

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 GNUSim8085 - 8085 Microprocessor Simulator interface. The main window shows the assembly program being loaded and executed. The program is as follows:

```
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 simulator's status bar at the bottom indicates "Simulator: Idle".

On the left side, the **Registers** panel shows the following values:

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 **Flag** panel shows the following values:

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

The **Decimal - Hex Conversion** panel shows the decimal value 0 and the hex value 0.

The **I/O Ports** panel shows the port value 0.

The **Memory** panel shows the memory value 0.

On the right side, the **Memory** panel shows the memory contents starting from 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

The **Assembler Message** panel shows the following message:

```
0 Program assembled successfully
```

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