Project Development Phase

Delivery of Sprint 3

Date	14 November 2022
Team ID	PNT2022TMID36404
Project Name	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation

Task 1:

Application Building:

Code:

Home page, Info page, Predict page, Result page:

```
<html>
<head>
   <title>Classification of Arrhythmia</title>
<link rel="stylesheet" href="/static/csss/style.css">
</head>
<body>


<div class="BG">
         <nav>
           <input type="checkbox" id="check">
           <label for="check" class="checkbtn">
             <i class="fas fa-bars"></i>
           </label>
           <label class="logo">ECG </label>

           <ul>
             <li><a class="active" class="active" href="#">Home</a></li>
           <li><a  href="about-us.html">Info</a></li>
             <li><a  href="classify.html">Predict</a></li>

           </ul>
         </nav>

      </div>



<h1>Classification of Arrhythmia by Using Deep Learning with 2-D ECG
Spectral Image Representation</h1>
<div id="home" class="container">

      <p>According to the World Health Organization (WHO), cardiovascular
diseases (CVDs) are the number one cause of death today. Over 17.7 million
people died from CVDs in the year 2017 all over the world which is about
31% of all deaths, and over 75% of these deaths occur in low and middle-
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income countries. Arrhythmia is a representative type of CVD that refers to
any irregular change from the normal heart rhythms. There are several types
of arrhythmia including atrial fibrillation, premature contraction,
ventricular fibrillation, and tachycardia. Although a single arrhythmia
heartbeat may not have a serious impact on life, continuous arrhythmia
beats can result in fatal circumstances. In this project, we build an
effective electrocardiogram (ECG) arrhythmia classification method using a
convolutional neural network (CNN), in which we classify ECG into seven
categories, one being normal and the other six being different types of
arrhythmia using deep two-dimensional CNN with grayscale ECG images. We are
creating a web application where the user selects the image which is to be
classified. The image is fed into the model that is trained and the cited
class will be displayed on the webpage.</p>
</div>
<footer>

  <div class="bottom">
    <center>
      <span class="credit">Created By <a href="">AK</a> | </span>
      <span class="far fa-copyright"></span><span> 2020 All rights
reserved.</span>
    </center>
  </div>
</footer>
</body>
</html>
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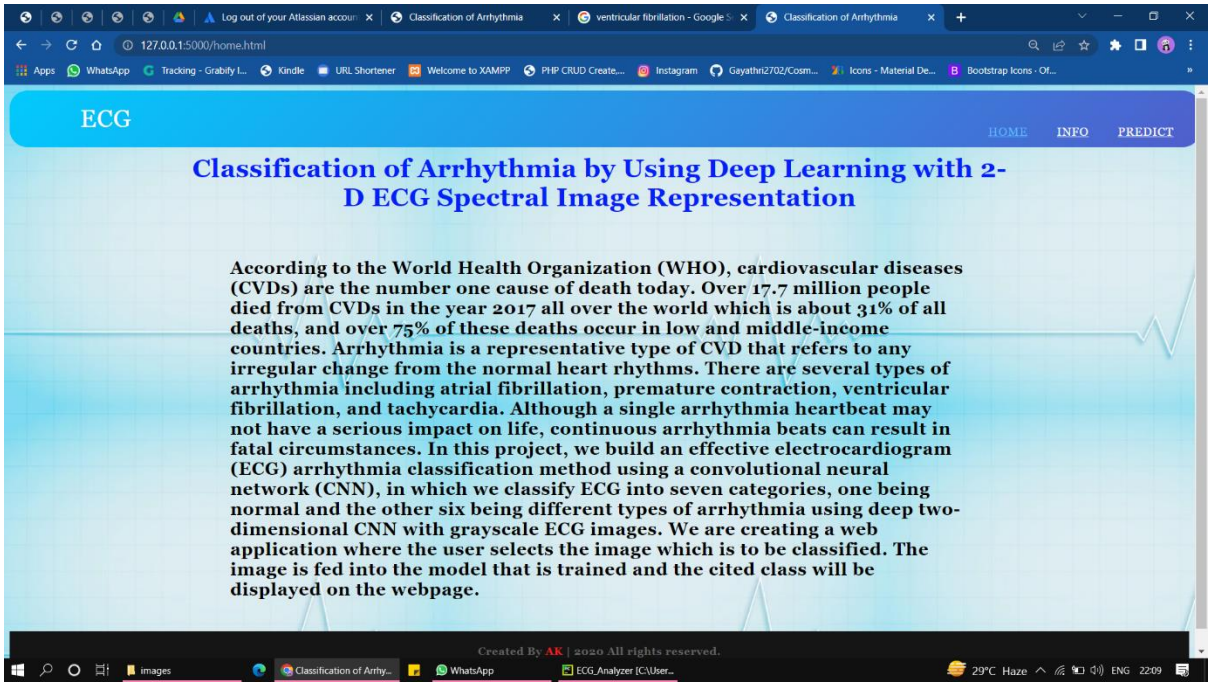
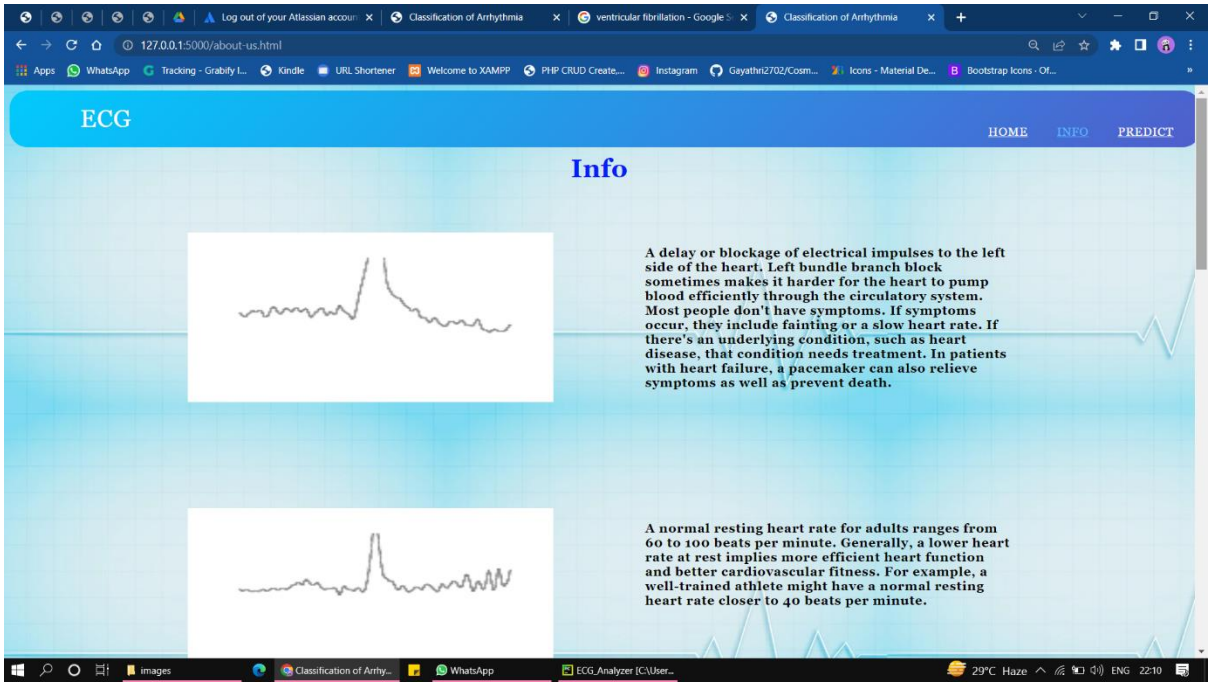
Output:

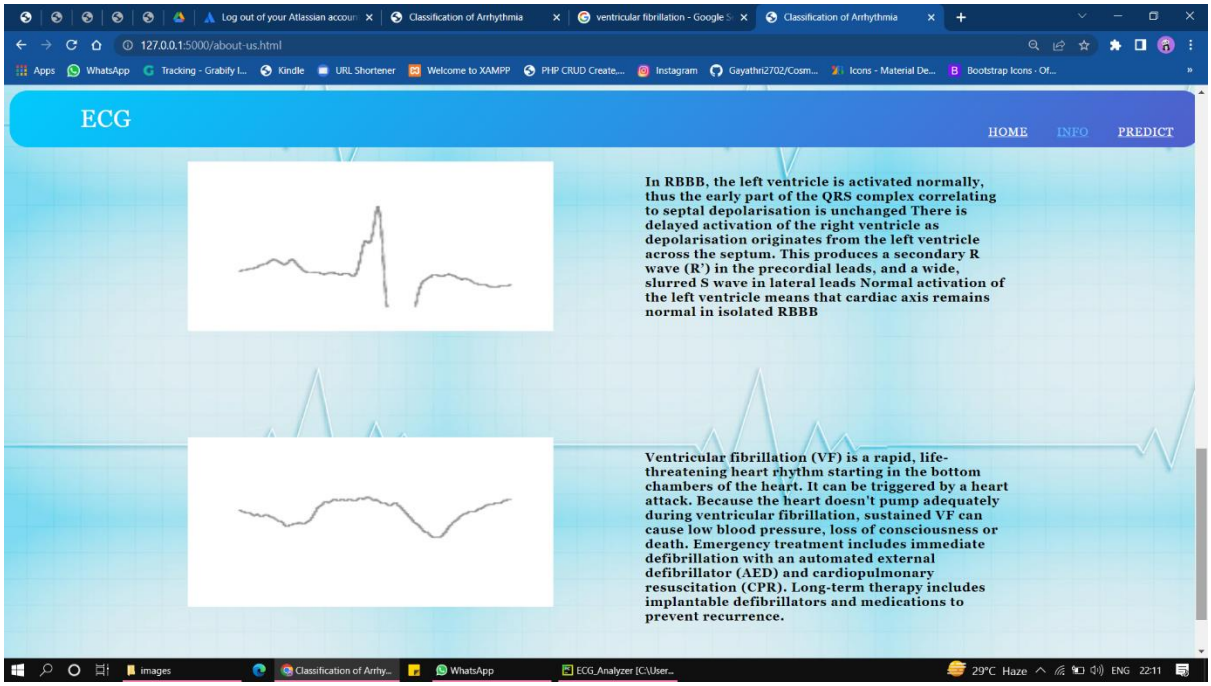
Home Page:

Info Page:

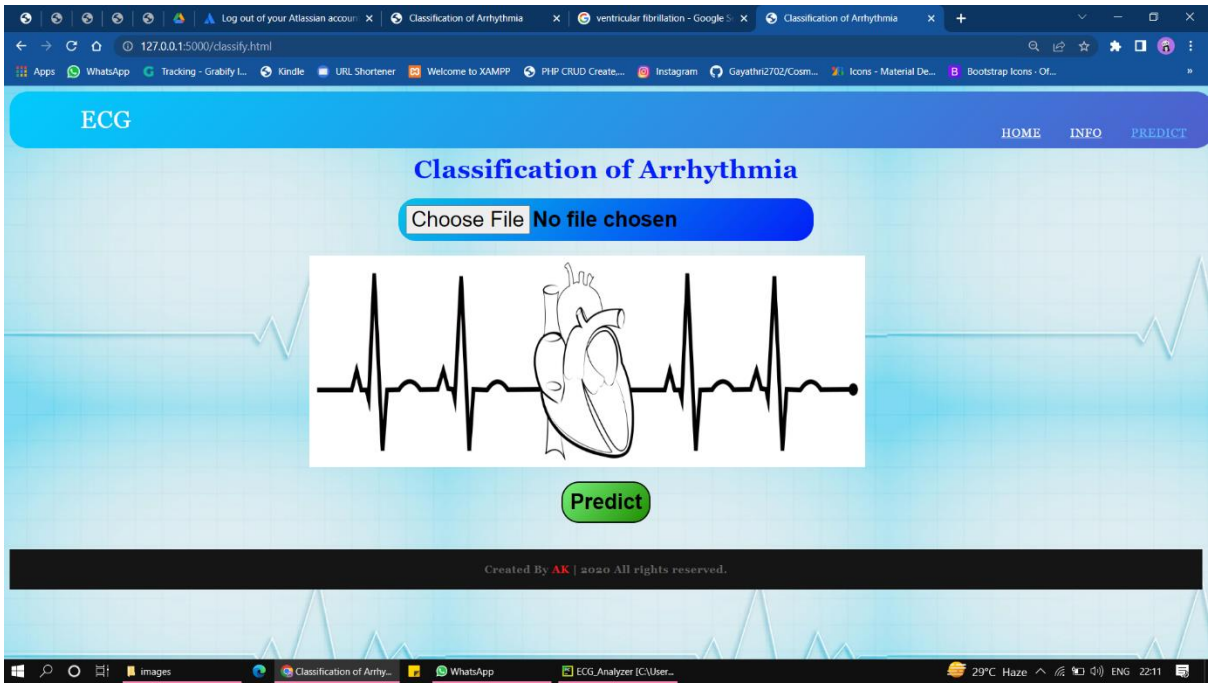


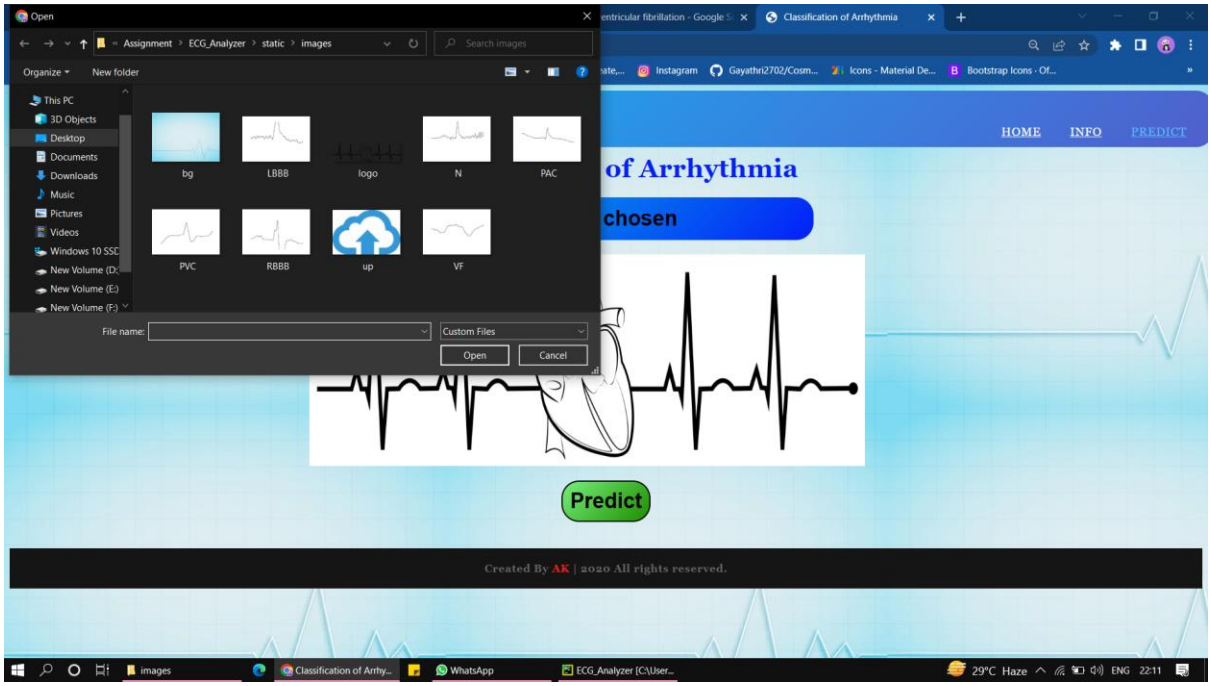

ECG
HOME
INFO
PREDICT
Info
A delay or blockage of electrical impulses to the left side of the heart. Left bundle branch block sometimes makes it harder for the heart to pump blood efficiently through the circulatory system. Most people don't have symptoms. If symptoms occur, they include fainting or a slow heart rate. If there's an underlying condition, such as heart disease, that condition needs treatment. In patients with heart failure, a pacemaker can also relieve symptoms as well as prevent death.
A normal resting heart rate for adults ranges from 60 to 100 beats per minute. Generally, a lower heart rate at rest implies more efficient heart function and better cardiovascular fitness. For example, a well-trained athlete might have a normal resting heart rate closer to 40 beats per minute.


ECG
HOME
INFO
PREDICT
Premature atrial contractions (PACs) are extra heartbeats that start in the upper chambers of your heart. When the premature, or early, signal tells the heart to contract, there may not be much blood in the heart at that moment. That means there's not much blood to pump out.
Premature ventricular contractions (PVCs) are extra heartbeats that begin in one of the heart's two lower pumping chambers (ventricles). These extra beats disrupt the regular heart rhythm, sometimes causing a sensation of a fluttering or a skipped beat in the chest.



Predict page:




Open
Assignment › ECG_Analyzer › static › images
Search images
Organize
New folder
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Windows 10 SSD
New Volume (D:)
New Volume (E:)
New Volume (F:)
bg
LBBB
logo
N
PAC
PVC
RBBB
up
VF
File name:
Custom Files
Open
Cancel
HOME
INFO
PREDICT
of Arrhythmia
chosen
Predict
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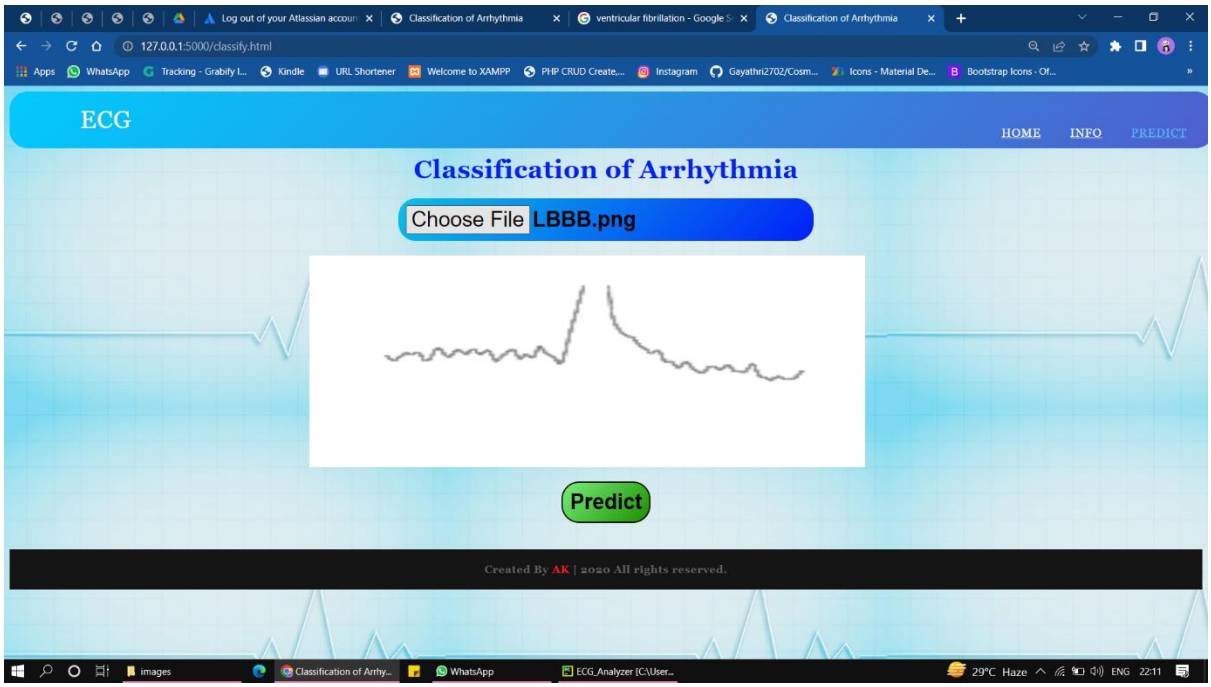
127.0.0.1:5000/classify.html
ECG
HOME
INFO
PREDICT
Classification of Arrhythmia
Choose File
LBBB.png
Predict
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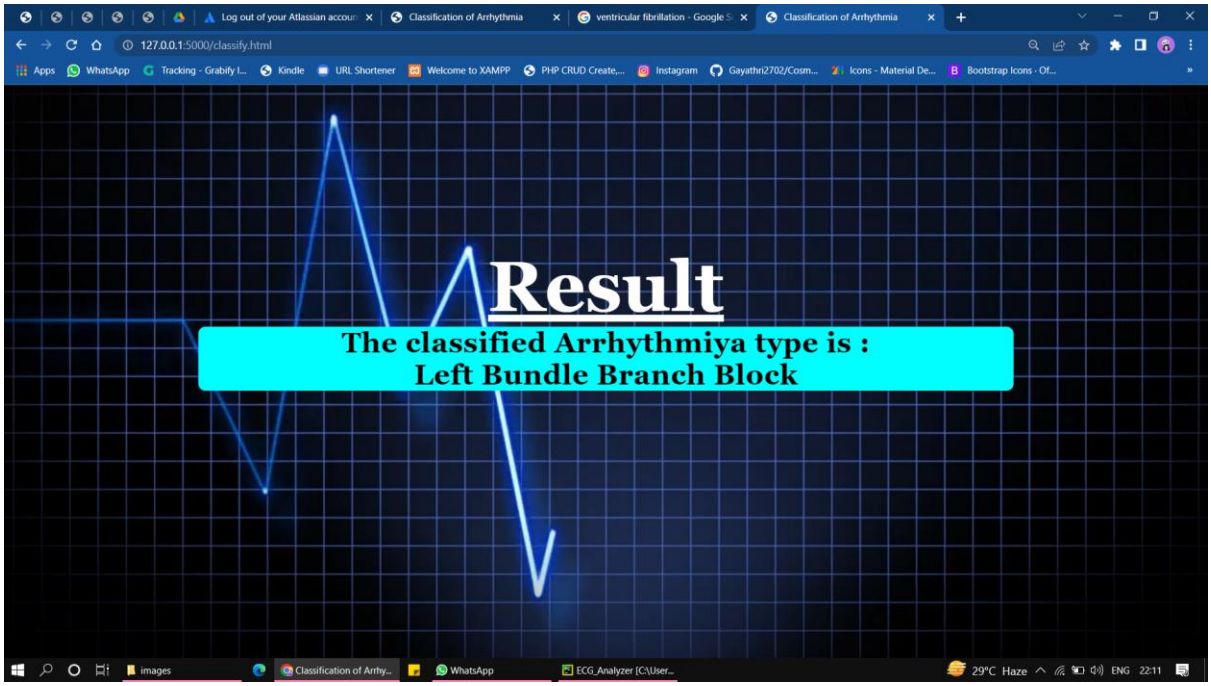
Result Page:


Result
The classified Arrhythmiya type is :
Left Bundle Branch Block