INDIAN INSTITUTE OF INFORMATION TECHNOLOGY
SONEPAT

Microprocessor and Interfacing Lab

(CSC508)

Practical Lab File

Submitted To:

Dr. Rajiv Verma

Submitted By

Dipankar Yadav

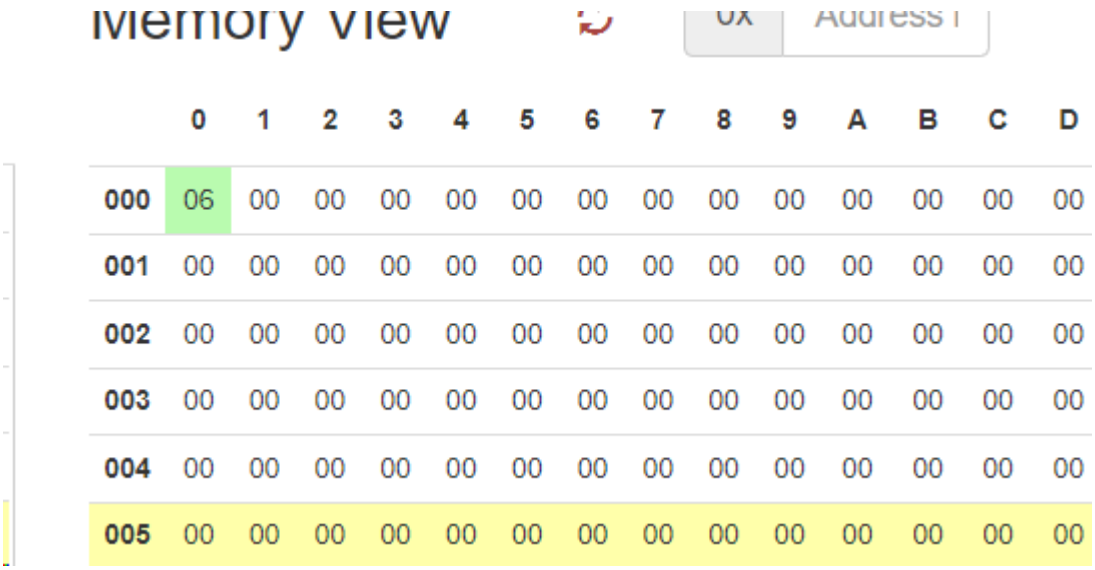
Roll No.- 12111070
Branch: CSE
Semester: 5
Session: 2021-25

Practical 1: - Write a program for addition of two 8 bit numbers

CODE:

```
MVI A,01H
MVI B,05H
ADD B
STA 0000H
HLT
```

OUTPUT:



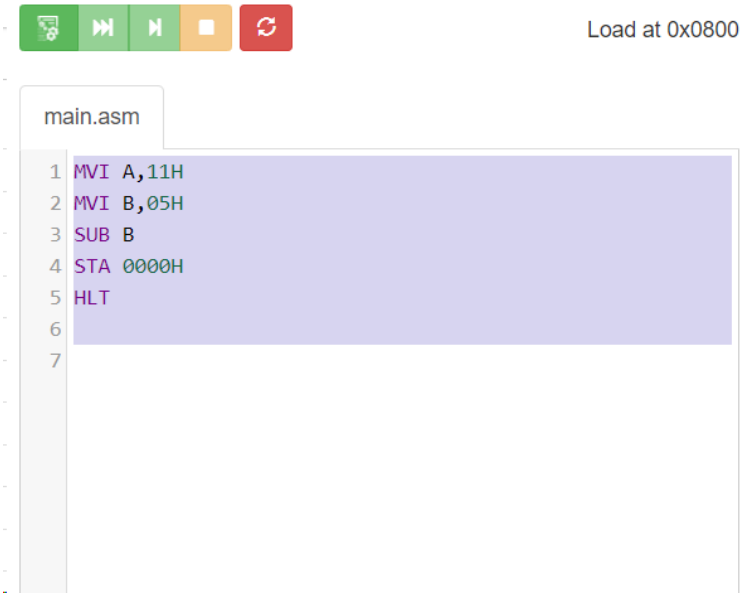
	0	1	2	3	4	5	6	7	8	9	A	B	C	D
000	06	00	00	00	00	00	00	00	00	00	00	00	00	00
001	00	00	00	00	00	00	00	00	00	00	00	00	00	00
002	00	00	00	00	00	00	00	00	00	00	00	00	00	00
003	00	00	00	00	00	00	00	00	00	00	00	00	00	00
004	00	00	00	00	00	00	00	00	00	00	00	00	00	00
005	00	00	00	00	00	00	00	00	00	00	00	00	00	00

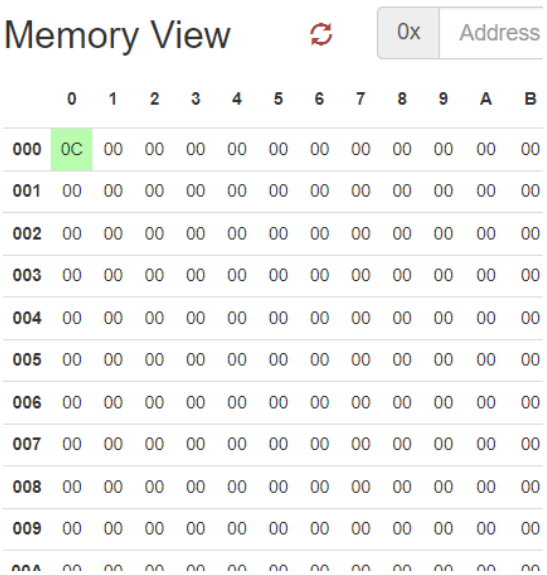
Practical 2: - Write a program for subtraction of two 8 bit numbers

CODE:

```
MVI A,11H
MVI B,05H
SUB B
STA 0000H
HLT
```

OUTPUT:





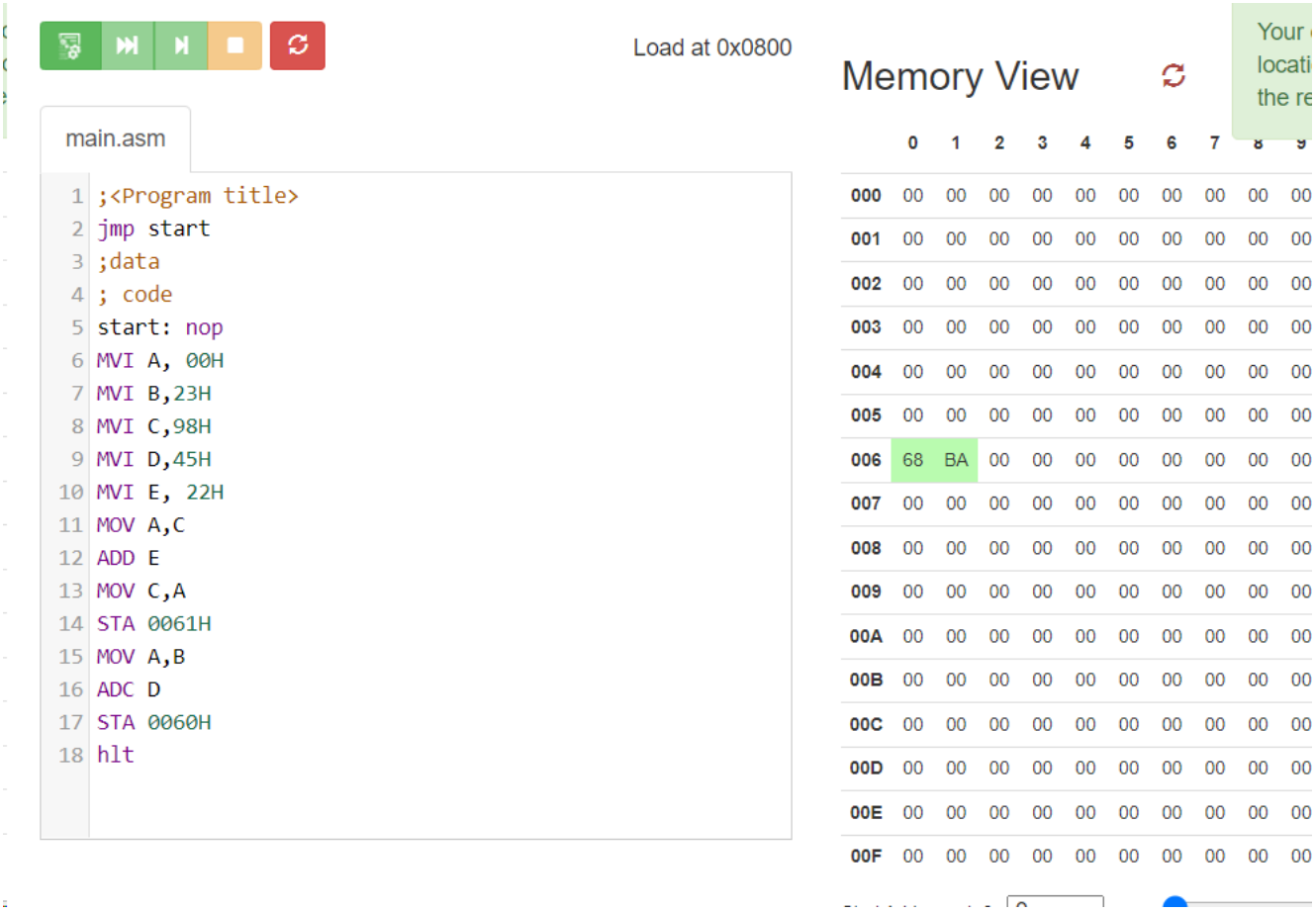
	0	1	2	3	4	5	6	7	8	9	A	B
000	0C	00	00	00	00	00	00	00	00	00	00	00
001	00	00	00	00	00	00	00	00	00	00	00	00
002	00	00	00	00	00	00	00	00	00	00	00	00
003	00	00	00	00	00	00	00	00	00	00	00	00
004	00	00	00	00	00	00	00	00	00	00	00	00
005	00	00	00	00	00	00	00	00	00	00	00	00
006	00	00	00	00	00	00	00	00	00	00	00	00
007	00	00	00	00	00	00	00	00	00	00	00	00
008	00	00	00	00	00	00	00	00	00	00	00	00
009	00	00	00	00	00	00	00	00	00	00	00	00

Practical 3: - Write a program for addition with a carry of two 8 bit numbers

CODE:

```
MVI A, 00H
MVI B,23H
MVI C,98H
MVI D,45H
MVI E, 22H
MOV A,C
ADD E
MOV C,A
STA 0061H
MOV A,B
ADC D
STA 0060H
hlt
```

OUTPUT:



Practical 4: - Write a program for subtraction of two 8 bit numbers with borrow.

CODE:

```
MVI A, 8DH
MVI B, 7DH
MOV C, A
SUB B
JC SUBTRACT
SUBTRACT: STA RESULT
RESULT: DB 00H
HLT;
```

OUTPUT:

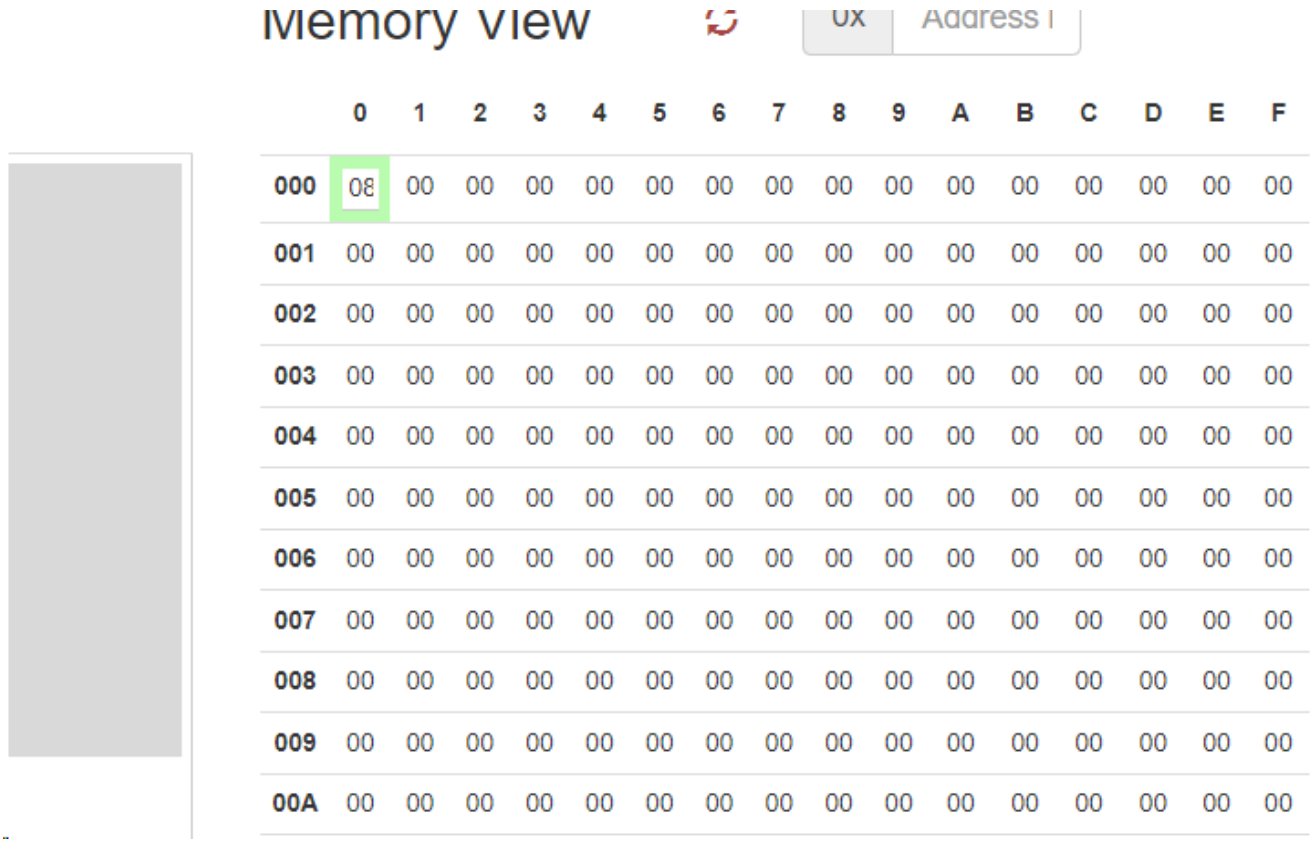
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	00	00	00	00	00	00	00	00	00	00	10	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Practical 5: - Write a program for multiplication of two 8 bit numbers using repeated addition.

CODE:

```
MVI b,02h
MVI c,04h
MVI a, 00h
MVI d,00h
loop: add b
jnc skip
inr d
skip: dcr c
jnz loop
mov b,d
mov c,a
mov a,c
sta 0000h
hlt
```

OUTPUT:



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
000	08	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
001	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
002	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
003	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
004	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
005	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
006	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
007	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
008	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
009	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00A	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Practical 6: - Write a program for multiplication of two 8 bit numbers using bit rotation method

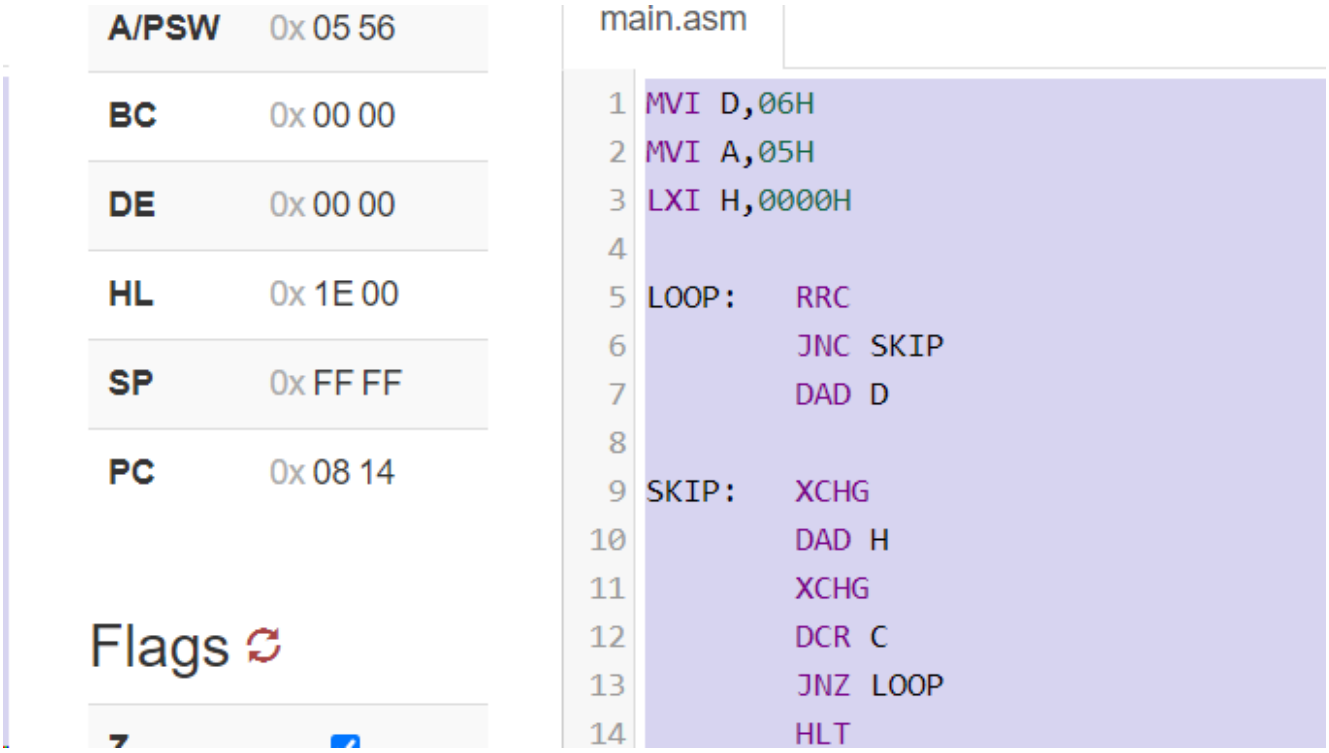
CODE:

```
MVI D,06H
MVI A,05H
LXI H,0000H

LOOP:   RRC
        JNC SKIP
        DAD D

SKIP:   XCHG
        DAD H
        XCHG
        DCR C
        JNZ LOOP
        HLT
```

OUTPUT:



Practical 7: - Write a program for division of two 8 bit numbers by repeated addition method.

CODE:

```
MVI A, 27H
MVI B, 05H
MVI C, 00H
MVI D, 00H
LOOP: SUB B
    JC DONE
INR C
JMP LOOP
DONE: MOV E, A
HLT
```

OUTPUT:

A/PSW	0x FF 97
BC	0x 05 07
DE	0x 00 FF
HL	0x 00 00
SP	0x FF FF
PC	0x 08 12

Flags

main.asm

```
1  MVI A, 27H
2  MVI B, 05H
3  MVI C, 00H
4  MVI D, 00H
5  LOOP: SUB B
6        JC DONE
7  INR C
8  JMP LOOP
9  DONE: MOV E, A
10 HLT
```

Practical 8: - Write a program for division of two 8 bit numbers using by bit rotation method.

CODE:

```
   MVI E,00H;
   LHLD 0008H;
   LDA 0007H;
   MOV B,A;
   MVI C,08H;
NEXT:DAD H;
   MOV A,E;
   RLC
   MOV E,A;
   MOV A,H;
   SUB B;
   JC SKIP;
   MOV H,A;
   INR E;
SKIP:DCR C;
   JNZ NEXT;
   MOV A,E;
   STA 0033H;
   MOV A,H;
   STA 0034H;
   HLT;
```

OUTPUT:

main.asm

```
1
2  start: nop
3      MVI E,00H;
4      LHLD 0008H;
5      LDA 0007H;
6      MOV B,A;
7      MVI C,08H;
8  NEXT:DAD H;
9      MOV A,E;
10     RLC
11     MOV E,A;
12     MOV A,H;
13     SUB B;
14     JC SKIP;
```

	0	1	2	3	4	5	6	7	8	9	A
000	00	00	00	00	00	00	00	00	00	00	0
001	00	00	00	00	00	00	00	00	00	00	0
002	00	00	00	00	00	00	00	00	00	00	0
003	00	00	00	FF	00	00	00	00	00	00	0
004	00	00	00	00	00	00	00	00	00	00	0
005	00	00	00	00	00	00	00	00	00	00	0
006	00	00	00	00	00	00	00	00	00	00	0
007	00	00	00	00	00	00	00	00	00	00	0
008	00	00	00	00	00	00	00	00	00	00	0
009	00	00	00	00	00	00	00	00	00	00	0