

SWAPPING OF NUMBERS

EXP NO: 15

AIM:

To compute swapping of numbers using 8085 processor.

ALGORITHM:

- 1)
Load a 8-bit number from memory location into accumulator.
- 2)
Move value of accumulator into register H.
- 3)
Load a 8-bit number from next memory location into accumulator.
- 4)
Move value of accumulator into register D.
- 5)
Exchange both the registers pairs.

6)
Halt

PROGRAM:

LDA 2001

MOV B,A

LDA 2002

STA 2001

MOV A,B

STA 2002

HLT

INPUT:

Address (Hex)	Address	Data
07D1	2001	27
07D2	2002	99

OUTPUT:

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, Z (Zero) is 1, AC (Auxiliary Carry) is 0, P (Parity) is 1, and C (Carry) is 0.
- Decimal - Hex Conversion:** A section for converting between decimal and hexadecimal values. The decimal value is 0, and the hexadecimal value is 0.
- I/O Ports:** A section for managing I/O ports. The port value is 0, and there are buttons for "Update Port Value" and "Update Memory".
- Memory:** A table showing the memory contents. The address range is from 07D1 to 07DC. The data values are: 07D1: 2001, 07D2: 5, 07D3: 0, 07D4: 0, 07D5: 0, 07D6: 0, 07D7: 0, 07D8: 0, 07D9: 0, 07DA: 0, 07DB: 0, 07DC: 0.
- Assembler Message:** A section showing the output of the assembler. The message is "Program assembled successfully".

The assembly code is loaded in the "Load me at" field. The code is as follows:

```
1  ;<Program title>
2
3
4  jmp start
5
6  ;data
7
8
9  ;code
10 start: nop
11 LDA 2001
12 MOV B,A
13 LDA 2002
14 STA 2001
15 MOV A,B
16 STA 2002
17 HLT
18 hit
19
```

RESULT: Thus

the program was executed successfully using 8085 processor simulator.