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EEN521 Assignment 1

In this assignment I am doing the following to test my very simple file system program. The operation are including:

'0'   Initialize the disc
'1'   List the root directory files
'2'   Creating a new file
'3'   Read a file by file name
'4'   Delete a file
'5'   Exit the file system

I did the following testing and the script log is attached at the end. (boldface show the command)

- **ls** current directory to show what file in the directory for the tape reading
- **run vsfs.exe**
- **1** to show the previous state of the file system,
- **0** to initialize the file system, 100 block is ready to use.
- **1** to show the root directory after the initialization
- **2** to create the new file with file name "filename1"
- **2** to create the new file with file name "filename2"
- **1** to list the newly created file
- **2** to create one more
- **3** to read filename1 file content
- **3** to read a file that doesn't exist, give a error message
- **1** to list the root directory
- **4** to delete a fliename1 file, successfully.
- **4** to delete a file that doesn't exsit, give a error message
- **1** to list the root directory after the deletion.

The detailed output of the above command for the vsfs is show in the attached script.

There are several challenges that I came across when building the vsfs file system. They are:

- New language and new editor, not quite handy.
- In read() function, how to look up the first block for the particular file
  - I use a match() function to search the matched filename between the exist filename and the user input filename, reading the entry for the fb filed and return it for using by the devctl(DC_DISK_READ,,fb,,).

- How to keep the entry number between the newfile() function and the delete() function.
  - I use a global static variable to keep the total entries in the

There are some limitations and bugs need to be further implemented or fixed including:

- backspaces support in input for filename or tape name. currently, the vsfs do not support backspace. which is a bit awkward.
- multiple block reading for one file.
- multiple disk support.
- file modification after creation
- file descriptor reuse,
- etc.

Script

21:07 ~/assignment > cat typescript
Script started on Wed Feb 13 21:03:18 2013
21:03 ~/assignment > ls -l
total 3064
-rw-r--r-- 1 rhan class   108 Feb 13 16:40 1.b
-rw-r--r-- 1 rhan class   140 Feb 13 16:52 2.b
-rw-r--r-- 1 rhan class   142 Feb 13 16:54 5.b
-rwxr-xr-x 1 rhan class   46 Feb 10 15:22 com
-rw------- 1 rhan class 3072000 Feb 13 21:03 maindrive.disc
-rw-r--r-- 1 rhan class   97 Feb 10 15:22 system.setup
-rw-r--r-- 1 rhan class   43 Feb 13 21:03 typescript
-rw-r--r-- 1 rhan class   5922 Feb 13 20:58 vsfs.b
-rw------- 1 rhan class   2902 Feb 12 10:33 vsfs.b.save.1
-rw-r--r-- 1 rhan class   8832 Feb 13 20:58 vsfs.exe
-rw-r--r-- 1 rhan class   6552 Feb 10 23:30 vsfs.exe.backup
21:03 ~/assignment > run vsfs

   Hello, this is a very simple file system version 0.0
Following is the operations it now support:
          '0'   Initialize the disc
          '1'   List the root directory files
          '2'   Creating a new file
          '3'   Read a file by file name
          '4'   Delete a file
          '5'   Exit the file system
please select a operation: 1
name   st   fd   len
'filename1'   1   16   108
'filename2'   1   17   140
'filename3'   1   19   142
please select a operation: 0

Disk 1 initialized!!! total available blocks = 100
please select a operation: 1
name   st   fd   len
please select a operation: 2
type new filename:
filename1
New file created!!! Enter the tape name (disk file):
1.b
loading '1.b' ...
load status = 1
tape '1.b' succesfully loaded into filesystem!
please select a operation: 2
type new filename:
filename2
New file created!!! Enter the tape name (disk file):
2.b
loading '2.b' ...
load status = 1
tape '2.b' succesfully loaded into filesystem!
please select a operation: 1
name   st   fd   len
'filename1'   1   10   108
'filename2'   1   11   140
please select a operation: 2
type new filename:
filename3
New file created!!! Enter the tape name (disk file):
5.b
loading '5.b' ...
load status = 1
tape '5.b' succesfully loaded into filesystem!
please select a operation: 1
name   st   fd   len
'filename1'   1   10   108
'filename2'   1   11   140
'filename3'   1   12   142
please select a operation: 3
file name to read:
filename
filename does not exist!!!
please select a operation: 3fi
file name to read:
i does not exist!!!

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please select a operation: 3
file name to read:
filename
filename does not exist!!!
please select a operation: 3
file name to read:
filename1
filename1 content:
 import "io"

let start() be

{ out("Greetings, Human.\n");

 out("Now go away and leave me alone.\n") }

please select a operation: 1
name         st   fd    len
'filename1'   1    10    108
'filename2'   1    11    140
'filename3'   1    12    142
please select a operation: 4
file name to delete:
filename1
filename1 deleted!
please select a operation: 1
name         st   fd    len
'filename2'   1    11    140
'filename3'   1    12    142
please select a operation: 4
file name to delete:
filename1
filename1 doesn't exist on disk!!!
please select a operation: 1
name         st   fd    len
'filename2'   1    11    140
'filename3'   1    12    142
please select a operation: 4
file name to delete:
ilename1
ilename1 doesn't exist on disk!!!
please select a operation: 4
file name to delete:
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filename2
filename2 deleted!
please select a operation: 4
file name to delete:
filename3
filename3 deleted!
please select a operation: 1
name   st   fd   len
please select a operation: 5
21:07 ~/assignment > exit
exit