

## ABSTRACT

Electrocardiogram is a physiological signal resulted by heart electrical activity. This signal is recorded by electrocardiograph which is later reflected in a graphical form. Electrocardiogram graph has so specific pattern that it could be referred to know heart's condition. An 8-bit microcontroller based-digital electrocardiograph equipment is an affordable ECG alternative equipment. ECG digital data is transferred to Personal Computer (PC). Therefore, digital ECG monitoring is expected to ease cardiologists' task in monitoring patients' heart's condition.

The deliverable of this final year project is the implementation of monitoring application as digital ECG receiver on cardiologists' PC. This application, used Matlab 7.4.0 programming language, could be displayed real time and the result could be stored in server database using MySQL. This digital electrocardiograph equipment is connected to a PC through RS232 communication standard interface.

Base on BPM test result, there are  $\pm 2,5$  errors when compared with biopac and  $\pm 0,3$  errors when compared with manual calculation in a minute. Physician assessment showed that the results have been good signal in accordance with the general standard used electrocardiograph. Acquisition delay time and the database access delay is 0.0058 which is quite prospective real-time applications.

Keywords : Electrocardiograph, real time, MySQL database, Matlab