

LOGICAL OPERATIONS

EXP NO: 20

AIM:

To compute various logical operations using 8085 processor.

ALGORITHM:

- 1) Load data to accumulator.
- 2) Load another data in register
- 3) Perform logical operations like AND, OR and XOR (Use ANA, ORA, XRA) with the accumulator content.
- 4) Store the result in specified memory location.

PROGRAM:

**AND
OPERATION:**

MVI
A,06

MVI
B,04

ANA
B

STA
2500

HLT

**OR
OPERATION:**

MVI
A,07

MVI
B,06

ORA
B

STA
2000

HLT

**XOR
OPERATION:**

MVI
A,03

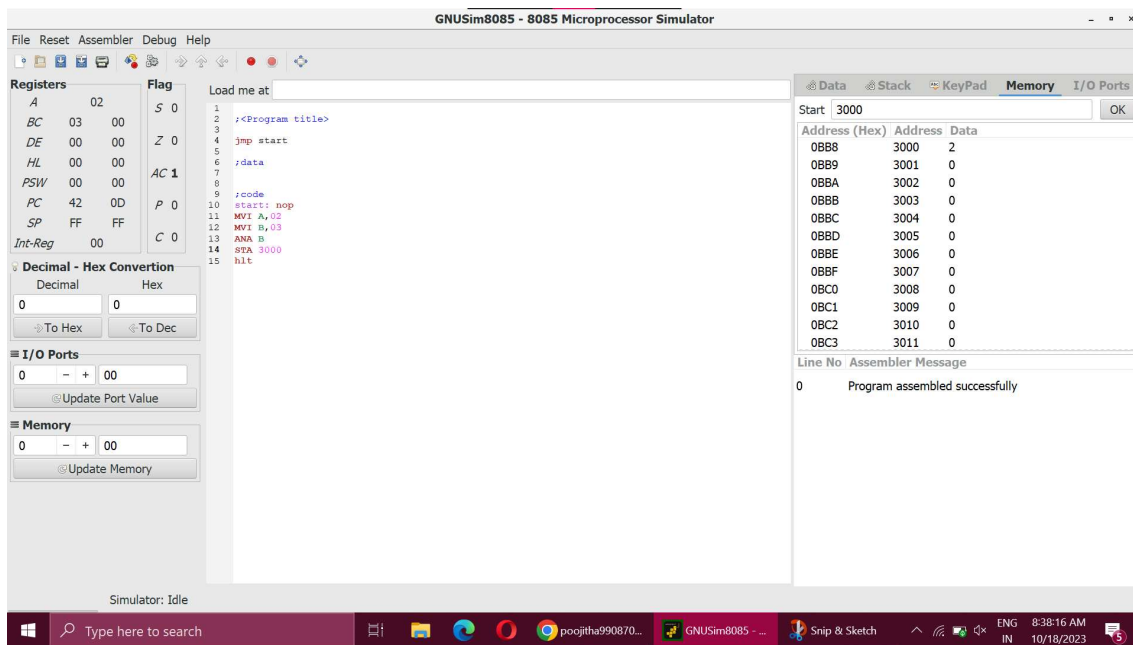
MVI
B,08

XRA
B

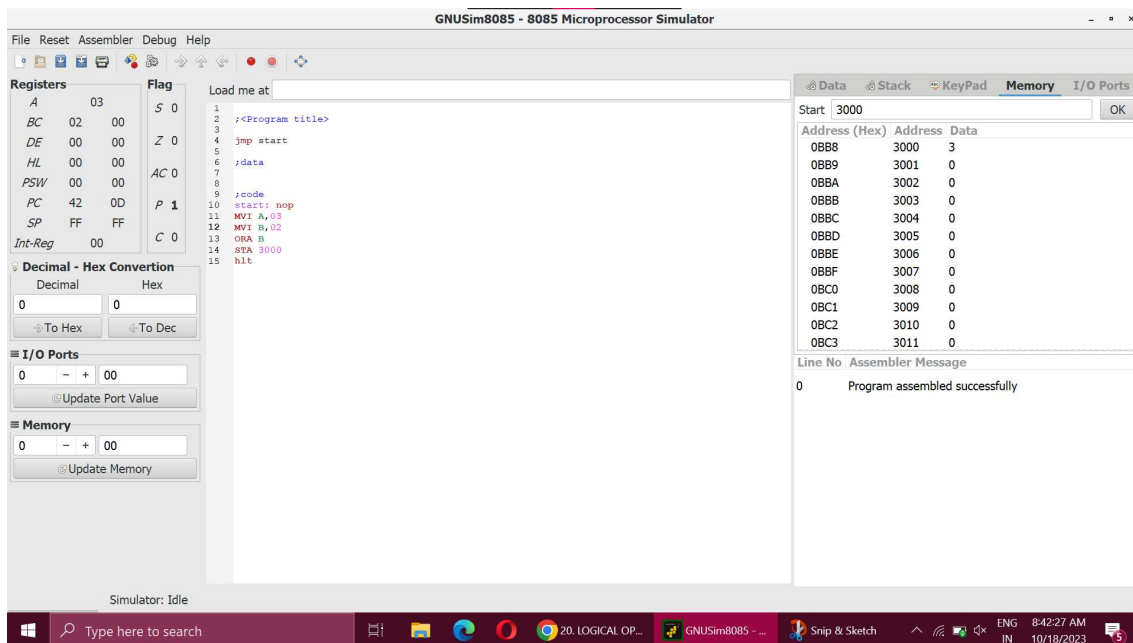
STA
2000

HLT

INPUT:
AND OPERATION:



OR OPERATION:



XOR OPERATION:

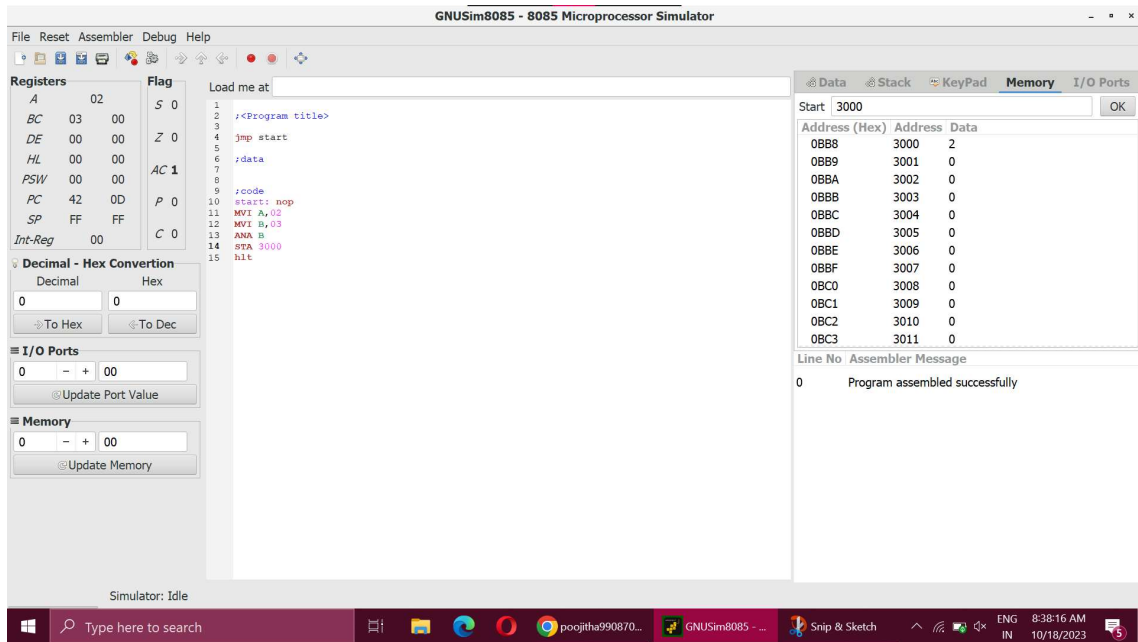
The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window is titled "GNUSim8085 - 8085 Microprocessor Simulator" and contains several panels:

- Registers:** A table showing the current values of the 8085 registers. The PC (Program Counter) is 42, and the SP (Stack Pointer) is FF. The Int-Reg (Interrupt Register) is 00.
- Flag:** A table showing the status of the flags. The S (Sign) flag is 0, and the Z (Zero) flag is 0. The AC (Auxiliary Carry) flag is 0, and the P (Parity) flag is 0. The C (Carry) flag is 0.
- Assembly Code:** A list of assembly instructions. The code starts with a title, followed by a jump to the start of the program. The code then defines a data segment and a code segment. The code segment contains instructions for moving data from memory to registers and performing an XOR operation.
- Memory:** A table showing the memory contents. The memory address 3000 contains the value 1. The memory address 3001 contains the value 0. The memory address 3002 contains the value 0. The memory address 3003 contains the value 0. The memory address 3004 contains the value 0. The memory address 3005 contains the value 0. The memory address 3006 contains the value 0. The memory address 3007 contains the value 0. The memory address 3008 contains the value 0. The memory address 3009 contains the value 0. The memory address 3010 contains the value 0. The memory address 3011 contains the value 0.
- I/O Ports:** A section for monitoring and controlling the I/O ports. The current value of the I/O port is 0.
- Decimal - Hex Conversion:** A section for converting between decimal and hexadecimal values. The current value is 0.
- Assembler Message:** A message box showing the output of the assembler. The message is "Program assembled successfully".

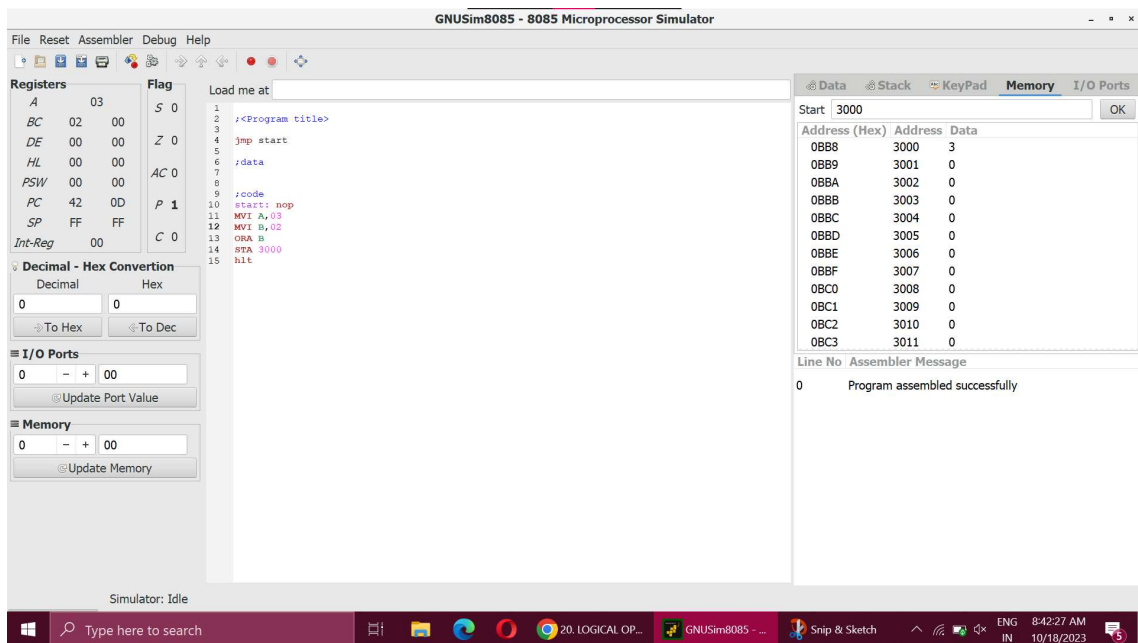
The simulator is currently in the "Idle" state.

OUTPUT:

AND OPERATION:



OR OPERATION:



XOR OPERATION:

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	01	S	0
BC	02 00	Z	0
DE	00 00	AC	0
HL	00 00	P	0
PSW	00 00	C	0
PC	42 0D		
SP	FF FF		
Int-Reg	00		

Flag

Decimal - Hex Conversion

Decimal: 0 Hex: 0

To Hex To Dec

I/O Ports

0 - + 00

Update Port Value

Memory

0 - + 00

Update Memory

Load me at

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8 ;code
9 start: nop
10
11 MVI A,03
12 MVI B,02
13 XRA B
14 STA 3000
15 hlt
```

Data Stack Keypad Memory I/O Ports

Start 3000 OK

Address (Hex)	Address	Data
0BB8	3000	1
0BB9	3001	0
0BBA	3002	0
0BBB	3003	0
0BBC	3004	0
0BBD	3005	0
0BBE	3006	0
0BBF	3007	0
0BC0	3008	0
0BC1	3009	0
0BC2	3010	0
0BC3	3011	0

Line No Assembler Message

0 Program assembled successfully

Simulator: Idle

Type here to search

20 LOGIC... GNUSim80... Snip & Ske... Snip & Ske...

ENG 8:43:40 AM 10/18/2023

RESULT: Thus the program was executed successfully using 8085 processor simulator.