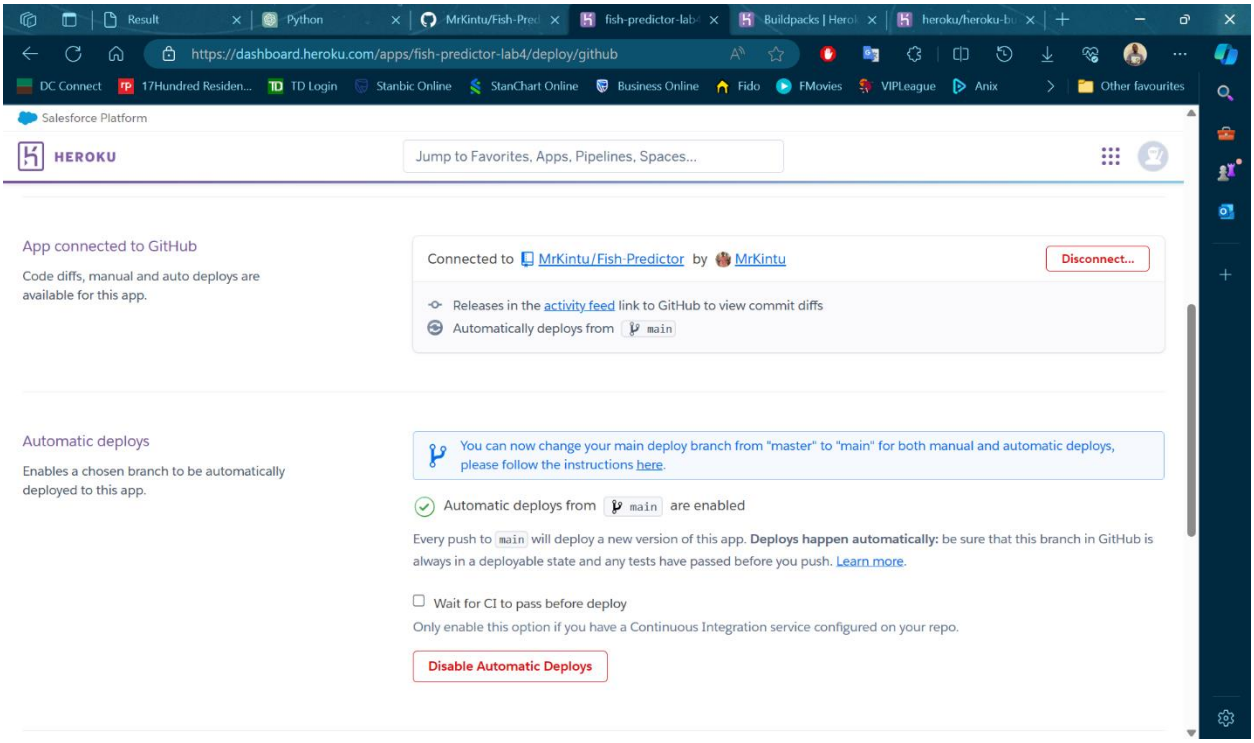
4) Heroku Repository.

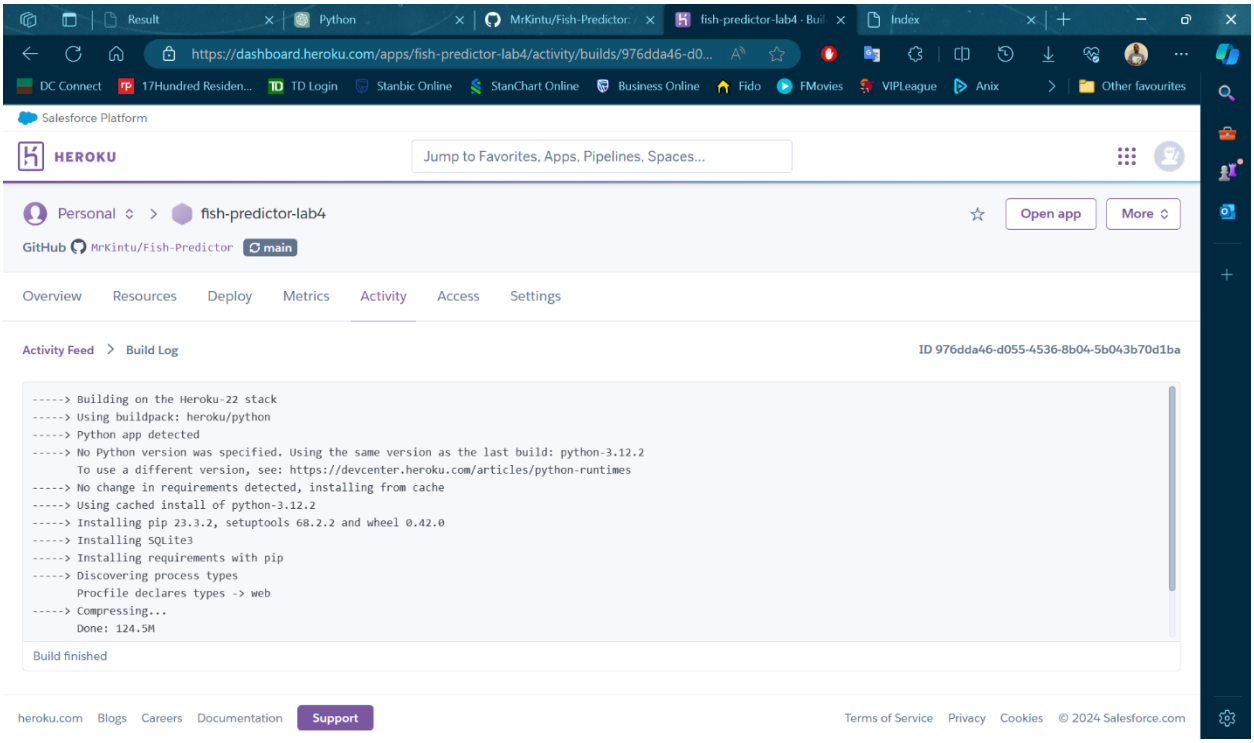
These are the actions performed in this step:

- Create a Heroku Account.
- Link Heroku account to GitHub Account.
- Link Lab4 GitHub Repository to Heroku Account.
- Deploy application on Heroku.

The application can be accessed using this link.




Result
Python
MrKintu/Fish-Pred
fish-predictor-lab
Buildpacks | Heroku
heroku/heroku-bu
https://dashboard.heroku.com/apps/fish-predictor-lab4/deploy/github
DC Connect
17Hundred Residen...
TD Login
Stanbic Online
StanChart Online
Business Online
Fido
FMovies
VIPLeague
Anix
Other favourites
Salesforce Platform
HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
App connected to GitHub
Code diffs, manual and auto deploys are available for this app.
Connected to MrKintu/Fish-Predictor by MrKintu
Disconnect...
Releases in the activity feed link to GitHub to view commit diffs
Automatically deploys from main
Automatic deploys
Enables a chosen branch to be automatically deployed to this app.
You can now change your main deploy branch from "master" to "main" for both manual and automatic deploys, please follow the instructions here.
Automatic deploys from main are enabled
Every push to main will deploy a new version of this app. Deploys happen automatically: be sure that this branch in GitHub is always in a deployable state and any tests have passed before you push. Learn more.
Wait for CI to pass before deploy
Only enable this option if you have a Continuous Integration service configured on your repo.
Disable Automatic Deploys


Result
Python
MrKintu/Fish-Predictor:
fish-predictor-lab4 · Buil
Index
https://dashboard.heroku.com/apps/fish-predictor-lab4/activity/builds/976dda46-d0...
DC Connect
17Hundred Residen...
TD Login
Stanbic Online
StanChart Online
Business Online
Fido
FMovies
VIPLeague
Anix
Other favourites
Salesforce Platform
HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
Personal
fish-predictor-lab4
Open app
More
GitHub MrKintu/Fish-Predictor main
Overview
Resources
Deploy
Metrics
Activity
Access
Settings
Activity Feed > Build Log
ID 976dda46-d055-4536-8b04-5b043b70d1ba
-----> Building on the Heroku-22 stack
-----> Using buildpack: heroku/python
-----> Python app detected
-----> No Python version was specified. Using the same version as the last build: python-3.12.2
To use a different version, see: https://devcenter.heroku.com/articles/python-runtimes
-----> No change in requirements detected, installing from cache
-----> Using cached install of python-3.12.2
-----> Installing pip 23.3.2, setuptools 68.2.2 and wheel 0.42.0
-----> Installing SQLite3
-----> Installing requirements with pip
-----> Discovering process types
Procfile declares types -> web
-----> Compressing...
Done: 124.5M
Build finished
heroku.com
Blogs
Careers
Documentation
Support
Terms of Service
Privacy
Cookies
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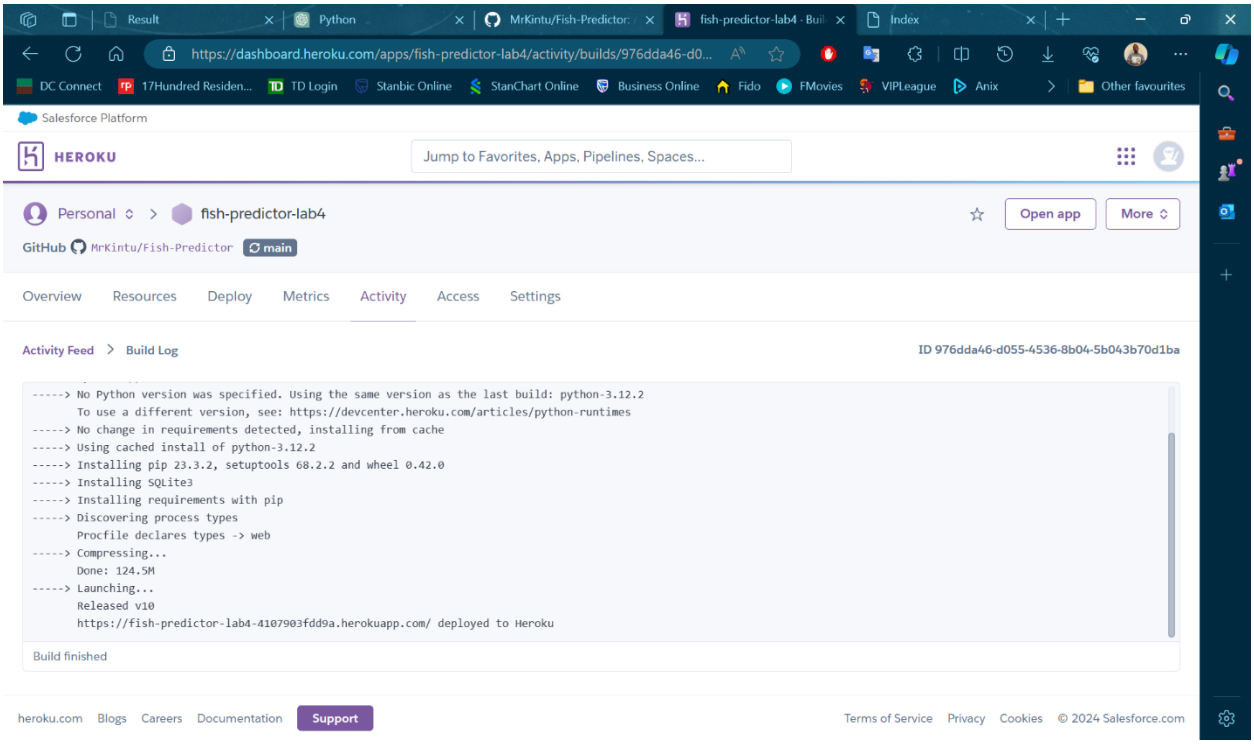
Result
Python
MrKintu/Fish-Predictor:
fish-predictor-lab4 · Buil
Index
https://dashboard.heroku.com/apps/fish-predictor-lab4/activity/builds/976dda46-d0...
DC Connect
17Hundred Residen...
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Activity Feed > Build Log
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-----> Installing SQLite3
-----> Installing requirements with pip
-----> Discovering process types
Procfile declares types -> web
-----> Compressing...
Done: 124.5M
-----> Launching...
Released v10
https://fish-predictor-lab4-4107903fdd9a.herokuapp.com/ deployed to Heroku
Build finished
heroku.com
Blogs
Careers
Documentation
Support
Terms of Service
Privacy
Cookies
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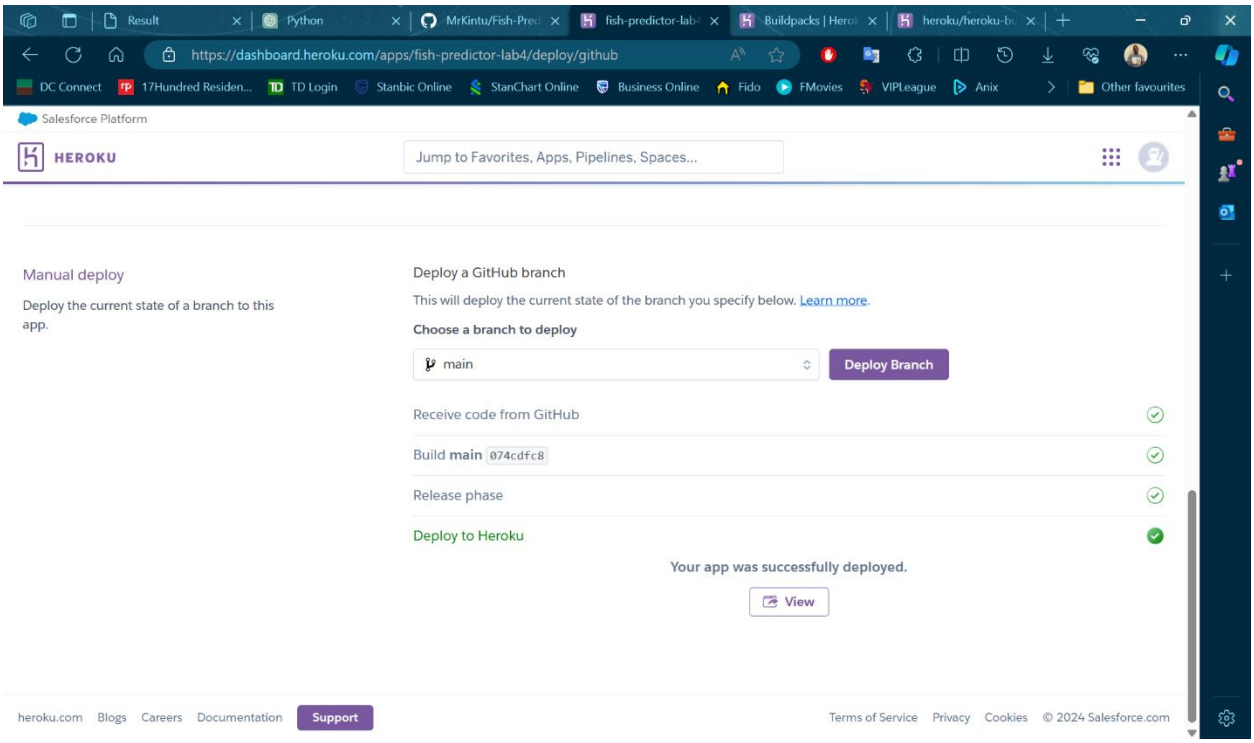
Result
Python
MrKintu/Fish-Pred
fish-predictor-lab
Buildpacks | Heroi
heroku/heroku-b
https://dashboard.heroku.com/apps/fish-predictor-lab4/deploy/github
DC Connect
17Hundred Residen...
TD Login
Stanbic Online
StanChart Online
Business Online
Fido
FMovies
VIPLeague
Anix
Other favourites
Salesforce Platform
HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
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 074cdfc8
Release phase
Deploy to Heroku
Your app was successfully deployed.
View
heroku.com
Blogs
Careers
Documentation
Support
Terms of Service
Privacy
Cookies
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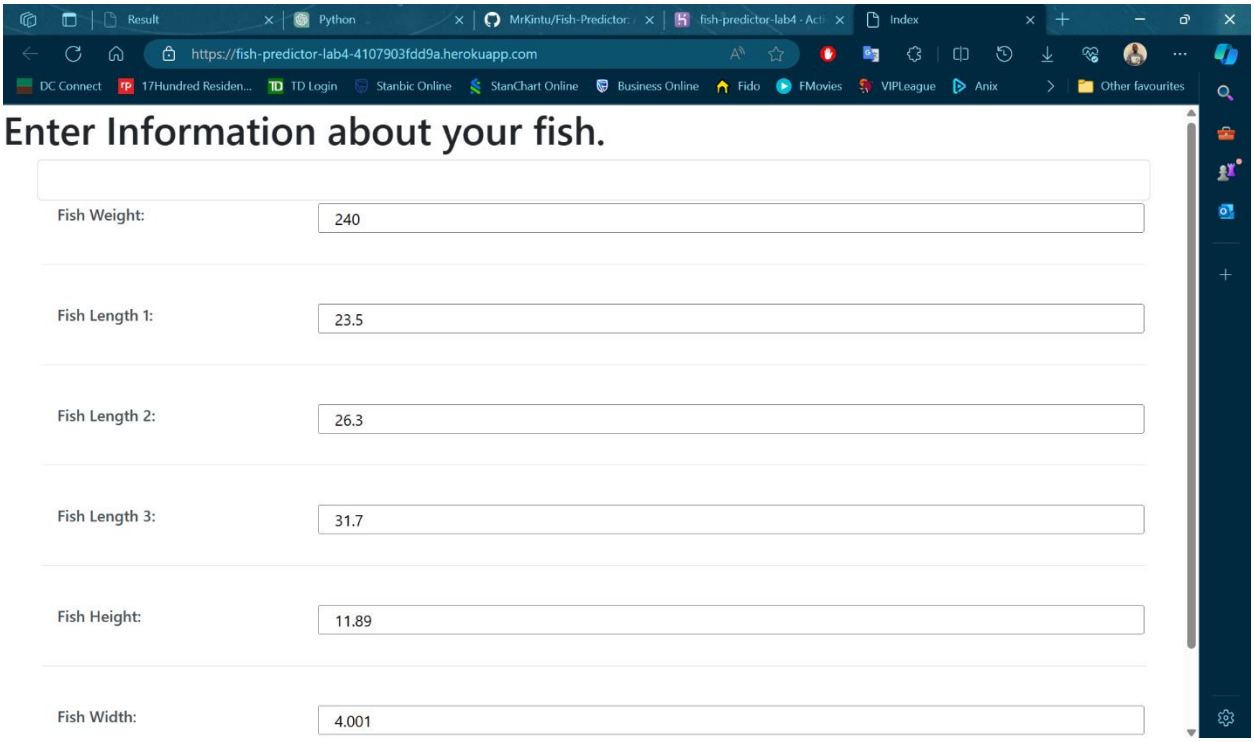
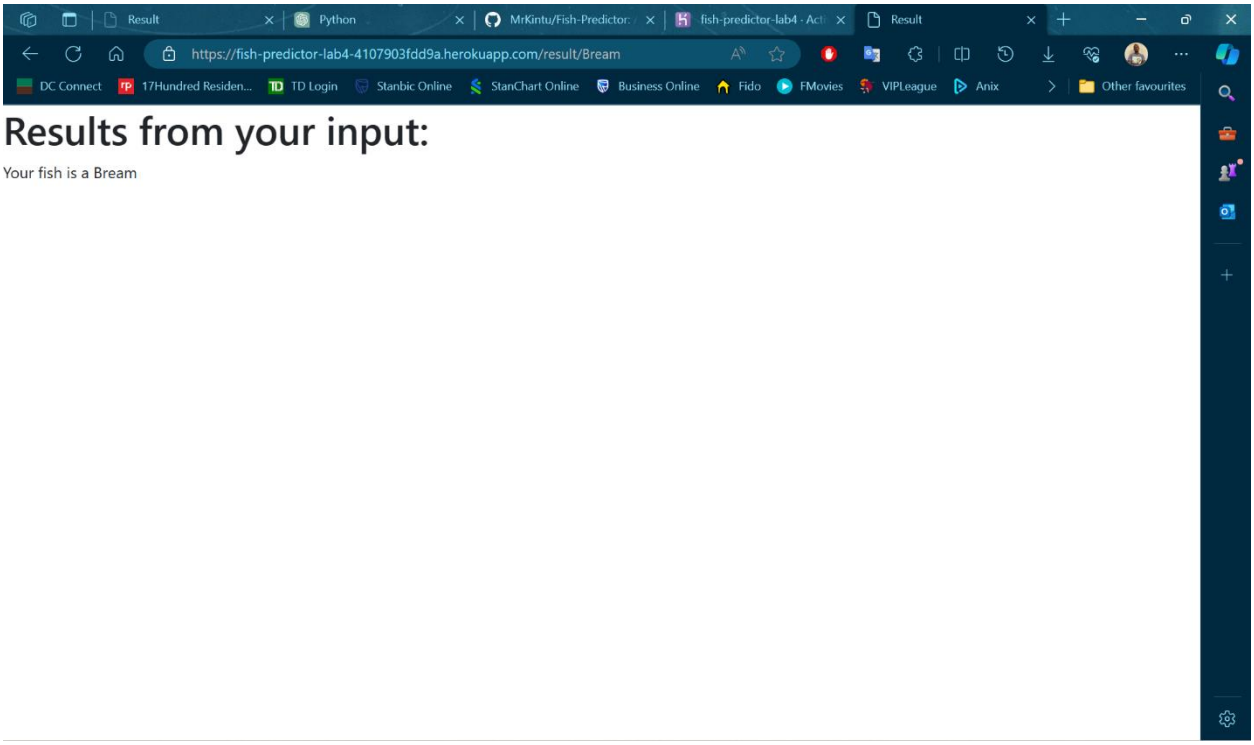

Result
Python
MrKintu/Fish-Predictor:
fish-predictor-lab4 · Acti
Index
https://fish-predictor-lab4-4107903fdd9a.herokuapp.com
DC Connect
17Hundred Residen...
TD Login
Stanbic Online
StanChart Online
Business Online
Fido
FMovies
VIPLeague
Anix
Other favourites
Enter Information about your fish.
Fish Weight:
240
Fish Length 1:
23.5
Fish Length 2:
26.3
Fish Length 3:
31.7
Fish Height:
11.89
Fish Width:
4.001


Result
Python
MrKintu/Fish-Predictor:
fish-predictor-lab4 · Acti
Result
https://fish-predictor-lab4-4107903fdd9a.herokuapp.com/result/Bream
DC Connect
17Hundred Residen...
TD Login
Stanbic Online
StanChart Online
Business Online
Fido
FMovies
VIPLeague
Anix
Other favourites
Results from your input:
Your fish is a Bream