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Experiment : 10

Aim : Write a program to count number of 1’s in the contents of memory location 1000H and store the count in memory location in 1001H

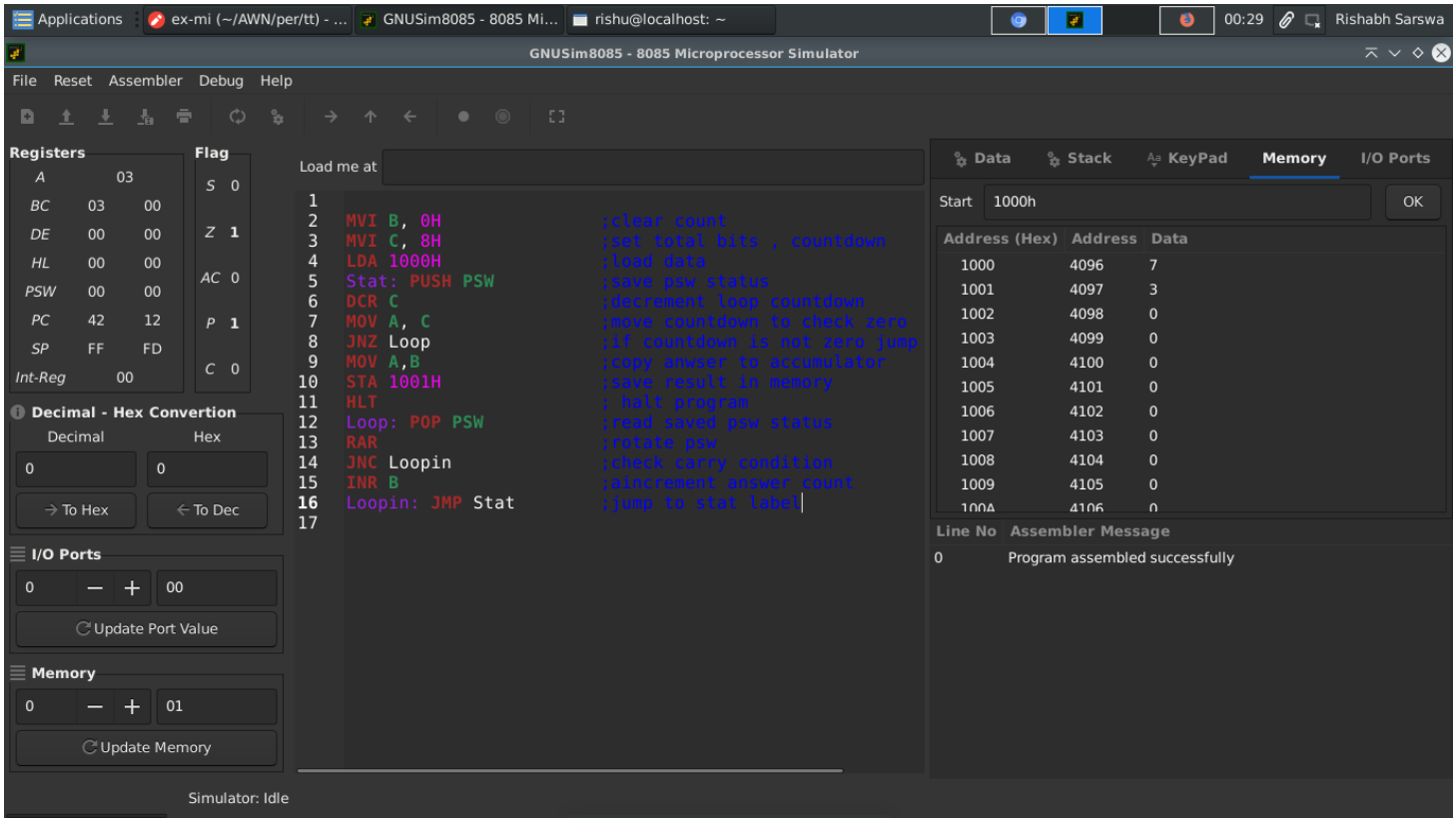
Software Use : GNUSim8085

Program :

-------- program in asm ------

```
MVI B, 0H               ;clear count
MVI C, 8H               ;set total bits , countdown
LDA 1000H               ;load data
Stat: PUSH PSW          ;save psw status
DCR C                   ;decrement loop countdown
MOV A, C                ;move countdown to check zero
JNZ Loop                ;if countdown is not zero jump to loop
MOV A,B                 ;copy anwser to accumulator
STA 1001H               ;save result in memory
HLT                     ; halt program
Loop: POP PSW           ;read saved psw status
RAR                     ;rotate psw
JNC Loopin              ;check carry condition
INR B                   ;aincrement answer count
Loopin: JMP Stat        ;jump to stat label
```

------- end program -------


Applications
ex-mi (~/AWN/per/tt) - ...
GNUSim8085 - 8085 Mi...
rishu@localhost: ~
00:29
Rishabh Sarswa
GNUSim8085 - 8085 Microprocessor Simulator
File Reset Assembler Debug Help
Registers
A 03
BC 03 00
DE 00 00
HL 00 00
PSW 00 00
PC 42 12
SP FF FD
Int-Reg 00
Flag
S 0
Z 1
AC 0
P 1
C 0
Decimal - Hex Convertion
Decimal
Hex
0
0
To Hex
To Dec
I/O Ports
0
00
Update Port Value
Memory
0
01
Update Memory
Load me at
1 MVI B, 0H ;clear count
2 MVI C, 8H ;set total bits , countdown
3 LDA 1000H ;load data
4 Stat: PUSH PSW ;save psw status
5 DCR C ;decrement loop countdown
6 MOV A, C ;move countdown to check zero
7 JNZ Loop ;if countdown is not zero jump
8 MOV A,B ;copy anwser to accumulator
9 STA 1001H ;save result in memory
10 HLT ; halt program
11 Loop: POP PSW ;read saved psw status
12 RAR ;rotate psw
13 JNC Loopin ;check carry condition
14 INR B ;aincrement answer count
15 Loopin: JMP Stat ;jump to stat label
16
17
Data
Stack
KeyPad
Memory
I/O Ports
Start
1000h
OK
Address (Hex) Address Data
1000 4096 7
1001 4097 3
1002 4098 0
1003 4099 0
1004 4100 0
1005 4101 0
1006 4102 0
1007 4103 0
1008 4104 0
1009 4105 0
Line No Assembler Message
0 Program assembled successfully
Simulator: Idle