

FLASK DEPLOYMENT ASSIGNMENT

App Name: Predictor Loan API

Version: 2.0

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Submission date: 03/11/2022

Submitted to: Data Glacier

1. Creating API Endpoint (app.py)

```
app.py U X
app.py > ...
1  import pandas as pd
2  import pickle
3  from flask import Flask, jsonify, request
4
5
6  app = Flask(__name__)
7
8
9  @app.route('/', methods=['GET', 'POST'])
10 def home():
11     if request.method == 'GET':
12         home = 'Hello world!!'
13         return jsonify({'home': home})
14
15 @app.route('/predict', methods=['POST'])
16 def predict():
17     """
18     Predict with the data entered in the html page.
19     """
20     with open('model.pkl', 'rb') as f:
21         model = pickle.load(f)
22     credit_policy = request.args.get('credit_policy')
23     int_rate = request.args.get('int_rate')
24     installment = request.args.get('installment')
25     log_annual_inc = request.args.get('log_annual_inc')
26     dti = request.args.get('dti')
27     fico = request.args.get('fico')
28     days_with_cr_line = request.args.get('days_with_cr_line')
29     revol_bal = request.args.get('revol_bal')
30     revol_util = request.args.get('revol_util')
31     inq_last_6mths = request.args.get('inq_last_6mths')
32     delinq_2yrs = request.args.get('delinq_2yrs')
33     pub_rec = request.args.get('pub_rec')
34
```

```

34
35     test_df = pd.DataFrame({
36         'Credit Policy': [credit_policy],
37         'Interest rate': [int_rate],
38         'Installment': [installment],
39         'Log Annual Income': [log_annual_inc],
40         'Debt-to-Income': [dti],
41         'FICO': [fico],
42         'Days with Credit Line': [days_with_cr_line],
43         'Revolving Balance': [revol_bal],
44         'Revolving Line Utilization': [revol_util],
45         'Inquiries in the last 6 months': [inq_last_6mths],
46         'Days past due on a payment': [delinq_2yrs],
47         'Derogatory Public Records': [pub_rec]
48     })
49     prediction = model.predict(test_df)
50     if int(round(prediction[0])) == 1:
51         return jsonify({
52             "Loan Payment Prediction": "The user won't fully pay the loan"
53         })
54     else:
55         return jsonify({
56             "Loan Payment Prediction": "The user will fully pay the loan"
57         })
58
59 if __name__ == "__main__":
60     app.run(port=5000, debug=True)

```

2. Running the app in the localhost

```

PS C:\Users\user> cd .\assignments\week5> 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 stat
* Debugger is active!
* Debugger PIN: 122-661-508

```

3. Testing the API end point with Postman

The screenshot shows the Postman interface for a GET request to `http://127.0.0.1:5000`. The request is successful, returning a 200 OK status with a response time of 32 ms and a body size of 195 B. The response body is displayed in JSON format:

```

{
  "home": "Hello world!!"
}

```

Overview GET http://127.0.0.1:5000/pr + ... No Environment

http://127.0.0.1:5000/predict/?credit_policy=1&int_rate=0.1189&installment=829.1&log_annual_inc=11.35040654&dti=19.48&fico=737&days_with...

Save

GET http://127.0.0.1:5000/predict/?credit_policy=1&int_rate=0.1189&installment=829.1&log_annual_inc=11.35040654&dti=19.48&fico=737&days_with_cr_lin Send

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

<input checked="" type="checkbox"/>	credit_policy	1
<input checked="" type="checkbox"/>	int_rate	0.1189
<input checked="" type="checkbox"/>	installment	829.1
<input checked="" type="checkbox"/>	log_annual_inc	11.35040654
<input checked="" type="checkbox"/>	dti	19.48
<input checked="" type="checkbox"/>	fico	737
<input checked="" type="checkbox"/>	days_with_cr_line	5639.958333
<input checked="" type="checkbox"/>	revol_bal	28854
<input checked="" type="checkbox"/>	revol_util	52.1
<input checked="" type="checkbox"/>	inq_last_6mths	0
<input checked="" type="checkbox"/>	delinq_2yrs	0
<input checked="" type="checkbox"/>	pub_rec	0

Body Cookies Headers (5) Test Results

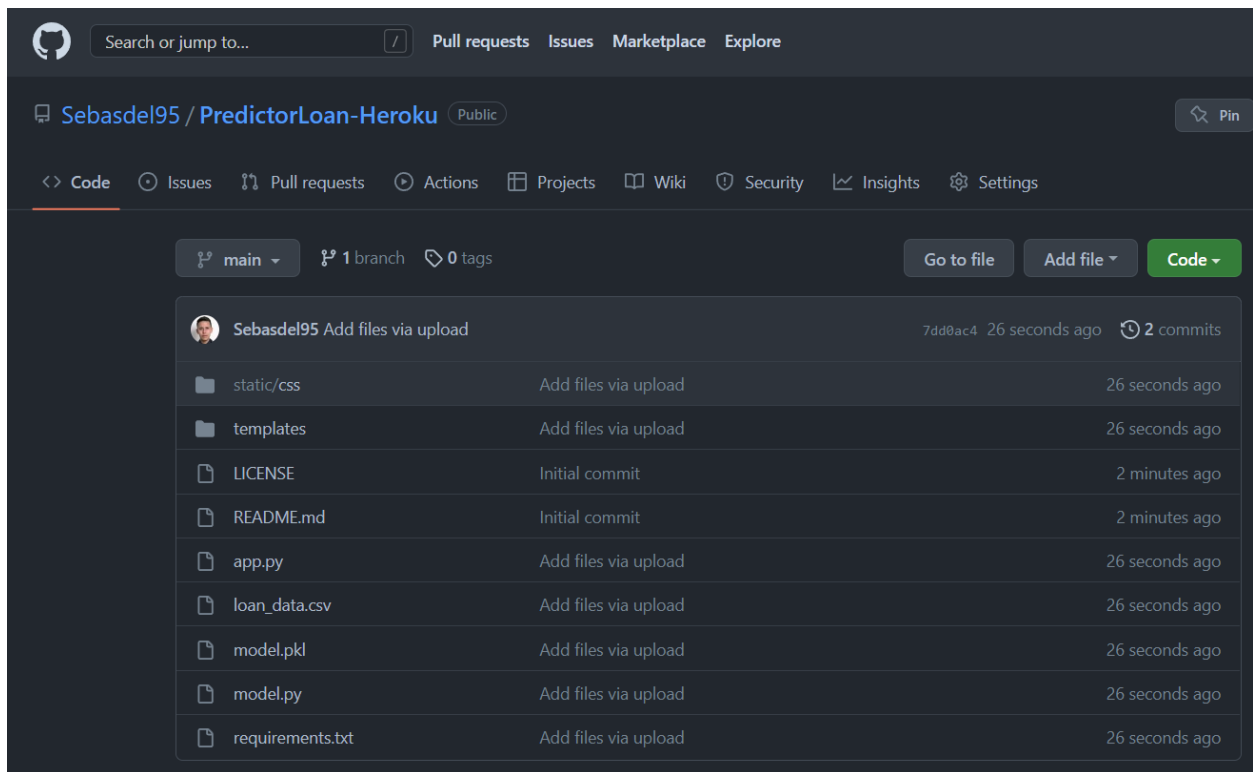
Status: 200 OK Time: 31 ms Size: 233 B Save Response

Pretty Raw Preview Visualize JSON

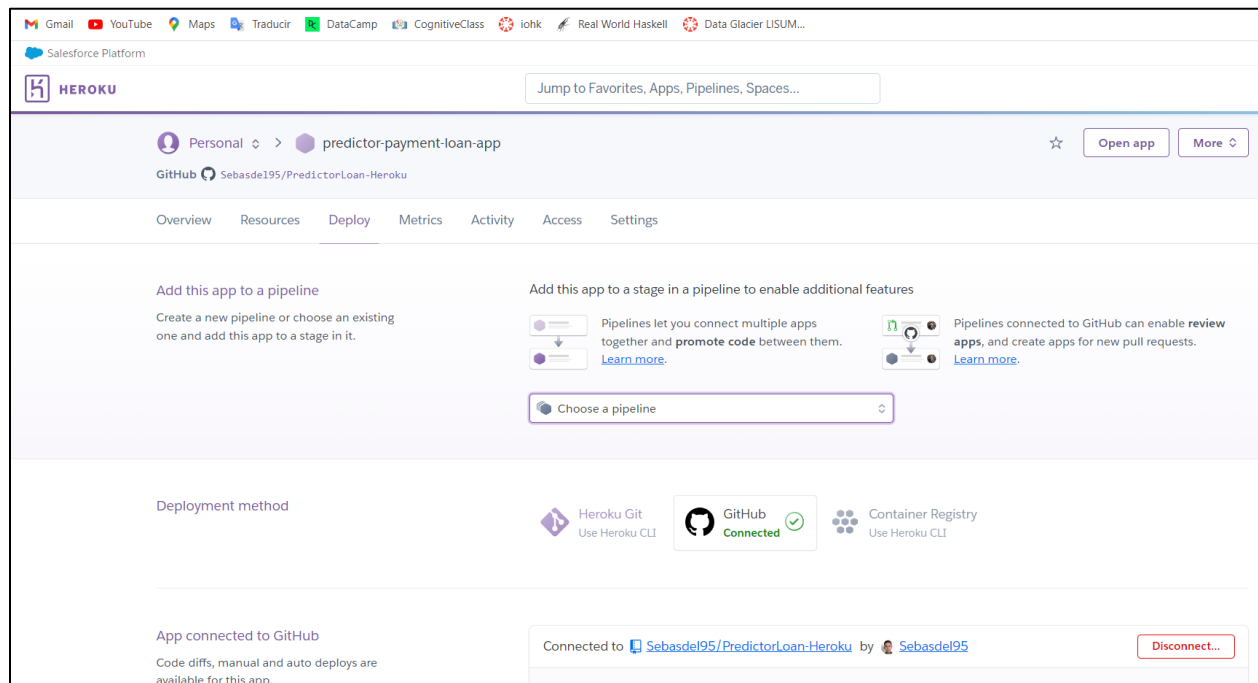
```
1
2  "Loan Payment Prediction": "The user will fully pay the loan"
3
```

HEROKU DEPLOYMENT

4. Adding Predictor Loan Payment app to GitHub



5. Creating web app in Heroku and connecting with GitHub repository.



6. Manual deployment.

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

Receive code from GitHub ✓

Build **main** 7dd0ac45 ...

```

----> Building on the Heroku-22 stack
----> Determining which buildpack to use for this app
----> Python app detected
----> No Python version was specified. Using the buildpack default: python-3.10.8
      To use a different version, see: https://devcenter.heroku.com/articles/python-runtimes
----> Installing python-3.10.8
----> Installing pip 22.2.2, setuptools 63.4.3 and wheel 0.37.1
----> Installing SQLite3
      
```

☒ Autoscroll with output [View build log](#)

Release phase

Deploy to Heroku

7. Web app in Heroku Cloud Server

predictor-payment-loan-app.herokuapp.com/predict

Gmail YouTube Maps Traducir DataCamp CognitiveClass iohk Real World Haskell Data Glacier LISUM...

Loans Predictor

Predict if a person will pay a loan

Credit Policy	<input type="text" value="1"/>	1 if the customer meets the credit underwriting criteria, 0 otherwise
Interest rate	<input type="text" value="0.1189"/>	Interest rate of the loan
Installment	<input type="text" value="829.1"/>	The monthly installments owed by the borrower
Log Annual Income	<input type="text" value="11.35040654"/>	Natural log of the self-reported annual income of the borrower
Debt-to-Income	<input type="text" value="19.48"/>	The debt-to-income ratio of the borrower (amount of debt divided by annual income)
FICO	<input type="text" value="737"/>	FICO credit score of the borrower
Days with Credit Line	<input type="text" value="5639.958333"/>	The number of days the borrower has had a credit line
Revolving Balance	<input type="text" value="28854"/>	The borrower's revolving balance (amount unpaid at the end of the credit card billing cycle)
Revolving Line Utilization	<input type="text" value="52.1"/>	The borrower's revolving line utilization rate (the amount of the credit line used relative to total credit available)
Inquiries in the last 6 months	<input type="text" value="0"/>	The borrower's number of inquiries by creditors in the last 6 months
30+ days past due on a payment	<input type="text" value="0"/>	The number of times the borrower had been 30+ days past due on a payment in the past 2 years
Derogatory Public Records	<input type="text" value="0"/>	The borrower's number of derogatory public records

Result

The user will fully pay the loan

8. You can enter to the web app with the following link <https://predictor-payment-loan-app.herokuapp.com/predict>