

Ambition College

New Baneshwor, Kathmandu



Department: BSc. CSIT

Semester: 2nd Semester

SUBJECT: MICROPROCESSOR

Received

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TO WRITE A PROGRAM TO LOAD REGISTER B,C,D,E,H,L WITH VALUES 01,02,CB,CF,3E,3C

PROGRAM:

Mnemonics	Hex Value
MVI B, 01H	06H
MVI C, 02H	0EH
MVI D, CBH	16H
MVI E, CFH	13H
MVI H, 3EH	26H
MVI L, 3CH	2EH
HLT	76H

MEMORY REPRESENTATION

MVI B, 01H	06H	2000
	01H	2001
MVI C, 02H	0EH	2002
	02H	2003
MVI D, CBH	16H	2004
	CBH	2005
MVI E, CFH	13H	2006
	CFH	2007
MVI H, 3EH	26H	2008
	3EH	2009
MVI L, 3CH	2EH	200A
	3CH	200B
HLT	76H	200C

OUTPUT:

Register B = 01H

Register C = 02H

Register D = CBH

Register E = CFH

Register H = 3EH

Register L = 3CH

o add four numbers of 8-bit i.e CB, FE, 9E, D8 and show the 8-bit result through D

PROGRAM

Instruction	Hex value
XRA A	AF H
MVI B, CB H	06 H
MVI C, FE H	0E H
MVI D, 9E H	16 H
MVI E, D8 H	1E H
ADD B	80H
ADD C	81H
ADD D	82H
ADD E	83H
MOV D, A	57H
HLT	76H

Memory Representation

XRA A	AF	200D
MVI B, CBH	06	200E
	CB	200F
MVI C, FEH	0E	2010
	FE	2011
MVI D, 9EH	16	2012
	9E	2013
MVI E, D8H	1E	2014
	D8	2015
ADD B	80	2016
ADD C	81	2017
ADD D	82	2018
ADD E	83	2019
MOV D, A	57	201A
HLT	76	201BA

OUTPUT:

Register D = :

CONCLUSION:

Hence, we were able to add 4 number of 8-bits data and more final result in register D

Recd
19/11

TO ADD 10 BYTES OF DATA STORED IN MEMORY AND SHOW 16 BIT RESULT THROUGH REGISTER D AND E

PROGRAM:

Mnemonics (Instruction)	Hex - Value
LXI H, 3000H	21
MVI A, 00H	3E
MVI C, 00H : carry	0E
MVI B, 0AH : counter	06
BACK: ADD M	86
JNC NEXT	D2
INR C	0C
NEXT: INX H	23
DCR B	05
JNZ BACK	C2
MOV D, A : sum	57
MOV E, C : carry	59
HLT	76

MEMORY REPRESENTATION:

	F7	3000	
	CB	3001	
	8E	3002	
	A7	3003	
	B5	3004	
	14	3005	data
	72	3006	
	25	3007	
	99	3008	
	35	3009	
	21	300A	
LXI H, 3000H	00	300B	
	30	300C	
MVI A, 00H	3E	300D	
	00	300E	
MVI C, 00H	0E	300F	
	00	3010	
	06	3011	
MVI B, 0AH	0A	3012	
ADD M	86	3013 : BACK	
	D2	3014	
JNC NEXT	18	3015	
	30	3016	
INR C	0C	3017	
INX H	23	3018 : NEXT	
DCR B	05	3019	
JNZ BACK	C2	301A	
	13	301B	
	30	301C	
MOV D, A	57	301D	
MOV C, A	59	301E	
HLT	76	301F	

OUTPUT:

Register D = 25

Register E = 05

CONCLUSION:

In this program, we were able to add 10 bytes of data stored in the memory and show the 16-bit result through the register D and E

Revised
20/11

TO MULTIPLY TWO NUMBERS 05 AND 04

PROGRAM

	Mnemonics	Hex Value
	MVI A, 00H	3E
	MVI B, 05H	06
	MVI C, 04H	0E
	MVI D, 00H	16
BACK	ADD B	80
	JNC NEXT	D2
	INR D	14
NEXT	DCR C	0D
	JNZ BACK	C2
	MOV E, A	5F
	HLT	76

MEMORY REPRESENTATION

MVI A,00H	3E	2000
	00	2001
MVI B,05H	06	2002
	05	2003
MVI C,04H	0E	2004
	04	2005
MVI D,00H	16	2006
	00	2007
ADD B	80	2008 : BACK
JNC NEXT	D2	2009
	0D	200A
	20	200B
INR D	14	200C
DCR C	0D	200D : NEXT
JNZ BACK	C2	200E
	08	200F
	20	2010
MOV E, A	5F	2011
HLT	76	2012

TPUT

Register E = 14H

ULT:

Hence, we were able to multiply two numbers 05H and 04H

Received
04/12

	A	B	C	D	E	F	G	H	I
1	Q.4) Compute first four moments about an arbitrary point 75 from the following data. Also find first four central								
2	moments, skewness and kurtosis and interpret								
3	Class Interval	50-60	60-70	70-80	80-90	90-100			
4	Frequency	5	12	20	7	6			
5									
6	x	f	mid(m)	fm	m-A				
7	50-60	5	55	275	-20				
8	60-70	12	65	780	-10				
9	70-80	20	75	1500	0				
10	80-90	7	85	595	10				
11	90-100	6	95	570	20				
12		50		3720					
13									
14									
15	Measure	Position	Formula	Value	Formula				
16	A			75					
17	μ_1'			-0.6	=SUMPRODUCT(B7:B11,E7:E11)/B12				
18	μ_2'			126	=SUMPRODUCT(B7:B11,E7:E11^2)/B12				
19	μ_3'			60	=sumproduct(B7:B11,E7:E11^3)/B12				
20	μ_4'			39000	=sumproduct(B7:B11,E7:E11^4)/B12				
21	μ_1			0	=D17-D17				
22	μ_2			125.64	=D18-D17^2				
23	μ_3			286.368	=D19-3*D17+2*(D17)^3				
24	μ_4			39415.7712	=D20-4*D19+6*D18*(D17)^2-3*(D17)^4				
25	γ_1			0.20334458	=D23/(D22)^1.5				
26	β_2			2.49697488	=D24/(D22)^2				
27									
28	Since (skewness) $\gamma_1 = 0.203344577 > 0$ so the distribution is positively skewed								
29	and since the kurtosis (β_2) = 2.496974877 < 3 so the distribution is platykurtic								

LAB 4

1) WAP to count number of 7 in 10 bytes of data stored in memory

PROGRAM

Mnemonics	Hex Value
LXI H, 2000H	21
MVI A, 00H	3E
MVI C, 0AH : counter	0E
MVI D, 00H : count	16
BACK: MOV A, M	7E
CPI 07H	FE
JNZ NEXT	C2
INR D	14
NEXT: INX H	23
DCR C	0D
JNZ BACK	C2
HLT	76

MEMORY REPRESENTATION

	CF	2000	data
	3C	2001	
	07	2002	
	27	2003	
	74	2004	
	75	2005	
	A8	2006	
	55	2007	
	64	2008	
	07	2009	
	21	200A	
LXI H, 2000H	00	200B	
	20	200C	
	3E	200D	
MVIA, 00H	00	200E	
	0E	200F	
MVIC, 0AH	0A	2010	
	16	2011	
MVI D, 00H	00	2012	
MOV A, M	7E	2013 : BACK	
CPI 07H	FE	2014	
	07	2015	
	C2	2016	
JNZ NEXT	1A	2017	
	20	2018	
INR D	14	2019	
INX H	23	201A : NEXT	
DCR C	0D	201B	
	C2	201C	
JNZ BACK	13	201D	
	20	201E	
HLT	76	201F	

INPUT

Register D=02

CONCLUSION

In this program, we were able to count number of 7 repeated in 10 bytes of data stored in memory.

Received
12/12

2) WAP to count number of even and odd number among 10 bytes of data
 2 calculate even number in Register C and odd number in Register D
 PROGRAM

Mnemonics	Hex Value
LXI H, 2000H	21
MVI A, 00H	3E
MVI B, 0AH: counter	06
MVI C, 00H: even	0E
MVI D, 00H: odd	16
BACK: MOV A, M	7E
RRC	0F
JNZ NEXT	D2
INR D	14
JMP GO	C3
NEXT: INR C	0C
GO: INX H	23
DCR B	05
JNZ BACK	C2
HLT	76

MEMORY REPRESENTATION

	CF	2000	data
	3C	2001	
	07	2002	
	27	2003	
	74	2004	
	75	2005	
	A8	2006	
	55	2007	
	64	2008	
	07	2009	
LXI H, 2000H	21	200A	
	00	200B	
	20	200C	
MVI A, 00H	3E	200D	
	00	200E	
MVI B, 0AH	06	200F	
	0A	2010	
MVI C, 00H	0E	2011	
	00	2012	
MVI D, 00H	16	2013	
	00	2014	
MOV A, M	7E	2015 : BACK	
RRC	0F	2016	
JNZ NEXT	D2	2017	
	1E	2018	
	20	2019	
INRD	14	201A	
JMP GO	C3	201B	
	1F	201C	
	20	201D	
INRC	0C	201E : NEXT	
INX H	23	201F : GO	
DCR B	05	2020	
JNZ BACK	C2	2021	
	15	2022	
	20	2023	
HLT	76	2024	

OUTPUT

Register C = 06

Register D = 04

CONCLUSION:

In this program, we were able to count number of even and odd number among 10 bytes of data stored in memory.

✓
Revised
12/12

Microprocessor 8085 Simulator Software Kit 1.0

The screenshot displays the 8085 Assembler software interface. At the top, there are icons for file operations and a status bar indicating "Ln 8, Col 1". Below this, the "MCycles" and "Time of Execution" are shown as 112 and 413 μs respectively.

The "General Regs." section shows the state of various registers:

	A	B	C	D	E	H	L	M	SP	PC	X
General Regs.	02	00	00	00	00	0A	7E	0000	0011		

The main window displays assembly code with addresses and hex values:

```

H 8000h
A
B 0Ah
X: CMP M
NEXT
M A M

T: INK H
B
BACK

```

On the right side, the "Starting Address" is set to 8000. Below it, the "Comments:" field is empty. The "User Data Grid" and "Hex Code Grid" are also visible, both showing memory locations from 8000 to 8009 with their respective data values.

The bottom right section contains four groups of instructions:

- 1 Data Transfer Group:** MOV, MVI, LDA, STA, LHL, SHLD, LXI, XCHG, LDAX, STAX, IN, OUT
- 2 Arithmetic Group:** ADD, ADI, ADC, ACI, SUB, SUI, SBB, SBI, INC, DCR, INX, DCX
- 3 Logical Group:** ANA, AND, XRA, XOR, ORA, ORI, CMP, CPI, CMC, RLC, RRC, RAL, RAR, STC
- 4 Branch and Machine Control Group:** JMP, J, CALL, C, RET, RL, EI, DI, PUSH, PCHL, RST, RIM, SIM, POP, XTHL, IPHL, NOP, HALT

At the very bottom, there are checkboxes for "Auto Insert" and "Instruction Information", along with a note about exchanging the top of the stack with HL pair.