

FACTORIAL OF A GIVEN NUMBER

EXP NO: 9

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	Memory	I/O Ports
Start	2000			OK	
Address (Hex)	Address	Data			
07D0	2000	0			
07D1	2001	6			
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	208			
07DB	2011	0			
07DC	2012	0			
07DD	2013	0			

OUTPUT:

The screenshot shows the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window displays the assembly code being executed. The registers window on the left shows the current state of the processor registers. The memory window on the right shows the memory contents, which match the data provided in the first image. The assembly code includes instructions for loading data from memory, moving it between registers, and performing arithmetic and control flow operations. The status bar at the bottom indicates that the simulator is in an idle state.

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