

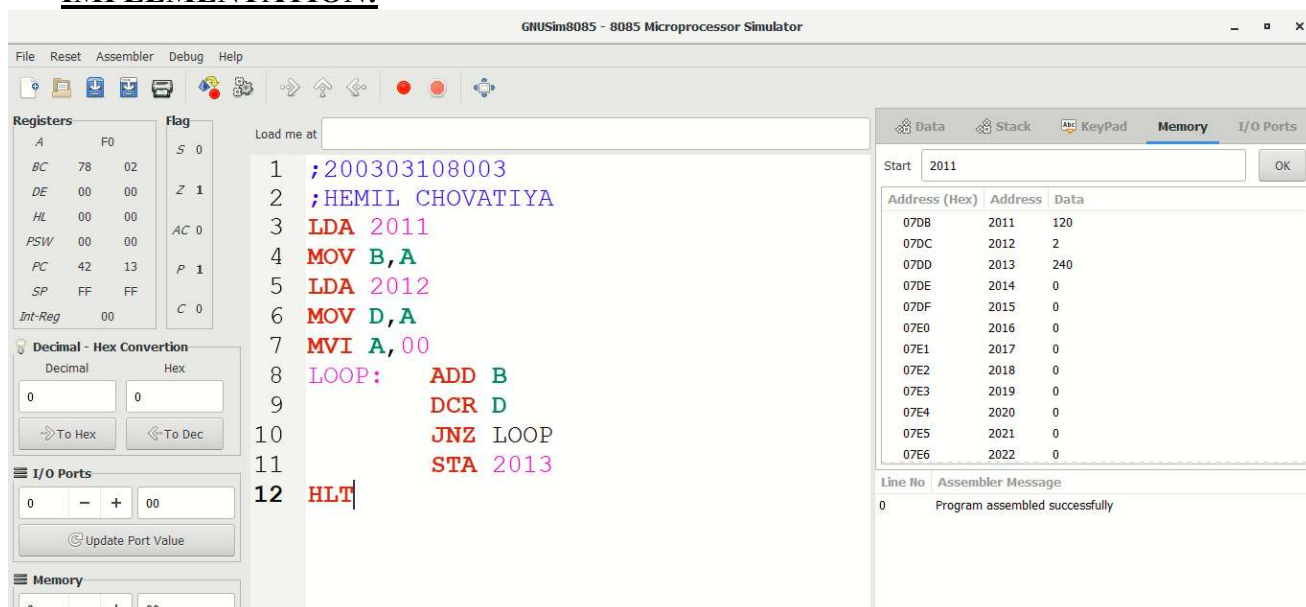
PRACTICAL 5

AIM: Write an assembly language code in GNUsim8085 to implement Multiplication of two 8bit Numbers.

THEORY

Code	Meaning
LDA 2011	Load value of memory location 2011 in Accumulator A
MOV B, A	Move data from memory to accumulator
STA 2013	Store accumulator contents in memory
MVI A,00	8-bit data is stored in the destination register or memory. (Move immediate 8-bit)
DCR D	Decrement register or memory by 1.
JNZ LOOP	Jump if No Zero (Z = 0) to LOOP
ADD B	Add data of memory with accumulator
HLT	Hold the program

IMPLEMENTATION:



The screenshot shows the GNUsim8085 - 8085 Microprocessor Simulator interface. The main window displays the following assembly code:

```

1 ;200303108003
2 ;HEMIL CHOVATIYA
3 LDA 2011
4 MOV B,A
5 LDA 2012
6 MOV D,A
7 MVI A,00
8 LOOP: ADD B
9       DCR D
10      JNZ LOOP
11      STA 2013
12 HLT
  
```

The left panel shows the Registers window with the following values:

Register	Value
A	00
BC	78 02
DE	00 00
HL	00 00
PSW	00 00
PC	42 13
SP	FF FF
Int-Reg	00

The right panel shows the Memory window with the following data:

Address (Hex)	Address	Data
07DB	2011	120
07DC	2012	2
07DD	2013	240
07DE	2014	0
07DF	2015	0
07E0	2016	0
07E1	2017	0
07E2	2018	0
07E3	2019	0
07E4	2020	0
07E5	2021	0
07E6	2022	0

The bottom panel shows the Assembler Message window with the message: "Program assembled successfully".

INPUT:

2011 = 120

2012 = 2

OUTPUT:

2013 = 240

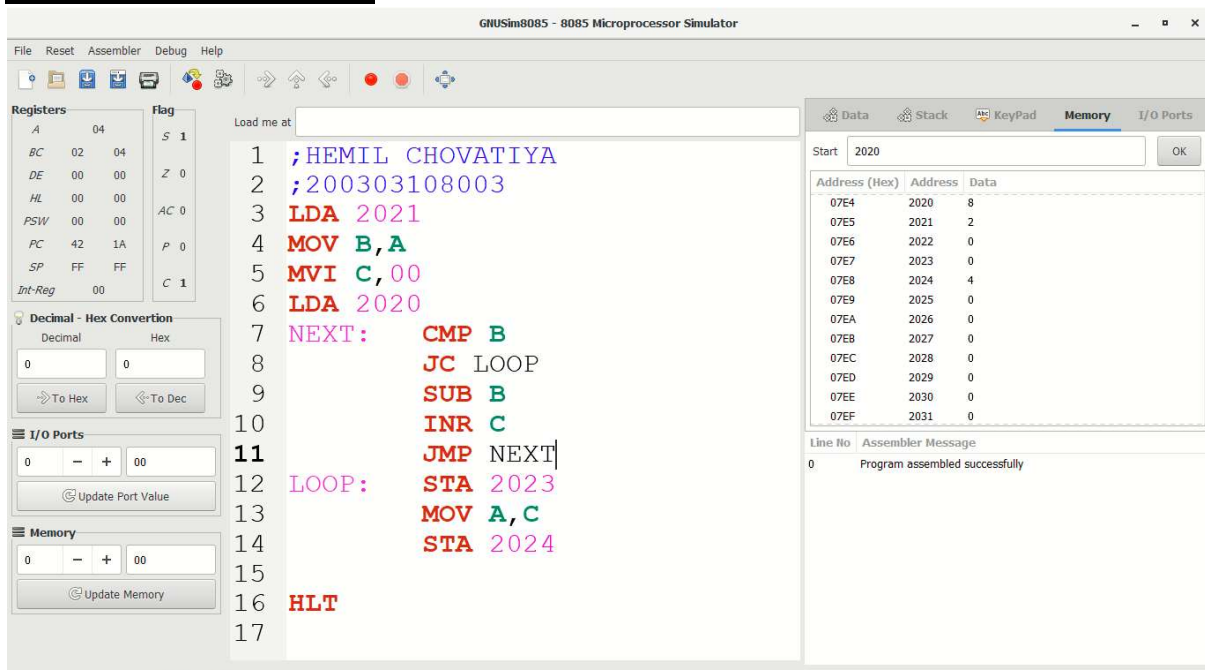
PRACTICAL 6

AIM: Write an assembly language code in GNUsim8085 to implement
Division of two 8bit Numbers

THEORY

Code	Meaning
LDA 2021	Load value of memory location 2021 in Accumulator A
MOV B, A	Move data from memory to accumulator
MVI C,00	8-bit data is stored in the destination register or memory. (Move immediate 8-bit)
CMP B	Compare register or memory with accumulator
JC LOOP	Jump if Carry CY=1
SUB B	Subtract register or memory from accumulator
INR C	Increment register or memory by 1
JMP NEXT	Jump unconditionally (16 Bit Address)
HLT	Hold the program

IMPLEMENTATION:



The screenshot shows the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window displays the following assembly code:

```

1 ;HEMIL CHOVIATYA
2 ;200303108003
3 LDA 2021
4 MOV B,A
5 MVI C,00
6 LDA 2020
7 NEXT:  CMP B
8         JC LOOP
9         SUB B
10        INR C
11        JMP NEXT
12 LOOP:  STA 2023
13        MOV A,C
14        STA 2024
15
16 HLT
17

```

The left panel shows the Registers window with the following values:

Register	Value
A	04
BC	02 04
DE	00 00
HL	00 00
PSW	00 00
PC	42 1A
SP	FF FF
Int-Reg	00

The right panel shows the Memory window with the following values:

Address (Hex)	Address	Data
07E4	2020	8
07E5	2021	2
07E6	2022	0
07E7	2023	0
07E8	2024	4
07E9	2025	0
07EA	2026	0
07EB	2027	0
07EC	2028	0
07ED	2029	0
07EE	2030	0
07EF	2031	0

The bottom panel shows the Assembler Message window with the message: "Program assembled successfully".

INPUT: 2020=8
2021=2

OUTPUT: 2023=0
2024=4