

16-BIT ADDITION

EXP NO: 5

AIM:

To write an assembly language program to implement 16-bit addition using 8085 processor.

ALGORITHM:

- 1) Start the program by loading a register pair with address of 1st number.
- 2) Copy the data to another register pair.
- 3) Load the second number to the first register pair.
- 4) Add the two register pair contents.
- 5) Store the result in memory locations.
- 6) Terminate the program.

PROGRAM:

LHLD 2500

XCHG

LHLD 2502

DAD D

SHLD 2504

HLT

INPUT:

Address (Hex)	Address	Data
09C4	2500	6
09C5	2501	0
09C6	2502	4
09C7	2503	0

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 shows the assembly code being loaded, with line numbers 1 through 17. The code includes comments like "<Program title>", "jmp start", and "hlt", along with instructions like "LHLD 2500", "XCHG", "DAD D", and "SHLD 2504".

On the left side, there are panels for "Registers" and "Flag". The "Registers" panel shows the values of registers A, BC, DE, HL, PSW, PC, SP, and Int-Reg. The "Flag" panel shows the status of flags S, Z, AC, P, and C. Below these panels is a "Decimal - Hex Conversion" section with input fields for decimal and hex values, and buttons for "To Hex" and "To Dec". There are also sections for "I/O Ports" and "Memory" with similar input fields and update buttons.

On the right side, there are tabs for "Data", "Stack", "Keypad", "Memory", and "I/O Ports". The "Memory" tab is selected, showing a table of memory addresses (hex) and their corresponding data. The table has columns "Address (Hex)", "Address", and "Data". The data is as follows:

Address (Hex)	Address	Data
09C4	2500	6
09C5	2501	0
09C6	2502	4
09C7	2503	0
09C8	2504	10
09C9	2505	0
09CA	2506	0
09CB	2507	0
09CC	2508	0
09CD	2509	0
09CE	2510	0
09CF	2511	0
09D0	2512	0
09D1	2513	0
09D2	2514	0
09D3	2515	0

Below the memory table, there is a "Line No / Assembler Message" section showing the message "Program assembled successfully" at line 0.

The bottom status bar shows the system clock (12:16), date (16-10-2023), and other system icons.

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