MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.), INDIA

DEEMED TO BE UNIVERSITY

(Declared under Distinct Category by Ministry of Education, Government of India)

NAAC ACCREDITED WITH A++ GRADE

DEPARTMENT OF ELECTRONICS ENGINEERING

2023-2024

A SKILL BASED MINI PROJECT

REPORT

"8085 microprocessor assembly language program to convert binary to BCD using 8085 Simulator"

Microprocessor and Interfacing (2140413)

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS ENGINEERING

SUBMITTED BY:
RATNESH ASATI
(0901EC221087)

SUBMITTED TO: Dr.
VIKAS MAHOR

CERTIFICATE

This is to certify that the mini project report entitled **"Develop an 8085 microprocessor assembly language program to convert binary to BCD using 8085 simulator"** submitted by Ratnesh Asati has been carried out under the guidance of Dr.Vikas Mahor, Electronics Engineering, Madhav Institute of Technology & Science, Gwalior. The project report is approved for submission requirement for Mini Project in 4th semester in Electronics Engineering, from Madhav Institute of Technology & Science, Gwalior (M.P).

SUBMITTED TO:

Dr.Vikas Mahor

(Department Of Electronics Engineering)

Ratnesh Asati
(0901EC221087)

DECLARATION

I hereby declare that the project work entitled **"Develop an 8085 microprocessor assembly language program to convert binary to BCD using 8085 simulator"** submitted to the Madhav Institute of Technology & Science Gwalior, is a record of an original work done by me under the guidance of Dr.Vikas Mahor, Department of Electronics Engineering.

The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

Ratnesh Asati

Date :22/04/2024
Place : MITS,Gwalior

ACKNOWLEDGEMENT

We would like to express our gratitude towards **Dr.Vikas Mahor**, for his support in accomplishment of our project on **"Develop an 8085 microprocessor assembly language program to convert binary to BCD using 8085 simulator".**

I would like to extend my deep appreciation to all my group members, without their support and coordination we would not have been able to complete this project.

Finally, as one of the team members, I would like to appreciate all my group members for their support and coordination, I hope we will achieve more in our future endeavours.

CONTENT

INTRODUCTION

A binary number is store data location 800H. Convert the number into its BCD equivalent and store it to the memory location 8050H.

Generally, the 8085 is an 8-bit microprocessor, and it was launched by the Intel team in the year of 1976 with the help of NMOS technology. This processor is the updated version of the microprocessor. The configurations of 8085 microprocessor mainly include data bus-8-bit, address bus-16 bit, program counter-16-bit, stack pointer-16 bit, registers 8-bit, +5V voltage supply, and operates at 3.2 MHz single segment CLK. The applications of 8085 microprocessor are involved in microwave ovens, washing machines, gadgets, etc.

CODE

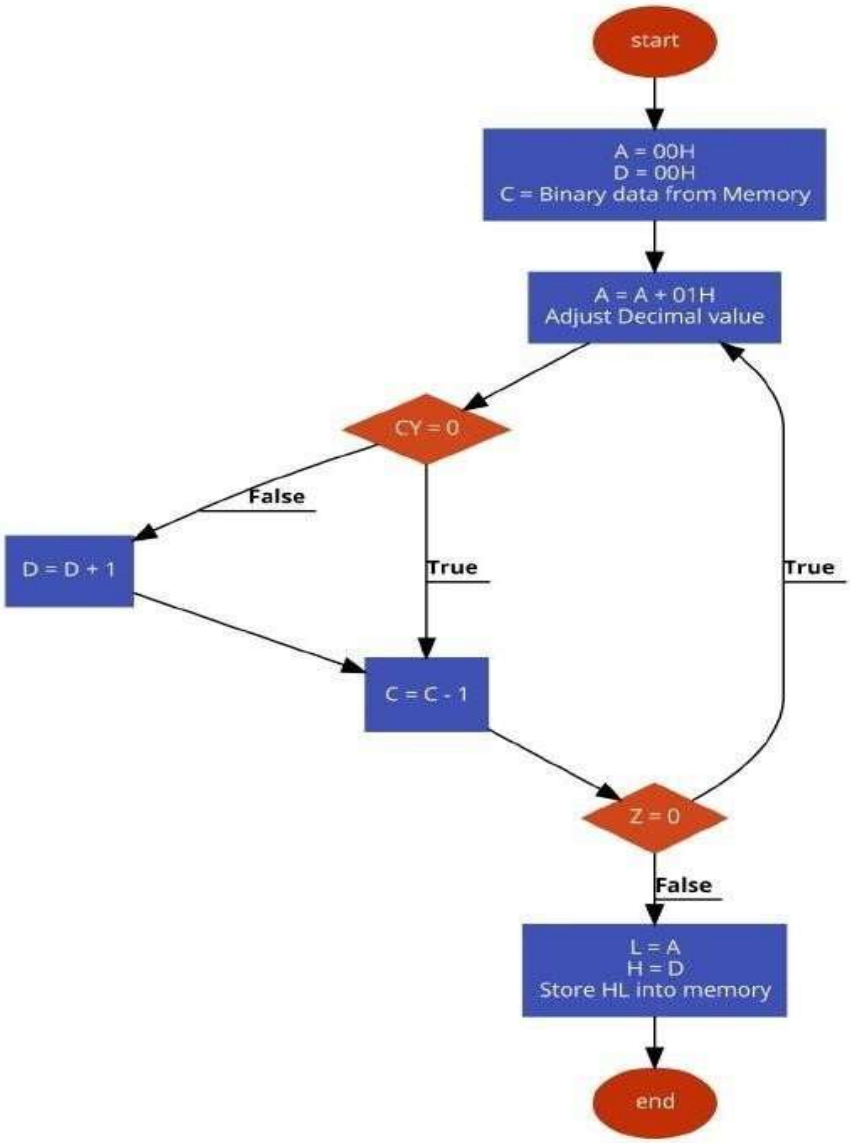
```
LXI H, 8D02H

MOV A, M

MVI C, 0 ; Initialize C register

MVI B, 0 ; Initialize B register

HUN:

SUI 64H

JC TENS

INR C

JMP HUN

TENS:

ADI 64H
```

```
LOOP:
SUI 0AH
JC UNITS
INR B
JMP LOOP
UNITS:
ADI 0AH
INX H
MOV M, C
INX H
MOV M, B
INX H
MOV M, A
HLT
```

INPUT

Address	Data
. . .	. . .
8000	34
. . .	. . .

FLOW DIAGRAM



OUTPUT

Address	Data
. . .	. . .
8050	52
. . .	. . .

CONCLUSION

The 8085 microprocessor, revered for its computational prowess, serves as a linchpin in digital processing, offering unparalleled sophistication in binary to BCD conversion. This pivotal functionality seamlessly bridges the gap between binary and decimal realms, facilitating intricate arithmetic computations and intricate digital displays across a myriad of applications. From intricately designed calculators to meticulously crafted digital clock systems, the 8085 microprocessor stands as a testament to its unparalleled versatility and indispensability in the ever-evolving landscape of digital technology.

REFERENCE

1) https://www.tutorialspoint.com/microprocessor/microprocessor_8085_architecture.htm
2) https://en.wikipedia.org/wiki/Intel_8085
3) https://www.geeksforgeeks.org/8085-program-to-convert-a-bcd-number-to-binary/
4) https://www.tutorialspoint.com/8085-program-to-convert-an-8-bit-binary-to-bcd