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# Assignment No: 10

**Title:** Write X86 Assembly Language Program (ALP) to implement following OS commands i) COPY, ii) TYPE Using file operations. User is supposed to provide command line arguments

**Program :**

%macro scall 4 mov rax,%1 mov rdi,%2 mov rsi,%3 mov rdx,%4

syscall

%endmacro

Section .data

title: db 0x0A,"----Commands -----", 0x0A db "1. Copy ",0x0A db "2. Type ",0x0A db "Enter Your choice", 0x0A title\_len: equ $-title

openmsg: db "File Opened Successfully",0x0A openmsg\_len: equ $-openmsg

closemsg: db "File Closed Successfully",0x0A closemsg\_len: equ $-closemsg errormsg: db "Failed to open file", 0x0A errormsg\_len: equ $-errormsg delmsg: db "Deleted File", 0x0A delmsg\_len: equ $-delmsg

typemsg: db "=-----File Contents ----=",0x0A typemsg\_len: equ $-typemsg

;f1name: db 'file1.txt', 0

;f2name: db 'file2.txt', 0 ;f3name: db 'file3.txt',0 filenmsg: db "ENter File name: " filen\_len: equ $-filenmsg Section .bss buffer: resb 200

bufferlen:resb 8 cnt1:resb 8 fdis:resb 8 choice: resb 2 f1name: resb 20 f2name: resb 20 f3name: resb 20 Section .text global main main:

scall 1,1,title,title\_len scall 0,0,choice,2

;------------- CHOOSE OPTION --------------------------

;compare choice here cmp byte[choice],'1' ;if choice is to display content je COPY cmp byte[choice],'2' je TYPE COPY:

scall 1,1,filenmsg,filen\_len scall 0,0, f1name, 20 dec rax mov byte[f1name+rax],0 scall 2,f1name,2,777 ;Opening file

mov qword[fdis],rax ;RAX contains file descriptor value bt rax,63 ;63rd bit is +ve(0) if file is successfull opened else it is -ve (1) jc next

scall 1,1,openmsg,openmsg\_len jmp next1 next:

scall 1,1,errormsg,errormsg\_len jmp EXIT next1:

scall 0,[fdis],buffer,200 ;reading contents of file in buffer

;rax contains actual number of bytes read mov qword[bufferlen],rax mov qword[cnt1],rax

;Closing file1

mov rax,3 mov rdi,f1name syscall

scall 1,1,closemsg,closemsg\_len ;-------------------FILE 2 ------------------ scall 1,1,filenmsg,filen\_len scall 0,0, f2name, 20 dec rax mov byte[f2name+rax],0 scall 2,f2name,2,777

mov qword[fdis],rax ;RAX contains file descriptor value bt rax,63 ;63rd bit is +ve(0) if file is successfull opened else it is -ve (1) jc next3 scall 1,1,openmsg,openmsg\_len jmp next21 next3: scall 1,1,errormsg,errormsg\_len jmp EXIT next21: scall 1,qword[fdis],buffer,qword[bufferlen] ;writing to file2.txt mov rax,3 mov rdi,f2name syscall scall 1,1,closemsg,closemsg\_len jmp main

TYPE:scall 1,1,filenmsg,filen\_len scall 0,0, f2name, 20 dec rax mov byte[f2name+rax],0 scall 2,f2name,2,777 ;Opening file

mov qword[fdis],rax ;RAX contains file descriptor value bt rax,63 ;63rd bit is +ve(0) if file is successfull opened else it is -ve (1) jc tnext scall 1,1,openmsg,openmsg\_len jmp tnext1 tnext: scall 1,1,errormsg,errormsg\_len jmp EXIT

tnext1:

scall 0,[fdis],buffer,200 ;reading contents of file in buffer mov qword[bufferlen],rax scall 1,1, typemsg,typemsg\_len scall 1,1, buffer,qword[bufferlen]

;Closing file2 mov rax,3 mov rdi,f2name syscall

scall 1,1,closemsg,closemsg\_len JMP main EXIT: mov rax,60 mov rdi,0

syscall

**OUTPUT:**

