

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY SONEPAT

Microprocessor and Interfacing Lab (CSC508)

Practical Lab File

Submitted To:

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Submitted By

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Branch: CSE

Semester: 5

Session: 2021-25

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

CODE:

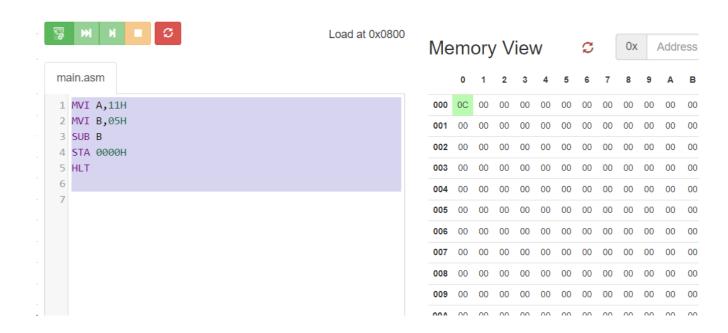


IVI	er	nc	nory view												
		0	1	2	3	4	5	6	7	8	9	Α	В	С	D
00	0 0)6	00	00	00	00	00	00	00	00	00	00	00	00	00
00	1 (00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	2 (00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	3 (00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	4 (00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	5 (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:

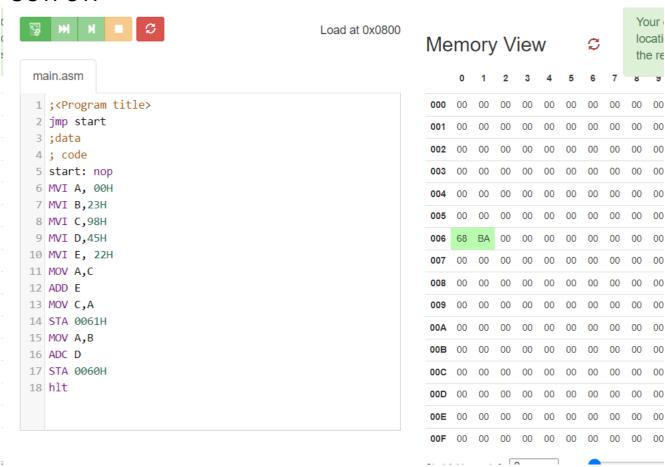
```
MVI A,11H
MVI B,05H
SUB B
STA 0000H
HLT
```



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
```



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;



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

CODE:

```
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
```

IV	/le	mo	ory	V	lev	V		Ø		UX	-	Adar	ess I				
		0	1	2	3	4	5	6	7	8	9	Α	В	С	D	E	F
0	000	80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	001	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	002	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	003	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	004	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	005	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	006	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	007	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	800	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	009	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	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
```

A/PSW	0x 05 56	main.asm	
ВС	0x 00 00	1 MVI D, 06H 2 MVI A, 05H	
DE	0x 00 00	3 LXI H,0000H	
HL	0x 1E 00	5 LOOP: RRC	
SP	0x FF FF	6 JNC S 7 DAD D	
PC	0x 08 14	8 9 SKIP: XCHG	
		10 DAD H	
		11 XCHG	
Flags	${\mathcal C}$	12 DCR C	
90		13 JNZ L	00P
7		14 HLT	

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
```

A/PSW	0x FF 97	main.asm
ВС	0x 05 07	1 MVI A, 27H 2 MVI B, 05H
DE	0x 00 FF	3 MVI C, 00H 4 MVI D, 00H
HL	0x 00 00	5 LOOP: SUB B
SP	0x FF FF	6 JC DONE 7 INR C
PC	0x 08 12	8 JMP LOOP 9 DONE: MOV E, A
		10 HLT
Flags	${\mathcal G}$	

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
                                                         000 00 00 00 00 00 00 00 00 00 00 01
2 start: nop
                                                         001
                                                             00 00 00 00 00 00 00 00 00 00
 3
       MVI E,00H;
4
                                                          002 00 00 00
                                                                      00 00 00 00 00 00
      LHLD 0008H;
5
     LDA 0007H;
                                                          003 00 00
                                                                   00
                                                                      FF 00 00 00
6
      MOV B,A;
                                                          004 00 00 00
                                                                      00 00 00 00
       MVI C,08H;
8 NEXT:DAD H;
                                                         005 00 00 00
                                                                      00 00 00 00
9
       MOV A,E;
                                                          006 00 00 00
                                                                      00 00 00 00
. 10
       RLC
                                                         007
                                                             00 00
                                                                   00
                                                                      00 00 00 00
- 11
       MOV E,A;
12
                                                             00 00
                                                                   00
                                                                      00
      MOV A,H;
13
     SUB B;
                                                         009 00 00 00 00 00 00 00 00 00 00
14 JC SKIP;
```

00 01

00 00 00

00 00

00 00

00 00

00 00

00 00

00

00

00 00

00 00

00 00

00 00

5

00 00 00 00 00