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BRANCH :- Comps -B BATCH: B.

**EXPERIMENT 1: Implement various Arithmetic Operations through Assembly Language Programming for microprocessor 8086(MASM).**

**SUBJECT :- CAO (COMPUTER ARCHITECTURE AND ORGANIZATION)**

**TOPIC :- 8-BIT ADDITION**

**CODE :-**

Data Segment

n1 db 28h

n2 db 9h

result db 01 dup(?)

data ends

Code Segment

Assume cs:code,ds:data

Start:

mov ax, data

mov ds, ax

mov ax,n1

mov bx,n2

add ax,bx

mov result,ax

mov ah,4ch

int 21h

code ends

end start

**OUTPUT :-**

```

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG
NC:\HOME\STUDENTS\MANISH\8086>debug experiment1.exe
-d 076A: 0000
3 076A:0000 28 09 00 00 00 00 00 00-00 00 00 00 00 00 00 00 (.....
076A:0010 B8 6A 07 8E D8 A1 00 00-8B 1E 01 00 03 C3 A3 02 .j.....
9 076A:0020 00 B4 4C CD 21 00 EB 27-00 EB 24 00 EB 21 00 EB ..L.?.'.$.?..
076A:0030 1E 00 EB 1B 00 EB 18 00-EB 15 00 EB 12 00 EB 0F .....
076A:0040 00 EB 0C 00 EB 09 00 EB-06 00 EB 03 00 EB 00 00 .....
076A:0050 FA 1E 2E 8E 1E 00 00 A3-7A 13 55 8B EC 8B 46 0A .....z.U...F.
076A:0060 25 FF BC A3 78 13 8C C0-87 46 04 5D 2D D3 12 51 x...x...F.l-..Q
D 076A:0070 B1 03 F6 F1 59 C1 E0 02-89 26 76 13 8C 16 74 13 ....Y....&v...t.
M-g
pProgram terminated normally
V-d 076A: 0000
076A:0000 28 09 31 09 00 00 00 00-00 00 00 00 00 00 00 00 (.1.....
076A:0010 B8 6A 07 8E D8 A1 00 00-8B 1E 01 00 03 C3 A3 02 .j.....
076A:0020 00 B4 4C CD 21 00 EB 27-00 EB 24 00 EB 21 00 EB ..L.?.'.$.?..
076A:0030 1E 00 EB 1B 00 EB 18 00-EB 15 00 EB 12 00 EB 0F .....
076A:0040 00 EB 0C 00 EB 09 00 EB-06 00 EB 03 00 EB 00 00 .....
076A:0050 FA 1E 2E 8E 1E 00 00 A3-7A 13 55 8B EC 8B 46 0A .....z.U...F.
076A:0060 25 FF BC A3 78 13 8C C0-87 46 04 5D 2D D3 12 51 x...x...F.l-..Q
076A:0070 B1 03 F6 F1 59 C1 E0 02-89 26 76 13 8C 16 74 13 ....Y....&v...t.

```

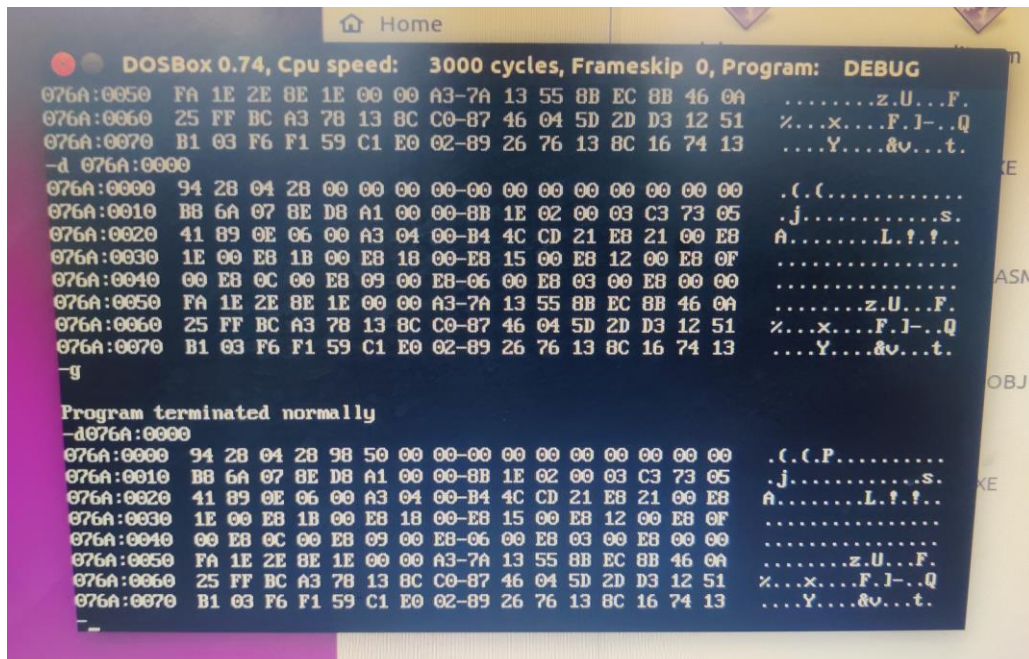
**TOPIC :- 16-BIT ADDITION**

**CODE :-**

```
data segment
num1 dw 2894h
num2 dw 2804h
result dw 01 dup(?)
data ends

code segment
assume cs:code,ds:data
start:
mov ax,data
mov ds,ax
mov ax,num1
mov bx,num2
add ax, bx
jnc xyz
inc cx
mov [result+2],cx
xyz: mov result,ax
mov ah,4ch
int 21h
code ends
end start
```

**OUTPUT :-**



**TOPIC :- 8-BIT SUBTRACTION**

**CODE :-**

```
data segment
n1 db 28h
n2 db 9h
result db 01 dup(?)
data ends

code segment
assume cs:code, ds:data
start:
mov ax, data
mov ds, ax
mov ax, n1
mov bx, n2
sub ax, bx
mov result, ax
mov ah, 4ch
int 21h
code ends
end start
```

**OUTPUT :-**

