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وزارة التعليم العالي والبحث العلمي
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EXPERIMENT 1

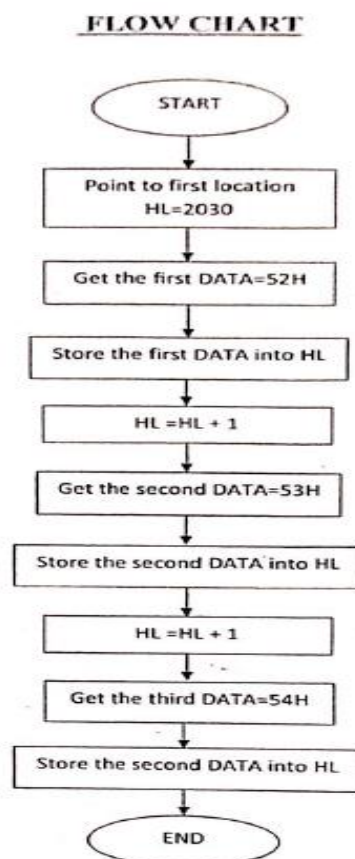
DATA TRANSFER INSTRUCTIONS

I. Introduction

These instructions move data between registers, or between memory and registers. These instructions copy data from source to destination, where the contents of source are not modified through copying. For example: MOV B, C or MOV B, M. This instruction (MOV) makes a copy to data stored in C register to B register without modified the data through copying.

II. Experiment

Store the data byte (52H, 53H, 54H) into memory location 2030, 2031, and 2032, respectively.



III. Source Code for program:

LXI H, 2030 H ; point the first location in memory
MVI A, 52H ; Enter the data to the A register
MOV M, A ; Make a copy data from Memory to A register
INX H ; increase data of H register by 1
MVI A, 53H ; Enter the data to the A register
MOV M, A ; Make a copy data from Memory to A register
INX H ; increase data of H register by 1
MVI A, 54H ; Enter the data to the A register
MOV M, A ; Make a copy data from Memory to A register
RST5 ; Finish the program


INSTRUCTION CODE	REGISTER	DATA
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IV. Memory

LXI H, 2030	H,L	20, 30
MVI A,52H	Accumulator	52
MOV M,A	Memory (2030)	52



V. Simulation program

- I. Write the program code using microprocessor 8085 simulator
- II. Execute the program using this button 

III. Getting result.

VI. Discussion

1- Write a program to exchange the content memory location 3051, 3061. Assume the content of these location.

3051 54

3051 8C

2- Find the machine codes and the number of bytes of the following instructions, identify the opcodes and the operands

a) **SUB D**

b) **MVI D, 8FH**

c) **ADI E4H**

3- Specify the output of the location 3030H if the following program is executed:

MVI D, 22H

The screenshot shows the Microprocessor 8085 Simulator Software Kit 1.0 interface. The main window displays the following assembly code:

```
LXI H 2030h
MVI A 52h
MOV M A
INX H
MVI A 53h
MOV M A
INX H
MVI A 54h
MOV M A
RST 5
```

The status bar shows: TStates: 76 | MCycles: 20 | Time of Execution: 76 µs | Flags: [S Z AC P CY] | General Regs.: A: 54 | B: 00 | C: 00 | D: 00 | E: 00 | H: L: 2032 | M: 54 | SP: 0000 | PC: 2030

The memory dump shows the following data:

Address	Data
2030	52
2031	53
2032	54
2033	30
2034	20
2035	3E
2036	52
2037	77
2038	23
2039	3E
203A	53
203B	77
203C	23
203D	3E
203E	54
203F	77
2040	EF

The text "program Result" is overlaid on the memory dump area. The Windows taskbar at the bottom shows the time as 06:05 and the date as 11/11/17.

MOV A, D
MOV B, A
MVI C, A5H
STA 3030H

4- Specify the content of the register and the flag status as the following instruction are executed (A,B,C,D,S,Z,CY)

MVI A, 00H
MVI B, 85H
MOV C, A
MOV D, B
ADD B
SUB C
RST5