

## 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 & OUTPUT

The screenshot displays the 8085 Microprocessor Simulator interface. The assembly code is loaded in the central window, and the memory dump on the right shows the data being added. The registers window on the left shows the state of the registers.

**Registers:**

Register	Value
A	3C
BC	00 00
DE	00 00
HL	1F 45
PSW	00 00
PC	42 15
SP	FF FF
Int-Reg	00

**Flag:**

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

**Assembly Code:**

```
1 LXI H,8000
2 MOV C,M
3 XRA A
4 MOV B,A
5 LOOP: INX H
6 ADD M
7 JNC SKIP
8 INR B
9 SKIP: DCR C
10 JNZ LOOP
11 INX H
12 MOV M,A
13 INX H
14 MOV M,B
15 HLT
```

**Memory Dump:**

Address (Hex)	Address	Data
1F40	8000	3
1F41	8001	10
1F42	8002	20
1F43	8003	30
1F44	8004	60
1F45	8005	0
1F46	8006	0
1F47	8007	0
1F48	8008	0
1F49	8009	0
1F4A	8010	0
1F4B	8011	0
1F4C	8012	0
1F4D	8013	0

**Assembler Message:**

```
0 Program assembled successfully
```

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