



Experiment 3.1

Student Name:

Branch: CSE

Semester: 4TH

Subject Name

UID: 2

Section/Group=

Microprocessor and interfacing lab

1. Aim/Overview of the practical:

Masking of 8 bit number

2. Task to be done:

a)Mask the lower nibble of 8-bit number

b) Mask the higher nibble of 8-bit number

3. Apparatus/Simulator used (For applied/experimental sciences/materials based labs):

1. Jubin Application

2. 8085 Simulator

3. JDK

4. Algorithm/Flowchart (For programming based labs):

a) Mask the lower nibble of the 8-bit number

1. Load the content of memory location 3050
2. Move the content of A in register B
3. Perform And operation of A with 0F and store the result in memory location 3051
4. Halt

b) Mask the Higher nibble of the 8-bit number

1. Load the content of memory location 3050
2. Move the content of A in register B
3. Perform OR With F0 and store in memory location 3051
4. Halt

5. Description/ Code:

Mask the lower nibble of 8-bit number

```
LDA 3050  
MOV B,A  
ANI 0F  
STA 3051  
HLT  
#BEGIN 3050  
#DB 14
```

Mask the Higher nibble of 8-bit number

```
LDA 3050
```



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**MOV B,A
ORI F0
STA 3051
HLT**

**#BEGIN 3050
#DB 53H**

6. Result/Output/Writing Summary:

Mask the lower nibble of 8-bit number



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8085 Simulator

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

8085 Assembly Language Editor

Assembler Disassembler

```
LDA 3050
MOV B,A
ANI 0F
STA 3051
HLT
#BEGIN 3050
#DB 14
```

Autocorrect Assemble

Registers Memory Devices

Memory Editor

Memory Range: 0000 --- FFFF

Memory Address	Value
0000	3A
0001	50
0002	30
0003	47
0004	E6
0005	0F
0006	32
0007	51
0008	30
0009	76
000A	14

Show entire memory content
 Show only loaded memory location
 Store directly to specified memory location



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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

* Address	Label	Mnemonics	Hexcode	Bytes	M-Cycles	T-States
✓ 0000		LDA 3050	3A	3	4	13
0001			50			
0002			30			
✓ 0003		MOV B,A	47	1	1	4
✓ 0004		ANI 0F	E6	2	2	7
0005			0F			
✓ 0006		STA 3051	32	3	4	13
0007			51			
0008			30			
✓ 0009		HLT	76	1	2	5

Simulate

Start From →

Registers Memory Devices

Registers :

Register	Value	7	6	5	4	3	2	1	0
Accumulator	00	0	0	0	0	0	0	0	0
Register B	00	0	0	0	0	0	0	0	0
Register C	00	0	0	0	0	0	0	0	0
Register D	00	0	0	0	0	0	0	0	0
Register E	00	0	0	0	0	0	0	0	0
Register H	00	0	0	0	0	0	0	0	0
Register L	00	0	0	0	0	0	0	0	0
Memory(M)	00	0	0	0	0	0	0	0	0

Register	Value	S	Z	*	AC	*	P	*	CY
Flag Register	00	0	0	0	0	0	0	0	0

Type	Value
Stack Pointer(SP)	0000
Memory Pointer (HL)	0000
Program Status Word(PSW)	0000
Program Counter(PC)	3050
Clock Cycle Counter	0
Instruction Counter	0

SOD	SID	INTR	TRAP	R7.5	R6.5	R5.5
0	0	0	0	0	0	0

For SIM instruction

SOD	SDE	*	R7.5	MSE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

For RIM instruction

SID	I7.5	I6.5	I5.5	IE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

No. Converter Tool :

Hexadecimal	Decimal	Binary
0		0



Mask the Higher nibble of 8-bit number

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

8085 Assembly Language Editor

Assembler Disassembler

```
LDA 3050
MOV B,A
ORI F0
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Registers Memory Devices

Registers :

Register	Value	7	6	5	4	3	2	1	0
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Register C	00	0	0	0	0	0	0	0	0
Register D	00	0	0	0	0	0	0	0	0
Register E	00	0	0	0	0	0	0	0	0
Register H	00	0	0	0	0	0	0	0	0
Register L	00	0	0	0	0	0	0	0	0
Memory(M)	00	0	0	0	0	0	0	0	0

Register	Value	S	Z	*	AC	*	P	*	CY
Flag Register	00	0	0	0	0	0	0	0	0

Type	Value
Stack Pointer(SP)	0000
Memory Pointer (HL)	0000
Program Status Word(PSW)	0000
Program Counter(PC)	3050
Clock Cycle Counter	0
Instruction Counter	0

SOD	SID	INTR	TRAP	R7.5	R6.5	R5.5
0	0	0	0	0	0	0

For SIM instruction

SOD	SDE	*	R7.5	MSE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

For RIM instruction

SID	I7.5	I6.5	I5.5	IE	M7.5	M6.5	M5.5
0	0	0	0	0	0	0	0

No. Converter Tool :

Hexadecimal	Decimal	Binary
0		0

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler Registers Memory Devices

Assembler

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Memory Editor

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0007	51
0008	30
0009	76
000A	53

Show entire memory content
 Show only loaded memory location
 Store directly to specified memory location

Simulate

Start From → 3050

Backward Stop Forward

Learning outcomes (What I have learnt):

- 1. Working of microprocessors.**
- 2. Learn how to Mask**
- 3. Learn about 8085 simulator.**
- 4. Operations of 8 bit numbers.**
- 5. Learn about the different instructions that are needed to be given to the memory to perform Masking tasks.**

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			