Name : Rishabh Sarswa
Rollno : 19UELE8030

Experiment : 5

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

Software Use : GNUSim8085

Program :

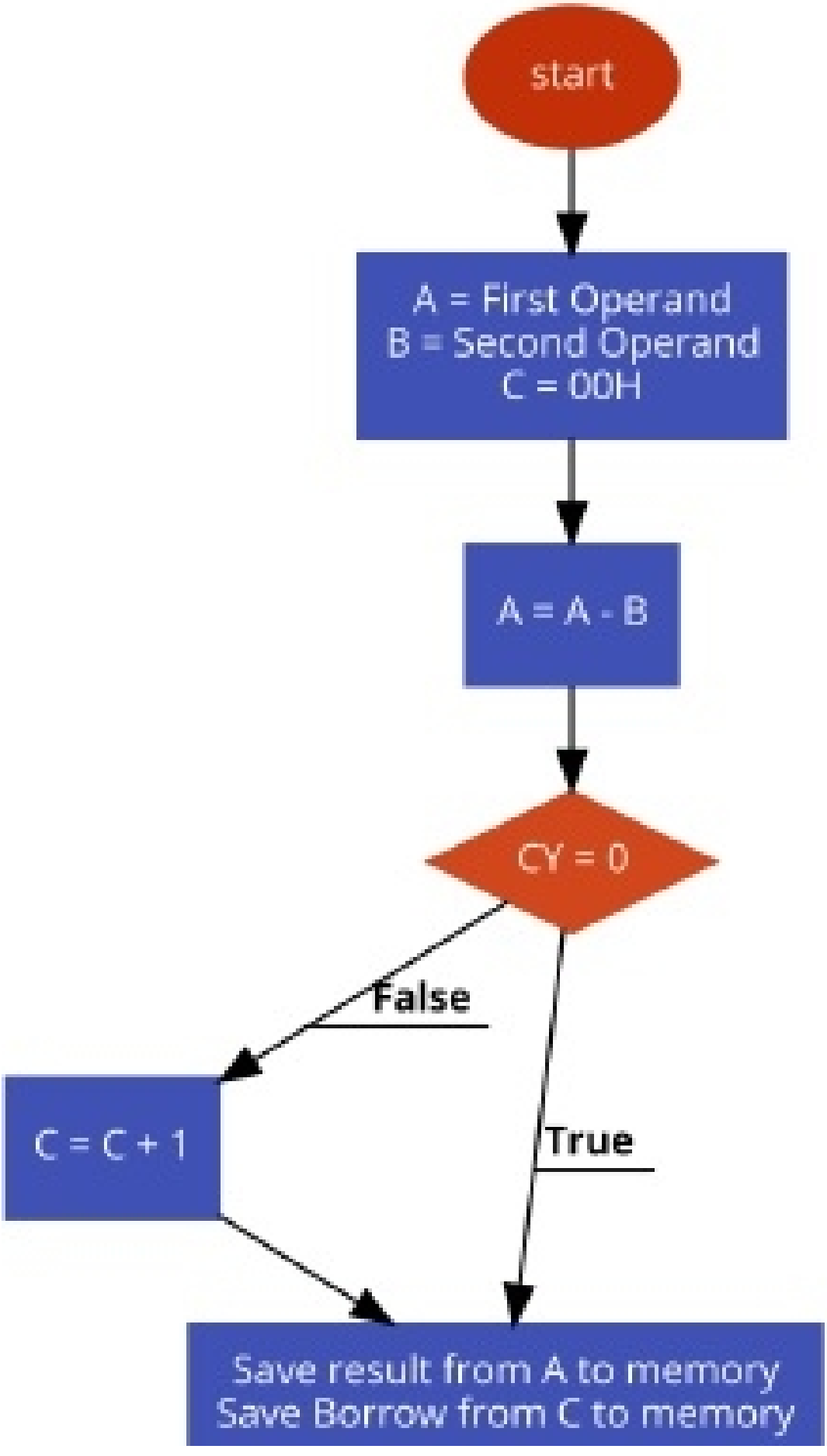
------ Program Table ------

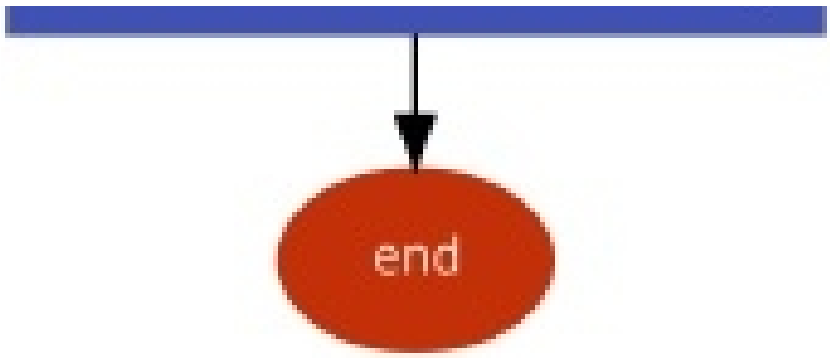
Address	HEX Codes	Labels	Mnemonics	Comments
F000	0E, 00		MVI C,00H	Clear C register
F002	21, 00, 10		LXI H,1000H	Load initial address to get operand
F005	7E		MOV A,M	Load Acc with memory element
F006	23		INX H	Point to next location
F007	46		MOV B,M	Load B with second operand
F008	90		SUB B	Subtract B from A
F009	D2, 0D, F0		JNC STORE	When CY = 0, go to STORE
F00C	0C		INR C	Increase C by 1
F00D	21, 20, 10	STORE	LXI H,1002H	Load the destination address
F010	77		MOV M,A	Store the result
F011	23		INX H	Point to next location
F012	71		MOV M,C	Store the borrow
F013	76		HLT	Terminate the program

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

```
MVI C,00H               ;Clear C register
LXI H,1000H             ;Load initial address to get operand
MOV A,M                 ;Load Acc with memory element
INX H                   ;Point to next location
MOV B,M                 ;Load B with second operand
SUB B                   ;Subtract B from A
JNC STORE               ;When CY = 0, go to STORE
INR C                   ;Increase C by 1
STORE: LXI H,1002H      ;Load the destination address
MOV M,A                 ;Store the result
INX H                   ;Point to next location
MOV M,C                 ;Store the borrow
HLT                     ;Terminate the program
```

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


start
A = First Operand
B = Second Operand
C = 00H
A = A - B
CY = 0
False
True
C = C + 1
Save result from A to memory
Save Borrow from C to memory



Applications | Experiment 5.pd... | exp5micro.txt (... | GNUSim8085 - 8... | [rishu@localhost... | rishu@localhost: ~ | 21:49 | Rishabh Sarswa

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	FB	
BC	08	01
DE	00	00
HL	10	03
PSW	00	00
PC	42	**14**
SP	FF	FF
Int-Reg	00	

Flag

S 0 | Z 0 | AC 0 | P 0 | C 1

Decimal - Hex Convertion

Decimal: 0 → To Hex

Hex: 0 ← To Dec

I/O Ports

0 — + 00

Update Port Value

Memory

0 — + 00

Update Memory

Load me at

```
1
2   MVI C,00H         ;Clear C register
3   LXI H,1000H       ;Load initial address to get operand
4   MOV A,M           ;Load Acc with memory element
5   INX H             ;Point to next location
6   MOV B,M           ;Load B with second operand
7   SUB B             ;Subtract B from A
8   JNC STORE         ;When CY = 0, go to STORE
9   INR C             ;Increase C by 1
10  STORE: LXI H,1002H      ;Load the destination address
11  MOV M,A           ;Store the result
12  INX H             ;Point to next location
13  MOV M,C           ;Store the borrow
14  HLT               ;Terminate the program
15
```

Data | Stack | KeyPad | **Memory** | I/O Ports

Start 1000h OK

Address (Hex)	Address	Data
1000	4096	3
1001	4097	8
1002	4098	251
1003	4099	1
1004	4100	0
1005	4101	0
1006	4102	0
1007	4103	0
1008	4104	0
1009	4105	0
100A	4106	0

Line No	Assembler Message
0	Program assembled successfully

Simulator: Idle