

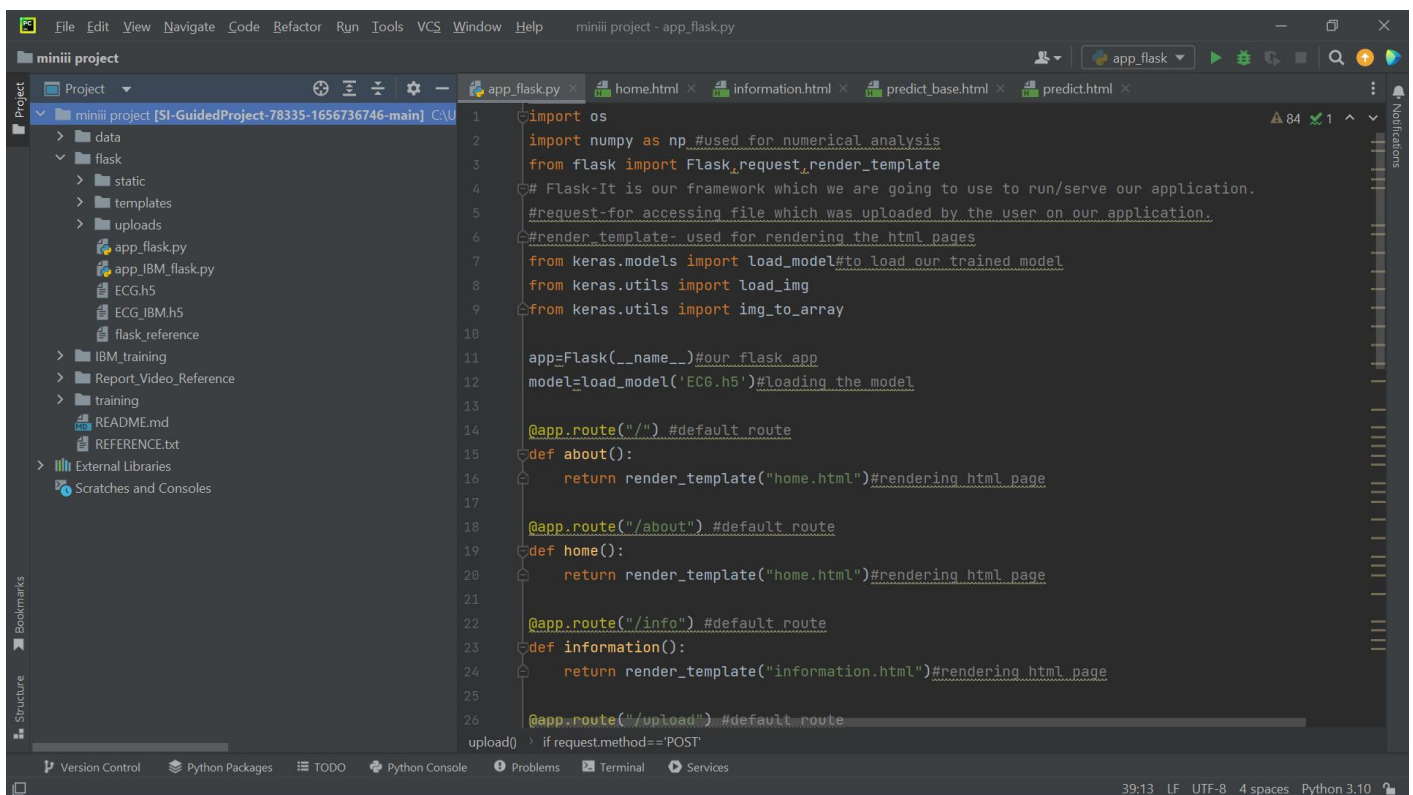
Sprint-3 Application Building

Date	23 October 2022
Team ID	PNT2022TMID52880
Project Name	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation

Task:

As a user, I can enter the webpage and view the homepage about the information about Electrocardiography (ECG) giving a clear perspective of the signals.

- The HTML file used to build the app_flask.py page includes:



```
1 import os
2 import numpy as np #used for numerical analysis
3 from flask import Flask, request, render_template
4 # Flask-It is our framework which we are going to use to run/serve our application.
5 #request-for accessing file which was uploaded by the user on our application.
6 #render_template- used for rendering the html pages
7 from keras.models import load_model #to load our trained model
8 from keras.utils import load_img
9 from keras.utils import img_to_array
10
11 app=Flask(__name__)#our flask app
12 model=load_model('ECG.h5')#loading the model
13
14 @app.route("/") #default route
15 def about():
16     return render_template("home.html")#rendering html page
17
18 @app.route("/about") #default route
19 def home():
20     return render_template("home.html")#rendering html page
21
22 @app.route("/info") #default route
23 def information():
24     return render_template("information.html")#rendering html page
25
26 @app.route("/upload") #default route
27 def upload():
28     if request.method=='POST':
```

- The HTML file used to build the Home.html

The screenshot shows a VS Code editor interface for a Flask web application. The left sidebar displays the project structure, including folders like 'data', 'flask', 'static', 'templates', and 'uploads', and files like 'app_flask.py', 'app_IBM_flask.py', 'ECG.h5', 'ECG_IBM.h5', 'flask_reference', 'IBM_training', 'Report_Video_Reference', 'training', 'README.md', and 'REFERENCE.txt'. The main editor shows the 'home.html' file with HTML code for a web page. The code includes a head section with a style tag for a red font, a body section with a navbar containing links for 'upload', 'info', and 'home', and a main content area with a heading 'ECG - IMAGE BASED ARRHYTHMIA CLASSIFICATION' and a paragraph 'ECG arrhythmia classification using...'. The status bar at the bottom shows '68:6 CRLF UTF-8 4 spaces Python 3.10'.

- The HTML file used to build the information.html

```

42 font-style:italic;
43 font-weight:bold;
44 }
45 </style>
46 <title>Info</title>
47 </head>
48 <body>
49 <div class="navbar">
50 <a href="/upload" >Predict</a>
51 <a href="/info">Info</a>
52 <a href="/about">Home</a>
53 <br>
54 </div>
55 <div>
56 <h1><u>ECG- Image Based Heartbeat Classification Information Guide</u></h1>
57 </div>
58 <div>
59 <span></span>
60 <span></span>
61 <span></span>
62 <span></span>
63 <span></span>
64 <span></span>
65 </div>
66 </body>
67 </html>

```

- The HTML file used to build the predict_base.html

```

35 a:hover{
36 background-color:black;
37 color:white;
38 border-radius:15px;0
39 font-size:30px;
40 padding-left:10px;
41 }
42 body
43 {
44 background-image: url("https://miro.medium.com/max/2560/1*yLvdHtjWHGnNdwmrVgYk-g.jpeg");
45 background-size:cover;
46 }
47 </style>
48 </head>
49 <body>
50 <div class="bar">
51 <a href="/upload" >Predict</a>
52 <a href="/info">Info</a>
53 <a href="/about">Home</a>
54 <br>
55 </div>
56 <div class="container">
57 <div id="content" style="margin-top:2em">{% block content %}{% end-block %}</div>
58 </div>
59 </body>
60 </html>

```

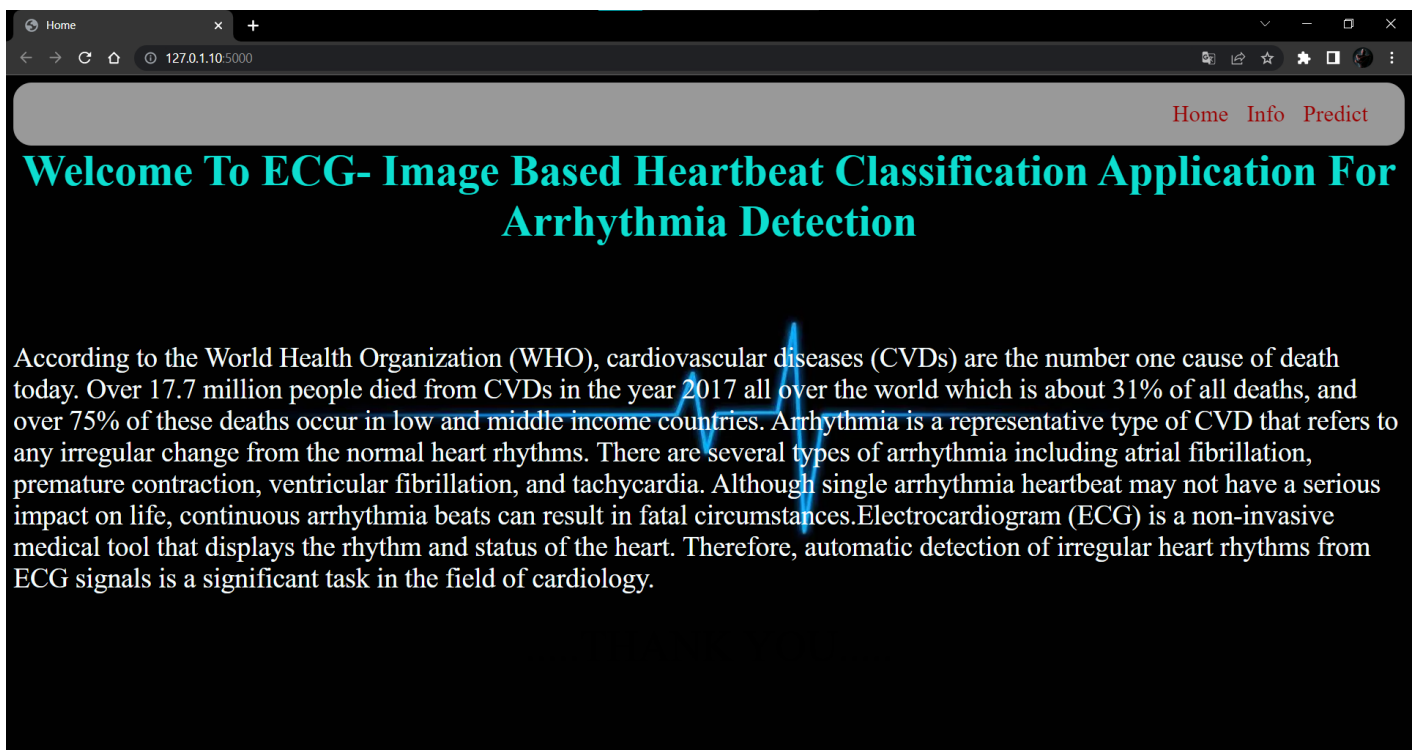
- The HTML file used to build the predict.html

```

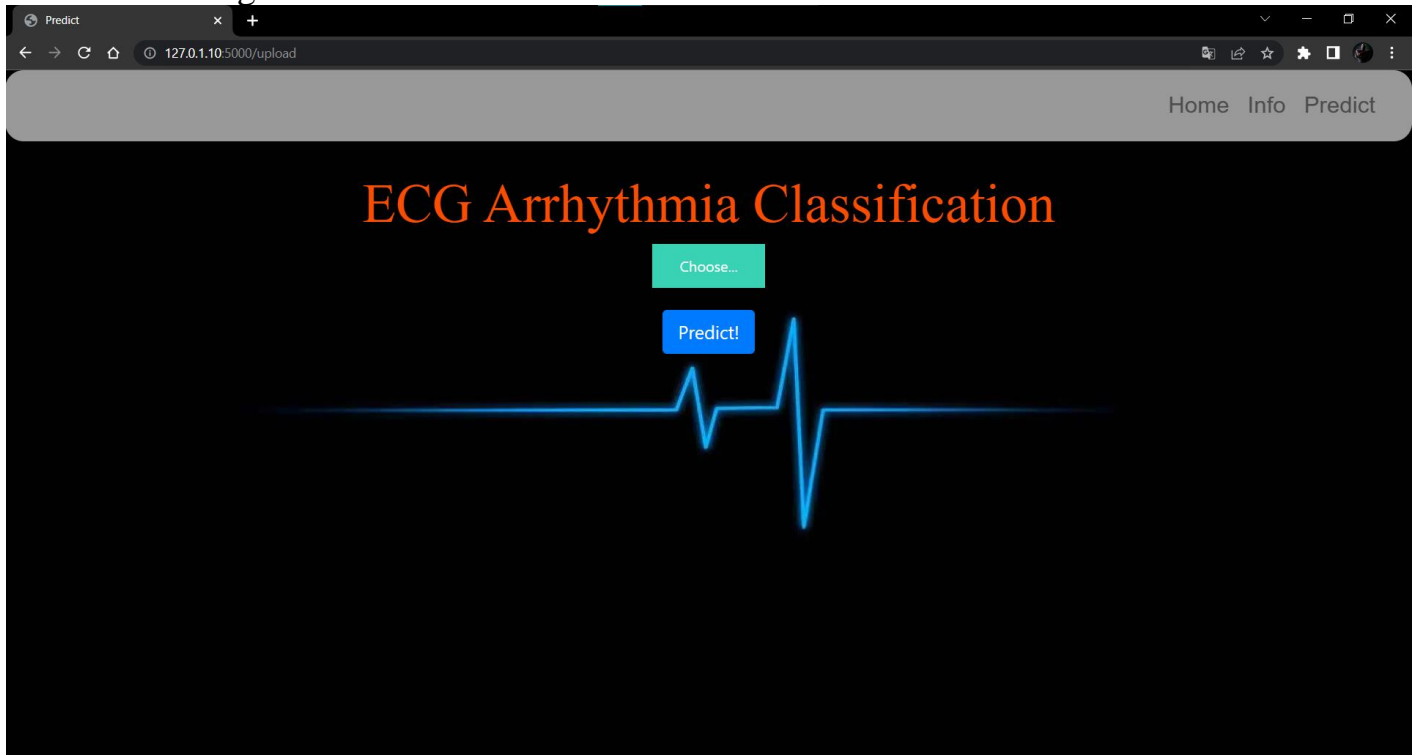
1
2
3 {% extends "predict_base.html" %} {% block content %}
4
5 <h2 style="color:#74239f;font-family:Cursive;font-size:60">ECG Arrhythmia Classification</h2>
6
7 <div>
8   <form id="upload-file" method="post" enctype="multipart/form-data">
9     <label for="imageUpload" class="upload-label">
10       Choose...
11     </label>
12     <input type="file" name="file" id="imageUpload" accept=".png, .jpg, .jpeg">
13   </center></form>
14
15   <center> <div class="image-section" style="display:none;"></div>
16     <div class="img-preview"></div>
17     <div id="imagePreview"></div>
18   </center>
19
20   <center><div>
21     <button type="button" class="btn btn-primary btn-lg" id="btn-predict">Predict!</button>
22   </div></center>
23 </div>
24
25 <div class="loader" style="display:none;"></div>
26
div > center

```

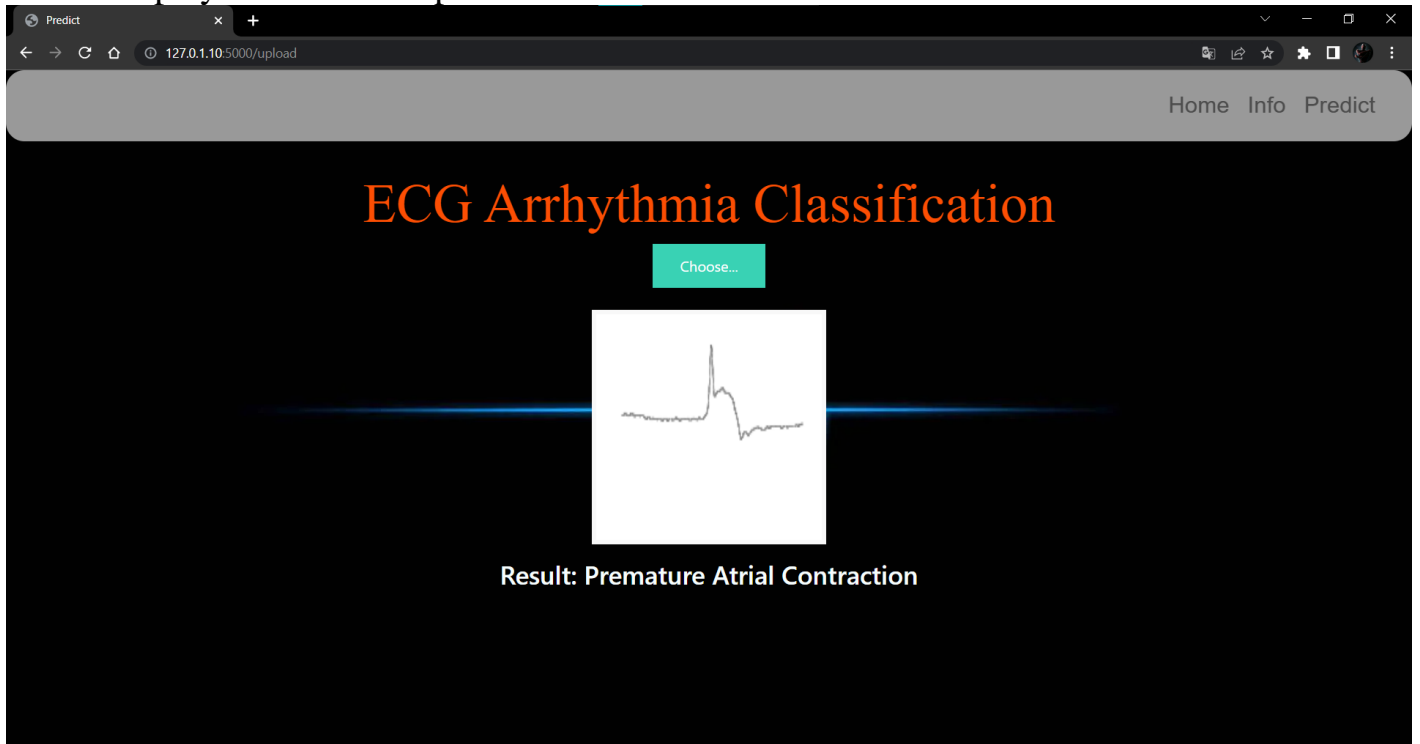
- Running the Web application



- Predicting window



- Display result of the uploaded ECG



- Info tab to allow the user to study about several classes of Arrhythmia

[Info](#)


127.0.1.10:5000/info

Home Info Predict

ECG- Image Based Heartbeat Classification Information Guide

NORMAL

Note that the heart is beating in a regular sinus rhythm between 60 - 100 beats per

An ECG waveform displayed on a red grid. The waveform shows a regular sinus rhythm with distinct P waves, QRS complexes, and T waves. The leads are labeled as aVR, V1, and V4. The rhythm is regular, with a heart rate between 60 and 100 beats per minute.