MARA INSTITUTE OF TECHNOLOGY

SCHOOL OF ENGINEERING

ELECTRONIC DEPARTMENT

1988/89 SESSION

Final Year (Diploma) Project Report

on

DIGITAL STOP CLOCK

By:

1. AMIR BIN SPIAN
   MIT NO: 85759283

2. AZMAN BIN MAT
   MIT NO: 87501445

Under the Supervision of:

PUAN HABIBAH BT.HASHIM

PREFACE

The Digital Stop Clock is designed for telephone switch board operators and for programme timing in audio recording studio

The Digital Stop Clock is build using the intergrated circuit that is TTL IC type. The main blocks of the Digital Stop Clock are the clock,counter, memory, decoder and display.

This Digital Stop Clock is able to give a maximum count of 99 minutes and 59 seconds and have facilities to hold the display as long as needed.

The objective of the report is to provide experience in devoloping circiuts and to gain understanding of its operation.

ACKNOWLEDGEMENT

In the name of ALLAH, Beneficient, the merciful we are grateful to ALLAH for giving the patience to complete our project.

We would like to take this opportunity to extend our appreciations and heart felt gratitude to Puan Habibah Hashim as our project advisor, for her concerned and fruitful advice in making this project a success.

Our sincere thanks and gratitude to all lecturers, technicians and all our friends for the moral support and cooperation given to us throughout our course.

TABLE OF CONTENTS

		Page
Preface	.....	i
Acknowledgements	.....	ii
Table of contents	.....	iii
Nomenclature	.....	v

CHAPTERS

1. INTRODUCTION

1.1 Introduction	.....	1
1.1.1 The circuit design and operation	.....	2
1.1.2 Circuit Digram	.....	3

2. THEORY AND OPERATION OF DIGITAL STOP CLOCK CIRCUIT

2.1 Power Supply	.....	4
2.1.1 Fullwave Rectification	.....	5
2.1.2 Smoothing Circuit	.....	6
2.1.3 Regulator	.....	8
2.2 Clock Signal	.....	9
2.2.1 Schmitt Trigger	.....	10
2.3 Counter	.....	12
2.3.1 Cascading BCD Counter	.....	13
2.3.2 Decade Counter	.....	15
2.3.3 MOD 6 Counter	.....	15
2.3.4 MOD 100 Counter	.....	17
2.4 Memory Device	.....	18
2.4.1 Bistable Latches	.....	1[illegible]

2.5 BCD To 7- Segment Decoder/Driver 20

2.6 Display 24

2.6.1 Common Anode LED 25

3. CONSTRUCTION AND TESTING

3.1 Circuit Layout 26

3.2 Testing and Result 29

4. USER GUIDE

4.1 User Guide 30

5. CONCLUSION

5.1 Conclusion 31

APPENDIX 32

BIBLIOGRAPHY 33