

## **Electrocardiography**

### **Purpose**

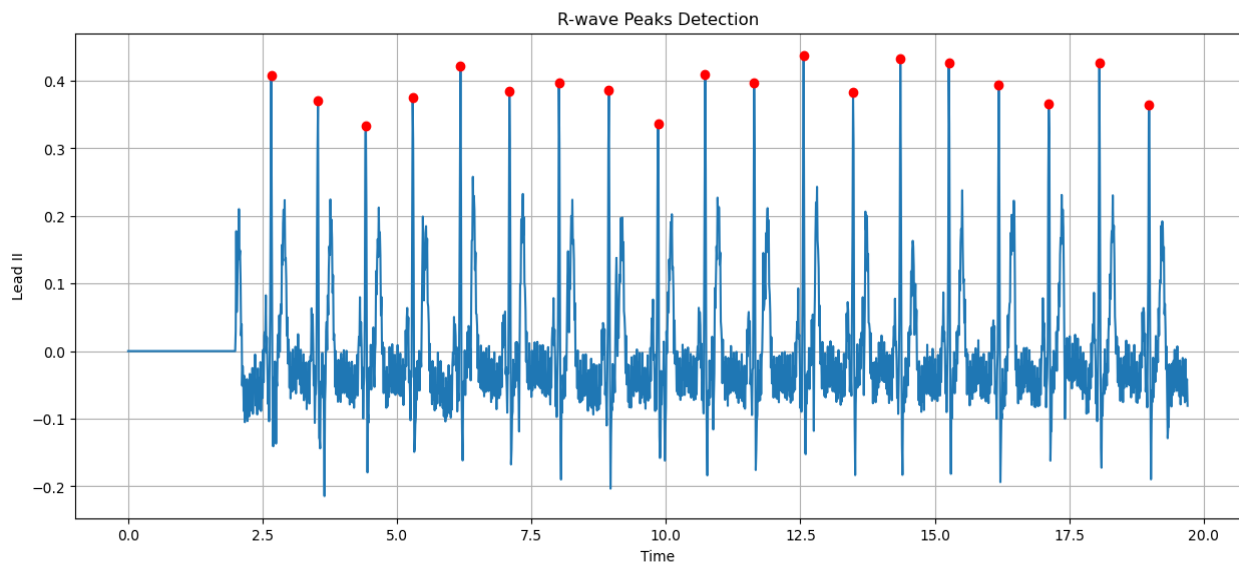
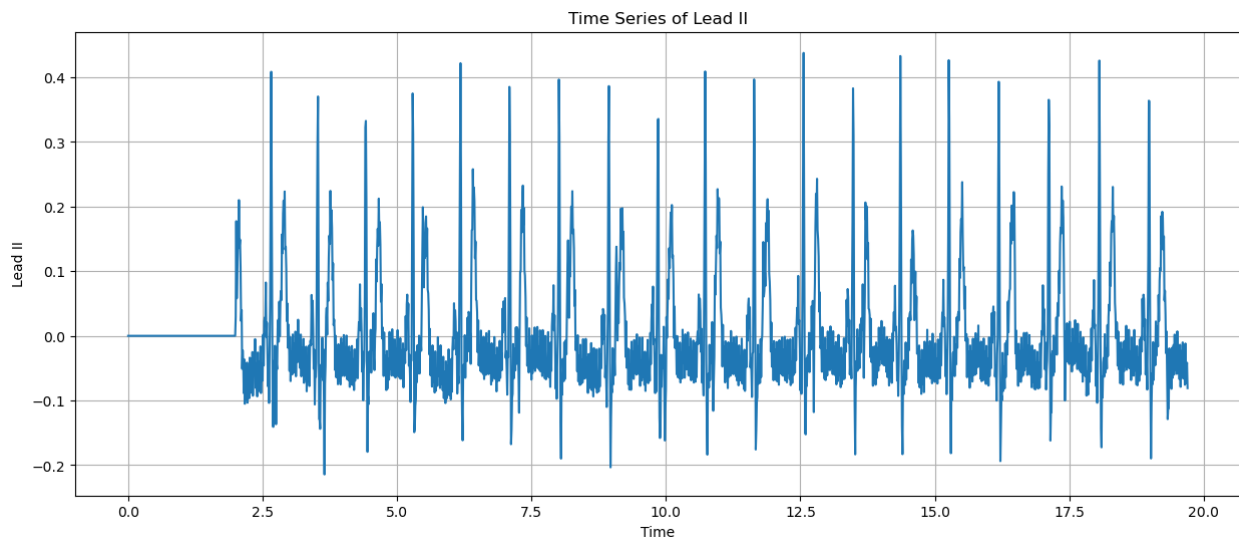
The purpose of this experiment is to identify and explain each component of the EKG and to know how the function of each instrument is used. It is also to learn the logic behind Einthoven's Triangle and Law. Lastly, to be able to identify common abnormalities of EKG patterns.

### **Procedures**

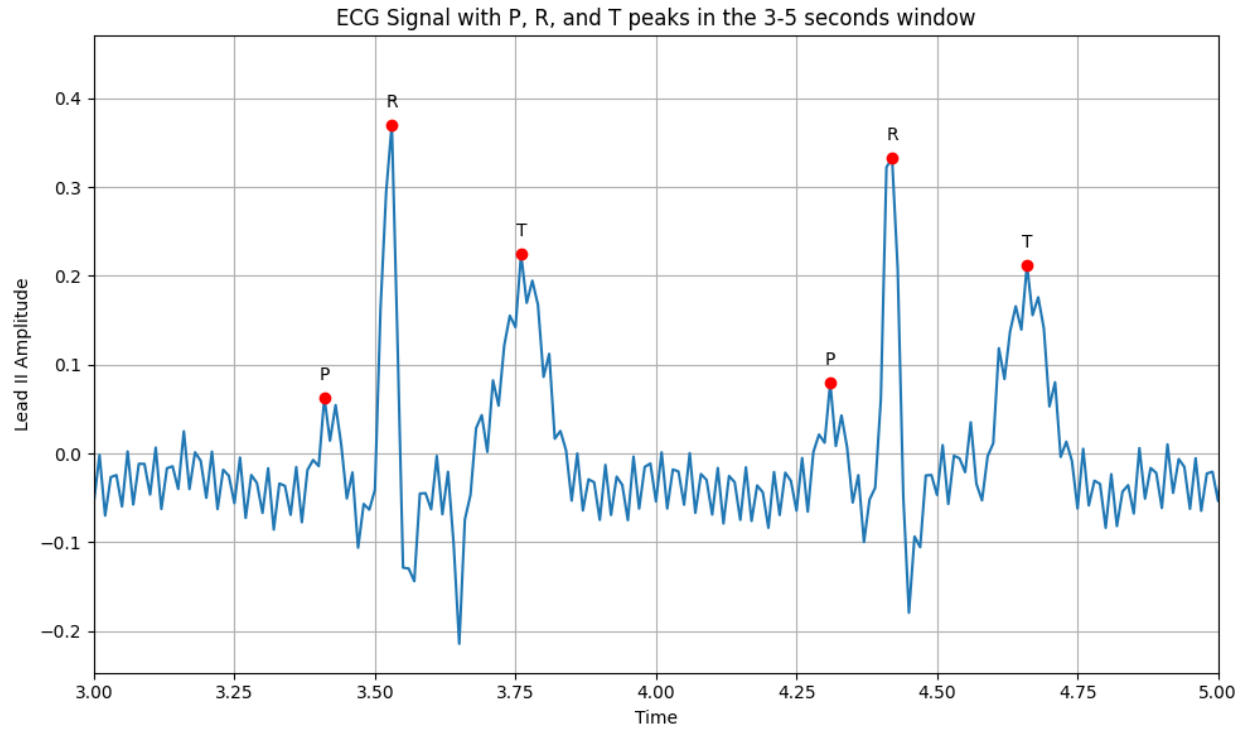
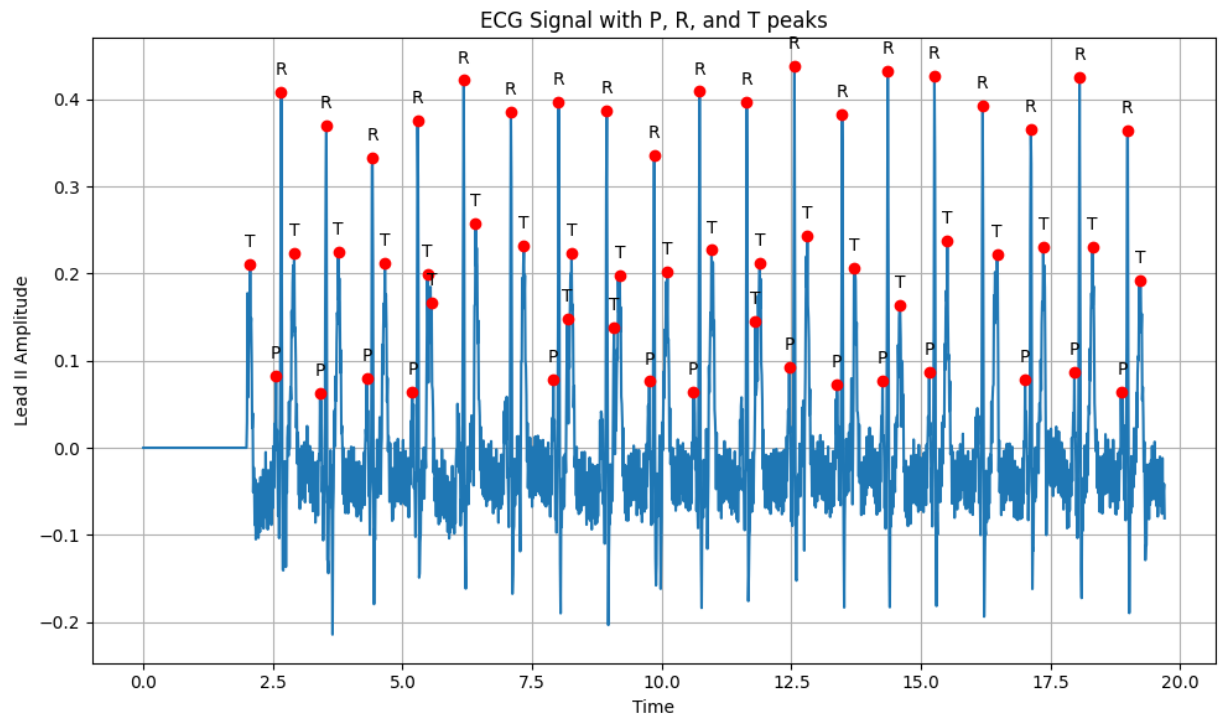
Before turning everything on, it was made sure that the IWX/214 unit was plugged in and connected to the laptop by USB cable. The EEG cable was connected as well as the three color coded lead wires. After that, the laptop was turned on and Labscribe3 icon was clicked. Next, the tab "Human Heart" was clicked, and "ECG-Heart Sounds" was clicked as well. The jewelry was sure removed before putting on the electrodes. The black electrode was placed on the right wrist. This step was repeated for the inside of the left ankle and the inside of the right ankle. The red lead was connected to the left ankle and the green lead is connected to the right ankle. The subject was instructed to sit quietly with their hand in their lap. If the subject moves, the ECG trace will move off the top or bottom of the screen. If the subject moves any muscles in the arms or upper body, electromyograms from the muscles will appear on the ECG recording as noise. After that, the record button was pressed, if the ECG appeared upside down in Lead II, a triangle

on the afar left needed to be clicked. On the next experiment, the electrodes were kept on the skin and unsnapped the red lead wire off the left ankle and snapped it onto the electrode on the left wrist. The data was recorded and labeled the five lead I ECG waves (P, Q, R, S, and T). The electrodes were kept on the skin, but the red lead wire was unsnapped again and snapped it back onto the left ankle. The black was removed as well and placed on the left wrist. Everything was recorded and labeled one set of the five Lead III ECG waves (P, Q, R, S, and T).

## Results



Heart rate: 66.18 BPM



## **Discussions**

In this experiment, the waves of the heartbeat were checked using the ECG. Based on the graph, the highest peak of the R wave was around 0.4 to 0.45 as shown from the second graph. The heartbeat of the subject was known by the R waves to be 66.18 BPM. This is in the range of a normal heart rate for an adult. Another purpose of this experiment was to show the peaks of the P, R, and T using the ECG. Based on the data above, the first graph was harder to see and in order to see better the window of the graph was changed between 3 to 5 seconds window. We can see that the peak for the P wave is around 0.05 to 0.08. The peak of R wave is around 0.34 to 0.37. Lastly, the peak of the T wave is around 0.21 to 0.23.

## **Conclusion**

In conclusion, the subject's heartbeat is normal because it has a heartbeat of 66.18 BPM. The highest peak of the R wave was around 0.4 to 0.45. For the second graph, the peak for the P wave is around 0.05 to 0.08. The peak of R wave is around 0.34 to 0.37. Lastly, the peak of the T wave is around 0.21 to 0.23. In order to see the peaks better for the P, R, and T wave, changing the windows was necessary because the P wave did not show properly from the original window from the graph.