SUBJECT: MICROPROCESSOR LAB (MPL) **NAME:PRIYANKA SALUNKE**	
CLASS: SE COMP A	**ROLL NO.: F19111151**
SEMESTER: SEM-II	**YEAR: 2020-21**
DATE OF PERFORMANCE:	**DATE OF SUBMISSION:**
EXAMINED:	

Assignment No-05

Title:-Count no. of positive and negative numbers

Assignment Name: - Write an ALP to count no. of positive and negative numbers from the array.

Objective-

- To understand the assembly language program
- To understand 64 bit interrupt.

Outcome-

- Students will be able to write code for how to count positive and negative number from array
- Students will be able to understand different assembly language instruction.

Prerequisite -

System call of Unix for Assembly language Program.

Hardware Requirement-

Desktop PC

Software Requirement-

Ubuntu 14.04,

Assembler: NASM version 2.10.07
Linker: ld

Introduction:-

Theory:

Algorithm:

1. Start
2. Initialise section .data
3. Define variable for array,pcount,ncount
4. Count Positive and negative number using JS command.
5. Display counts
6. Terminate program using system call
6. Stop

Conclusion:- Hence we implemented an ALP to count positive and negative number from array and display count.

Questions:-

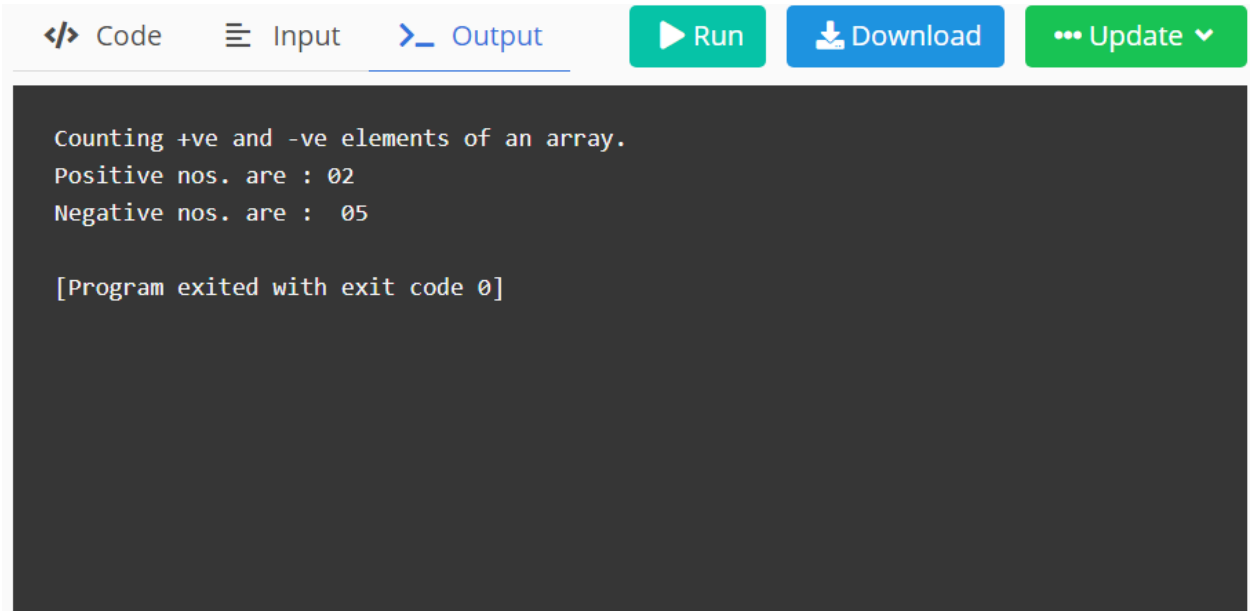
Q.1.Explain BT,JS,loop instruction with Example?
Q.2 Explain Paging in 80386?
Q.3 Draw control registers of 80386

Program

```
%macro print 2
mov rax,1
mov rdi,1
mov rsi,%1
mov rdx,%2
syscall
%endmacro

section .data

m0 db "Counting +ve and -ve elements of an array.",10
l0 equ $-m0

m1 db "Positive nos. are : "
l1 equ $-m1

m2 db "Negative nos. are :  "
l2 equ $-m2

array db -1h,2h,-3h,4h,-5h,-6h,-7h
pcount db 0
ncount db 0
newline db 0xa

section .bss

dispbuff resb 2


section .text
global _start
_start:
                print m0,l0

                mov rsi,array
                mov rcx,07

again:
                mov al, [rsi]
                cmp al,00h
                js next1
```

```
                inc byte[pcount]
        jmp pskip

next1:  inc byte[ncount]

pskip:  add rsi,1

                loop again


print m1,l1

mov bl,[pcount]
call disp_result
print newline,1

print m2,l2
mov bl,[ncount]
call disp_result
print newline,1

mov rax,60                                      ;terminate program
xor rdi,rdi
Syscall


;procedure to convert hex number to its equivalent ASCII
disp_result:
        mov rdi,dispbuff
        mov rcx,02

        dispup1:
           rol bl,4
           mov dl,bl
           and dl,0fh
           add dl,30h
           cmp dl,39h
           jbe dispskip1
           add dl,07h

        dispskip1:
            mov [rdi],dl
            inc rdi
            loop dispup1
            print dispbuff,2
ret
```

Output


Code
Input
Output
Run
Download
Update
Counting +ve and -ve elements of an array.
Positive nos. are : 02
Negative nos. are : 05
[Program exited with exit code 0]