**NEAR EAST UNIVERSITY**

**8085/Z80 MICROPROCESSOR PROBLEMS**



|  |  |  |
| --- | --- | --- |
| M1  |  | AO  |
|  |  | A1  |
| MREO  |  | A2  |
| IORO  |  | A3  |
| VVR  |  | A4  |
| RD  |  | AS  |
|  |  | A6  |
| REFSH  |  | A?  |
|  |  | AS  |
| HALT  |  | A9  |
|  |  | A10  |
| VVAIT  |  | A11  |
|  |  | A12  |
| INT  |  | A13  |
| NMI  |  | A14  |
|  |  | A1S  |
| RESET  |  |  |
|  |  | DO  |
| BUSRQ  |  | D1  |
| BU SAK  | .  | D2  |
| ,-~CLK  |  | D3  |
|  | D4  |
|  |  | DS  |
|  |  | De  |
|  |  | D?  |

Z80-CPU

**DOGAN iBRAHiM**

**NICOSIA 2001**

NEAR EAST UNIVERSITY

8085/Z80 MICROPROCESSOR PROBLEMS

DOGAN iBRAHIM

NICOSIA 2001

8085/Z80 MICROPROCESSOR PROBLEMS

ISBN: 975-8359-09-6

Computer Design: Dqgan Ibrahim

Production Manager: Recep Tekdemir

Printed by Near East University Press, Nicosia, 2001

©Dogan Ibrahim, 2001

2

**CONTENTS**

|  |  |
| --- | --- |
| *PREFACE*  |  |
| 1.  | INTRODUCTION  | 5  |
| 2.  | NUMBER SYSTEMS  | 7  |
| 3.  | 8085 MICROPROCESSOR ARCHITECTURE  | 12  |
| 4.  | Z80 MICROPROCESSOR ARCHITECTURE  | 14  |
| 5.  | ASSEMBLER PROGRAMMING  | 17  |
| 6.  | 8085 ASSEMBLER PROGRAMMING  | 20  |
| 7.  | Z80 ASSEMBLER PROGRAMMING  | 26  |
| APPENDIX A - 8085 INSTRUCTION SET  | 38  |
| APPENDIX B - Z80 INSTRUCTION SET  | 41  |
| APPENDIX C - ASCII CODES  | 56  |
| .APPENDIX D - DECIMAL TO BCD CONVERSION  | 59  |
| :BIBLIOGRAPHY  | 60  |

3

***PREFACE***

This book has been designed to help the students by providing them exercises on the hardware and software of the 8085 and the Z80 microprocessors. The book can be used by anyone who wants to practise writing assembly language programs.

The book has mainly been designed to be used by the undergraduate students at the Near East University, studying for the degree of computer engineering, electrical engineering, or computer science.

The author has many years of experience using both 8 and 16 bit microprocessors and microcontrollers. It is the author's opinion that one of the best ways to learn assembly language programming is to do as many exercises as possible. The book will take the students systematically through the basic concepts and then many exercises will be provided on programming the 8085 and the Z80 microprocessors. The solutions to all of the exercises in this book are provided in a complimentary book by the author. It is recommended that the students use both books at the same time.

*Assoc. Prof. Dr. Dogan lbrahim Faculty Of Engineering*

*Near East University*

*Nicosia, 2001*

4