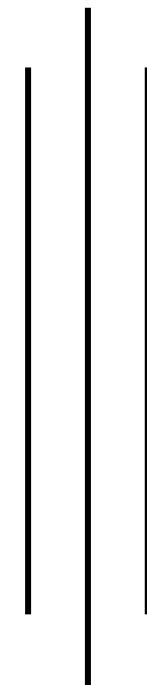# SAGARMATHA ENGINEERING COLLEGE

(TU Affiliated)

Sanepa, Lalitpur

LAB NO: 1

A LAB REPORT ON

DATA TRANSFER, ARITHMETIC & LOGICAL GROUP INSTRUCTIONS IN 8085 MICROPROCESSOR

Submitted By

Name: ………………………….

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Submitted To

Department of Electronics and Computer Engineering

Signature: ……………………...

Date: ………………………....

MICROPROCESSOR LAB-01

TITLE

USE OF DATA TRANSFER, ARITHMETIC & LOGICAL GROUP INSTRUCTIONS IN 8085 MICROPROCESSOR.

Objective

- ✓ To be familiar with assembly simulator interface
- ✓ To be familiar with basic 8085 instructions

Hardware/Software Required

- Computer with internet
- Sim8085 online simulator

Related Theory

Data Transfer Group Instructions: This instruction group copies data from a source location to destination location without modifying the contents of the source.

Arithmetic Group Instructions: This instruction group performs arithmetic operations such as addition, subtraction, increment and decrement.

Logical Group Instructions: The instruction group performs logical operations like AND, OR, NOT (complement), and bitwise shift.

MICROPROCESSOR LAB-01

Software Interface
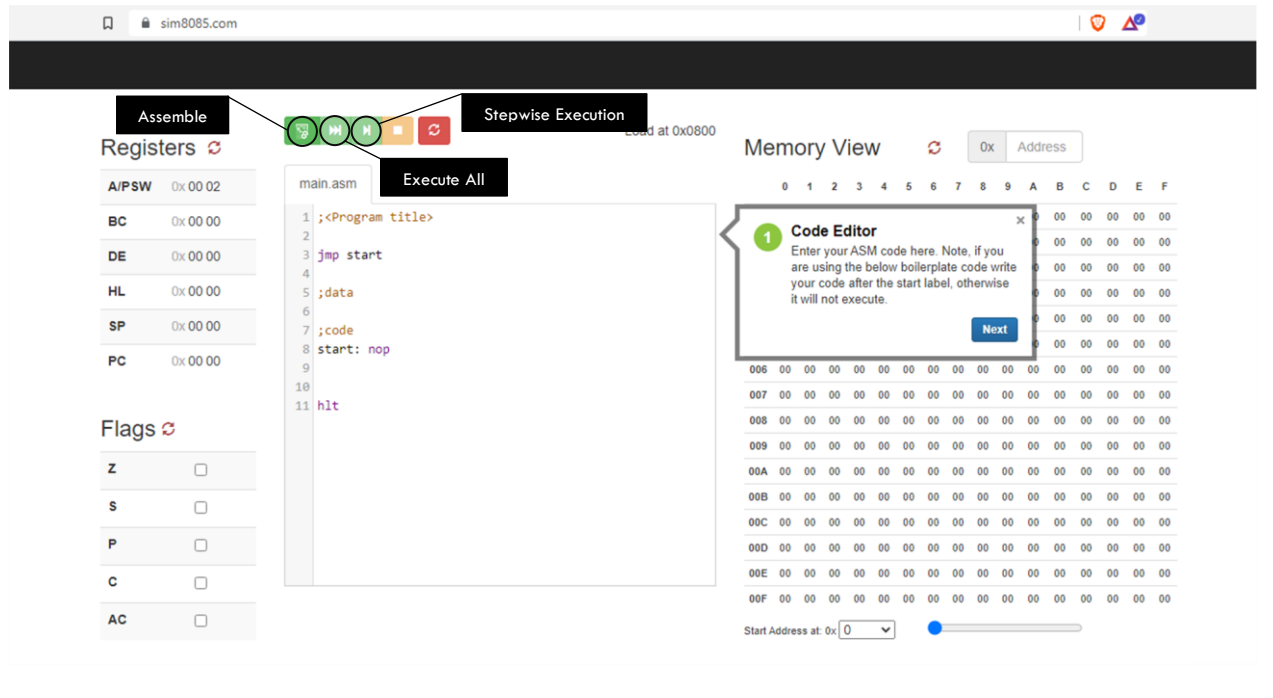
Procedure

1) Make sure that your computer is connected to the internet and then browse *www.sim8085.com*

2) Write your assembly code at code editor section as shown in figure above.

3) After writing your code, click assemble button to assemble and click "Stepwise Execution" button to execute line by line or click "Execute All" button to execute all code at a time.

4) Verify your results by inspecting "Memory View", "Register View" and Flags sections.

5) Note that you can manually insert values on memory or registers by double or triple clicking.

MICROPROCESSOR LAB-01

Code and Observations

Data Transfer Group

MVI D, 7AH MOV A, D STA 9000H HLT D = A = [9000] =	LDA 9000H MOV B, A HLT A = B = Assume [9000] = A6	LXI H, 9000H MVI M, 33H HLT H = L = [9000] =	LXI B, 90A0H LDAX B HLT A = B = C = Assume [90A0] = 9A	LHLD 9000H XCHG HLT H = L = D = E = Assume [9000] = 77 [9001] = 44	MVI A, 50H LXI B, 9000H STAX B HLT B = C = [9000] =

LXI H, 1234H SHLD 9000H HLT H = L = [9000] = [9001] =	LXI SP, 9008 LXI B, 1234H PUSH B HLT B = C = [9007] = [9006] =	LXI SP, 9005 POP D HLT D = E = Assume [9005] = 11 [9006] = 66	1. Write a program to exchange the content of location 9010H and 9020H. (*Load values manually*) 2. WAP to display lower byte of a sixteen-bit number having memory location 9000 on port address 80H and higher byte on port address 81H.

Arithmetic Group Instructions

Please fill up the updated register, memory location, flags, or IO port using the convention showed in the example after executing the following code line by line.

Example	
MVI A, 45H	A ← 45H
MVI B, 7AH	B ← 7AH
ACI 22H	A ← 45H + 22H + 0
ADD B	A ← 67H + 7AH, (S=1, P=1, AC=1)
STA 9000H	[9000H] ← E1H

MVI A, F3H

ADI 28H

STA 9050H

MVI A, 00H

ADC A

STA 9051H

HLT

LXI D, 2277H

LXI H, 3388H

DAD D

INX H

SHLD 9000H

HLT

Q. There are three 16-bit data at location 9000H, 9002H and 9004H. WAP to add all the values and store the 24 bit result at 9007.

MICROPROCESSOR LAB-01

Code and Observations

Logical Group Instructions

MVI A, 18H
MVI D, 24H
ANI 0FH
ORA D
CMA
HLT

MVI A, 35H
MVI D, 7EH
ANA D
XRI 55H
ORI 83H
RRC
HLT

Q1. Compare the content of memory location [9000H] = 41H with [9001H] = 40H and [9002H] = 41H. Observe and note the content of flag.

Q2. Set D_2 bit and reset D_5 bit of data at memory location [9000H] = 63H. And store the result at location [9005H] = ?.

Rough

Result

All the given instructions are executed, and all the results are verified.