**Assignment number: 12**

**Subject: MICROPROCESSOR LAB**

Name: ***RIA MITTAL***

Class: ***SECOND YEAR ENGINEERING***

Division: ***B***

Roll no: ***222008***

Batch: ***B1***

**PROBLEM STATEMENT:**

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.

**Code:**

%macro scall 4

mov rax,%1

mov rdi,%2

mov rsi,%3

mov rdx,%4

syscall

%endmacro

%macro fopen 1

mov rax,2

mov rdi,%1

mov rsi,2

mov rdx,0777o

syscall

%endmacro

%macro fread 3

mov rax,0

mov rdi,%1

mov rsi,%2

mov rdx,%3

syscall

%endmacro

%macro fwrite 3

mov rax,1

mov rdi,%1

mov rsi,%2

mov rdx,%3

syscall

%endmacro

%macro fclose 1

mov rax,3

mov rdi,%1

syscall

%endmacro

%macro exit 0

mov rax,60

mov rdi,0

syscall

%endmacro

section .data

menumsg db 10,"\*\*\*\*\*\*\*\*\*\*Menu\*\*\*\*\*\*\*\*\*\*\*\*\*"

db 10,"1.TYPE"

db 10,"2.Copy"

db 10,"3.Delete"

db 10,"4.Exit"

l1 equ $-menumsg

chmsg db 10,"Enter u r choice:"

l2 equ $-chmsg

cntmsg db 10,"Do u want to cont...."

l3 equ $-cntmsg

fmsg db 10,"Enter File name:"

l4 equ $-fmsg

errmsg db "File not Present..."

l5 equ $-errmsg

fmsg1 db "File Present..."

l6 equ $-fmsg1

delmsg db 10,"File deleted successfully...."

l7 equ $-delmsg

wmsg db 10,"Write Successfully"

wmsgl equ $-wmsg

section .bss

choice resb 2

filename resb 50

filename1 resb 50

fhandle resq 1

fhandle1 resq 1

buff resb 1024

bufflen equ $-buff

act\_len resq 2

cnt1 resq 1

cnt2 resb 2

dispbuff resb 5

section .text

global \_start

\_start:

menu:

scall 1,1,menumsg, l1

scall 1,1,chmsg,l2

scall 0,0,choice,2

mov al,byte[choice]

sub al,30h

cmp al,1

jne case2

call typecmd

jmp cnt

case2:

cmp al,2

jne case3

call copycmd

jmp cnt

case3:

cmp al,3

jne case4

call delcmd

jmp cnt

case4:

exit

cnt:

scall 1,1,cntmsg,l3

scall 0,0,choice,2

mov al,byte[choice]

sub al,30h

cmp al,1

je menu

exit

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*TYPE Command \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

typecmd:

scall 1,1,fmsg,l4

scall 0,0,filename,50

dec rax

mov byte[filename+rax],0

fopen filename

cmp rax,-1H

jle err

mov [fhandle],rax

fread [fhandle],buff,bufflen

dec rax

mov [act\_len],rax

scall 1,1,buff,act\_len

jmp n

err:

scall 1,1,errmsg,l5

n:

ret

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Copy Command \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

copycmd:

scall 1,1,fmsg,l4

scall 0,0,filename,50

dec rax

mov byte[filename+rax],0

scall 1,1,fmsg,l4

scall 0,0,filename1,50

dec rax

mov byte[filename1+rax],0

fopen filename

cmp rax,-1h

jle err1

mov [fhandle],rax

fopen filename1

cmp rax,-1h

jle err1

mov [fhandle1],rax

fread [fhandle],buff,bufflen

dec rax

mov [act\_len],rax

fwrite [fhandle1],buff,[act\_len]

scall 1,1,wmsg,wmsgl

fclose [fhandle1]

jmp nxt

err1:

scall 1,1,errmsg,l5

nxt:

ret

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Delete Command \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

delcmd:

scall 1,1,fmsg,l4

scall 0,0,filename,50

dec rax

mov byte[filename+rax],0

mov rax,87 ;87 is function number to delete

mov rdi,filename

syscall

cmp rax,-1h

jle erro

scall 1,1,delmsg, l7

call cnt

erro:

scall 1,1,errmsg,l5

ret

