

AIM:To find the factorial of a given number using 8085 microprocessor.

ALGORITHM:

- 1)
Load the data into register B
- 2)
To start multiplication set D to 01H
- 3)
Jump to step 7
- 4)
Decrements B to multiply previous number
- 5)
Jump to step 3 till value of B>0
- 6)
Take memory pointer to next location and store result
- 7)
Load E with contents of B and clear accumulator
- 8)
Repeatedly add contents of D to accumulator E times
- 9)
Store accumulator content to D
- 10) Go to
step 4

PROGRAM:

LDA 2001

MOV B,A

MVI C,01H

MVI E,01H

LOOP: MOV D,C

MVI A,00H

LP: ADD E

DCR D

JNZ LP

MOV E,A

INR C

DCR B

JNZ LOOP

MOV A,E

STA 2010

HLT

INPUT:

Data Stack KeyPad

Start 2001

Address (Hex)	Address	Data
07D1	2001	9

OUTPUT:

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

Register	Value	Flag
A	80	S 0
BC	00 0A	Z 1
DE	00 80	AC 0
HL	08 02	P 1
PSW	00 00	C 0
PC	42 22	
SP	FF FF	
Int-Reg	00	

Decimal - Hex Conversion

Decimal: 0 Hex: 0

I/O Ports

0 - + 00

Memory

0 - + 00

Load me at

```
1 ;<Program title>
2
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 LXI H,2050
12 LDA 2001
13 MOV B,A
14 MVI C,01H
15 LOOP: MOV D,C
16 MVI A,0FH
17 LP: ADD E
18 DCR D
19 JNZ LP
20 MOV E,A
21 INR C
22 DCR B
23 JNZ LOOP
24 MOV A,E
25 STA 2010
26 hlt
27
28
29 hlt
```

Memory

Address (Hex)	Address	Data
07D1	2001	9
07D2	2002	0
07D3	2003	0
07D4	2004	0
07D5	2005	0
07D6	2006	0
07D7	2007	0
07D8	2008	0
07D9	2009	0
07DA	2010	128
07DB	2011	0
07DC	2012	0
07DD	2013	0
07DE	2014	0

Line No Assembler Message

0 Program assembled successfully

Simulator: Idle

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

