

Practical No - 5

Code-

```
section .data
    msg db 10, "Count of positive and negative numbers:", 10
    msg_len equ $-msg
    pmsg db "Count of positive numbers: ", 10
    pmsg_len equ $-pmsg
    nmsg db "Count of negative numbers: ", 10
    nmsg_len equ $-nmsg
    array dq 100, 10, -70, -1, -30
    array_size equ 5

section .bss
    pcnt resb 4
    ncnt resb 4
    num_buffer resb 16

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

section .text
global _start

_start:
    mov dword [pcnt], 0
    mov dword [ncnt], 0
    mov rsi, array
    mov rcx, array_size
```

next_num:

```
    mov rax, [rsi]
    cmp rax, 0
    jl negative
```

positive:

```
    add dword [pcnt], 1
    jmp next
```

negative:

```
    add dword [ncnt], 1
```

next:

```
    add rsi, 8
    loop next_num
    write msg, msg_len
    write pmsg, pmsg_len
    mov eax, [pcnt]
    call print_num
    write nmsg, nmsg_len
    mov eax, [ncnt]
    call print_num
    mov rax, 60
    xor rdi, rdi
    syscall
```

print_num:

```
    mov rsi, num_buffer + 15
    mov byte [rsi], 10
    dec rsi
    mov rbx, 10
    mov rcx, 0
```

convert:

```
xor rdx, rdx
div rbx
add dl, '0'
mov [rsi], dl
dec rsi
inc rcx
test rax, rax
jnz convert
inc rsi
mov rdx, rcx
write rsi, rdx
ret
```

Output –

```
cns@cns-System-Product-Name:~$ nasm -f elf64 -o mpprac5.o mpprac5.asm
cns@cns-System-Product-Name:~$ ld -o exe.x mpprac5.o
cns@cns-System-Product-Name:~$ ./exe.x

Count of positive and negative numbers:
Count of positive numbers:
2Count of negative numbers:
cns@cns-System-Product-Name:~$ S
```