Lab-1
Group: 06

01-12-24

Dhaka University of Engineering & Technology (DUET), Gazipur

Department of Computer Science & Engineering (CSE)

Course Title: Microprocessor & Interfacing Sessional (CSE 3812)

Lab: 01

Familiarizing with MDA 8086 trainer Kit and loading machine code of a sample program to MDA-8086.

Objectives:

a. To familiarize with MDA-8086 system configuration.
b. To understand MDA-8086 trainer Kit command in "Machine Code" mode.
c. To know about different registers inside 8086 microprocessors.

Basic Theory:

MDA-8086 can operate in two modes. (a) Machine Code Mode (b) Serial Monitor Mode

In machine code mode, users can load instructions/ programs directly by keypad and can observe the contents of different registers in the LCD. On the other hand, users can load instructions/programs from the computer via serial port in Serial Monitor Mode.

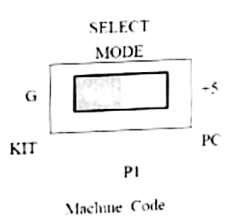
On a power-up, the following message will be displayed on a LCD.

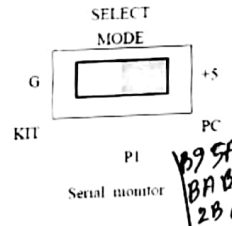
MDA-8086 Kit ! !
Midas 2109-5964

Or

Serial monitor!
Midas 2109-5964

To use "Machine Code" mode, move jumper P_1 which is located on the PCB like this.





After this press the RES key to change the mode of MDA-8086 trainer Kit.

Task to do:

1. Write Assembly Language Program using notepad to transfer the following hexa-decimal values to the specified registers:

   AX=3789 h, BX= 3B9F h, CX=2B5A h, DX= 52B1C h

   Then, **ADD** the value of AX with BX and **SUBTRACT** the value of DX from CX. **MOV** the content from AX to BX and CX to DX. Then, make an **AND** operation using the updated contents of AX and CX.
2. Find the Machine Code of the corresponding Assembly Language Program using MASM (i.e., use **.lst Ifile)*.
3. Turn on the 8086 microprocessor kit
4. Set the address 0000H: 1000H in the MDA-8086 kit.
5. Write the machine codes in the appropriate memory address.

6. Press STP (or T command) key and then GO (or G command) key, and verify the calculated value of different registers. Perform theoretical calculations and verify results and fill-up the given data table.

Seg. Address	Offset Address	Machine Code	Instruction
0000	1000-2	B8 89 37	MOV AX, 3789H
0000	1000-2	B9 5A 2B	MOV CX, 2B5AH

Instruction	AX	BX	CX	DX	Flag Reg.
ADD ~~MOV~~ AX, 3789H	7398	3B9F	0000	0000	0114
Sub CX, DX	0000	0000	D8A9	52B1	0285