Cloud and API deployment

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Batch code: LISUM19
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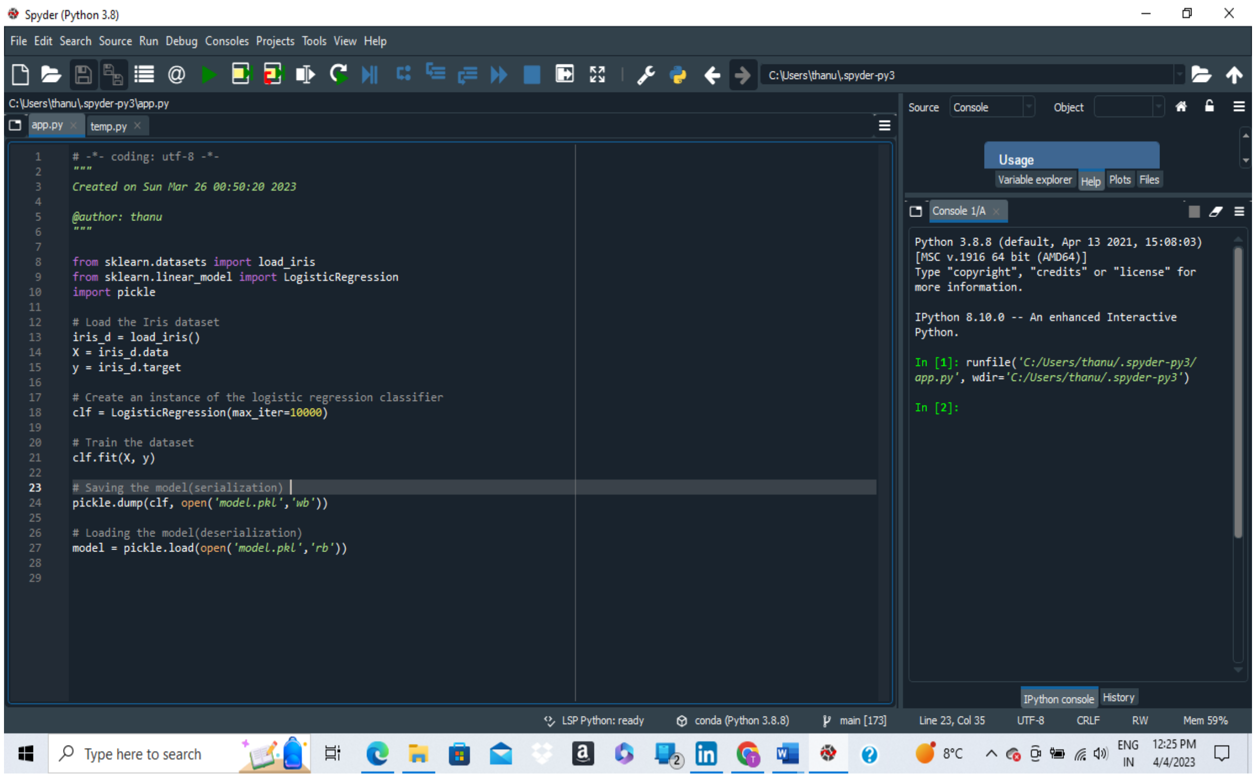
Submitted to: Data Glacier

Steps of deployment:

1. Select the simple toy data.
   Here, we are selecting 'iris data'. Here, we are using iris data. This data consists of 150 observations and 4 features(sepal length, sepal width, petal length, and petal width). There are 3 species of iris flowers Setosa, Versicolor, and Virginica. These are the target variables.
2. Save the model.
   In this code, we are loading the dataset. And training the model to predict species of the flower based on its four features and saving it.



```
# -*- coding: utf-8 -*-
"""
Created on Sun Mar 26 00:50:20 2023

@author: thanu
"""

from sklearn.datasets import load_iris
from sklearn.linear_model import LogisticRegression
import pickle

# Load the Iris dataset
iris_d = load_iris()
X = iris_d.data
y = iris_d.target

# Create an instance of the logistic regression classifier
clf = LogisticRegression(max_iter=10000)

# Train the dataset
clf.fit(X, y)

# Saving the model(serialization)
pickle.dump(clf, open('model.pkl','wb'))

# Loading the model(deserialization)
model = pickle.load(open('model.pkl','rb'))
```

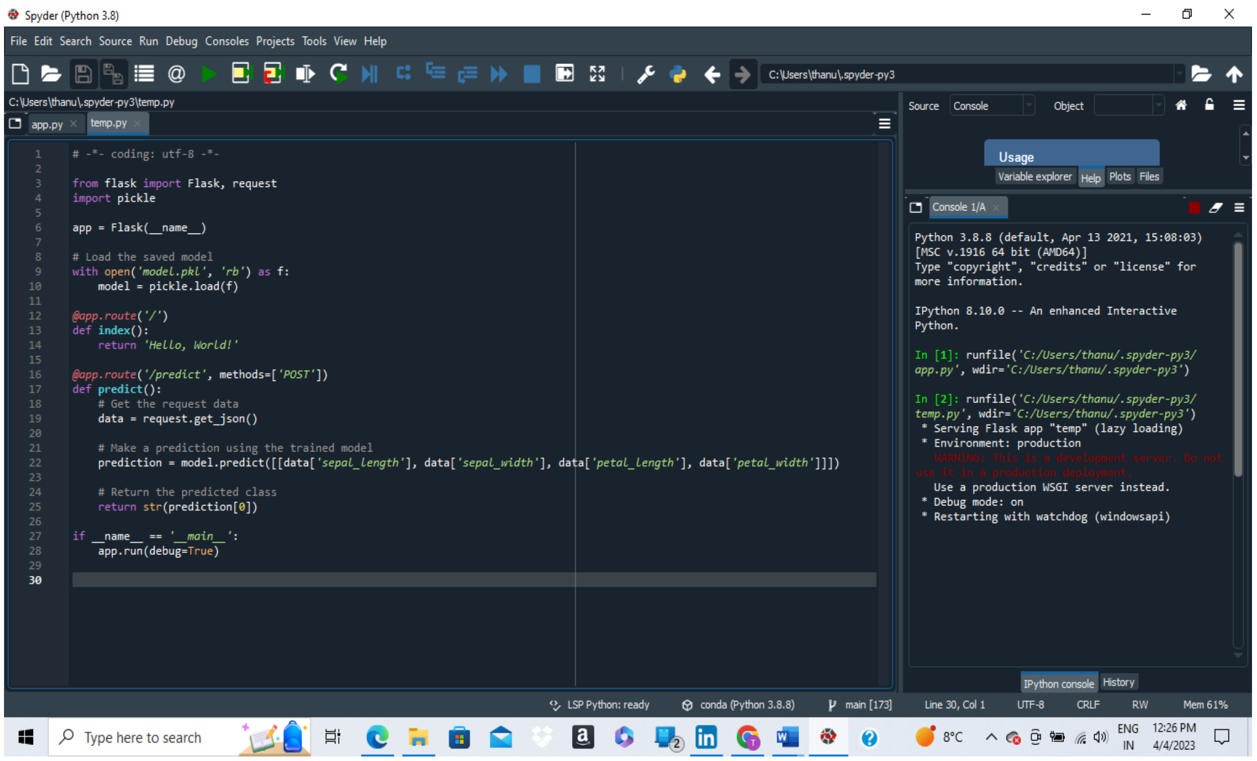
```
Python 3.8.8 (default, Apr 13 2021, 15:08:03)
[MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for
more information.

IPython 8.10.0 -- An enhanced Interactive
Python.

In [1]: runfile('C:/Users/thanu/.spyder-py3/
app.py', wdir='C:/Users/thanu/.spyder-py3')

In [2]:
```

3. Deploy the model on Heroku.
   The web app is created using Flask.



```python
# -*- coding: utf-8 -*-

from flask import Flask, request
import pickle

app = Flask(__name__)

# Load the saved model
with open('model.pkl', 'rb') as f:
    model = pickle.load(f)

@app.route('/')
def index():
    return 'Hello, World!'

@app.route('/predict', methods=['POST'])
def predict():
    # Get the request data
    data = request.get_json()

    # Make a prediction using the trained model
    prediction = model.predict([[data['sepal_length'], data['sepal_width'], data['petal_length'], data['petal_width']]])

    # Return the predicted class
    return str(prediction[0])

if __name__ == '__main__':
    app.run(debug=True)
```

```
Python 3.8.8 (default, Apr 13 2021, 15:08:03)
[MSC v.1916 64 bit (AMD64)]
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more information.

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Python.

In [1]: runfile('C:/Users/thanu/.spyder-py3/
app.py', wdir='C:/Users/thanu/.spyder-py3')

In [2]: runfile('C:/Users/thanu/.spyder-py3/
temp.py', wdir='C:/Users/thanu/.spyder-py3')
 * Serving Flask app "temp" (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not
use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with watchdog (windowsapi)
```
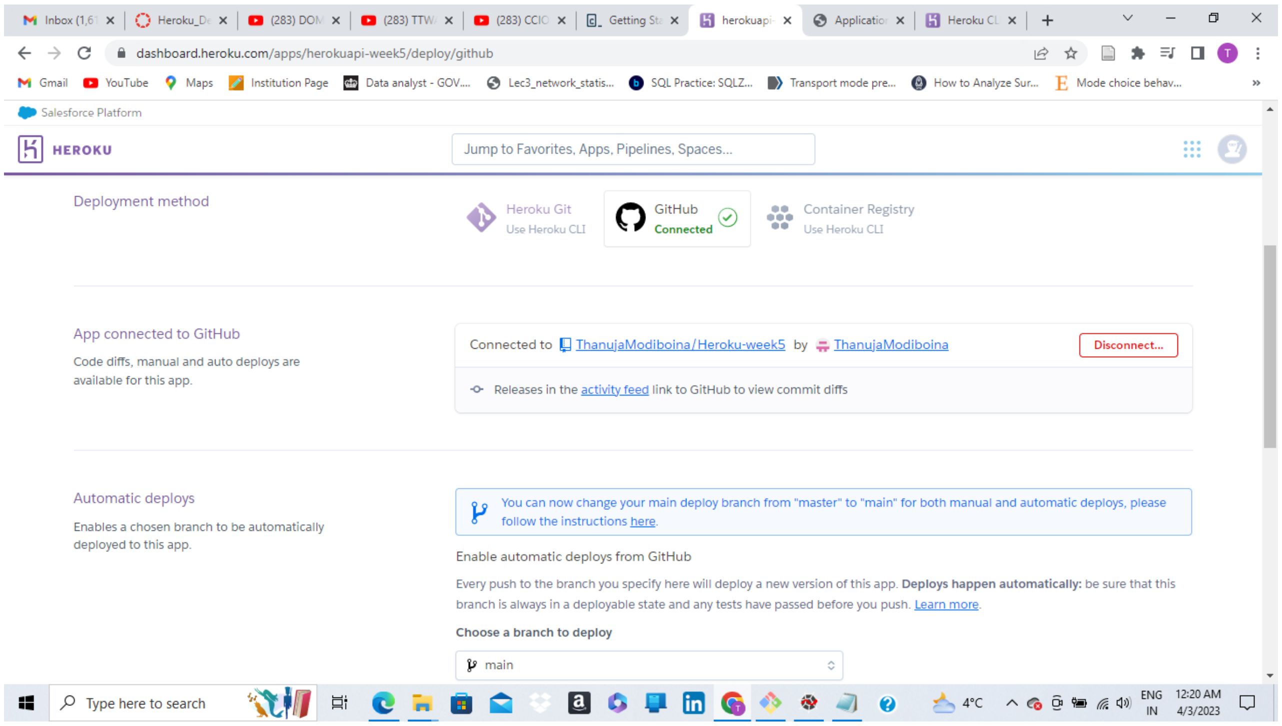

4. In Heroku, connect the GitHub. The newly created app in Heroku is connected with GitHub.



dashboard.heroku.com/apps/herokuapi-week5/deploy/github

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 ThanujaModiboina/Heroku-week5 by ThanujaModiboina — 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.

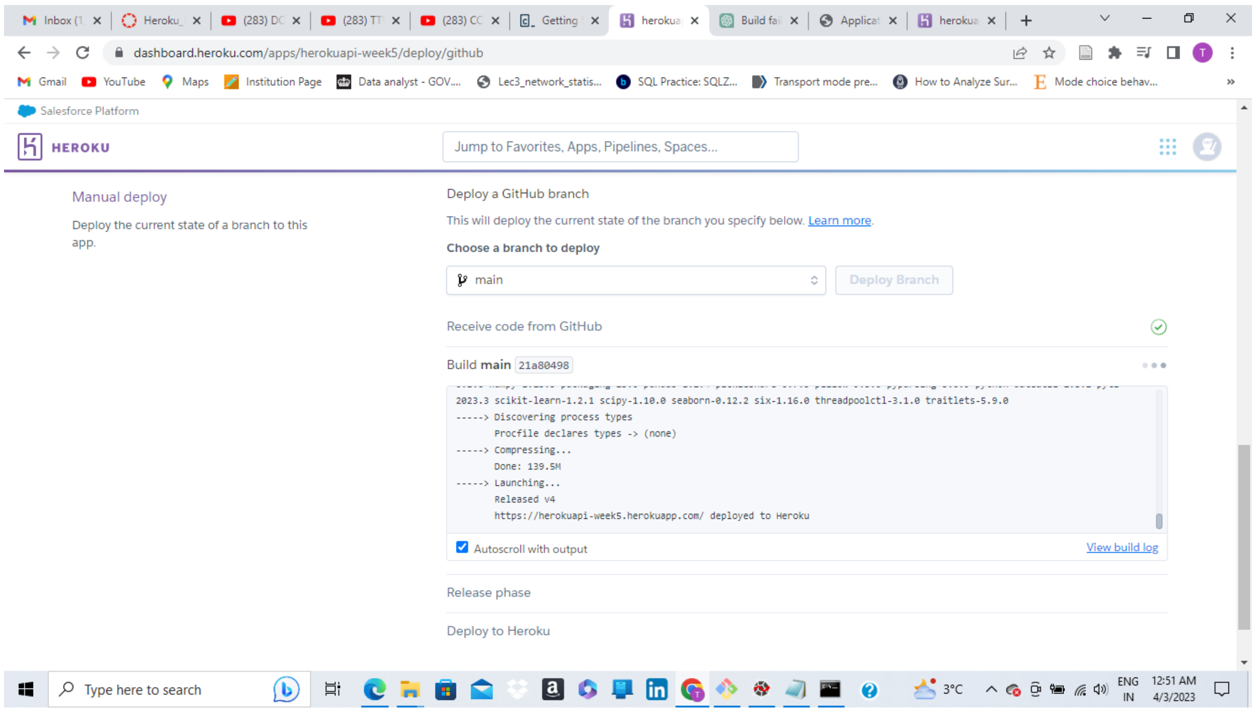
Enable automatic deploys from GitHub

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

main

Deploy the model in Heroku.



dashboard.heroku.com/apps/herokuapi-week5/deploy/github

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 21a80498

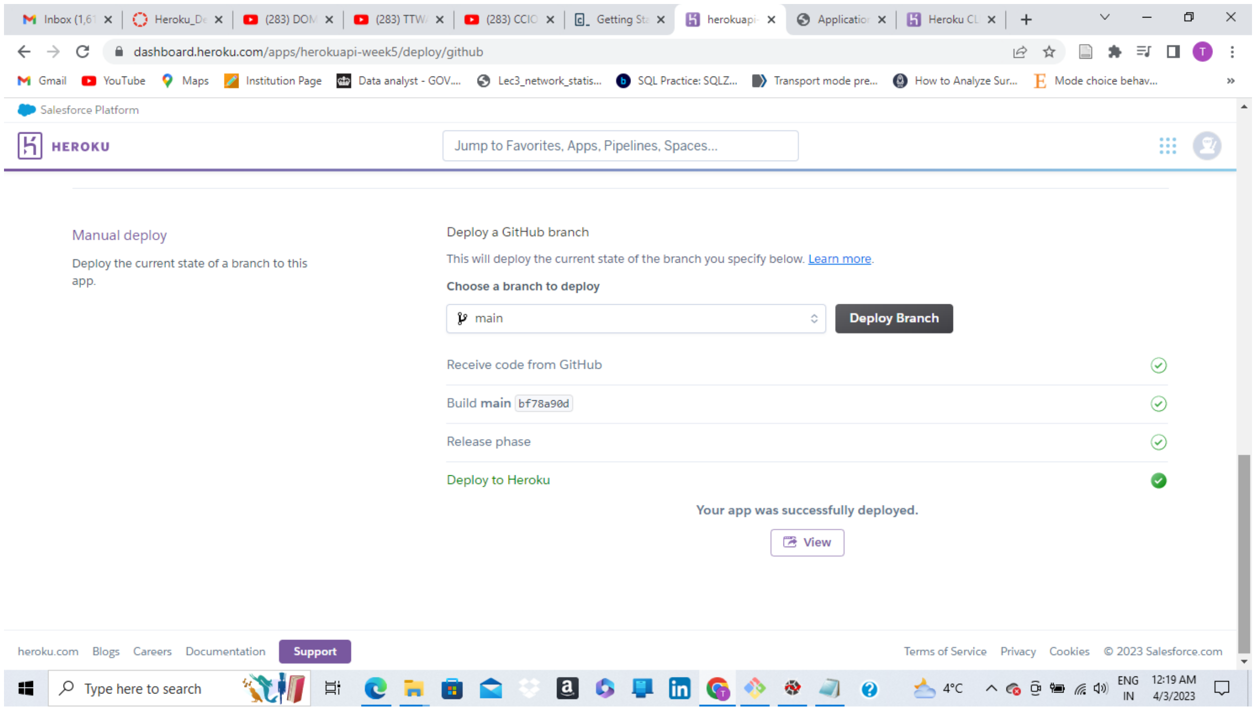
```
2023.3 scikit-learn-1.2.1 scipy-1.10.0 seaborn-0.12.2 six-1.16.0 threadpoolctl-3.1.0 traitlets-5.9.0
-----> Discovering process types
       Procfile declares types -> (none)
-----> Compressing...
       Done: 139.5M
-----> Launching...
       Released v4
       https://herokuapi-week5.herokuapp.com/ deployed to Heroku
```

[✓] Autoscroll with output | View build log

Release phase

Deploy to Heroku

The app was successfully deployed to Heroku.



dashboard.heroku.com/apps/herokuapi-week5/deploy/github

Manual deploy

Deploy the current state of a branch to this app.

Deploy a GitHub branch

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Choose a branch to deploy

main | Deploy Branch

Receive code from GitHub ✓

Build main bf78a90d ✓

Release phase ✓

Deploy to Heroku ✓

Your app was successfully deployed.

View