

ADDITION OF N NUMBERS

EXP NO: 14

AIM:

To compute addition of N numbers using 8085 processor.

ALGORITHM:

- 1) Load the base address of the array in HL register pair.
- 2) Load the memory with data to be added.
- 3) Take it as count.
- 4) Initialize the accumulator with 00.
- 5) Add content of accumulator with content of memory.
- 6) Decrement count.

- 7) Load count value to memory location.
- 8) Repeat step 5.
- 9) Check whether 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:

Address (Hex)	Address	Data
1F40	8000	5
1F41	8001	4
1F42	8002	2
1F43	8003	4
1F44	8004	4
1F45	8005	4

OUTPUT:

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window is divided into several sections:

- Registers:** A table showing the current values of the 8085 registers. The PC (Program Counter) is 42, and the SP (Stack Pointer) is FF.
- Flag:** A section showing the status of the flags (S, Z, AC, P, C).
- Assembly Code:** A list of assembly instructions with line numbers. The code includes a jump to 'start', a loop, and a halt instruction.
- Memory:** A table showing the memory contents at various addresses. The memory at address 8000 contains the value 5.
- I/O Ports:** A section for monitoring and controlling I/O ports.
- Decimal - Hex Conversion:** A utility for converting between decimal and hexadecimal values.

The simulator status at the bottom indicates "Simulator: Idle". The Windows taskbar at the bottom shows the system clock as 10:08 AM on 17-10-2023.

Register	Value
A	12
BC	00 00
DE	00 00
HL	1F 47
PSW	00 00
PC	42 19
SP	FF FF
Int-Reg	00

Flag	Value
S	0
Z	1
AC	0
P	1
C	0

Address (Hex)	Address	Data
1F40	8000	5
1F41	8001	4
1F42	8002	2
1F43	8003	4
1F44	8004	4
1F45	8005	4
1F46	8006	18
1F47	8007	0
1F48	8008	0
1F49	8009	0
1F4A	8010	0
1F4B	8011	0
1F4C	8012	0
1F4D	8013	0

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

RESULT: Thus

the program was executed successfully using 8085 processor simulator.