

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 registered pairs.
- 6)
Halt

PROGRAM:

LDA 2001

MOV B,A

LDA 2002

STA 2001

MOV A,B

STA 2002

HLT

INPUT:

| | | |
|------|------|---|
| 07D1 | 2001 | 4 |
| 07D2 | 2002 | 6 |

OUTPUT:

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window is titled "GNUSim8085 - 8085 Microprocessor Simulator". The interface includes a menu bar (File, Reset, Assembler, Debug, Help) and a toolbar with various icons. The central area is divided into several panels:

- Registers:** A table showing the status of 8085 registers. The PC (Program Counter) is 42, and the SP (Stack Pointer) is FF. The Int-Reg is 00.
- Flag:** A table showing the status of 8085 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 input is 0, and the hex output is 0.
- I/O Ports:** A section for I/O operations. The input is 0, and the output is 00.
- Memory:** A section for memory operations. The input is 0, and the output is 00.
- Assembly Code:** A central panel showing the assembly code being executed. 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
```
- Memory Table:** A table showing the memory contents. The address 2001 contains the value 6, and address 2002 contains the value 4. The rest of the memory is empty.
- Assembler Message:** A panel showing the output of the assembler. The message is "Program assembled successfully".

The status bar at the bottom indicates "Simulator: Idle". The system tray shows the date and time as 17-10-2023 10:45.

RESULT: Thus

The program was executed successfully using an 8085 processor simulator.