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VIDYA BHAVAN'S SARDAR PATEL INSTITUTE OF TECHNOLOGY
Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai – 400058-India
Department of Computer Engineering

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Experiment No.	**1**

AIM:	**To implement various Arithmetic Operations through Assembly Language Programming for microprocessor 8086 (MASM)**
Program 1	
PROBLEM STATEMENT :	**To perform 8 -bit addition of two numbers.**

PROGRAM:	data segment
	a db 05h
	b db 03h
	c dw ?
	data ends
	
	code segment
	assume cs:code,ds:data
	start:
	mov ax,data
	mov ds,ax
	mov al,a
	mov bl,b
	add al,bl
	mov c,ax
	int 3
	code ends
	end start

RESULT:	

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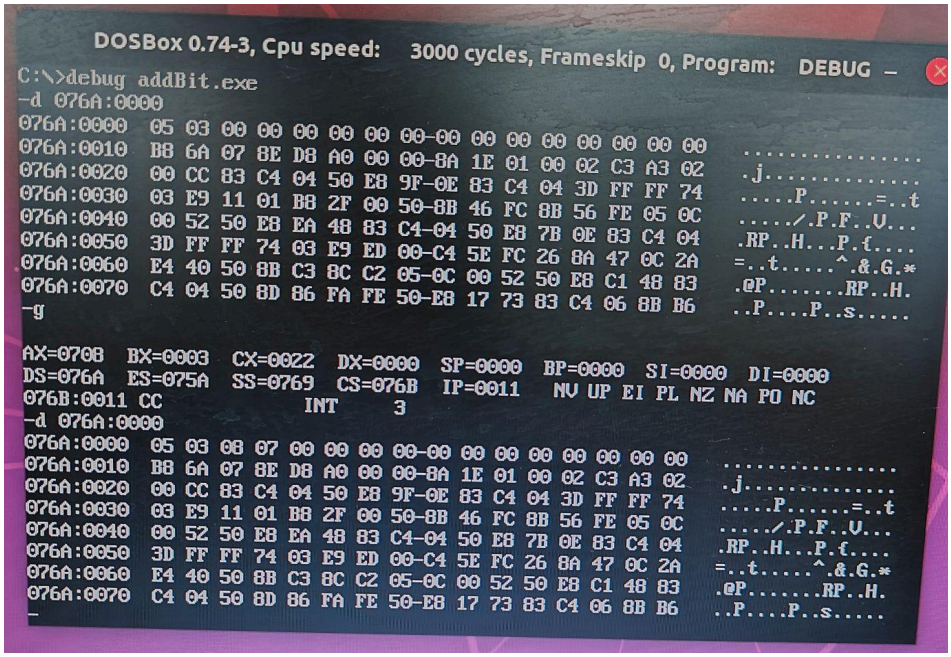
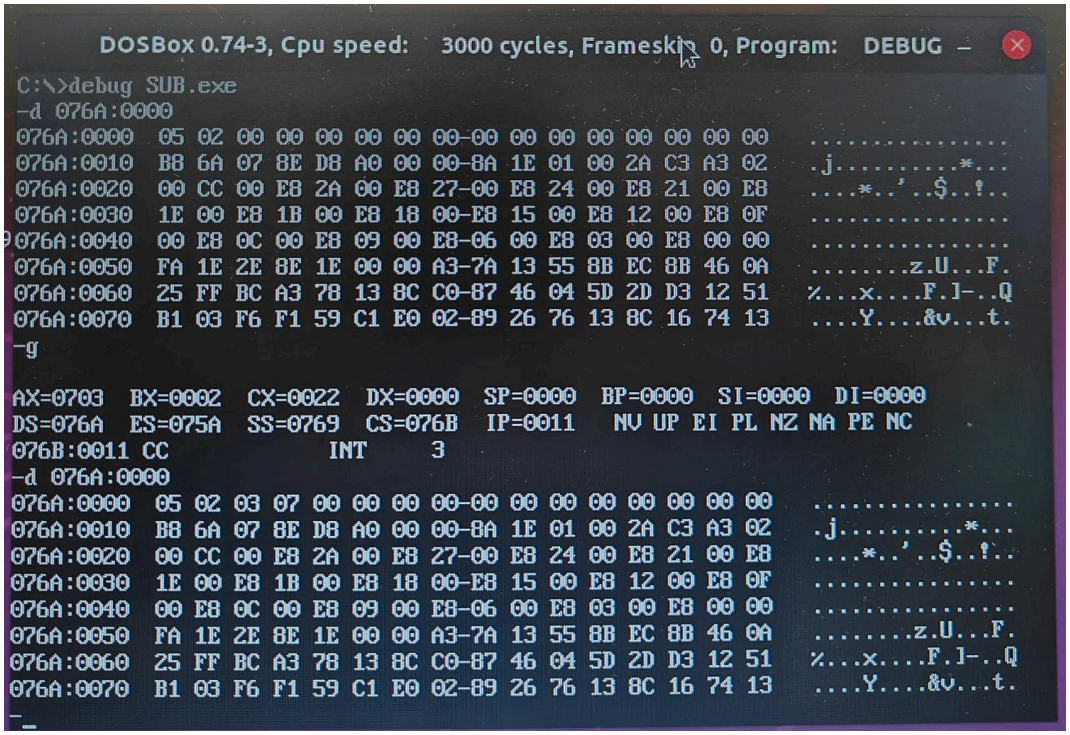


Program 2	
PROBLEM STATEMENT :	**To perform 8- bit substraction of two numbers.**

PROGRAM:	data segment
	a db 05h
	b db 02h
	c dw ?
	data ends
	
	code segment
	assume cs:code,ds:data
	start:
	mov ax,data
	mov ds,ax
	mov al,a
	mov bl,b
	add al,bl
	mov c,ax
	int 3
	code ends

	end start

RESULT:

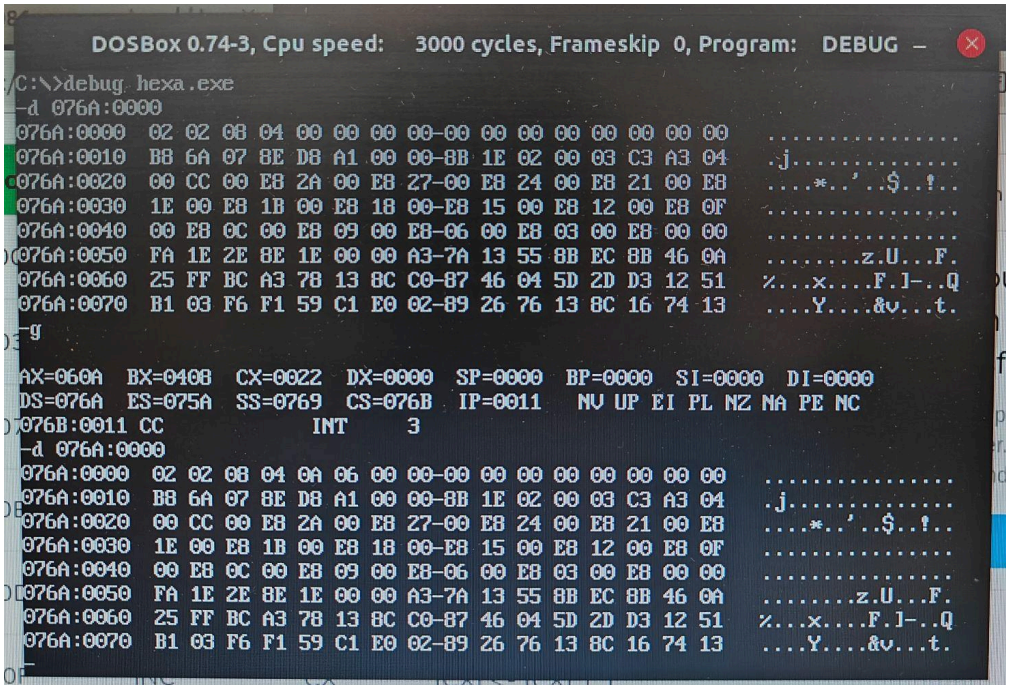


Program 3	
PROBLEM STATEMENT:	**To perform 16-bit addition of two numbers.**

PROGRAM:	data segment
	a db 0202h
	b db 0804h
	c dw ?
	data ends
	
	code segment
	assume cs:code,ds:data
	start:
	mov ax,data
	mov ds,ax

	mov ax,a
	mov bx,b
	add ax,bx
	mov c,ax
	int 3
	code ends
	end start

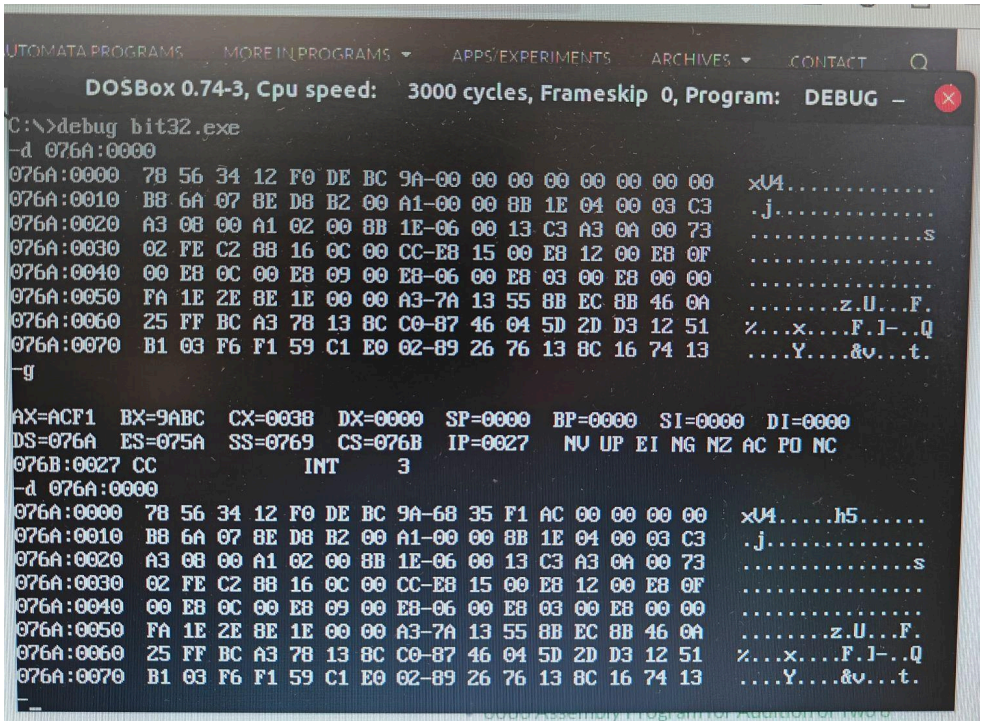
RESULT:



Program 4	
PROBLEM STATEMENT:	**To perform 32-bit addition of two numbers.**
PROGRAM:	data segment abc dd 78563412h def dd F0DEBC98H ghi dw ? data ends code segment assume cs:code, ds:data

```
start:
mov ax, data
mov ds, ax
mov dl, 00h
mov ax, word ptr abc
mov bx, word ptr def
add ax,bx
mov word ptr ghi,ax
mov ax, word ptr abc+2
mov bx, word ptr def+2
adc ax,bx
code ends
end start
```

RESULT:



CONCLUSION:	In this experiment, I got acquainted with the basics of 8086 assembly language programming and solved various arithmetic operations.