Week 5: Cloud Deployment on Heroku

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Batch Code: **LISP01**

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Submitted to: **Data Glacier**

Step 1: Flask API

Welcome | app.py | style.css | index.html

app.py > predict

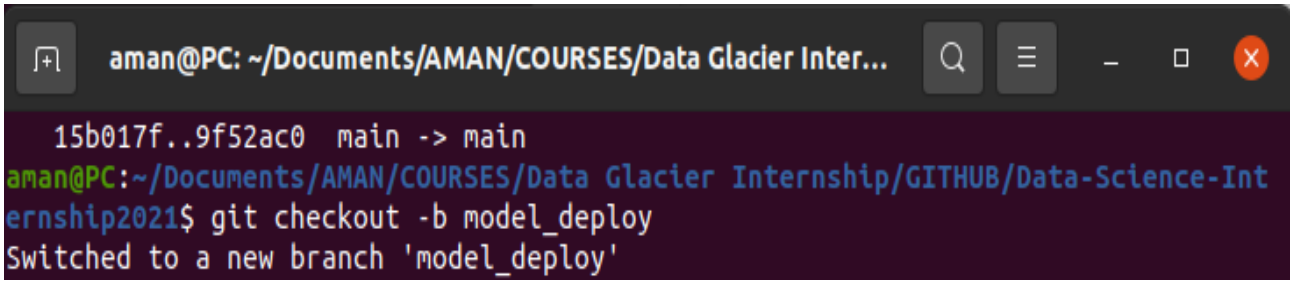
```python
import numpy as np
import pickle
from flask import Flask, request, render_template

app = Flask(__name__)
model = pickle.load(open('model/model.sav', 'rb'))

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

@app.route('/predict', methods=['POST'])
def predict():
    flag = False
    if request.method == "POST":
        bedroom = int(request.form.get('bedroom'))
        bathroom = int(request.form.get('bathroom'))
        surface = float(request.form.get('surface'))
        longitude = float(request.form.get('longitude'))
        latitude = float(request.form.get('latitude'))
        ptype = int(request.form.get('ptype'))

        raw_features = [bathroom, bedroom, surface, longitude, latitude, ptype]
        features = [np.array(raw_features)]

        prediction = model.predict(features)
        output = round(prediction[0], 2)
        return render_template('index.html',flag=True, prediction_text=f'House price should be €{output}.')

```

Step 2: Added requirements.txt

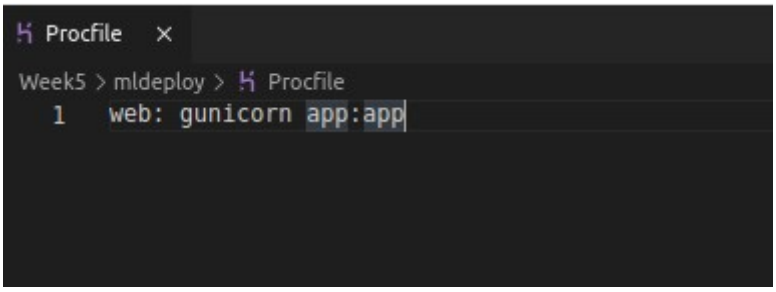
aman@PC: ~/Documents/AMAN/COURSES/Data Glacier Inter...

```
aman@PC:~/Documents/AMAN/COURSES/Data Glacier Internship/GITHUB/Data-Science-Int
ernship2021/Week 5/mldeploy$ pip freeze > requirements.txt
WARNING: Could not generate requirement for distribution -ip 21.0 (/usr/local/li
b/python3.8/dist-packages): Parse error at "'-ip==21.'": Expected W:(abcd...)
aman@PC:~/Documents/AMAN/COURSES/Data Glacier Internship/GITHUB/Data-Science-Int
ernship2021/Week 5/mldeploy$ less requirements.txt
aman@PC:~/Documents/AMAN/COURSES/Data Glacier Internship/GITHUB/Data-Science-Int
ernship2021/Week 5/mldeploy$ git add .
aman@PC:~/Documents/AMAN/COURSES/Data Glacier Internship/GITHUB/Data-Science-Int
ernship2021/Week 5/mldeploy$ cd ..
aman@PC:~/Documents/AMAN/COURSES/Data Glacier Internship/GITHUB/Data-Science-Int
ernship2021/Week 5$ cd ..
aman@PC:~/Documents/AMAN/COURSES/Data Glacier Internship/GITHUB/Data-Science-Int
ernship2021$ git add .
aman@PC:~/Documents/AMAN/COURSES/Data Glacier Internship/GITHUB/Data-Science-Int
ernship2021$ git commit -m "Week 5 files added"
[main 15b017f] Week 5 files added
 103 files changed, 47376 insertions(+)
 create mode 100644 Week 5/mldeploy/.gitignore
 create mode 100644 Week 5/mldeploy/Procfile
 create mode 100644 Week 5/mldeploy/app.py
 create mode 100644 Week 5/mldeploy/model/model.sav
 create mode 100644 Week 5/mldeploy/requirements.txt
 create mode 100755 Week 5/mldeploy/static/css/main.css
```

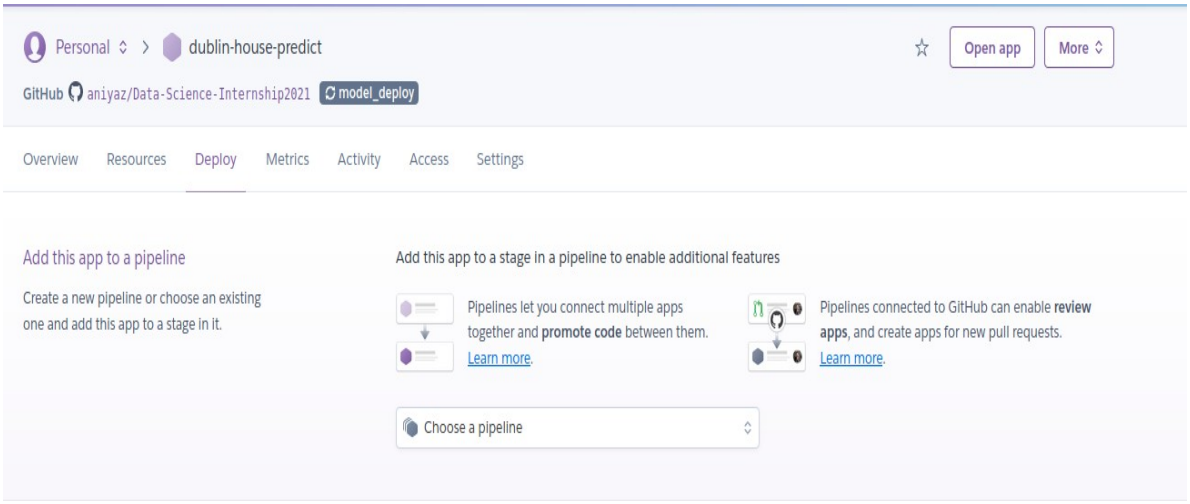
Step 3: **Create another branch for Heroku deployment**



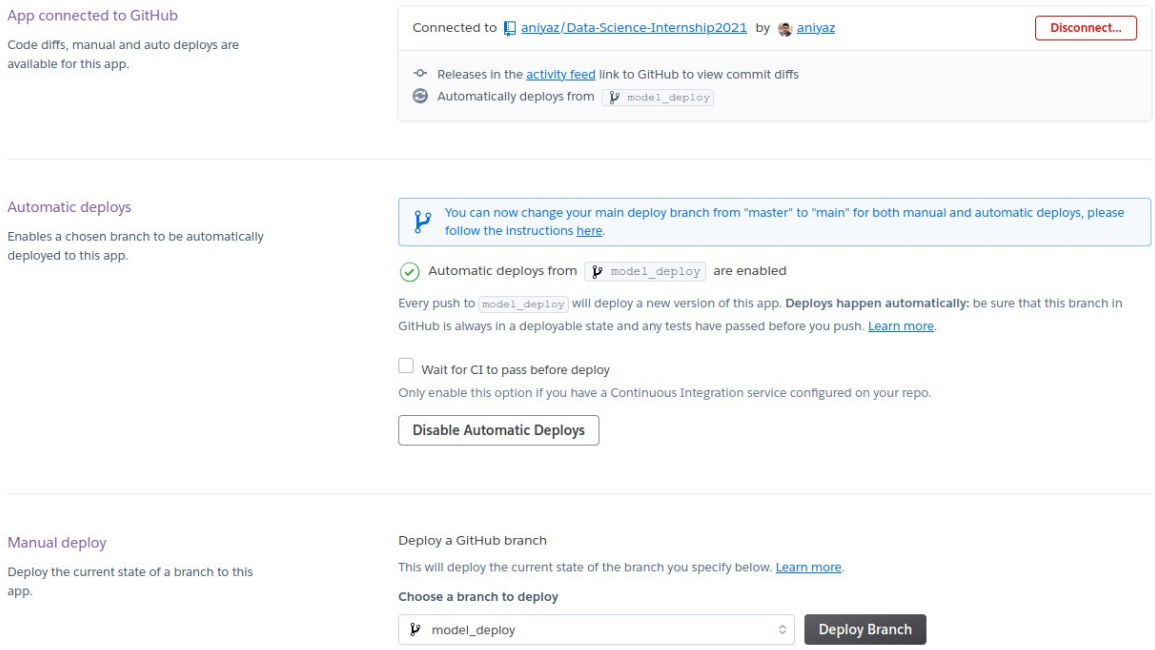
Step 4: **Create Procfile for Heroku**



Step 5: **Create a new app in Heroku:** ***dublin-house-predict***



<u>Step 6:</u> Select the repo from Github and select a branch in which application is written and then deploy



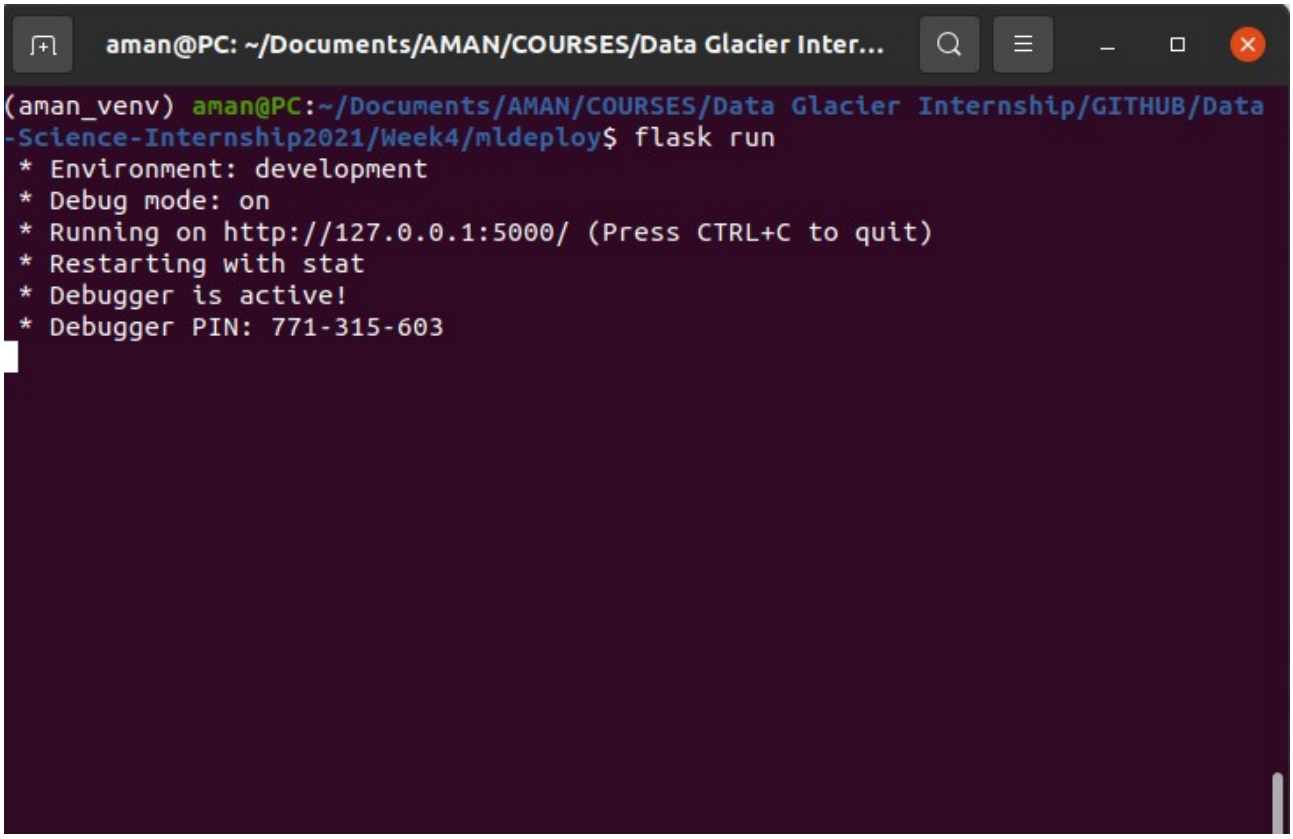
<u>Step 7:</u> Heroku install the necessay requirements and then finishes the build and deploy it.

```
        Downloading typed_ast-1.4.2-cp36-cp36m-manylinux1_x86_64.whl (743 kB)
      Collecting decorator>=4.3.0
        Downloading decorator-4.4.2-py2.py3-none-any.whl (9.2 kB)
      Building wheels for collected packages: sklearn, gunicorn, wrapt
        Building wheel for sklearn (setup.py): started
        Building wheel for sklearn (setup.py): finished with status 'done'
        Created wheel for sklearn: filename=sklearn-0.0-py2.py3-none-any.whl size=1315 sha256=a63112d097b0638e35043a96c343f783dc196d3e507cf355417fc126f10213a1
        Stored in directory: /tmp/pip-ephem-wheel-cache-b9amznpt/wheels/23/9d/42/5ec745cbbb17517000a53cecc49d6a865450d1f5cb16dc8a9c
        Building wheel for gunicorn (setup.py): started
        Building wheel for gunicorn (setup.py): finished with status 'done'
        Created wheel for gunicorn: filename=gunicorn-20.1.0-py3-none-any.whl size=78918 sha256=00e47bee94e04f0fd67c8ec79b78eb8937f76fe5e32527ab669737d971275d92
        Stored in directory: /tmp/pip-ephem-wheel-cache-b9amznpt/wheels/9a/86/37/cad4bc71746b420e17c4eb0f5c41cf7b5e653c1fdbda27d198
        Building wheel for wrapt (setup.py): started
        Building wheel for wrapt (setup.py): finished with status 'done'
        Created wheel for wrapt: filename=wrapt-1.12.1-cp36-cp36m-linux_x86_64.whl size=75946
sha256=027fece1325c30bd39b17e32a157736abdbe970258805bb53a378ede13552c3e
        Stored in directory: /tmp/pip-ephem-wheel-cache-b9amznpt/wheels/32/42/7f/23cae9ff6ef66798d00dc5d659088e57dbba01566f6c60db63
      Successfully built sklearn gunicorn wrapt
      Installing collected packages: certifi, Click, Werkzeug, itsdangerous, MarkupSafe, Jinja2, Flask, six, cycler, python-dateutil, kiwisolver, pyparsing,
numpy, pillow, matplotlib, pytz, pandas, isort, toml, mccabe, lazy-object-proxy, wrapt, typed-ast, astroid, pylint, regex, tifffile, decorator, networkx, scipy,
PyWavelets, imageio, scikit-image, threadpoolctl, joblib, scikit-learn, seaborn, sklearn, xgboost, gunicorn
      Successfully installed Click-7.0 Flask-1.1.1 Jinja2-2.10.1 MarkupSafe-1.1.1 PyWavelets-1.1.1 Werkzeug-1.0.1 astroid-2.5 certifi-2020.6.20 cycler-0.10.0
decorator-4.4.2 gunicorn-20.1.0 imageio-2.9.0 isort-4.3.21 itsdangerous-1.1.0 joblib-1.0.1 kiwisolver-1.3.1 lazy-object-proxy-1.6.0 matplotlib-3.3.2 mccabe-0.6.1
networkx-2.5 numpy-1.18.5 pandas-1.0.4 pillow-8.1.2 pylint-2.5.3 pyparsing-2.4.7 python-dateutil-2.8.1 pytz-2021.1 regex-2020.11.13 scikit-image-0.17.2 scikit-
learn-0.24.1 scipy-1.5.3 seaborn-0.11.0 six-1.15.0 sklearn-0.0 threadpoolctl-2.1.0 tifffile-2020.9.3 toml-0.10.2 typed-ast-1.4.2 wrapt-1.12.1 xgboost-1.2.1
-----> Discovering process types
       Procfile declares types -> web
-----> Compressing...
       Done: 327.8M
-----> Launching...
 !     Warning: Your slug size (327 MB) exceeds our soft limit (300 MB) which may affect boot time.
       Released v3
       https://dublin-house-predict.herokuapp.com/ deployed to Heroku
```

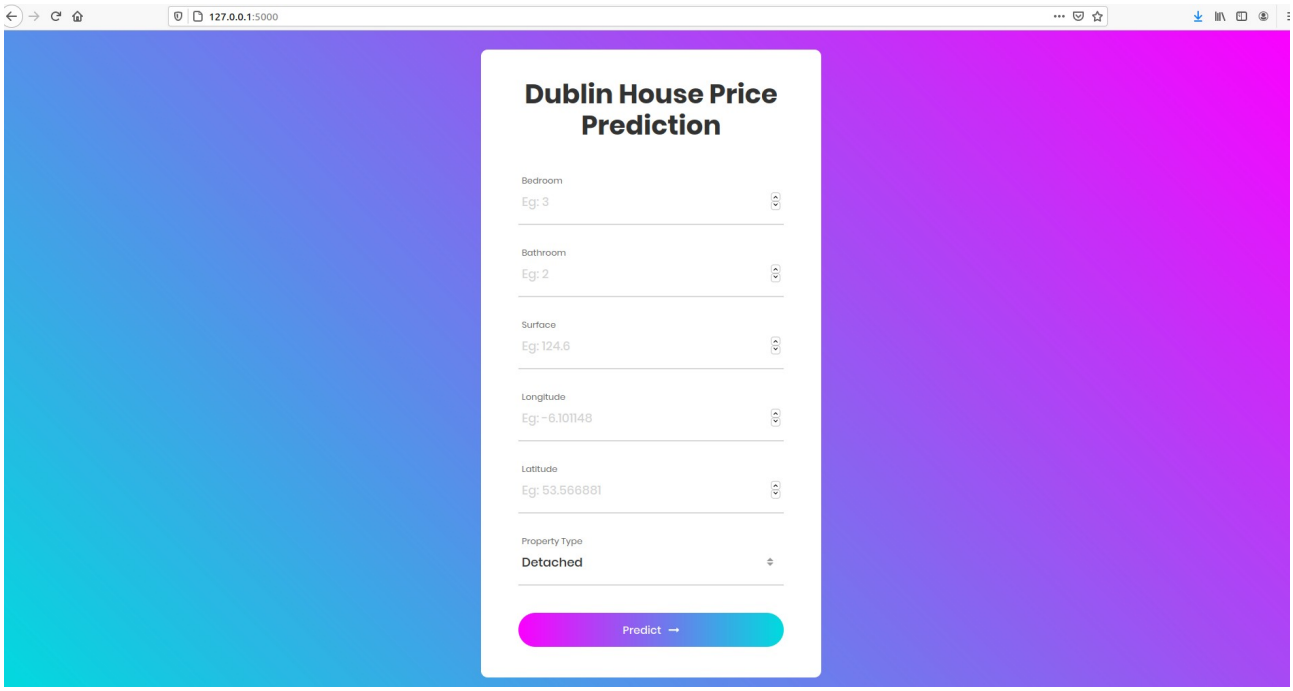
<u>Step 8:</u> Our application is successfully deployed and can be accessed at

<u>https://dublin-house-predict.herokuapp.com/</u>

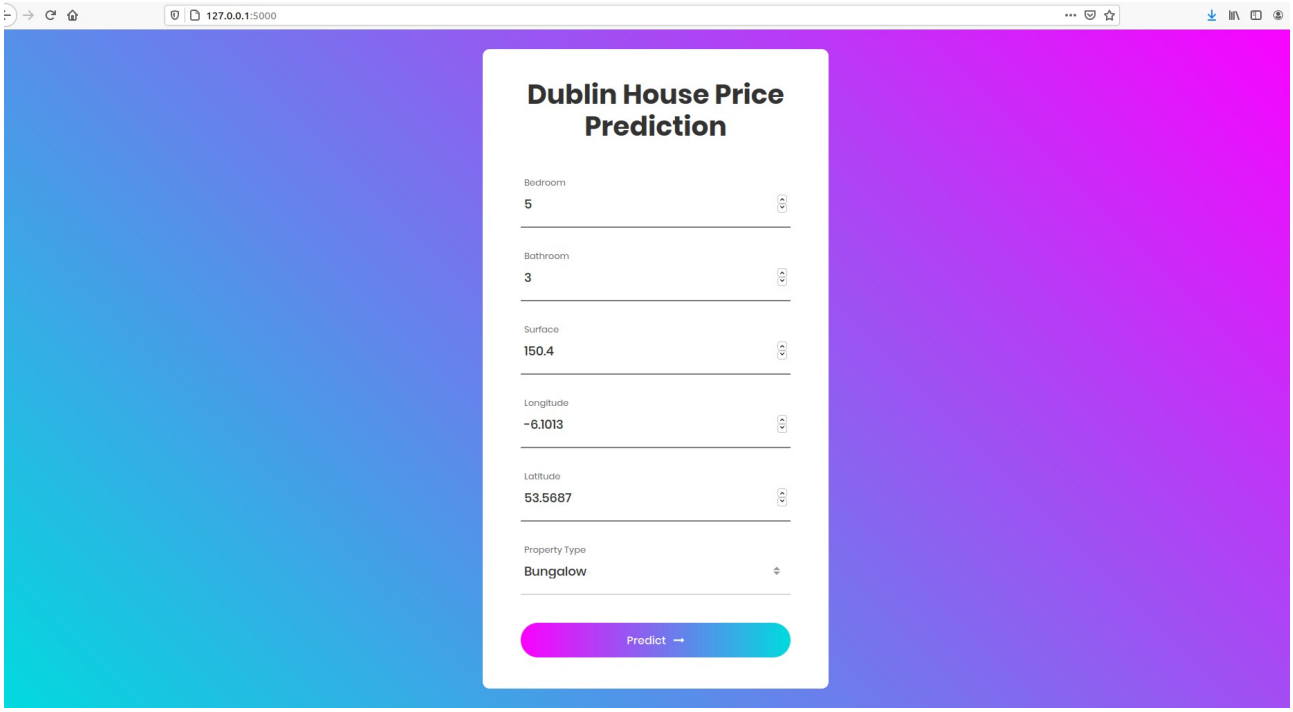
Step 9: Running the Flask Application



Step 10: Open the link in the browser



Step 11: Testing the model



Step 12: Getting the result