Assignment-8

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

Problem :
Write X86 menu driven assembly language Program (ALP) to implement OS (DOS) commands.

Objective : To understand how to implement OS(DOS) command using file operations.

Outcome :
Students will study different DOS commands and file operations.

S/W and H/W requirements :
Processor : Core 2duo/i3/i5/i7
OS : Linux 32 bit/64 bit OS
Editor : gedit/vi
Debugger : GDB
Assembler : NASM

Concept Related Theory :

* Command Line Arguments:

(1) Stores 0 at the end of file argument.

(2) For numerical value ASCII value will be stored.

(3) The count of variable will be stored in hexadecimal.

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./dos
type 0
a.test 0

```
pop rbx
pop rbx
pop rbx
mov rcx, qword [rbx]
mov rsi, rbx.
```

pop operation pops address of that value.

* DOS COPY command.

(1) Start

(2) pop no. of arguments, exe arguments and source file name.

(3) Save source file name.

(4) Pop destination filename.

(5) Save destination filename.

(6) Open the file for reading.

(7) Open or create the file for writing.

(8) Close source file.

(9) Close destination file.

(10) Exit.

* DOS DELETE Command.

(1) Start
(2) Pop number of arguments, exec arguments and source filename.
(3) Save source file name.
(4) Delete file.
(5) Exit.

* DOS TYPE Command.

(1) Start
(2) Pop no. of arguments, exec arguments and source filename.
(3) Save source file name.
(4) Open the file for reading.
(5) Write to the terminal.
(6) Close source file.
(7) Exit.

Open file

```
mov rax,2        ; 'open' syscall.
mov rdi,fname1   ; File name.
mov rsi,0
mov rdx,0777     ; permissions set.
Syscall
mov [fdin],rax
```

READ file.

```
    mov rax,0x       ; 'Read' Syscall.
    mov rdi,[fd-in]  ; file Pointer
```

```
mov rsi ,Buffer ; Buffer for read.
mov rdx, length ; len of data want to read.
Syscall.
```

Write File

```
mov rax,01 ; 'Write' syscall.
mov rdi,[fd-in] ; file pointer.
mov rsi ,Buffer ; Buffer for write.
mov rdx, length ; len of data want to read
Syscall.
```

- Delete File

```
mov rax, 87
mov rdi, fname
syscall.
```

- Close File.

```
mov rax,3
mov rdi, [fd-in]
syscall
```

Type Command:

(1) Openfile in read mode using open interrupt.
(2) Read contents of using read interrupt.
(3) Display contents of file using write interrupt
(4) Close file using close interrupt.

* Copy command.

(1) Open file in read mode using open interrupt.
(2) Read contents of file using read interrupt.
(3) Create another file using read interrupt change only attributes.
(4) Open another file using open interrupt.
(5) Write text contents of buffer into opened file.
(6) Close both files using close interrupt.

* DELETE command:
delete file using delete interrupt.

Conclusion: We have learnt how DOS commands copy, type, delete work in ALP.