EXP NO: 16

AIM: To compute square of number using 8085 processor.

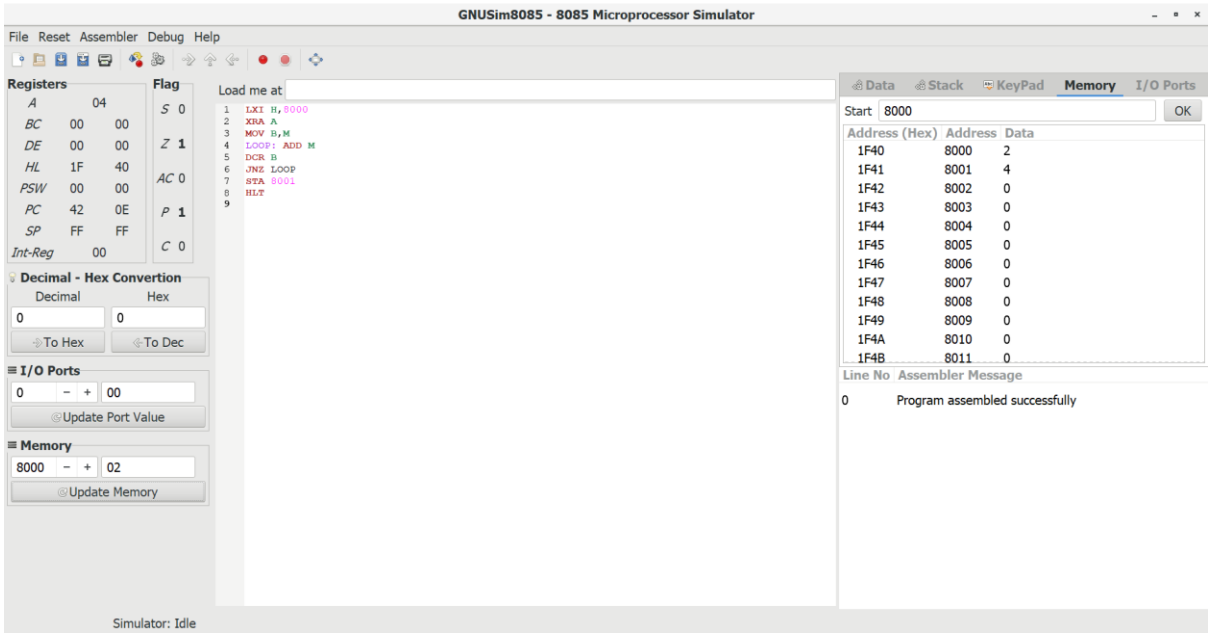
ALGORITHM:

1) Load the base address of the array in HL register pair.
2) Assign accumulator as 0.
3) Load the content of memory location specified into register.
4) Add content of memory location with accumulator and decrement register content by 01.
5) Check if register holds 00, if so store the value of accumulator in memory location.

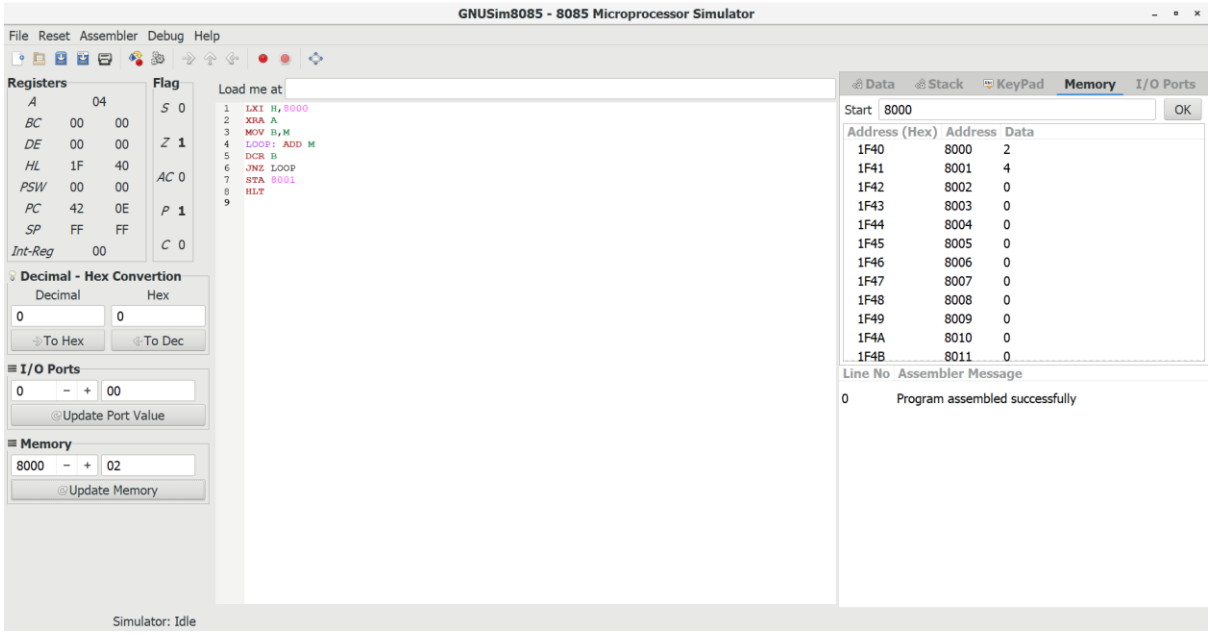
PROGRAM:

```
LXI H,8000
XRA A
MOV B,M
LOOP: ADD M
DCR B
JNZ LOOP
STA 8001
HLT
```

INPUT:



OUTPUT:



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

EXP NO: 17

AIM: To compute one's and two's complement using 8085 processor.

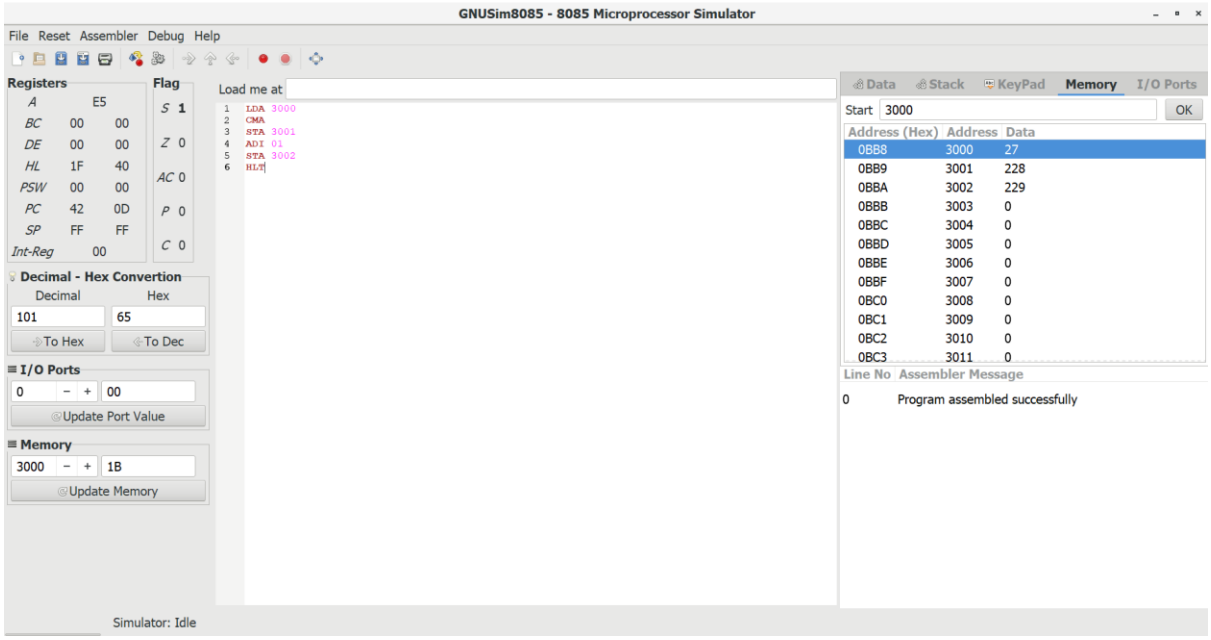
ALGORITHM:

1) Load the base address of the array in a register pair.
2) Move the data from memory location into accumulator.
3) Convert all ones into zeros and zeros into ones.
4) Add 01 to the accumulator content.
5) Store the results of one's and two's complement.

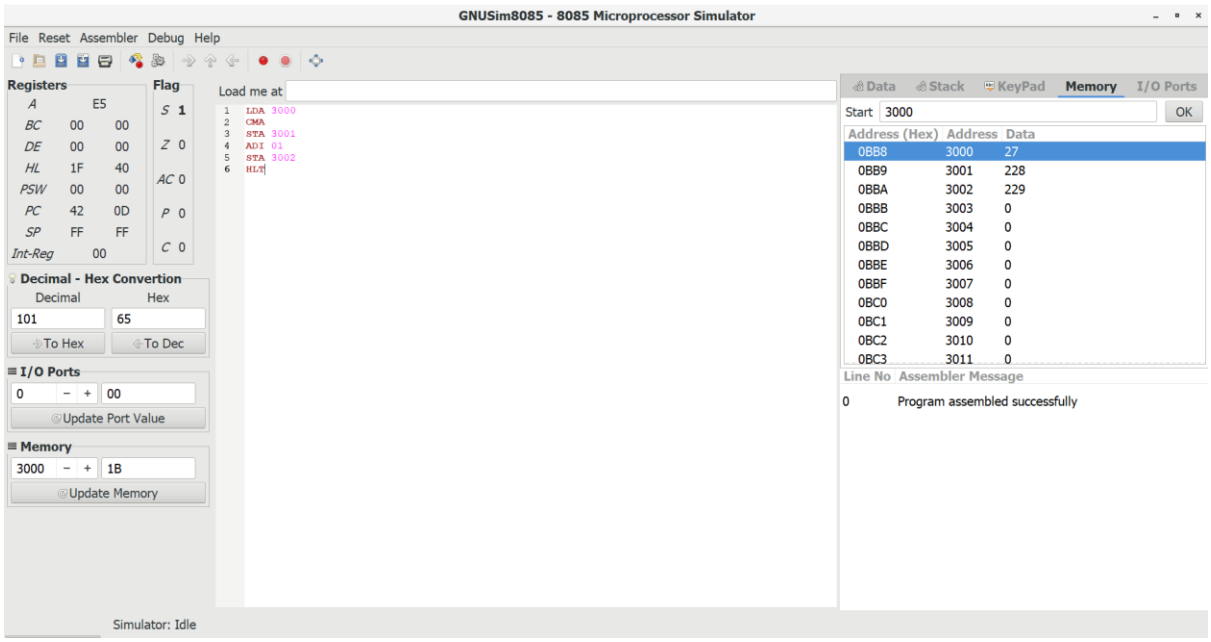
PROGRAM:

LDA 3000
CMA
STA 3001
ADI 01
STA 3002
HLT

INPUT:



OUTPUT:



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

EXP NO:18

AIM: To compute rotation of given data in left without carry using 8085 processor.

ALGORITHM:

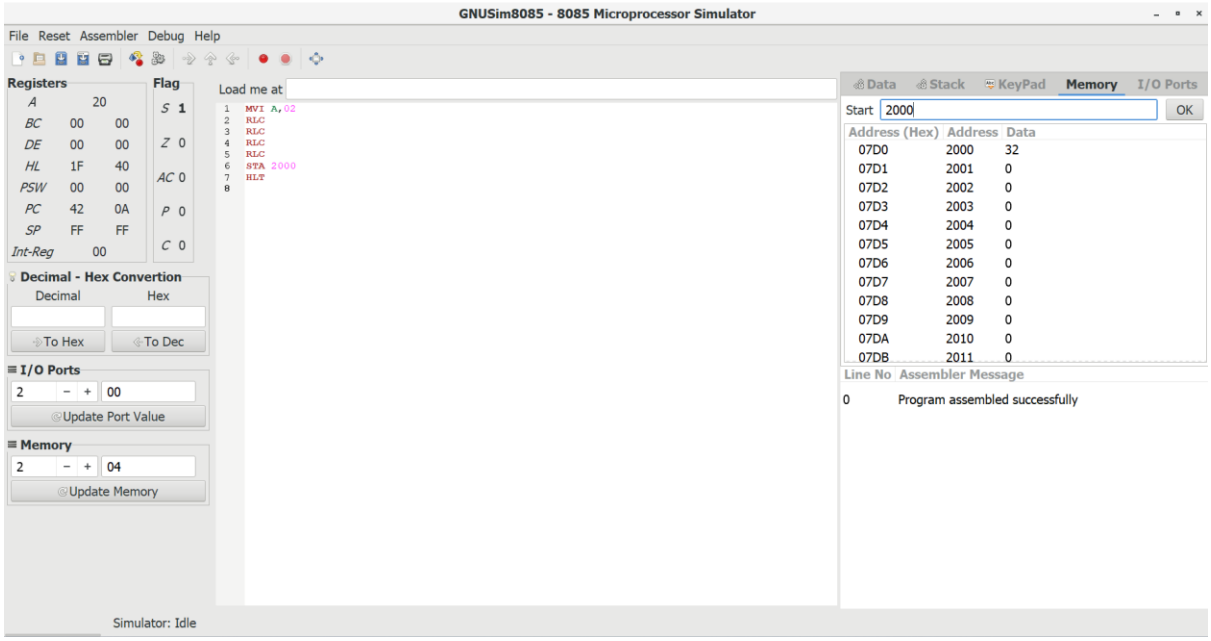
1) Load the base address of the array in HL register pair.
2) Move the data from memory location into accumulator.
3) Shift left the accumulator content for four times.

4) Store the result in the specified location.

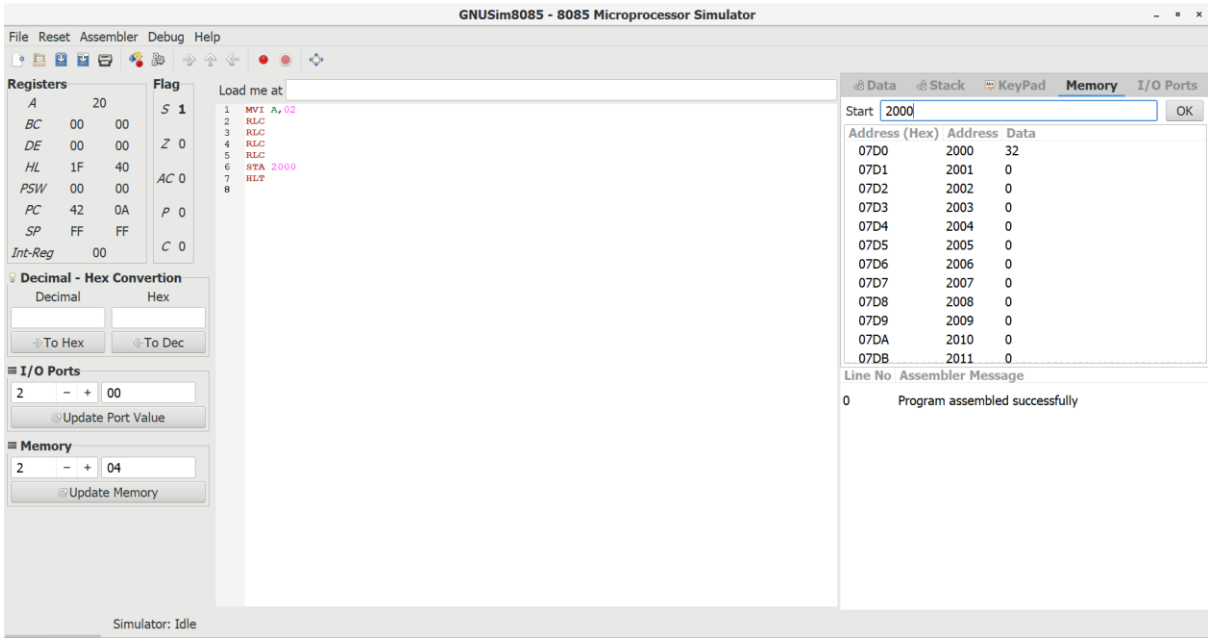
PROGRAM:

```
MVI A,02
RLC
RLC
RLC
RLC
STA 2000
HLT
```

INPUT:



OUTPUT:



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

EXP NO: 19

AIM: To compute rotation of given data in right without carry using 8085 processor.

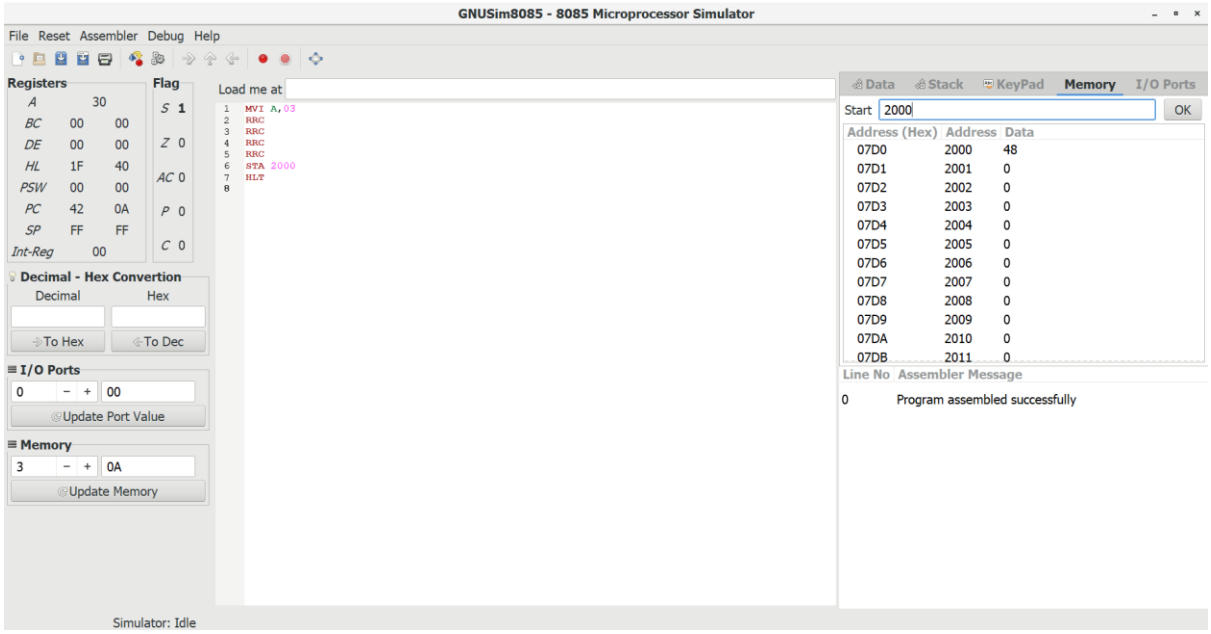
ALGORITHM:

1) Load the base address of the array in HL register pair.
2) Move the data from memory location into accumulator.
3) Shift right the accumulator content for four times left.
4) Store the result in the specified location.

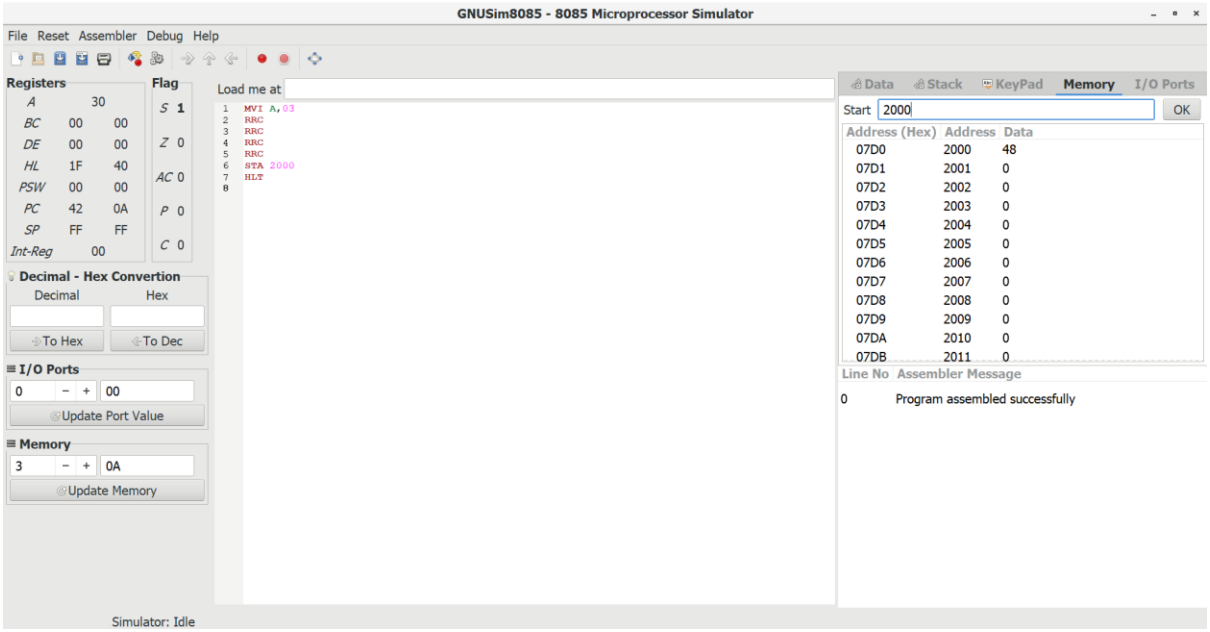
PROGRAM:

```
MVI A,03
RRC
RRC
RRC
RRC
STA 2000
HLT
```

INPUT:



OUTPUT:



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

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
```

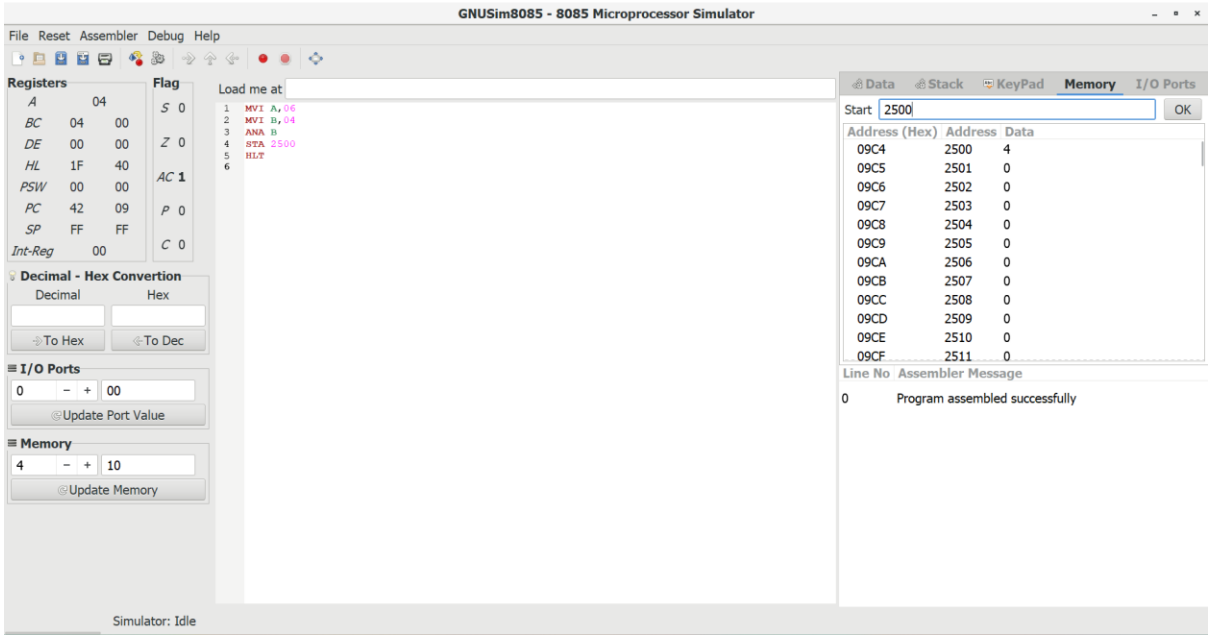
OR OPERATION:

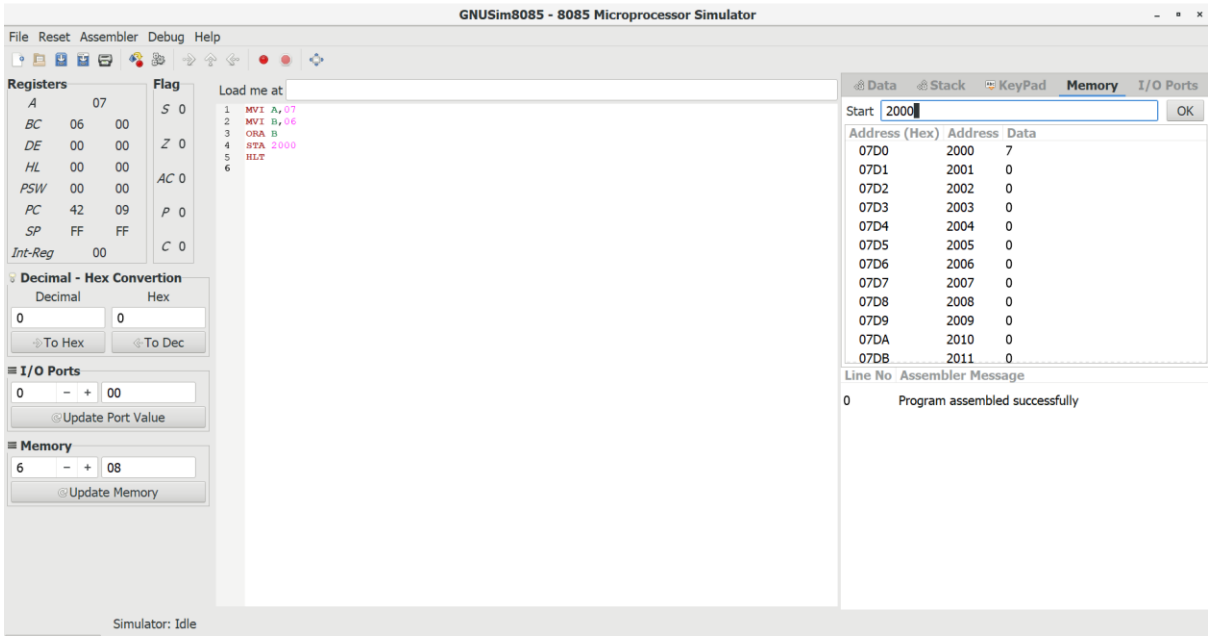
```
MVI A,07
MVI B,06
ORA B
STA 2000
HLT
```

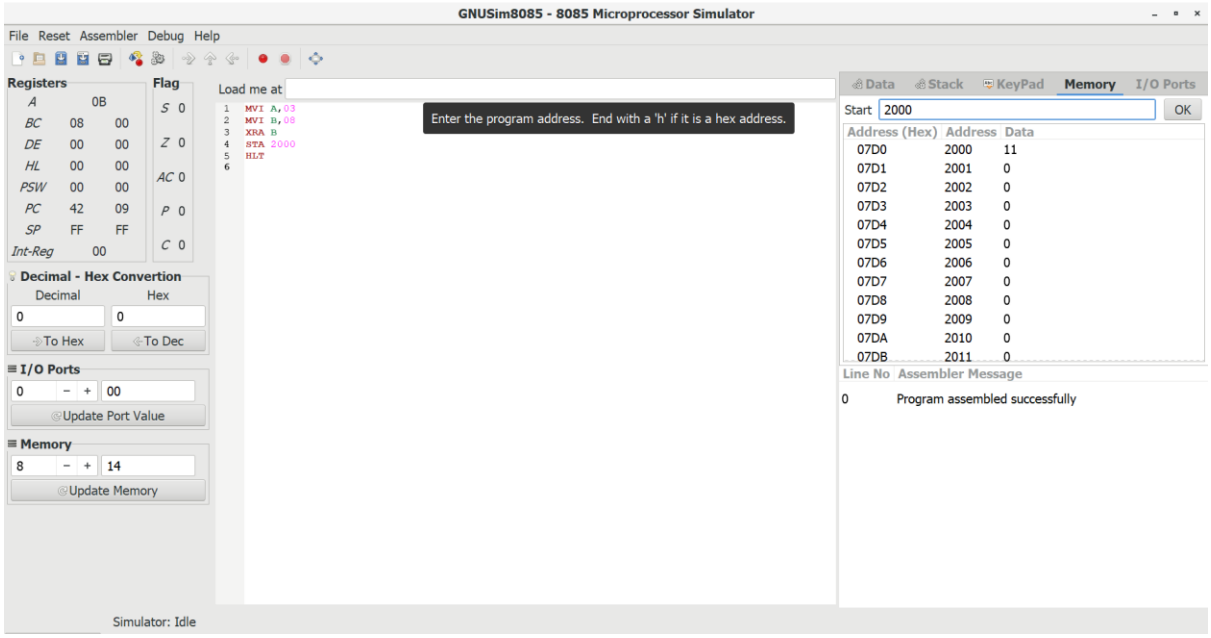
XOR OPERATION:

MVI A,03
MVI B,08
XRA B
STA 2000
HLT

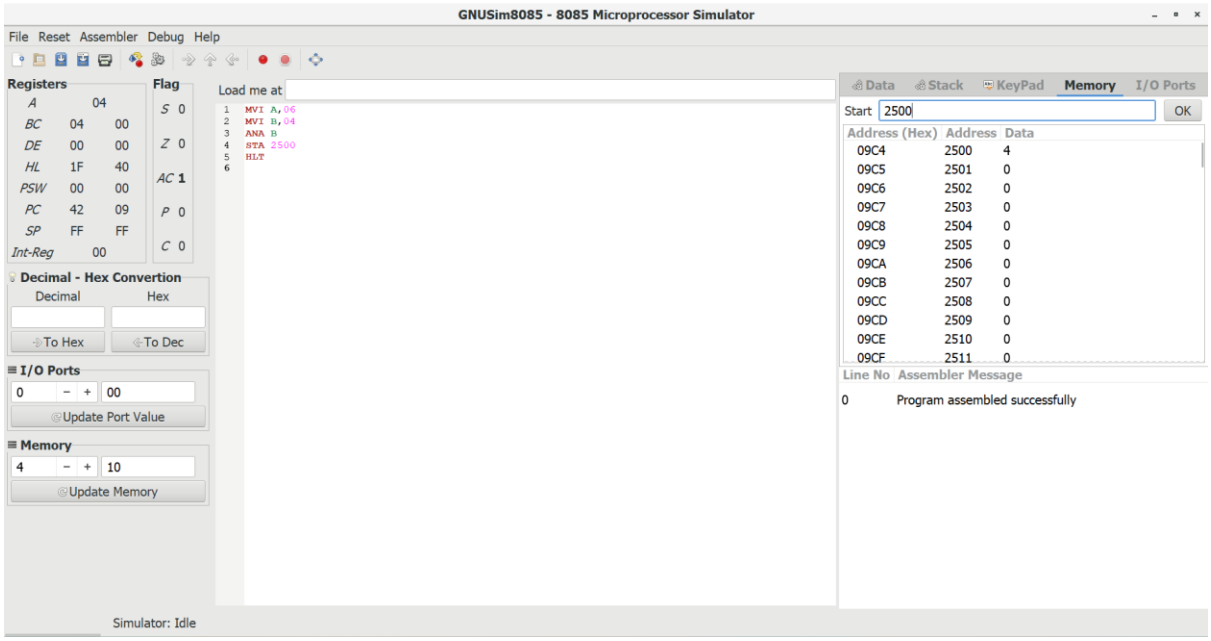
INPUT:

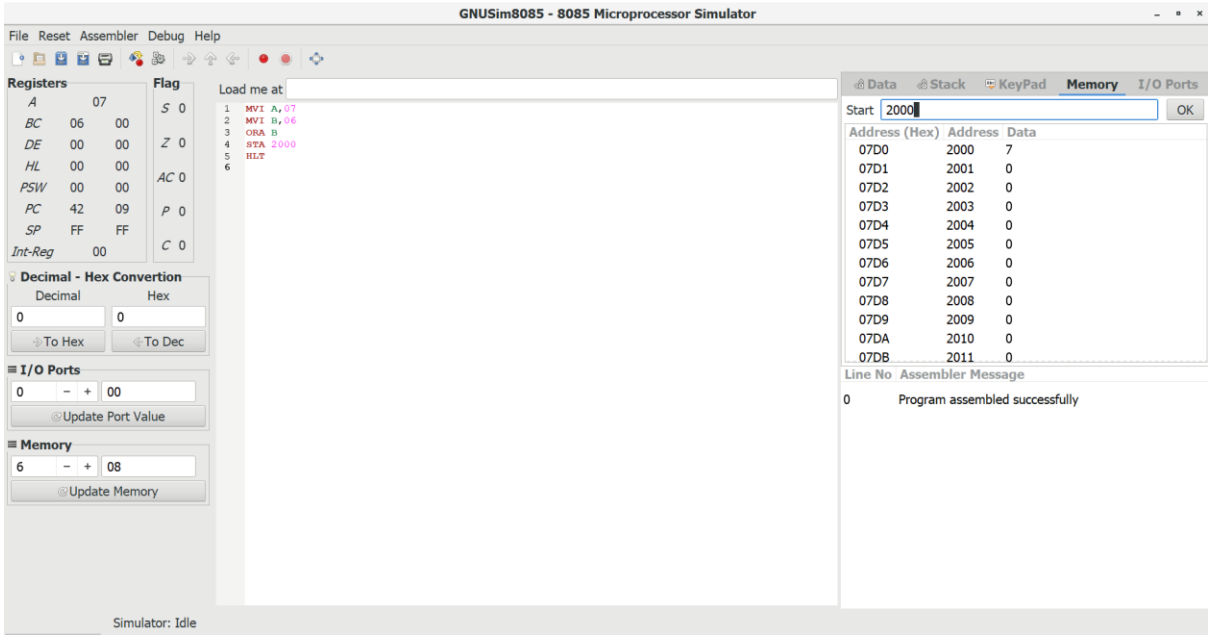


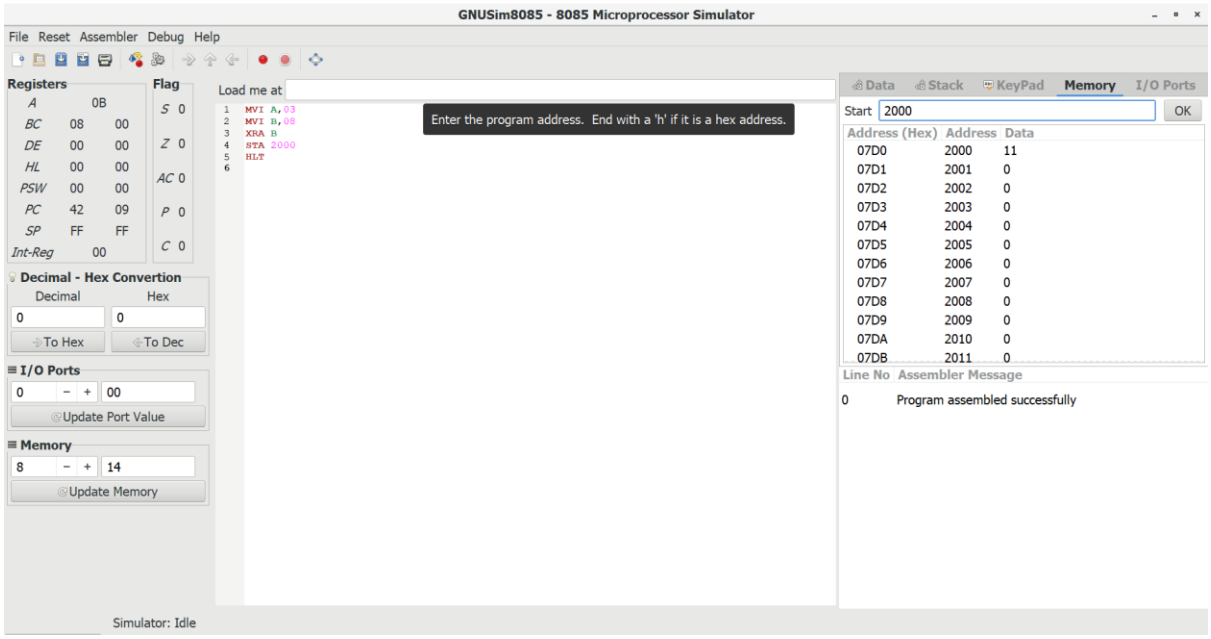



GNUSim8085 - 8085 Microprocessor Simulator
File Reset Assembler Debug Help
Registers
Flag
Load me at
Enter the program address. End with a 'h' if it is a hex address.
Data Stack KeyPad Memory I/O Ports
Start 2000
OK
Address (Hex) Address Data
Line No Assembler Message
0 Program assembled successfully
Decimal - Hex Convertion
To Hex
To Dec
I/O Ports
Update Port Value
Memory
Update Memory
Simulator: Idle

OUTPUT:


GNUSim8085 - 8085 Microprocessor Simulator
File Reset Assembler Debug Help
Registers
Flag
Load me at
Data Stack KeyPad Memory I/O Ports
Start 2500
OK
Address (Hex) Address Data
Line No Assembler Message
0 Program assembled successfully
Decimal - Hex Convertion
To Hex
To Dec
I/O Ports
Update Port Value
Memory
Update Memory
Simulator: Idle





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