

Name : *Saad Bin Munir*

Batch Code : *LISUM06*

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API Link: <https://heroku-vaccine-classification.herokuapp.com/>

Cloud and API Deployment on Heroku

Writing Flask Application

```
1  import numpy as np
2  from flask import Flask,request,render_template
3  import pickle
4  import warnings
5  warnings.filterwarnings("ignore")
6
7  app = Flask(__name__)
8  model = pickle.load(open('drugs_model.pkl', 'rb'))
9
10 @app.route('/')
11 def home():
12     return render_template('index.html')
13
14 @app.route('/predict',methods = ['POST'])
15 def predict():
16     int_features = [int(x) for x in request.form.values()]
17     #int_features = [int_features]
18     final_features = np.array(int_features)
19     final_features = final_features.reshape(1, 5)
20     prediction = model.predict(final_features)
21     output = prediction[0]
22     #print(output)
23     return render_template('index.html',prediction_text = 'The Drug is : ' + output)
24
25 if __name__ == '__main__':
26     app.run(port= 5000)
```

Writing template code

```
<!DOCTYPE html>
<html >
<head>
  <meta charset="UTF-8">
  <title>ML API</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
<link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300' rel='stylesheet' type='text/css'>
<link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">

</head>
<body>
<div class="login">
  <h1>Predict Drug Type</h1>
  <!-- Main Input For Receiving Query to our ML -->
  <form action="{{ url_for('predict') }}" method="post">

    <label for="Age">Age :</label>
    <input type="text" name="Age" placeholder="Age" required="required" />

    <br><br><label for="Sex">Sex :</label>
    <select id="Sex" name="Sex">
    <option value=1>Male</option>
    <option value=0>Female</option>
    </select>

    <br><br><label for="BP">BP :</label>
    <select id="BP" name="BP">
    <option value=0>High</option>
    <option value=1>Low</option>
    <option value=2>Normal</option>
    </select>

    <br><br><label for="Cholesterol">Cholesterol :</label>
    <select id="Cholesterol" name="Cholesterol">
    <option value=0>High</option>
    <option value=1>Normal</option>
    </select>

    <br><br><label for="Na_to_K">Na_to_K :</label>
    <input type="text" name="Na_to_K" placeholder="Na_to_K" required="required" />

    <br><br><button type="submit" class="btn btn-primary btn-block btn-large">Predict</button>
  </form>

  <br> <br>
  {{prediction_text}}

</div>

</body>
</html>
```

Create requirements.txt

```
1  atomicwrites==1.4.0
2  attrs==21.2.0
3  click==8.0.1
4  colorama==0.4.4
5  cycler==0.10.0
6  Flask==2.0.1
7  gunicorn==20.1.0
8  iniconfig==1.1.1
9  itsdangerous==2.0.1
10 Jinja2==3.0.1
11 joblib==1.0.1
12 kiwisolver==1.3.1
13 MarkupSafe==2.0.1
14 matplotlib==3.4.2
15 numpy==1.20.3
16 packaging==20.9
17 pandas==1.2.4
18 Pillow==8.2.0
19 pluggy==0.13.1
20 py==1.10.0
21 pyparsing==2.4.7
22 pytest==6.2.4
```

Create profile

```
1 web: gunicorn app:app
```

Create New App in Heroku account

Create New App

App name

heroku-vaccine-classificationn

✓

heroku-vaccine-classificationn is available

Choose a region

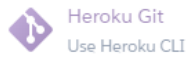
🇪🇺 Europe

⌵

Add to pipeline...

Create app

Search for branch and connect



Heroku Git
Use Heroku CLI



GitHub
Connect to GitHub



Container Registry
Use Heroku CLI

Search for a repository to connect to

saadbinmunir

cloud

Search

Missing a GitHub organization? [Ensure Heroku Dashboard has team access.](#)

saadbinmunir/Heroku-Cloud-and-API-Deployment

Connect

Deploy Branch

Choose a branch to deploy

main

Deploy Branch

Receive code from GitHub



Build main 99a80f43

```
-----> Installing requirements with pip
-----> Discovering process types
Procfile declares types -> web
-----> Compressing...
Done: 155.5M
-----> Launching...
Released v18
https://heroku-vaccine-classification.herokuapp.com/ deployed to Heroku
```

☒ Autoscroll with output

[View build log](#)

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 99a80f43



Release phase



Deploy to Heroku

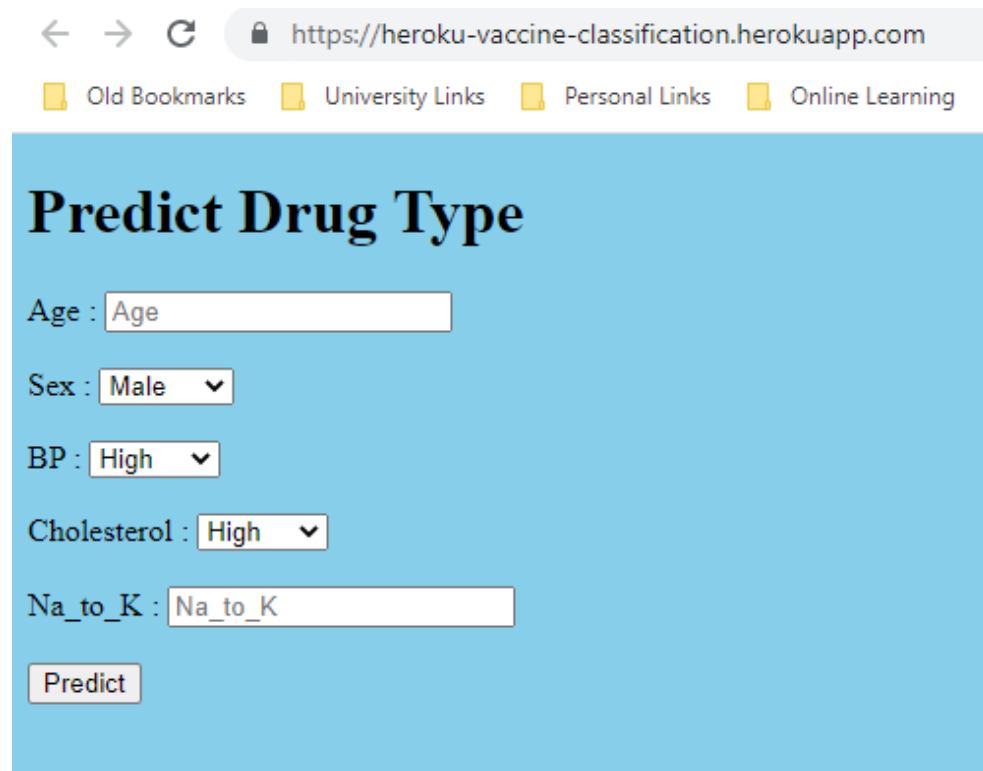


Your app was successfully deployed.

View

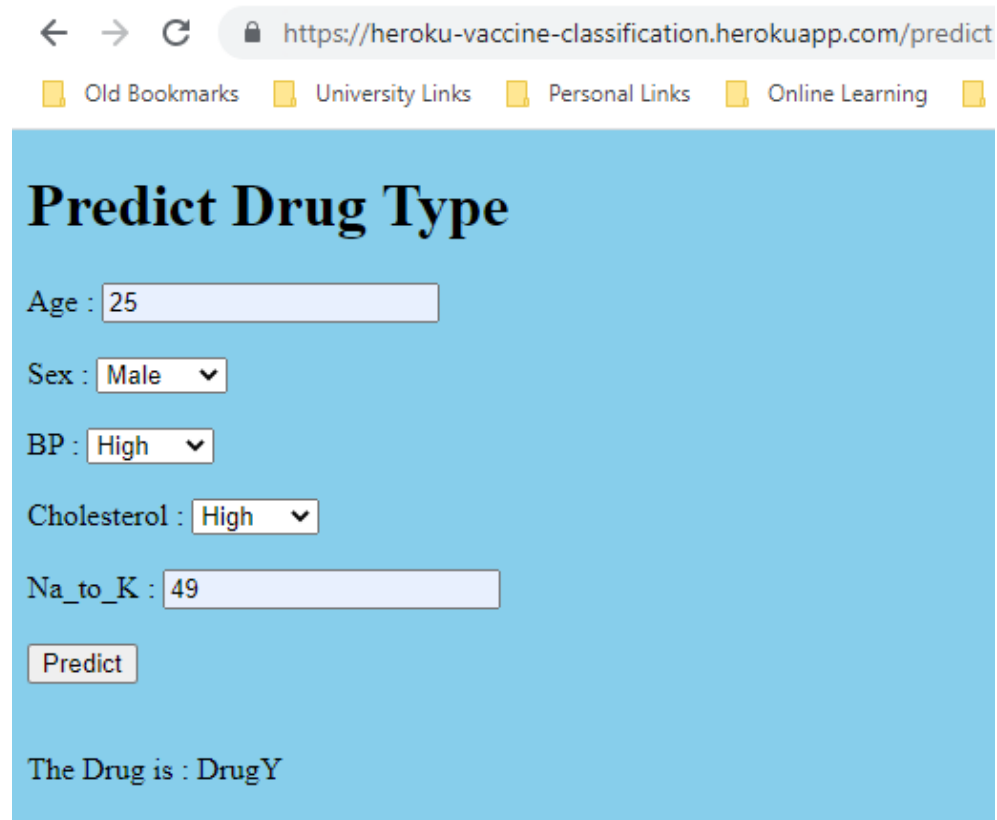
Open Link in browser

The link is : <https://heroku-vaccine-classification.herokuapp.com/>



A screenshot of a web browser showing the 'Predict Drug Type' application. The browser's address bar displays the URL 'https://heroku-vaccine-classification.herokuapp.com/'. Below the address bar, there are four bookmark icons with labels: 'Old Bookmarks', 'University Links', 'Personal Links', and 'Online Learning'. The application interface has a light blue background and a title 'Predict Drug Type' in a large, bold, black serif font. Below the title, there are five input fields: 'Age' (a text box with 'Age' inside), 'Sex' (a dropdown menu with 'Male' selected), 'BP' (a dropdown menu with 'High' selected), 'Cholesterol' (a dropdown menu with 'High' selected), and 'Na_to_K' (a text box with 'Na_to_K' inside). At the bottom left of the form area is a 'Predict' button.

Test Model and Get results



A screenshot of the same 'Predict Drug Type' web application, but now showing the results of a prediction. The browser's address bar shows the URL 'https://heroku-vaccine-classification.herokuapp.com/predict'. The bookmark bar is the same. The input fields now contain specific values: 'Age' is '25', 'Sex' is 'Male', 'BP' is 'High', 'Cholesterol' is 'High', and 'Na_to_K' is '49'. The 'Predict' button is still present. Below the form area, the text 'The Drug is : DrugY' is displayed in a black serif font.