Name : Rishabh Sarswa
Rollno : 19UELE8030

Experiment : 6

Aim : Multiply the contents of memory location 1000H and 1001H
place the result in memory location 1002H and 1003H carry

Software Use : GNUSim8085

Program :

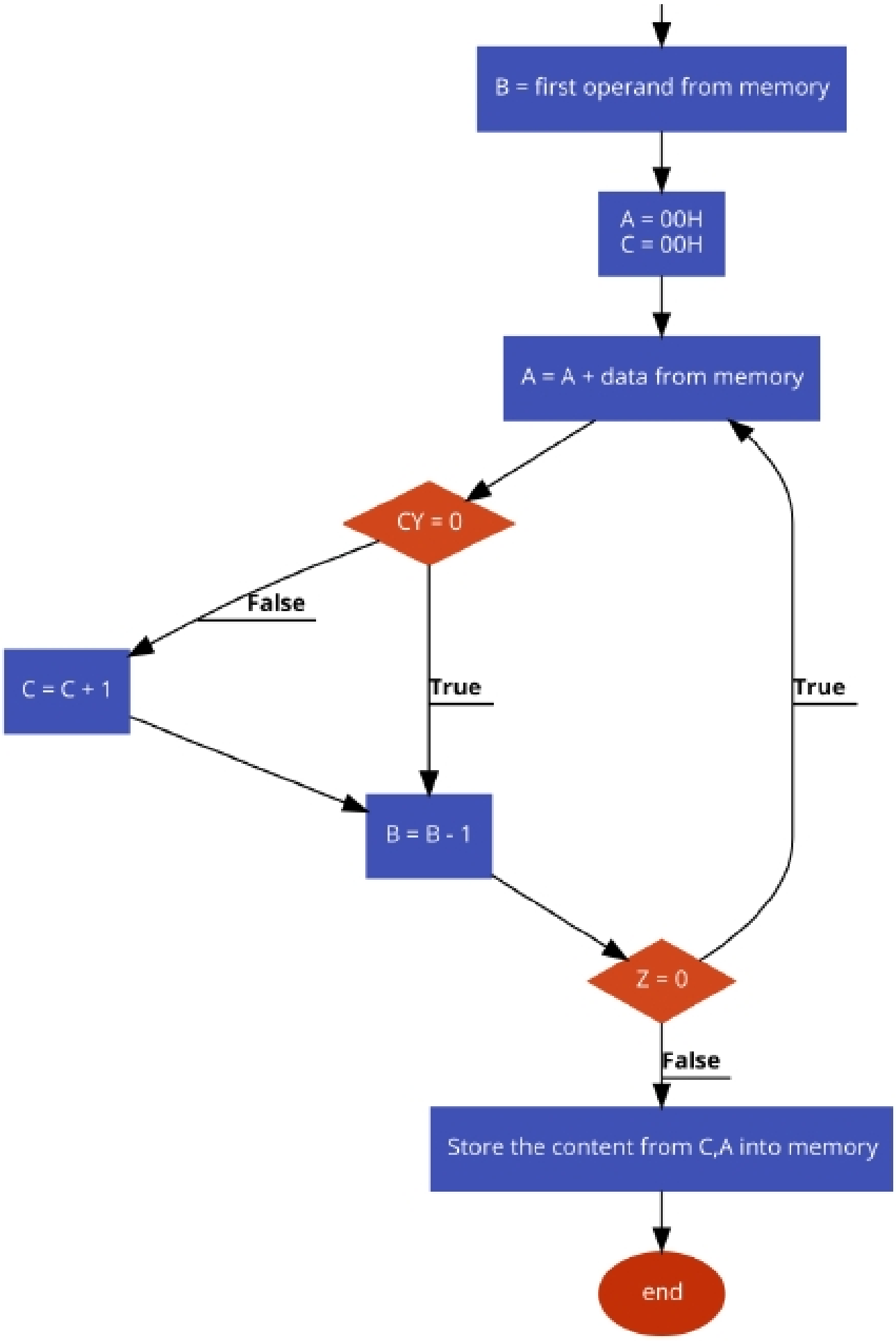
------ Program Table ------

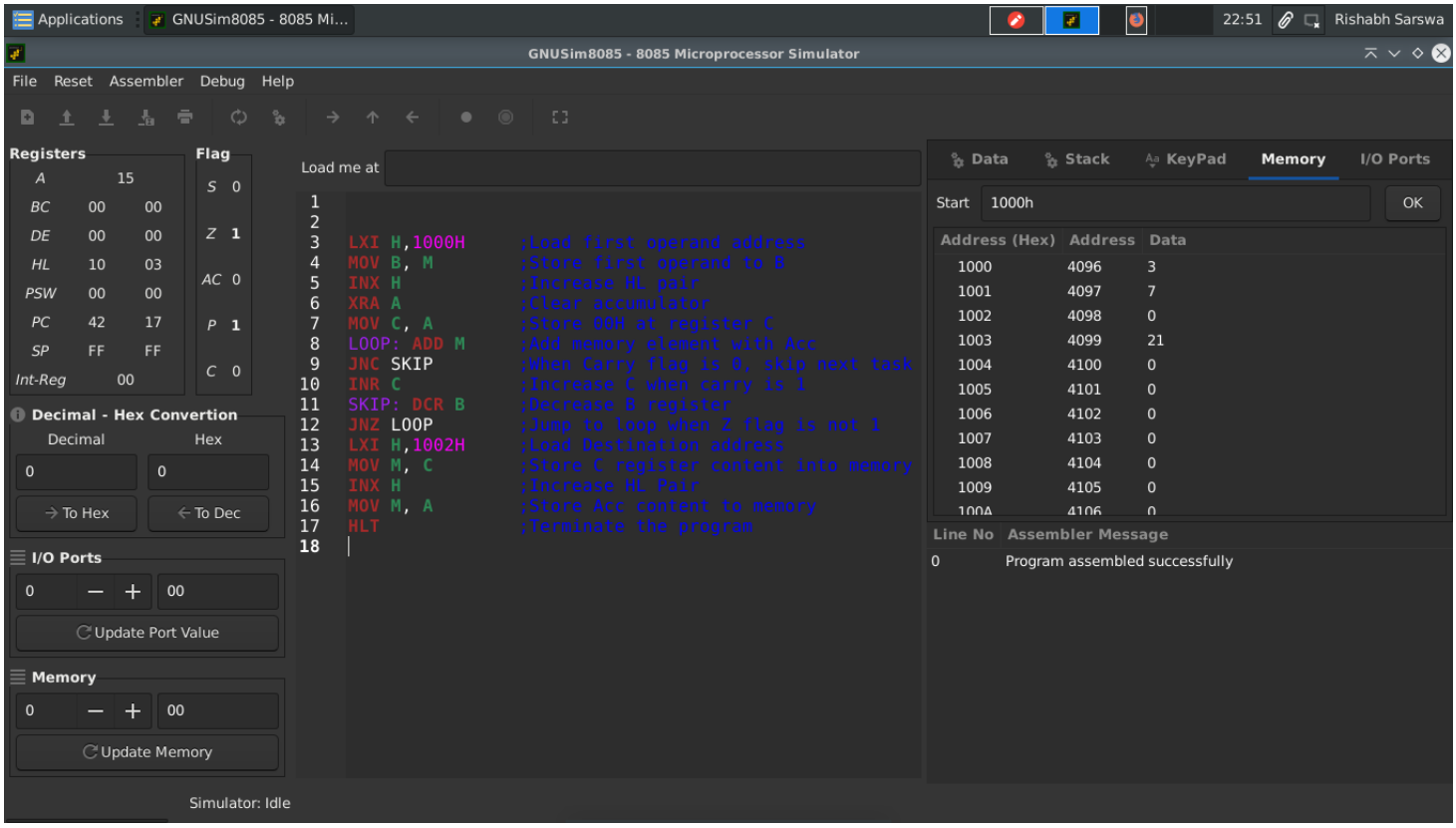
| Address | HEX Codes | Labels | Mnemonics | Comments |
|---|---|---|---|---|
| F000 | 21, 00, 10 | | LXI H,1000H | Load first operand address |
| F003 | 46 | | MOV B, M | Store first operand to B |
| F004 | 23 | | INX H | Increase HL pair |
| F005 | AF | | XRA A | Clear accumulator |
| F006 | 4F | | MOV C, A | Store 00H at register C |
| F007 | 86 | LOOP | ADD M | Add memory element with Acc |
| F008 | D2, 0C, F0 | | JNC SKIP | When Carry flag is 0, skip next task |
| F00B | 0C | | INR C | Increase C when carry is 1 |
| F00C | 05 | SKIP | DCR B | Decrease B register |
| F00D | C2, 07, F0 | | JNZ LOOP | Jump to loop when Z flag is not 1 |
| F010 | 21, 20, 10 | | LXI H,1002H | Load Destination address |
| F013 | 71 | | MOV M, C | Store C register content into memory |
| F014 | 23 | | INX H | Increase HL Pair |
| F015 | 77 | | MOV M, A | Store Acc content to memory |
| F016 | 76 | | HLT | Terminate the program |

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

```
LXI H,1000H     ;Load first operand address
MOV B, M        ;Store first operand to B
INX H           ;Increase HL pair
XRA A           ;Clear accumulator
MOV C, A        ;Store 00H at register C
LOOP: ADD M     ;Add memory element with Acc
JNC SKIP        ;When Carry flag is 0, skip next task
INR C           ;Increase C when carry is 1
SKIP: DCR B     ;Decrease B register
JNZ LOOP        ;Jump to loop when Z flag is not 1
LXI H,1002H     ;Load Destination address
MOV M, C        ;Store C register content into memory
INX H           ;Increase HL Pair
MOV M, A        ;Store Acc content to memory
HLT             ;Terminate the program
```

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


B = first operand from memory
A = 00H
C = 00H
A = A + data from memory
CY = 0
False
True
C = C + 1
B = B - 1
True
Z = 0
False
Store the content from C,A into memory
end


Applications
GNUSim8085 - 8085 Mi...
22:51
Rishabh Sarswa
GNUSim8085 - 8085 Microprocessor Simulator
File Reset Assembler Debug Help
Registers
A 15
BC 00 00
DE 00 00
HL 10 03
PSW 00 00
PC 42 17
SP FF FF
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
00
Update Memory
Load me at
1
2
3 LXI H,1000H ;Load first operand address
4 MOV B, M ;Store first operand to B
5 INX H ;Increase HL pair
6 XRA A ;Clear accumulator
7 MOV C, A ;Store 00H at register C
8 LOOP: ADD M ;Add memory element with Acc
9 JNC SKIP ;When Carry flag is 0, skip next task
10 INR C ;Increase C when carry is 1
11 SKIP: DCR B ;Decrease B register
12 JNZ LOOP ;Jump to loop when Z flag is not 1
13 LXI H,1002H ;Load Destination address
14 MOV M, C ;Store C register content into memory
15 INX H ;Increase HL Pair
16 MOV M, A ;Store Acc content to memory
17 HLT ;Terminate the program
18
Data
Stack
KeyPad
Memory
I/O Ports
Start
1000h
OK
Address (Hex) Address Data
1000 4096 3
1001 4097 7
1002 4098 0
1003 4099 21
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