

## **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:**

**4**

**OUTPUT:**

The screenshot displays the 8085 processor simulator interface. The main window is divided into several sections:

- Registers:** A table showing the current values of the 8085 registers. The **Int-Reg** register is set to 00.
- Flag:** A table showing the status of the flags. The **S** flag is 0, **Z** is 1, **AC** is 0, **P** is 1, and **C** is 0.
- Decimal - Hex Conversion:** A section for converting between decimal and hexadecimal values. The decimal input is 0, and the hex output is 0.
- I/O Ports:** A section for monitoring and controlling I/O ports. The port value is 0.
- Memory:** A section for monitoring and controlling memory. The memory value is 0.
- Assembly Code:** A list of assembly instructions 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
```
- Memory Window:** A table showing the contents of memory addresses from 8000 to 8013. The data at address 8001 is 16.
- Assembler Message:** A message box indicating that the program was assembled successfully.

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