Abstract

Electrocardiogram (ECG or EKG) is basically a diagnostic tool that measures and records the electrical signal by comparing the activity of heart. Electrocardiogram has significant importance since it reveals important information about various disorders. The purpose of this work is to extract R-wave and find heart rate using LabVIEW. In this work an algorithm has been developed for the detection of R-wave, which is based on array subset and array min and max method using LabVIEW. LabVIEW (laboratory virtual instrument engineering workbench)
is a graphical programming language that uses icons instead of lines of text to create programs. The work is executed in four stages. Firstly data acquisition, secondly it denoises the signal to remove the noise from the ECG signal, thirdly it detects the R-wave and lastly analysis is done by calculating heart rate. LabVIEW and the related toolkit i.e., Advanced signal processing toolkit is used to build the graphical programme. ECG data are acquired from the subjects which includes 5000 samples recorded at a sampling frequency of 1000Hz.

References

- Jan Havlk, Jan Dvorak, Jakub Parak, and Lenka Lhotska, &quot;Monitoring of Physiological Signs using Telemonitoring System&quot;, ITBAM, 2011.
- Ling Zhu, Gong Zhang, Trevor Strome, Ricardo Lobato De Faria, Jiefe Pei, Francis Lin, Simon Liao, Trish Bergal, Blake W. Podaima &quot;Real Time Traceability using RFID Technology&quot;.

Index Terms

Computer Science  Signal Processing

Keywords

Ecg Signal  Labview  Wavelet Denoise  Wa Detrend  Array Min & Max  Array Subset.

1. Introduction