

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
```

INPUT:

5,2

OUTPUT:

The screenshot shows an 8085 assembly simulator interface. On the left, the 'Registers' panel displays the state of various registers: A (07), BC (04 00), DE (00 00), HL (00 00), PSW (00 00), PC (42 09), SP (FF FF), and Int-Reg (00). The 'Flag' panel shows S (0), Z (0), AC (0), P (0), and C (0). Below these are sections for 'Decimal - Hex Conversion', 'I/O Ports', and 'Memory', each with input fields and update buttons. The central area displays the assembly code:

```
1 MVI A,03
2 MVI B,04
3 ORA B
4 STA 2000
5 HLT
6
```

The right panel shows the 'Memory' tab with a table of memory addresses and data. The 'Start' address is set to 2000. The memory table shows addresses from 07D0 to 07DD with corresponding data values. At the bottom, the 'Assembler Message' panel shows the message: 'Program assembled successfully'.

Address (Hex)	Address	Data
07D0	2000	7
07D1	2001	0
07D2	2002	0
07D3	2003	0
07D4	2004	0
07D5	2005	0
07D6	2006	0
07D7	2007	0
07D8	2008	0
07D9	2009	0
07DA	2010	0
07DB	2011	0
07DC	2012	0
07DD	2013	0

Line No	Assembler Message
0	Program assembled successfully

OR OPERATION:

MVI A,07

MVI B,06

ORA B

STA 2000

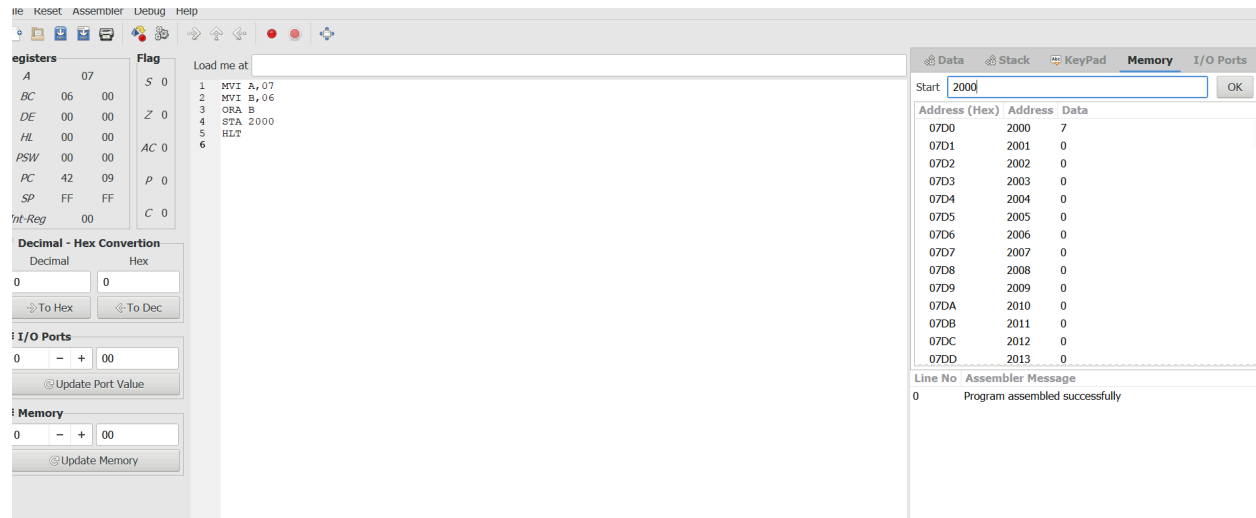
HLT

INPUT:

4

8

OUTPUT:



XOR OPERATION:

MVI A,03

MVI B,04

XRA B

STA 2000

HLT

INPUT:

5

7

OUTPUT:

The screenshot displays the 8085 processor simulator interface. The main window is divided into several sections:

- Registers:** A table showing the current values of the 8085 registers. The *PC* (Program Counter) is at 4209, and *SP* (Stack Pointer) is at FF00.
- Flag:** A table showing the status of the flags. The *S* (Sign) flag is 0, and the *C* (Carry) flag is 0.
- Assembly Code:** A list of instructions with line numbers:
 - 1: *MVI A, 03*
 - 2: *MVI B, 04*
 - 3: *XRA B*
 - 4: *STA 2000*
 - 5: *HLT*
 - 6: (blank)
 - 7: (blank)
- Memory:** A table showing the contents of memory locations from 07D0 to 07DD. The value at address 2000 is 07.
- I/O Ports:** A section for monitoring and controlling I/O ports.
- Assembler Message:** A log showing the message "Program assembled successfully".

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

