

ADDITION OF N NUMBERS

EXP NO: 14

AIM: To compute addition of N numbers using the 8085 processor.

ALGORITHM:

- 1) Load the base address of the array in the HL register pair.
- 2) Load the memory with data to be added.
- 3) Take it as a count.
- 4) Initialise the accumulator with 00.
- 5) Add the content of the accumulator with the content of memory.
- 6) Decrement count.
- 7) Load count value to memory location.
- 8) Repeat step 5.
- 9) Check whether the count has become 0.
- 10) Halt.

PROGRAM:

LXI H,8000

MOV C,M

XRA A

MOV B,A

LOOP: INX H

ADD M

JNC SKIP

INR B

SKIP: DCR C

JNZ LOOP

INX H

MOV M,A

INX H

MOV M,B

HLT

INPUT:

Start	8000	OK
Address (Hex)	Address	Data
1F40	8000	5
1F41	8001	4
1F42	8002	4
1F43	8003	4
1F44	8004	4
1F45	8005	4

OUTPUT:

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers: A 14, BC 00 00, DE 00 00, HL 1F 47, PSW 00 00, PC 42 19, SP FF FF, Int-Reg 00 00. Flag: S 0, Z 1, AC 0, P 1, C 0.

Decimal - Hex Conversion: Decimal 0, Hex 0. I/O Ports: 0. Memory: 0.

Load me at: 1 <Program title>, 2, 3, 4 jmp start, 5, 6 ;data, 7, 8, 9 ;code, 10 start: nop, 11 LXI H,8000, 12 MOV C,M, 13 XRA A, 14 MOV B,A, 15 LOOP: INX H, 16 ADD M, 17 JNC ERIP, 18 INR B, 19 ERIP: DCR C, 20 JNZ LOOP, 21 INX H, 22 MOV M,A, 23 INX H, 24 MOV M,B, 25 hlt

Memory: Start 8000, OK. Address (Hex) Address Data: 1F40 8000 5, 1F41 8001 4, 1F42 8002 4, 1F43 8003 4, 1F44 8004 4, 1F45 8005 4, 1F46 8006 20, 1F47 8007 0, 1F48 8008 0, 1F49 8009 0, 1F4A 8010 0, 1F4B 8011 0, 1F4C 8012 0, 1F4D 8013 0.

Line No: 0, Assembler Message: Program assembled successfully.

Simulator: Idle

31°C Hot weather, Search, ENG IN, 10:29 17-10-2023

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