

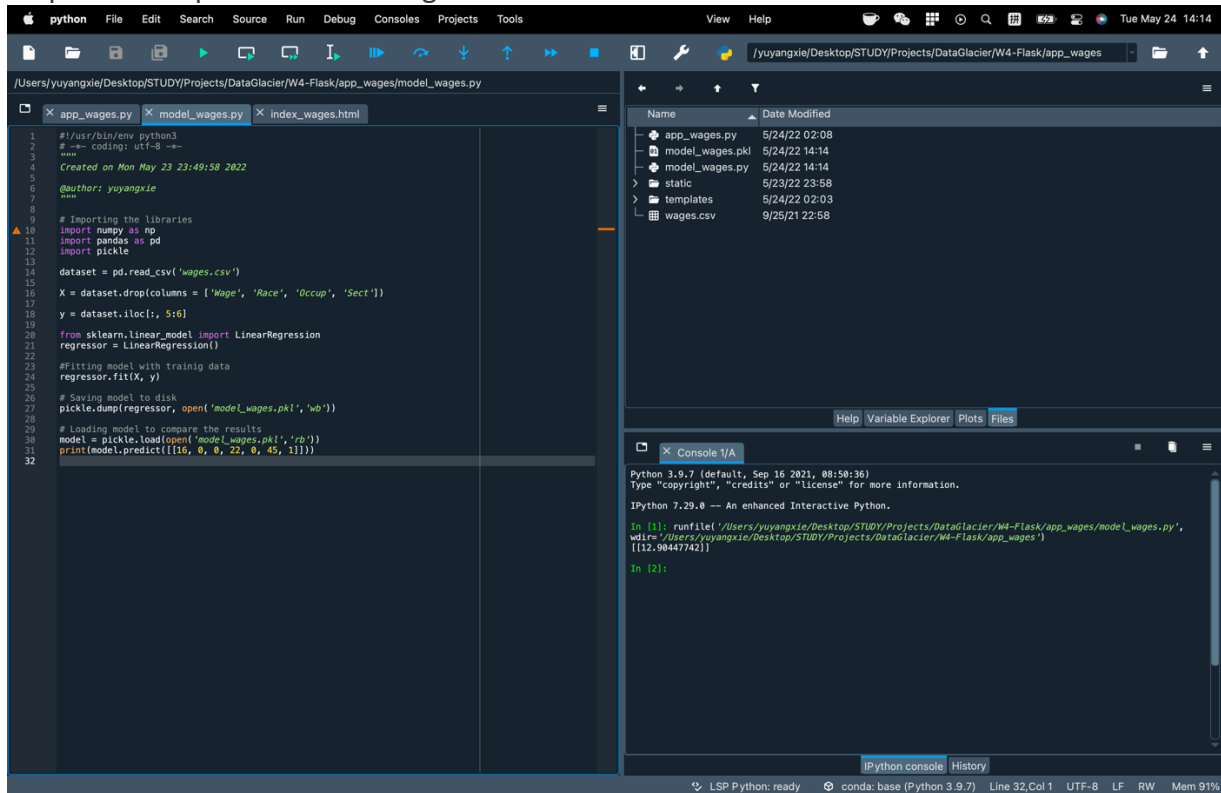
Week5: Cloud and API Deployment

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Batch code: LISUM09

Submission date: 06/01/2022

Step1: Write up the model fitting



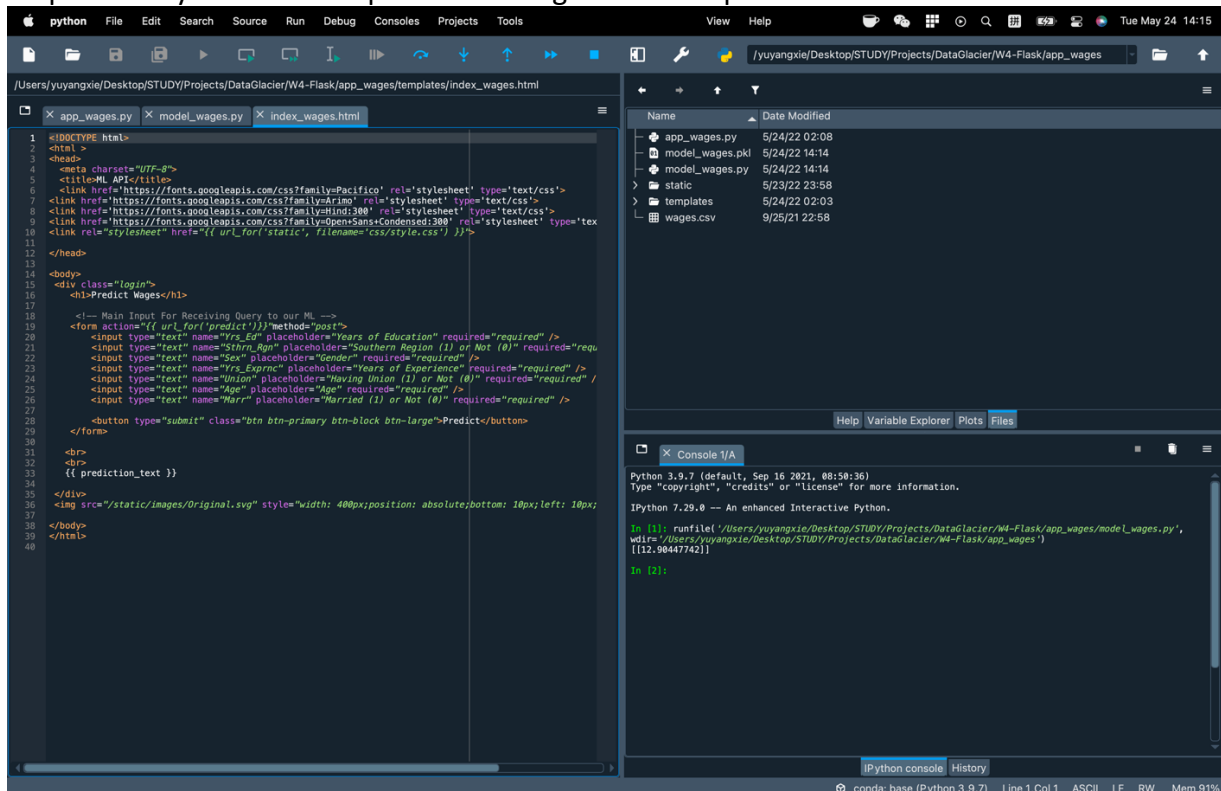
```
1 #!/usr/bin/env python3
2 # -*- coding: utf-8 -*-
3 """
4 Created on Mon May 23 23:49:58 2022
5
6 @author: yuyangxie
7 """
8
9 # Importing the libraries
10 import numpy as np
11 import pandas as pd
12 import pickle
13
14 dataset = pd.read_csv('wages.csv')
15 X = dataset.drop(columns = ['Wage', 'Race', 'Occup', 'Sect'])
16 y = dataset.iloc[:, 5:6]
17
18 from sklearn.linear_model import LinearRegression
19 regressor = LinearRegression()
20
21 #Fitting model with training data
22 regressor.fit(X, y)
23
24 # Saving model to disk
25 pickle.dump(regressor, open('model_wages.pkl', 'wb'))
26
27 # Loading model to compare the results
28 model = pickle.load(open('model_wages.pkl', 'rb'))
29 print(model.predict([[16, 0, 22, 0, 45, 1]]))
30
```

Python 3.9.7 (default, Sep 16 2021, 08:50:36)
Type "copyright", "credits" or "license()" for more information.
IPython 7.29.0 -- An enhanced Interactive Python.

In [11]: runfile('/Users/yuyangxie/Desktop/STUDY/Projects/DataGlacier/W4-Flask/app_wages/model_wages.py',
wdir='/Users/yuyangxie/Desktop/STUDY/Projects/DataGlacier/W4-Flask/app_wages')
[[12.90447742]]

In [2]:

Step2: Modify the html template according to model inputs



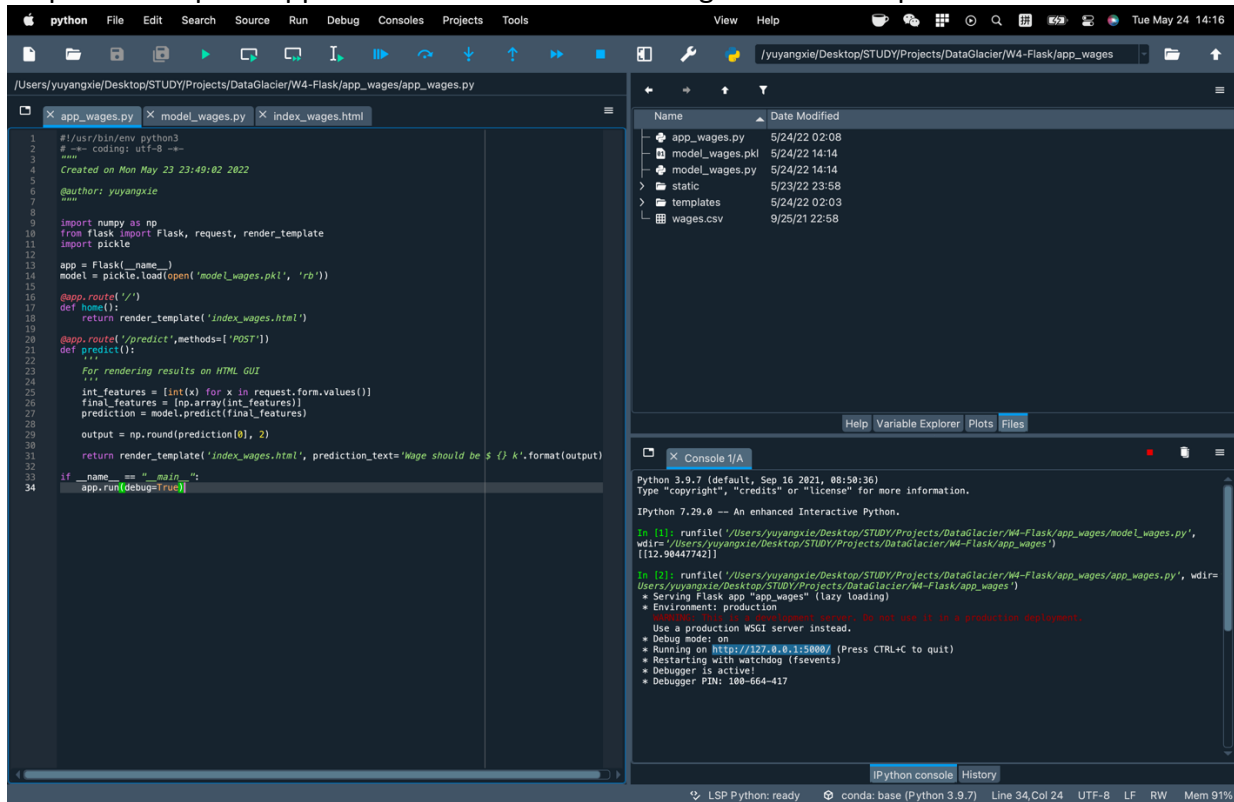
```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="UTF-8">
5 <title>ML API</title>
6 <link href="https://fonts.googleapis.com/css?family=Pacifico" rel="stylesheet" type="text/css">
7 <link href="https://fonts.googleapis.com/css?family=Arimo" rel="stylesheet" type="text/css">
8 <link href="https://fonts.googleapis.com/css?family=Lato:300" rel="stylesheet" type="text/css">
9 <link href="https://fonts.googleapis.com/css?family=Open+Sans: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 Wages</h1>
17
18 <!-- Main Input For Receiving Query to our ML -->
19 <form action="{{ url_for('predict')}}" method="post">
20 <input type="text" name="Yrs_Ed" placeholder="Years of Education" required="required" />
21 <input type="text" name="Sthrn_Rgn" placeholder="Southern Region (1) or Not (0)" required="required" />
22 <input type="text" name="Sex" placeholder="Gender" required="required" />
23 <input type="text" name="Yrs_Exp" placeholder="Years of Experience" required="required" />
24 <input type="text" name="Union" placeholder="Having Union (1) or Not (0)" required="required" />
25 <input type="text" name="Age" placeholder="Age" required="required" />
26 <input type="text" name="Married" placeholder="Married (1) or Not (0)" required="required" />
27
28 <button type="submit" class="btn btn-primary btn-block btn-large">Predict</button>
29
30 </form>
31
32 <br>
33 <br>
34 {{ prediction_text }}
35
36 </div>
37
38 </body>
39 </html>
40
```

Python 3.9.7 (default, Sep 16 2021, 08:50:36)
Type "copyright", "credits" or "license()" for more information.
IPython 7.29.0 -- An enhanced Interactive Python.

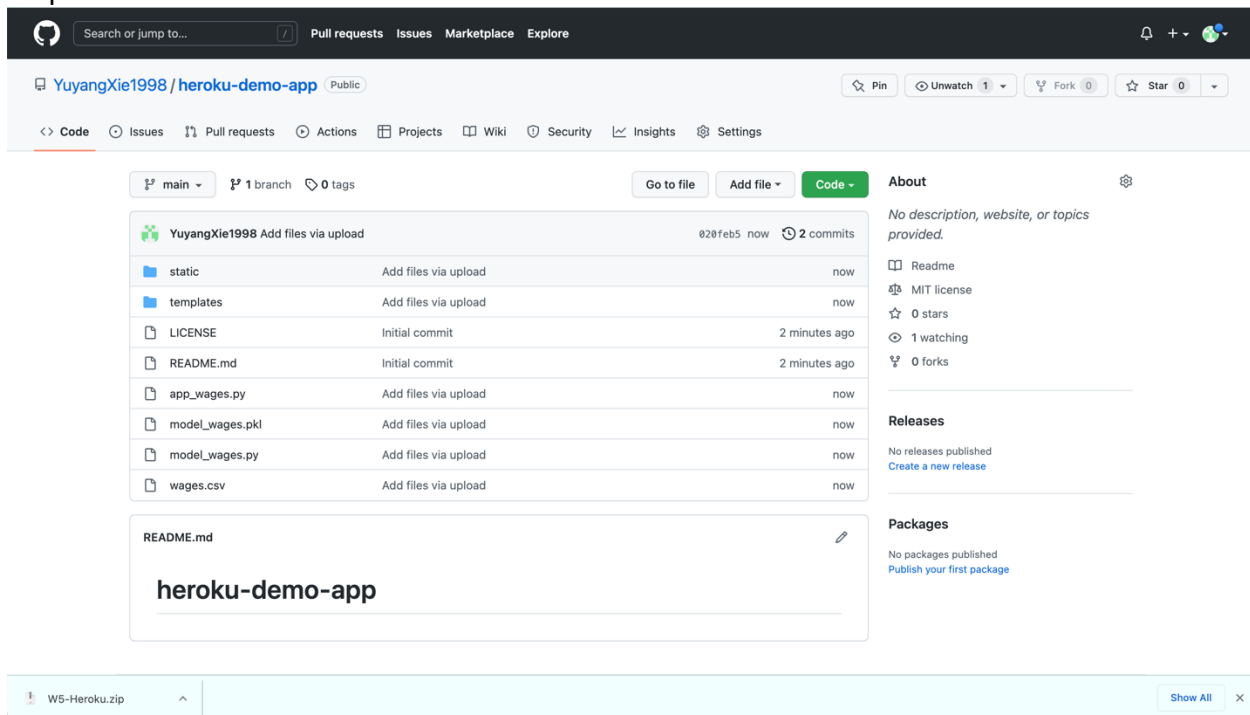
In [11]: runfile('/Users/yuyangxie/Desktop/STUDY/Projects/DataGlacier/W4-Flask/app_wages/model_wages.py',
wdir='/Users/yuyangxie/Desktop/STUDY/Projects/DataGlacier/W4-Flask/app_wages')
[[12.90447742]]

In [2]:

Step3: Write up the application based on model fitting and html template



Step4: Commit code on Github



Step5: Link Github Repo to Heroku

Salesforce Platform

HEROKU

Jump to Favorites, Apps, Pipelines, Spaces...

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 **Connected**

Container Registry Use Heroku CLI

App connected to GitHub

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

Connected to [YuyangXie1998/heroku-demo-app](#) by [YuyangXie1998](#) [Disconnect...](#)

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

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](#).

Enable automatic deploys from GitHub

Every push to the branch you specify here will deploy a new version of this app. **Deploys happen automatically:** be sure that this branch is always in a deployable state and any tests have passed before you push. [Learn more](#).

Choose a branch to deploy

Step6: Deploy the ML Model manually

Salesforce Platform

HEROKU

Jump to Favorites, Apps, Pipelines, Spaces...

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

Receive code from GitHub

Build main cc1ea9c3

```

-----
----> Installing requirements with pip
----> Discovering process types
Procfile declares types => (none)
----> Compressing...
Done: 192.3M
----> Launching...
Released v4
https://heroku-demo-app-yuyangxie.herokuapp.com/ deployed to Heroku
  
```

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

Release phase

Deploy to Heroku

heroku.com Blogs Careers Documentation [Support](#)

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Step7: Open up the local address to review

Predict Wages

Years of Education

Southern Region (1) or Not (0)

Gender


Years of Experience

Having Union (1) or Not (0)

Age

Married (1) or Not (0)

Predict

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Step8: Try the predicting function

Predict Wages

Years of Education

Southern Region (1) or Not (0)

Gender

Years of Experience


Having Union (1) or Not (0)

Age

Married (1) or Not (0)

Predict

Wage should be \$ [12.9] k

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