;Write X86 ALP to find, a) Number of Blank spaces

; b) Number of lines

; c) Occurrence of a particular character.

; Accept the data from the text file.

;The text file has to be accessed **during Program\_1 execution ;and write FAR PROCEDURES**

; in **Program\_2 f**or the rest of the processing.

;Use of **PUBLIC and EXTERN** directives is mandatory.

;\*\*\*\*\*\*\*\*\*\*\*\*\* p1.asm file \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

section .data

global msg6,len6,scount,ncount,occcount,new,new\_len

fname: db 'abc.txt',0

msg: db "File opened successfully",0x0A

len: equ $-msg

msg1: db "File closed successfully",0x0A

len1: equ $-msg1

msg2: db "Error in opening file",0x0A

len2: equ $-msg2

msg3: db "Spaces:",0x0A

len3: equ $-msg3

msg4: db "NewLines:",0x0A

len4: equ $-msg4

msg5: db "Enter character:",0x0A

len5: equ $-msg5

msg6: db "No of occurances:",0x0A

len6: equ $-msg6

new: db "",0x0A

new\_len: equ $-new

scount: db 0

ncount: db 0

ccount: db 0

chacount: db 0

section .bss

global cnt,cnt2,cnt3,buffer

fd: resb 17

buffer: resb 200

buf\_len: resb 17

cnt: resb 2

cnt2: resb 2

cnt3: resb 2

occr: resb 2

%macro scall 4

mov rax,%1

mov rdi,%2

mov rsi,%3

mov rdx,%4

syscall

%endmacro

section .text

global \_start

\_start:

extern spaces, enters, occ

mov rax,2 ;open file cursor goes in end of file

mov rdi, fname ;file name as second parameter

mov rsi,2 ;0=read only,1=write only 2=read/write

mov rdx,0777 ; Setting permission for read, write and execute by all

syscall

mov qword[fd],rax

BT rax,63

jc next

scall 1,1,msg,len ;File open successfully

jmp next2

next: scall 1,1,msg2,len2 ;Error to open file

jmp exit

next2:scall 0,[fd],buffer, 200

mov qword[buf\_len],rax

mov qword[cnt],rax

mov qword[cnt2],rax

mov qword[cnt3],rax

scall 1,1,msg3,len3 ;No of spaces

call spaces

scall 1,1,msg4,len4 ; No .of words

call enters

scall 1,1,msg5,len5 ;Enter chr for occurance

scall 0,1,occr,2 ;read chr

mov bl, byte[occr]

call occ

;jmp exit

;exit:

scall 1,1,msg1,len1 ;file close successfuly

mov rax, 3 ;close Fname (abc.txt)

mov rdi, fname

syscall

exit:mov rax,60 ;Program end

mov rdi,0

syscall

;\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*P2 file \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

;P2.asm

section .data

extern msg6,len6,scount,ncount,occrance,new,new\_len

section .bss

extern cnt,cnt2,cnt3,scall,buffer

%macro scall 4

mov rax,%1

mov rdi,%2

mov rsi,%3

mov rdx,%4

syscall

%endmacro

section .text

global main2

main2:

global spaces,enters,occ

;\*\*\*\*\*\*\*\*\*\*\*\*checking number of spaces \*\*\*\*\*\*\*\*\*\*\*\*\*

spaces:mov rsi,buffer

up:mov al, byte[rsi]

cmp al,20H

je next3

inc rsi

dec byte[cnt]

jnz up

jmp next4

next3:inc rsi

inc byte[scount] ;increment space count

dec byte[cnt]

jnz up

next4:add byte[scount], 30h

scall 1,1,scount, 2

scall 1,1,new,new\_lenret

; \*\*\*\*\*\*\*\*\*\*\*\* check new line \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enters:

mov rsi,buffer

up2:

mov al, byte[rsi]

cmp al,0AH ;check enter key

je next5

inc rsi

dec byte[cnt2]

jnz up2

jmp next6

next5:inc rsi

inc byte[ncount] ;new line counter increment

dec byte[cnt2]

jnz up2

next6:add byte[ncount], 30h

scall 1,1,ncount, 2

scall 1,1,new,new\_len

ret

;\*\*\*\*\*\*\*\*\*\*\* occurance of character \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

occ:mov rsi,buffer

up3:mov al, byte[rsi]

cmp al,bl

je next7

inc rsi

dec byte[cnt3]

jnz up3

jmp next8

next7:inc rsi

inc byte[occrance]

dec byte[cnt3]

jnz up3

next8:add byte[occrance], 30h

scall 1,1,msg6,len6 ;No. of occurance

scall 1,1,occrance, 1

scall 1,1,new,new\_len

ret

;\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\*p2.asm file end \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

;\*\*\*\*\*\*\*\*\*\*\*Text file (abc.txt)\*\*\*\*\*\*\*\*\*\*\*\*

;Hello

;Welcome to Pune

;This is microprocessor Lab

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

;\*\*\*\*\*\*\*output\*\*\*\*\*\*\*

; nasm -f elf64 p1 p1.asm

; nasm -f elf64 p2 p2.asm

; ld -o p p1.o p2.o

; ./p

;File opened successfully

;Spaces:6

;NewLines:3

;Enter character:e

;

No of occurances:5

;file closed successfuly