;-------------------------------------------------------------------------------

;Write X86 menu driven Assembly Language Program (ALP) to implement OS ;(DOS) commands TYPE, COPY and DELETE using file operations. User is ;supposed to provide command line arguments in all cases

;-------------------------------------------------------------------------------

%macro print 2

mov rax,1

mov rdi,1

mov rsi,%1

mov rdx,%2

syscall

%endm

%macro read 2

mov rax,0

mov rdi,0

mov rsi,%1

mov rdx,%2

syscall

%endm

%macro fopen 1

mov rax,2

mov rdi,%1

mov rsi,2

mov rdx,666

syscall

%endm

%macro fclose 1

mov rax,3

mov rdi,%1

syscall

%endm

%macro fread 3

mov rax,0

mov rdi,%1

mov rsi,%2

mov rdx,%3

syscall

%endm

%macro fwrite 3

mov rax,1

mov rdi,%1

mov rsi,%2

mov rdx,%3

syscall

%endm

;--------------------------------------

%include "macro.nasm"

section .data

msg db 10,13,'File contents are: ',10,13

len equ $-msg

err db 10,13,'Not a command',10,13

err\_len equ $-err

msgc db 10,13,'File copied'

len2 equ $-msgc

msgd db 10,13,'File deleted',10,13

len3 equ $-msgd

er db 10,13,'Cannot open file'

er\_len equ $-er

TYPE db 'TYPE'

DELETE db 'DELETE'

COPY db 'COPY'

section .bss

filename1 resb 50

filename2 resb 50

buff resb 4096

bufflength equ $-buff

fhandle1 resq 1

fhandle2 resq 1

abufflength resq 1

global \_start:

section .text

\_start:

pop rcx

pop rsi

pop rsi

mov rdi,TYPE

mov cl,04

up: mov al,[rsi]

mov bl,[rdi]

cmp al,bl

je label1

mov rdi,DELETE

mov bl,[rdi]

mov cl,06

cmp al,bl

je label3

mov rdi,COPY

mov bl,[rdi]

mov cl,04

cmp al,bl

je label2

jmp dn

label1: mov al,[rsi]

mov bl,[rdi]

cmp al,bl

jne dn

inc rsi

inc rdi

dec cl

jnz label1

print msg,len

pop rsi

mov rdx,[rsi]

mov [filename1],rdx

mov byte[filename1+rax],0

;xor rax,rax

fopen filename1

cmp rax,-1h

je error

mov [fhandle1],rax

xor rax,rax

fread [fhandle1],buff,bufflength

dec rax

mov [abufflength],rax

print buff,abufflength

fclose [fhandle1]

jmp dn1

label2: mov al,[rsi]

mov bl,[rdi]

cmp al,bl

jne dn

inc rsi

inc rdi

dec cl

jnz label2

print msgc,len2

pop rsi

mov rdx,[rsi]

mov [filename1],rdx

mov byte[filename1+rax],0

pop rsi

mov rdx,[rsi]

mov [filename2],rdx

mov byte[filename2+rax],0

fopen filename1

cmp rax,-1h

je error

mov [fhandle1],rax

xor rax,rax

fopen filename2

cmp rax,-1h

je error

mov [fhandle2],rax

xor rax,rax

fread [fhandle1],buff,bufflength

dec rax

mov [abufflength],rax

fwrite [fhandle2],buff,abufflength

fclose [fhandle1]

fclose [fhandle2]

jmp dn1

label3: mov al,[rsi]

mov bl,[rdi]

cmp al,bl

jne dn

inc rsi

inc rdi

dec cl

jnz label3

;print msgd,len3

pop rsi

mov rdx,[rsi]

mov [filename1],rdx

mov byte[filename1+rax],0

fopen filename1

cmp rax,-1h

mov [fhandle1],rax

xor rax,rax

;fread [fhandle1],buff,bufflength

mov rax,filename1

syscall

cmp rax,-1h

je del

del: print msgd,len3

jmp dn1

error: print er,er\_len

dn: print err,err\_len

dn1: mov rax,60

mov rdi,0

syscall

;------------------------------------------------

**OUTPUT :**

manu@ubuntu:~/MP$ nasm -f elf64 -g -F stabs DOS.nasm

manu@ubuntu:~/MP$ ld -o DOS DOS.o

manu@ubuntu:~/MP$ ./DOS TYPE abc.txt

File contents are:

"Welcome!!!"

Computer Engineering

Pune Vidyarthi Grihas College of Engineering and Technology,Pune

Mansi Borole

manu@ubuntu:~/MP$ ./DOS COPY abc.txt abx.txt

File copied

manu@ubuntu:~/MP$ ./DOS TYPE abx.txt

File contents are:

"Welcome!!!"

Computer Engineering

Pune Vidyarthi Grihas College of Engineering and Technology,Pune

Mansi Borole

manu@ubuntu:~/MP$ ./DOS DELETE abc.txt

File deleted