# AUTOMATIC MEASUREMENT FOR RC CIRCUIT

ROSMIAH BT ISMAIL

A PROJECT PAPER SUBMITTED
FOR THE PARTIAL FULFILLMENT OF REQUIREMENT
BACHELOR OF SCIENCE HONOUR IN INFORMATION TECHNOLOGY

FAKULTI TEKNOLOGI MAKLUMAT DAN SAINS KUANTITATIF
INSTITUT TEKNOLOGI MARA
SHAH ALAM

1998

# ABSTRACT

At present, engineering student analysis the RC circuit response manually. The output voltage of the circuit is observed from the CRO and the graph of the RC charging and discharging is manually plotted on the graph paper. It would be the great help, if the RC circuit response can be obtained automatically.

This project leads to design software for test and measurement that will help to upgrading the present manual laboratory. With a software embedded on the personal computer, the RC charging and discharging graph can be plotted automatically displayed on the screen in real time. The software is designed for a specific value of resistor and capacitor. Output voltage of the RC circuit charging and discharging is read using Thurlby Thandar Multimeter, which is then pass the value to the personal computer. This value will be display on the screen of the personal computer in dos environment. Then by using Microsoft Visual Basic, the fixed graph will be created according to the output voltage and time constant that was stored in the file.

# ACKNOWLEDGEMENT

**In the name of Allah , The Most Compassionate, The Most Merciful**

In the name of Allah s.w.t, The Most Gracious who has given me the strength and ability to complete this report. All perfect praises belong to Allah s.w.t, Lord of the universe. May His blessings upon the Prophet Muhammad s.a.w and members of his family and companions.

I would like to express my deepest gratitude to my project external supervisors Puan Wahidah Mansor from Electrical Engineering Department for their guidance, ideas and patience in advising and assisting my project. My gratitude also goes to my internal supervisor Puan Nurazzah Abdul Rahman for her ideas and patience in advising and assisting my project. Thanks to all lecturers especially Puan Fatimah Ibrahim from Electrical Engineering department for the support and ideas to complete this project and for the guidance and willingness in sharing knowledge towards the completeness of this project.

Shah Alam, April 1998 Rosmiah Bt Ismail

# TABLE OF CONTENTS

# CHAPTER 1

# PROBLEM DESCRIPTION

## 1.1 Background of the problem

The most important aspect of the on-line computer is its communication with the external world. Much of this communication is standardized and stylized because it takes place through peripherals, which are common to most installations.

The term interface is used throughout computing, unfortunately with a number of different meanings. In a software context it is used to describe a piece of program designed to link together two other programs which would otherwise be incompatible. In hardware context it is sometimes taken to mean the whole body of electronic linking the computer to an external device. An interface is something without depth and shall use it to represent the dividing line between the electronics which are general to the computer and the electronics which are particular to the operation of an external device. **[LARRY 91]**

The ability to make measurement is vital to an understanding of the physical world in which we live. Automation in many areas of industry and the accompanying