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Batch code: LISUM 15

Submission date: Dec 5th 2022

Submitted to: week 5 deployment on Heroku cloud

Model description:

This file records snapshots of deploying a logistic regression model on flask. The dataset is the record of personal information for passengers of the Titanic, as well as whether they survived through the hazard. For this model, by entering user's personal information, the model will predict whether the user can survive from the Titanic shipwreck.

Step 1:

Firstly we need to train the model by our dataset titanic_train.csv. Here is the model.py function which uses logistic regression.

model.py - E:\data glacier\wk5\heroku_deployment\model.py (3.9.12)

File Edit Format Run Options Window Help

```
# importing libraries
import numpy as np
import pandas as pd
import pickle

train = pd.read_csv('titanic_train.csv')

sex = pd.get_dummies(train['Sex'], drop_first=True)

train.drop(['Cabin','Sex','Embarked','Name','Ticket','PassengerId'], axis=1, inpla

train = pd.concat([train, sex], axis=1)

train.dropna(inplace=True)

X = train.drop('Survived', axis=1)
print(X)
y = train['Survived']
print(y)

from sklearn.linear_model import LogisticRegression
logmodel = LogisticRegression()

logmodel.fit(X, y)

pickle.dump(logmodel, open('model.pkl','wb'))
```

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Step 2: after we are done with the model training, we create the app that enables us to actually run the model and make predictions. Other files, including the folder static and template, are from the online google drive.

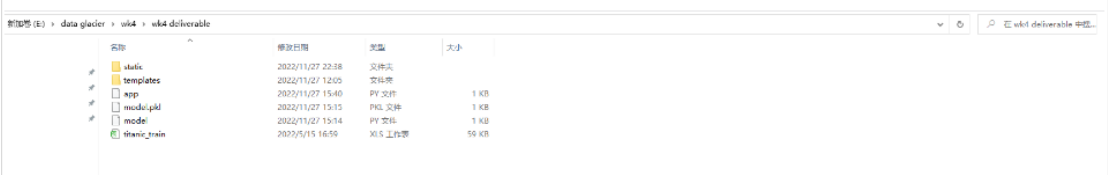
app.py - E:\data glacier\wk5\heroku_deployment\app.py (3.9.12)

File Edit Format Run Options Window Help

```
import numpy as np
from flask import Flask, request,render_template
import pickle
app = Flask(__name__)
model = pickle.load(open('model.pkl', 'rb'))

@app.route('/')
def home():
    return render_template('index.html')

@app.route('/predict',methods=['POST'])
def predict():
    '''
    For rendering results on HTML GUI
    '''
    int_features = [int(x) for x in request.form.values()]
    final_features = [np.array(int_features)]
    prediction = model.predict(final_features)

    output = round(prediction[0], 2)

    if output == 0:
        return render_template('index.html', prediction_text='Predicted survivin
    elif output == 1:
        return render_template('index.html', prediction_text='Predicted survivin

if __name__ == "__main__":
    app.run()
```

Step 3: After all the files are ready, we start by navigating to the local directory:

```
C:\Users\HGY>E:

E:\>cd E:\data glacier\wk4\wk4 deliverable

E:\data glacier\wk4\wk4 deliverable>
```

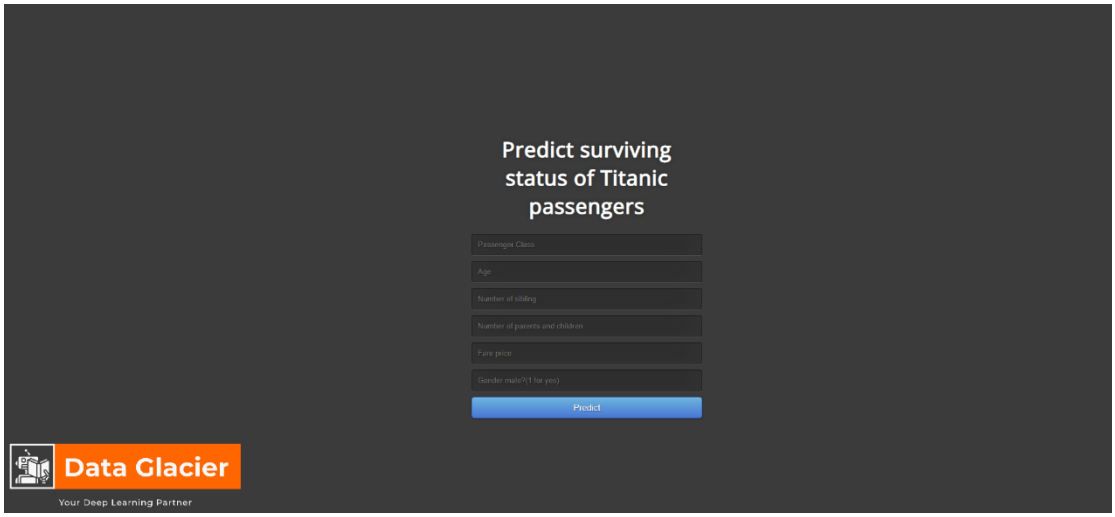


Step 4: Then we run the app.py file:

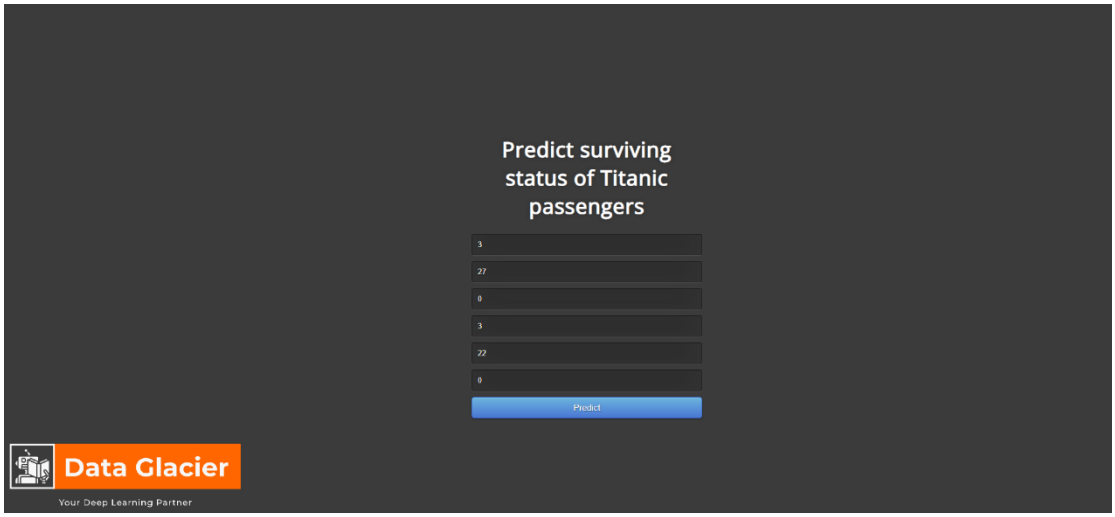
```
E:\data glacier\wk4\wk4 deliverable>python app.py
E:\python\lib\site-packages\sklearn\base.py:329: UserWarning: Trying to unpickle estimator LogisticRegression from versi
on 1.1.1 when using version 1.1.3. This might lead to breaking code or invalid results. Use at your own risk. For more i
nfo please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
  warnings.warn(
 * Serving Flask app 'app'
 * Debug mode: on
```

Step 5: The flask app is up and running, let’s enter the homepage via Chrome:

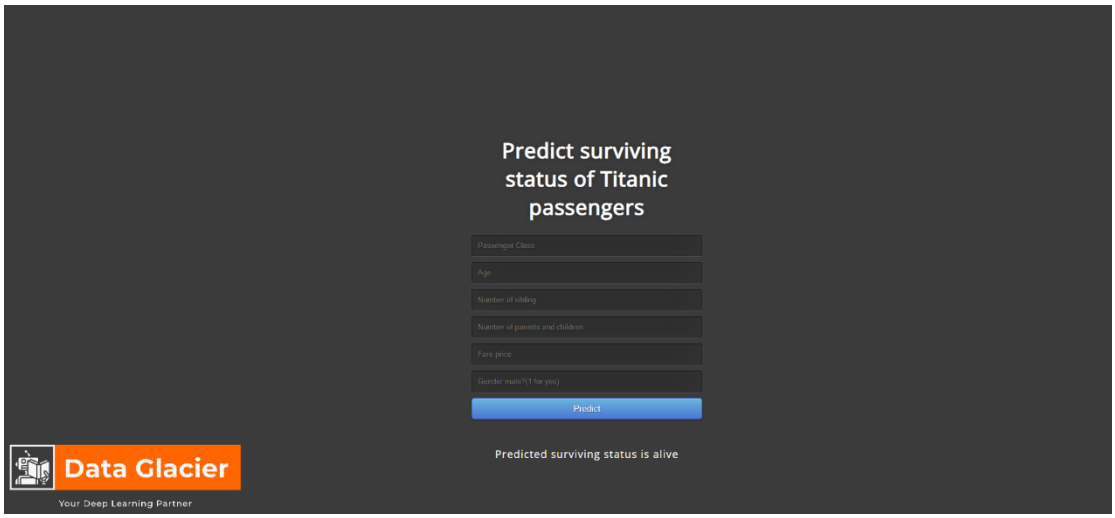
```
E:\data glacier\wk4\wk4 deliverable>python app.py
E:\python\lib\site-packages\sklearn\base.py:329: UserWarning: Trying to unpickle estimator LogisticRegression from versi
on 1.1.1 when using version 1.1.3. This might lead to breaking code or invalid results. Use at your own risk. For more i
nfo please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
  warnings.warn(
 * 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
```



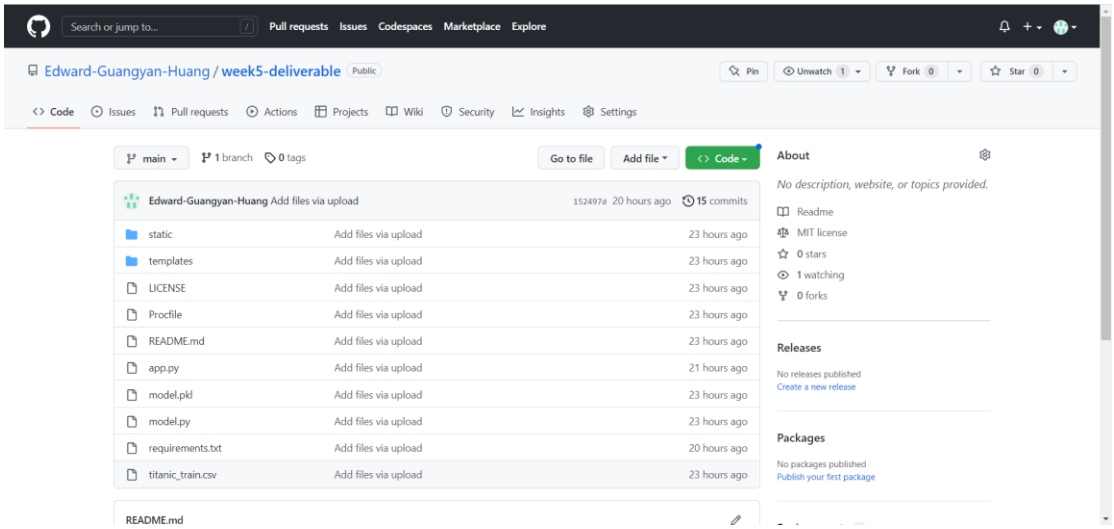
Step 6: Enter passenger class, age, number of siblings, number of parents and children, ticket fare as well as gender to the model. Then click predict.



Step 7: The prediction outcome shows up on the screen.

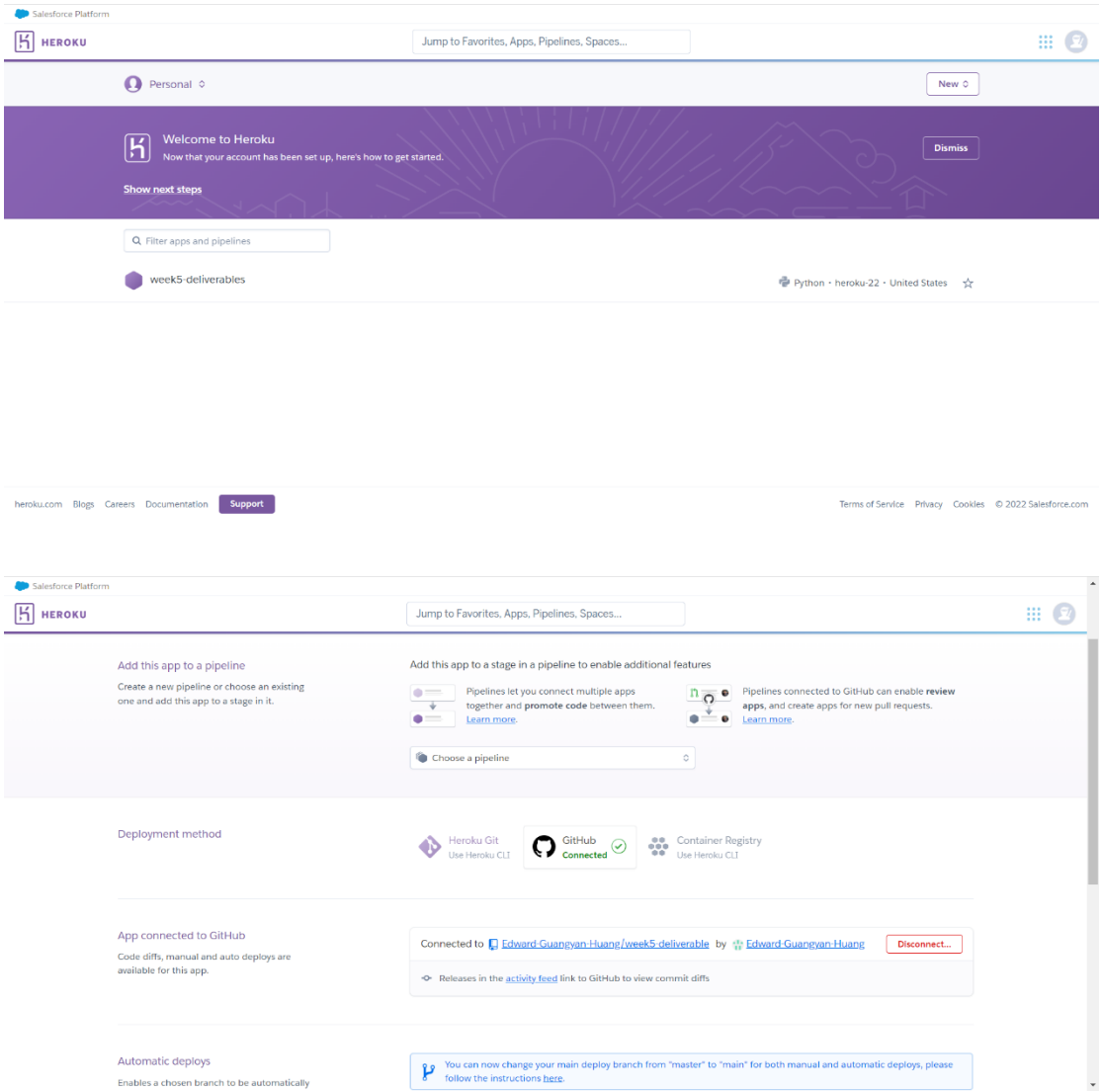


Step 8: Given the file is good to run on our local device, we upload it to Heroku for cloud deployment. Before this we need to upload all relevant files to Github.

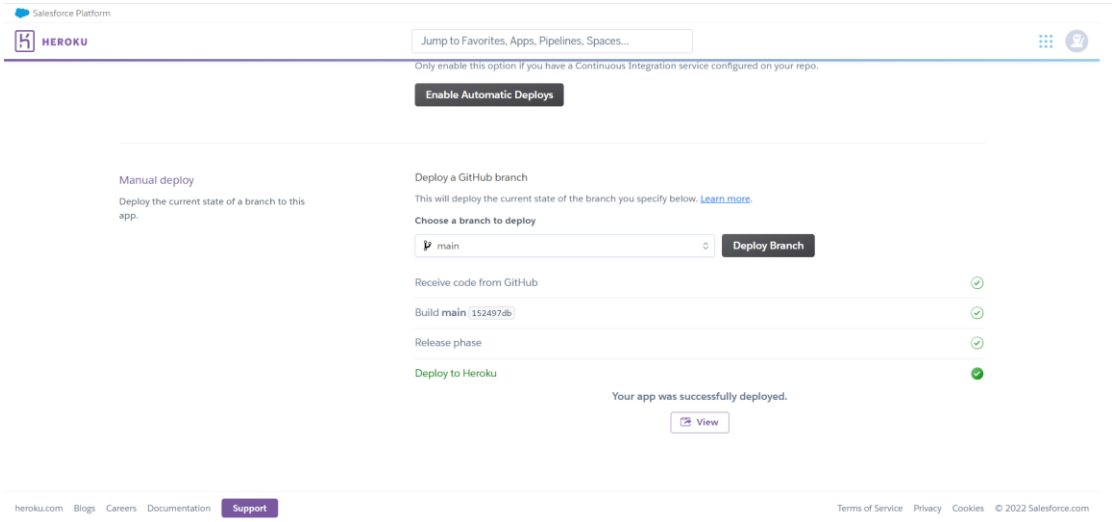


The file Procfile and requirements are from google drive with crucial information for deployment on Heroku.

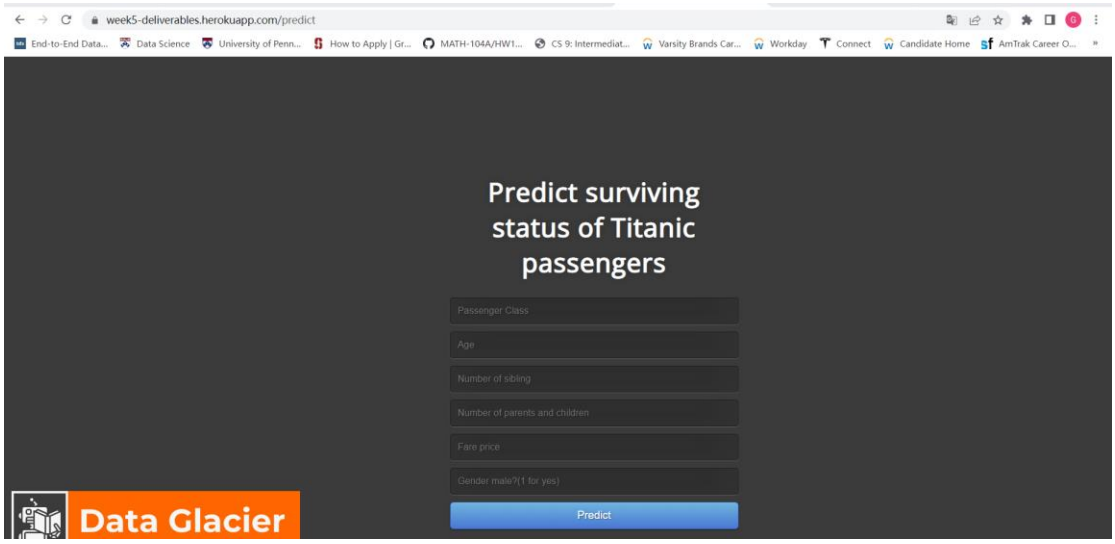
Step 9: After creating the Github repository, we create an app on Heroku and link this repository to the app.



Step 10: at the ‘manual deploy’ part, click ‘Deploy branch’. After clicking ‘Deploy Branch’, wait a few minutes and the cloud app will be ready to view by clicking the ‘view’ button.



Step 11: after clicking ‘view’, the app we deployed locally will pop up, notice now its url is a url from Heroku, not 127.0.0.5000



Step 12: Put in data for the new prediction and click button ‘predict’, the result will show up.