

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 :

Data	Stack	KeyPad	Memory	I/O Ports
Start	3000	OK		
Address (Hex)	Address	Data		
0BB8	3000	5		
0BB9	3001	0		
0BBA	3002	0		
0BBB	3003	0		
0BBC	3004	0		
0BBD	3005	0		
0BBE	3006	0		
0BBF	3007	0		
0BC0	3008	0		
0BC1	3009	0		
0BC2	3010	0		
0BC3	3011	0		
0BC4	3012	0		
0BC5	3013	0		

OUTPUT :

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window is titled "GNUSim8085 - 8085 Microprocessor Simulator". The interface includes a menu bar (File, Reset, Assembler, Debug, Help) and a toolbar with various icons. The central area shows the assembly code being entered or executed:

```
1 ;<Program title>
2
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 LXI H, 3000
12 XRA A
13 MOV B, M
14 LOOP: ADD M
15 DCR B
16 JNZ LOOP
17 STA 3001
18 HLT
```

On the left side, there are panels for "Registers" and "Flag". The "Registers" panel shows the current values of the 8085 registers: A (19), BC (00 00), DE (00 00), HL (08 B8), PSW (00 00), PC (42 12), SP (FF FF), and Int-Reg (00). The "Flag" panel shows the status of the flags: S (0), Z (1), AC (0), P (1), and C (0). Below these panels is a "Decimal - Hex Conversion" section with input fields for decimal and hex values and buttons for conversion. Further down are "I/O Ports" and "Memory" sections, each with input fields and update buttons.

On the right side, there is a "Memory" panel showing a table of memory addresses and data:

Address (Hex)	Address	Data
0BB8	3000	5
0BB9	3001	25
0BBA	3002	0
0BBB	3003	0
0BBC	3004	0
0BBD	3005	0
0BBE	3006	0
0BBF	3007	0
0BC0	3008	0
0BC1	3009	0
0BC2	3010	0
0BC3	3011	0
0BC4	3012	0
0BC5	3013	0

At the bottom right, there is a "Line No Assembler Message" section showing the message: "0 Program assembled successfully".

RESULT:

Thus the program was executed successfully using 8085 processor simulator.