

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

Address (Hex)	Address	Data
1F40	8000	5

OUTPUT:

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window shows the assembly code being executed, with the following instructions visible:

```
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
```

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 Memory window on the right shows the memory dump starting at address 8000:

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 current port value as 0. The Assembly Message window at the bottom indicates that the program assembled successfully.

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