MINI PROJECT-3 (QUARANTINE EDITION)

ECG MONITOR:

INTRODUCTION:

- In this project I have created a basic ECG monitor in order to perform a detailed analysis of a person's ECG graph. During the Covid-19 situation, it becomes extremely important that one takes care of their health. Without the regular option of visiting a doctor to get a health check-up, I have come to realise the importance of remote health monitoring.
- Hence, during this situation, I tried to build a basic 'ECG Monitor' in order to monitor the ECG graph, so that we can stay a step ahead and take all the necessary precautions to stay fit and healthy.

MATERIALS REQUIRED:

- Arduino Uno Board
- Breadboard
- Jumper Wires
- AD8232 sensor

PROCEDURE:

- The Arduino Board was interfaced with the AD8232 sensor using jumper wires. As the AD8232 was still novel to me, I had to study the sensor and its' pin very carefully.
- After setting up the basic code and after several trial and errors, I then verified and uploaded the code to the Arduino.
- The serial plotter was set up and the baud rate was fixed at 9600. The sensor comes with 3 pins which were then attached to specific points on my hand. In order to understand those positions and the ECG graph (PQRST), I had to study about the same in detail.
- After following these steps, the graph was plotted on the serial plotter.

ECG ANALYSIS:

- To study about ECG and what it really means, I had referred to this link: http://www.southsudanmedicaljournal.com/archive/may-2010/how-to-read-an-electrocardiogram-ecg.-part-one-basic-principles-of-the-ecg.-the-normal-ecg.html#:~:text=An%20ECG%20is%20simply%20a%20representation%20of%20the,response%20to%20electrical%20depolarisation%20of%20the%20muscle%20cells.
- Studying the proper graph of ECG and understanding what PQRST points are and what they mean is extremely important.

IMAGES RELATED TO THE PROJECT:

OVERVIEW OF THE PROJECT SHOWING THE HARDWARE AND THE ECG GRAPH
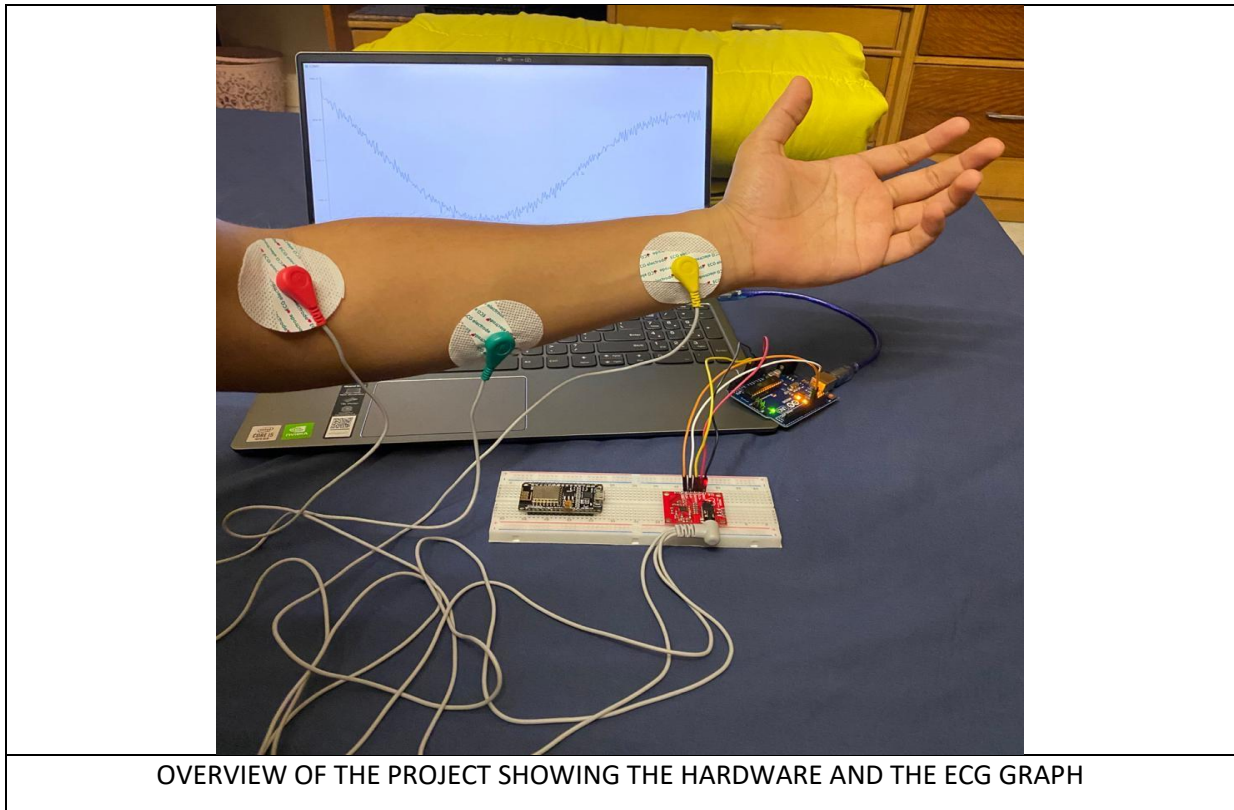
NOTE:

- The graph shown above might not look proper as the three sensors should be ideally placed at 3 points on the chest.

FUTURE SCOPE:

- I would like to make the entire project on an ESP8266 or ESP32 board and connect and deploy the graph on a cloud platform, so that it can be visualised, processed and analysed in an easier and efficient way.