ABSTRACT

Electrocardiogram (ECG) signal is a form of many physiologic signals as result of heart muscles activity. Arrhythmia is an abnormal condition of human heart activity. By processing ECG signal, a doctor can analyze the abnormalities.

One of arrhythmia's many parameters is *beat perminute* (bpm). It is the number of heart beat in a minute. By analyzing this bpm, doctor can decide whether his patient suffered.

In conventional way, ECG signals are acquired and recorded (written down) on a paper called electrocardiograms paper. Then, bpm value is measured manually as the changing of *R-R interval* on the paper.

In this Final Assignment, ECG Signals are acquired by using *biopotential amplifier* with a total *gain* of 930 times and filtered on a frequency range of 0.05 to 100 Hz. Then the signals are transmitted to PC using serial port (COM), recorded in *harddisk*, and its bpm variation being calculated.

An algorithm for detecting *QRS Complex* is implemented on PC, so that the changing of *R-R interval* can be observed as the signals stream through the algorithm and heart condition can be determined as normal, abnormal signal.

Key word : EKG, *bpm, R-R interval, QRS Kompleks*