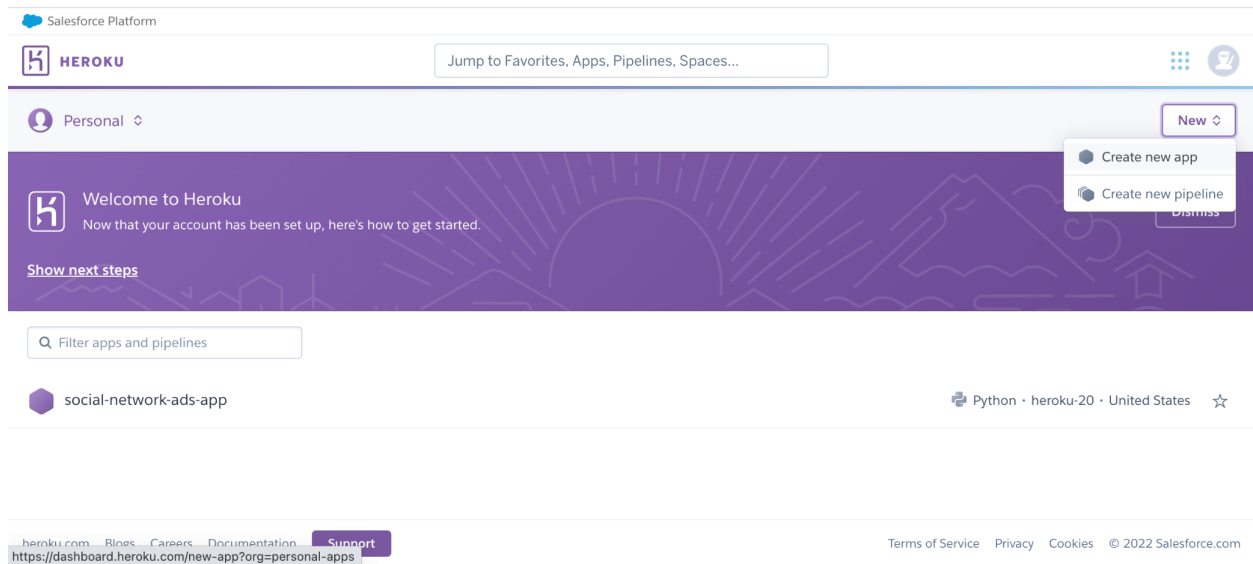Name: Batta Liu
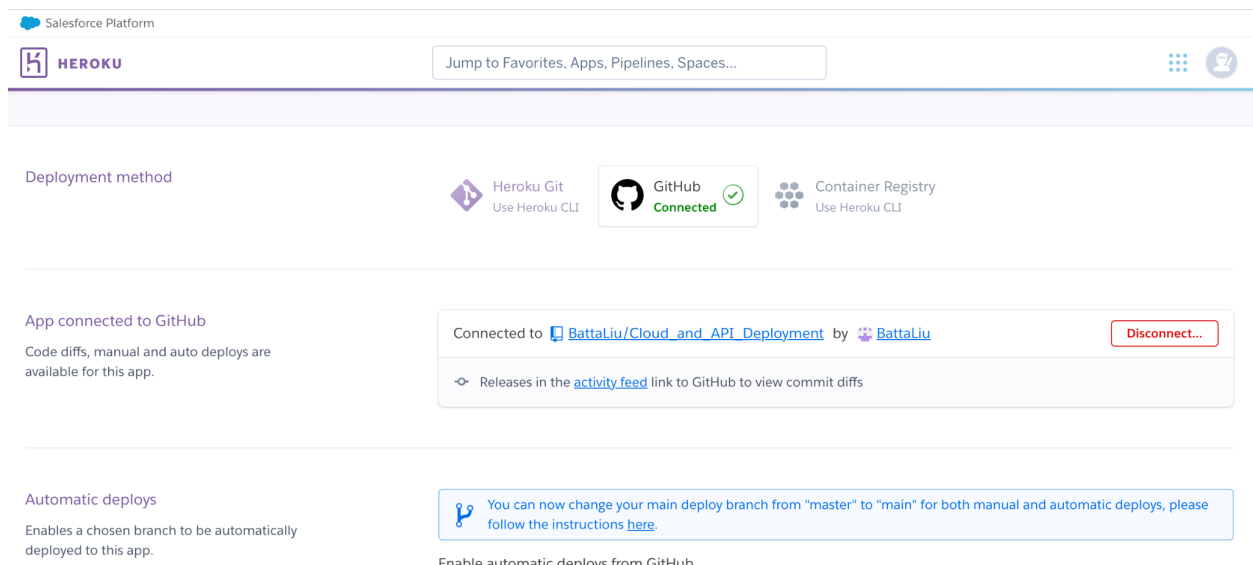Batch: LISUM10:30-Week 5 Cloud and API Deployment
Submission Date: July 5, 2022
Submitted to: Data Glacier and Data Science Group

Step 1: register on Heroku and create a new app named social-network-ads.app

Step 2: Connect the app with the target repository on Github

Step 3: Manually deploy the APP

In this step, I try to use the same toy model and files as in Week 4 assignment (Deployment on Flask). However, I encountered several errors in the deployment. so I looked into the log of

deployment from the Heroku dashboard and realized that '/predict' doesn't not support 'post' method, so I added methods=['POST'] to @app.route('/predict') and the problem got solved.

The other change I made is to loosen the package requirement in 'requirements.txt', change all '==' to '>=', and then the deployment went through smoothly.

Step 4: Testing the Web APP

Click the View button after deployment, the home page opened.

Put some numbers into the APP, and it returns the prediction.
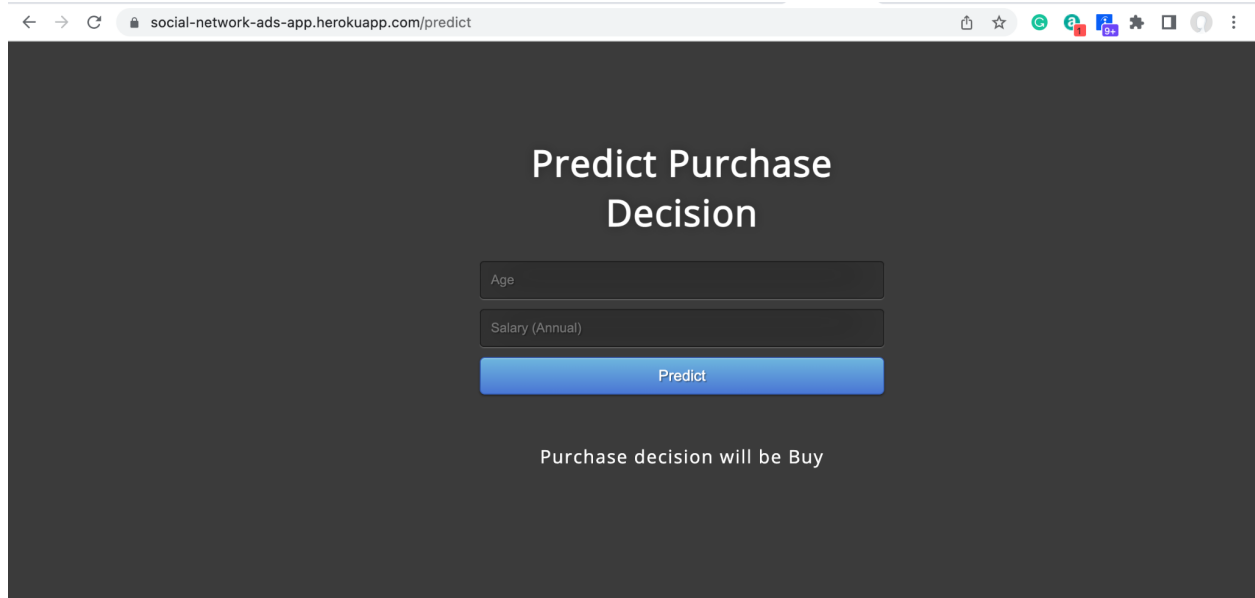
Step 5: rewrite my app.py (name is battapp.py) for API deployment

As Postman is Json based, I have to jsonify the input.

```python
#!/usr/bin/env python3
# -*- coding: utf-8 -*-
"""
Created on Tue Jun 28 00:49:58 2022

@author: batta
"""
import pandas as pd
from flask import Flask, jsonify, request
import pickle

app = Flask(__name__)
model = pickle.load(open('knn_model.pkl', 'rb'))

@app.route('/')
def home():
    data = "Hello world!"
    return jsonify({'data':data})

@app.route('/predict',methods=['GET','POST'])
def predict():
    '''
    For rendering results on HTML GUI
    '''
    age = request.args.get('age')
    estimated_salary = request.args.get('estimated_salary')
    test_df = pd.DataFrame({'Age': [age], 'Income': [estimated_salary]})
    prediction = model.predict(test_df)
    def int_to_word(decision):
        word_dict = {0:"Not buy", 1:"Buy"}
        return word_dict[decision]
    output = int_to_word(prediction[0])
    return jsonify({'Purchase Decision:': output})

if __name__ == "__main__":
    app.run(port = 3232,debug=True)
```

Step 6: test the api on postman

http://127.0.0.1:3232/

Save

GET | http://127.0.0.1:3232/ | Send

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

Query Params

KEY	VALUE	DESCRIPTION	ooo	Bulk Ed
Key	Value	Description		

Body | Cookies | Headers (5) | Test Results   200 OK 34 ms 194 B Save Response

Pretty | Raw | Preview | Visualize | JSON ∨

```
1  {
2      "data": "Hello world!"
3  }
```

http://127.0.0.1:3232/predict?age=35&estimated_salary=30000

Save

GET http://127.0.0.1:3232/predict?age=35&estimated_salary=30000 Send

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

Query Params

	KEY	VALUE	DESCRIPTION	•••	Bulk Edit
☑	age	35			
☑	estimated_salary	30000			
	Key	Value	Description		

Body | Cookies | Headers (5) | Test Results   200 OK 56 ms 199 B   Save Response ⌄

Pretty | Raw | Preview | Visualize | JSON ⌄ | ⇥

```
1  {
2      "Purchase Decision:": "Buy"
3  }
```