

# RHYTHM NARANG

## 102203839

### Lab assignment 1

#### Question1-

MVI A, 48;  
MOV B,A;  
MOV C, A;  
MOV D,A;  
MOV E,A;  
MOV H,A;  
MOV L,A;  
HLT

The screenshot displays a 8085 assembly simulator interface with three main panels: Memory, Assembly Code, and Machine Code.

**Memory Panel:** Shows memory locations from 0x0000 to 0x000C. The values are: 0x0000: C3, 0x0001: 03, 0x0002: 00, 0x0003: 00, 0x0004: 3E, 0x0005: 30, 0x0006: 47, 0x0007: 4F, 0x0008: 57, 0x0009: 5F, 0x000A: 67.

**Assembly Code Panel:** Shows the assembly code for the program. The code is as follows:

```
1 ;<Program title>
2
3 JMP START
4
5 ;data
6
7 ;code
8 START: NOP
9
10 ;Start writing your code here
11 MVI A, 48;
12 MOV B,A;
13 MOV C, A;
14 MOV D, A;
15 MOV E, A;
16 MOV H, A;
17 MOV L, A;
18
19
20
21 HLT
22
```

**Machine Code Panel:** Shows the machine code for the program. The code is as follows:

```
4
5 ;data
6
7 ;code
8 0x3 START: NOP
9
10 ;Start writing your code
11 0x4 3E 30 MVI A, 48;
12 0x6 47 MOV B, A;
13 0x7 4F MOV C, A;
14 0x8 57 MOV D, A;
15 0x9 5F MOV E, A;
16 0xA 67 MOV H, A;
17 0xB 6F MOV L, A;
18
19
20
21 0xC 76 HLT
```

## Question 2-

MVI A,48

MVI B,48

ADD B

STA 8500

HLT

The screenshot shows a 68000 assembly editor with three main panels. The left panel displays memory locations from 0x0000 to 0x000B, with values like C3, 03, 00, 00, 3E, 30, 06, 30, 80, 32, 34, and 21. The middle panel shows assembly code starting with a title, followed by a jump to START, data declaration, code declaration, a NOP instruction at START, a comment, and then the instructions: MVI A,48, MVI B,48, ADD B, STA 8500, HLT, and HLT. The right panel shows the corresponding machine code in hexadecimal, including the jump instruction 0x0 C3 03 00 and the instruction sequence 0x4 3E 30, 0x6 06 30, 0x8 80, 0x9 32 34 21, and 0xC 76.

Memory Location	Value
0x0000	C3
0x0001	03
0x0002	00
0x0003	00
0x0004	3E
0x0005	30
0x0006	06
0x0007	30
0x0008	80
0x0009	32
0x000A	34
0x000B	21

```
1 ;<Program title>
2
3 JMP START
4
5 ;data
6
7 ;code
8 START: NOP
9
10 ;Start writing your code here
11 MVI A,48
12 MVI B,48
13 ADD B
14 STA 8500
15 HLT
16
17 HLT
18
```

Machine Code	Hex	Assembly
1		;<Program title>
2		
3	0x0 C3 03 00	JMP START
4		
5		;data
6		
7		;code
8	0x3	START: NOP
9		
10		;Start writing your code here
11	0x4 3E 30	MVI A,48
12	0x6 06 30	MVI B,48
13	0x8 80	ADD B
14	0x9 32 34 21	STA 8500
15	0xC 76	HLT
16		
17		
18		

## Question 3-

LDA 8500

MOV B,A

LDA 8501

ADD B

STA 8502

RST 5

The screenshot shows a 68000 assembly editor with three main panels. The left panel displays memory locations from 0x0000 to 0x000A, with values like C3, 03, 00, 00, 3A, 34, 21, 47, 3A, 35, and 21. The middle panel shows assembly code starting with a title, followed by a jump to START, data declaration, code declaration, a NOP instruction at START, a comment, and then the instructions: LDA 8500, MOV B,A, LDA 8501, ADD B, STA 8502, and RST 5. The right panel shows the corresponding machine code in hexadecimal, including the jump instruction 0x0 C3 03 00 and the instruction sequence 0x4 3A 34 21, 0x7 47, 0x8 3A 35 21, 0xB 80, and 0xC 32 36 21.

Memory Location	Value
0x0000	C3
0x0001	03
0x0002	00
0x0003	00
0x0004	3A
0x0005	34
0x0006	21
0x0007	47
0x0008	3A
0x0009	35
0x000A	21

```
1 ;<Program title>
2
3 JMP START
4
5 ;data
6
7 ;code
8 START: NOP
9
10 ;Start writing your code here
11 LDA 8500
12 MOV B,A
13 LDA 8501
14 ADD B
15 STA 8502
16
17 RST 5
18
```

Machine Code	Hex	Assembly
1		;<Program title>
2		
3	0x0 C3 03 00	JMP START
4		
5		;data
6		
7		;code
8	0x3	START: NOP
9		
10		;Start writing your code here
11	0x4 3A 34 21	LDA 8500
12	0x7 47	MOV B,A
13	0x8 3A 35 21	LDA 8501
14	0xB 80	ADD B
15	0xC 32 36 21	STA 8502
16		
17		
18		

```

LXI H, 8500
MOV A,M
INX H
ADD M
INX H
MOV M,A
RST5 5

```

The screenshot shows an 8085 assembly editor with three main panels. The left panel displays memory locations from 0x0000 to 0x000B. The middle panel shows the assembly code, and the right panel shows the machine code.

Memory Location	Value
0x0000	C3
0x0001	03
0x0002	00
0x0003	00
0x0004	21
0x0005	34
0x0006	21
0x0007	7E
0x0008	23
0x0009	86
0x000A	23
0x000B	77

```

3  JMP START
4
5  ;data
6
7  ;code
8  START: NOP
9
10 ;Start writing your code here
11 LXI H, 8500
12 MOV A, M
13 INX H
14 ADD M
15 INX H
16 MOV M, A
17
18 HLT
19

```

```

1  ;<Program title>
2
3  0x0  C3 03 00 JMP START
4
5  ;data
6
7  ;code
8  0x3  START: NOP
9
10 ;Start writing your code here
11 0x4  21 34 21 LXI H, 8500
12 0x7  7E      MOV A, M
13 0x8  23      INX H
14 0x9  86      ADD M
15 0xA  23      INX H
16 0xB  77      MOV M, A
17
18
19

```

Program ran successfully

#### Question 4-

```

LHLD 8500
XCHG
LHLD 8502
DAD D
SHLD 8504
RST 5

```

The screenshot shows an 8085 assembly editor with three main panels. The left panel displays memory locations from 0x0000 to 0x000B. The middle panel shows the assembly code, and the right panel shows the machine code.

Memory Location	Value
0x0000	C3
0x0001	03
0x0002	00
0x0003	00
0x0004	2A
0x0005	34
0x0006	21
0x0007	EB
0x0008	2A
0x0009	36
0x000A	21
0x000B	19

```

1  ;<Program title>
2
3  JMP START
4
5  ;data
6
7  ;code
8  START: NOP
9
10 ;Start writing your code here
11 LHLD 8500
12 XCHG
13 LHLD 8502
14 DAD D
15 SHLD 8504
16
17 HLT
18
19

```

```

1  ;<Program title>
2
3  0x0  C3 03 00 JMP START
4
5  ;data
6
7  ;code
8  0x3  START: NOP
9
10 ;Start writing your code here
11 0x4  2A 34 21 LHLD 8500
12 0x7  EB      XCHG
13 0x8  2A 36 21 LHLD 8502
14 0xB  19      DAD D
15 0xC  22 38 21 SHLD 8504
16
17

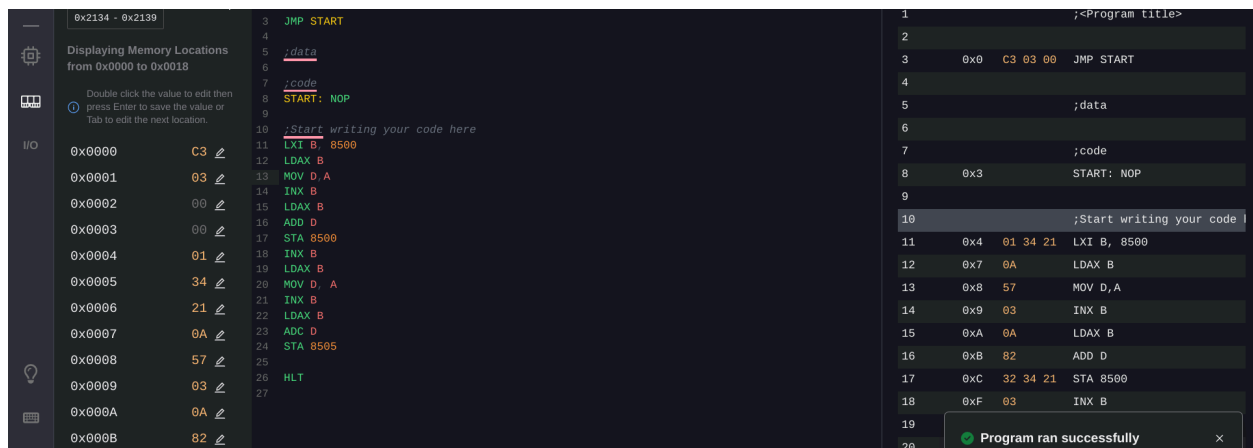
```

Program ran successfully

```

LXI B, 8500
LDAX B
MOV D,A
INX B
LDAX B
ADD D
STA 8500
INX B
LDAX B
MOV D, A
INX B
LDAX B
ADC D
STA 8505

```



Question 5-

```

MVI C, 00
LXI H, 8500
MOV A, M
INX H
ADD M
JNC Next
INR C
Next: INX H
MOV M, A
INX H

```

MOV M,C  
RST 5

The screenshot shows an assembly editor interface. On the left, a table displays memory locations from 0x0000 to 0x000B with their corresponding hex values and edit icons. The main area shows assembly code with comments. On the right, a disassembly view shows the machine code for the entered instructions. A status bar at the bottom indicates 'Program ran successfully'.

Address	Value
0x0000	C3
0x0001	03
0x0002	00
0x0003	00
0x0004	0E
0x0005	00
0x0006	21
0x0007	34
0x0008	21
0x0009	7E
0x000A	23
0x000B	86

```
6 ;code
7 START: NOP
8
9 ;Start writing your code here
10
11 MVI C, 00
12 LXI H, 8500
13 MOV A, M
14 INX H
15 ADD M
16 JNC Next
17 INR C
18 Next: INX H
19 MOV M, A
20 INX H
21 MOV M, C
22
23
24 HLT
25
```

Line	Address	Code	Source Code
1			<Program title>
2			
3	0x0	C3 03 00	JMP START
4			
5			;data
6			
7			;code
8	0x3		START: NOP
9			
10			;Start writing your code here
11	0x4	0E 00 00	MVI C, 00
12	0x6	21 34 21	LXI H, 8500
13	0x9	7E	MOV A, M
14	0xA	23	INX H
15	0xB	86	ADD M
16	0xC	D2 10 00	JNC Next
17			

Program ran successfully

QUESTION 6-

LDA 8500H  
CMA  
STA 8501H  
RST 5

The screenshot shows an assembly editor interface. On the left, a table displays memory locations from 0x0000 to 0x000B with their corresponding hex values and edit icons. The main area shows assembly code with comments. On the right, a disassembly view shows the machine code for the entered instructions. A status bar at the bottom indicates 'Program ran successfully'.

Address	Value
0x0000	C3
0x0001	03
0x0002	00
0x0003	00
0x0004	3A
0x0005	00
0x0006	85
0x0007	2F
0x0008	32
0x0009	01
0x000A	85
0x000B	76

```
4 ;data
5
6 ;code
7 START: NOP
8
9 ;Start writing your code here
10
11 LDA 8500H
12 CMA
13 STA 8501H
14
15 HLT
16
17
```

Line	Address	Code	Source Code
1			<Program title>
2			
3	0x0	C3 03 00	JMP START
4			
5			;data
6			
7			;code
8	0x3		START: NOP
9			
10			;Start writing your code here
11	0x4	3A 00 85	LDA 8500H
12	0x7	2F	CMA
13	0x8	32 01 85	STA 8501H
14			
15			
16	0xB	76	HLT
17			

Program ran successfully

LDA 8500H  
CMA  
INR A  
STA 8501H  
RST 5

The screenshot displays a 6502 assembly editor interface with three main panels: Memory, Code, and Data.

**Memory Panel (Left):** Shows memory addresses from 0x0000 to 0x000F. The values are: 0x0000: C3, 0x0001: 03, 0x0002: 00, 0x0003: 00, 0x0004: 3A, 0x0005: 00, 0x0006: 85, 0x0007: 2F, 0x0008: 3C, 0x0009: 32, 0x000A: 01, 0x000B: 85.

**Code Panel (Middle):** Shows assembly code starting at address 0x0000. The code is: `START: NOP` at 0x0000, `LDA 8500H` at 0x0001, `CMA` at 0x0002, `INR A` at 0x0003, `STA 8501H` at 0x0004, and `HLT` at 0x0005.

**Data Panel (Right):** Shows data starting at address 0x0000. The data is: `JMP START` at 0x0000, `;data` at 0x0001, `;code` at 0x0002, `START: NOP` at 0x0003, `;Start writing your code here` at 0x0004, `LDA 8500H` at 0x0005, `CMA` at 0x0006, `INR A` at 0x0007, and `STA 8501H` at 0x0008.

A status bar at the bottom right indicates "Program ran successfully".