

## SQUARE OF NUMBER

### EXP NO: 16

**AIM:** To compute square of number using 8085 processor.

#### ALGORITHM:

- 1) Load the base address of the array in HL register pair.
- 2) Assign accumulator as 0.
- 3) Load the content of memory location specified into register.
- 4) Add content of memory location with accumulator and decrement register content by 01.
- 5) Check if register holds 00, if so store the value of accumulator in memory location.

#### PROGRAM:

LXI H,8000

XRA A

MOV B,M

LOOP: ADD M

DCR B

JNZ LOOP

STA 8001

HLT

#### INPUT & OUTPUT

The screenshot displays the 8085 processor simulator interface. The main window shows the assembly code being executed:

```
1 LXI H,8000
2 XRA A
3 MOV B,M
4 LOOP: ADD M
5 DCR B
6 JNZ LOOP
7 STA 8001
8 HLT
9
```

The registers window on the left shows the state of the 8085 registers:

Register	Value
A	19
BC	00 00
DE	00 00
HL	1F 40
PSW	00 00
PC	42 0E
SP	FF FF
Int-Reg	00

The flags window shows the status of the flags:

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

The memory window on the right shows the memory contents:

Address (Hex)	Address	Data
1F40	8000	5
1F41	8001	25
1F42	8002	0
1F43	8003	0
1F44	8004	0
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

The I/O Ports window shows the port values:

Port	Value
0	00

The Memory window shows the memory contents:

Address (Hex)	Address	Data
1F40	8000	5
1F41	8001	25
1F42	8002	0
1F43	8003	0
1F44	8004	0
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

The Assembler Message window at the bottom shows the message:

```
Line No Assembler Message
0 Program assembled successfully
```

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