PES UNIVERSITY

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Department of Computer Science

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UE19CS254: Operating Systems

Assignment 4

Assignment 4 is based on operations on files and directories.

1. Write an application program to write 20 bytes of data to a file and display the first 5 bytes and last 5 bytes of data from the file and also print the size of the file using lseek() system call.

[Hint: use open(), read(),write(),lseek(),close() system calls]

2. I) Write a program to set the size of the existing file 0 bytes without creating new file.

[Hint: use open() and lseek() system calls]

II) Write program to create a link to the file "a.txt". After creating a link write 10 bytes of data to a one of the "a.txt" file. Observe the change in the size of both files and number of links. Make a note of these changes.

[Hint: use link() system call)

3. WAP to display the directory contents. Pass the directory name from the command line, if command line argument is not passed then the files from current working directory needs to be displayed.

[Use opendir, readdir and closedir]

Note: this programs implements ls command and $ls pathnameofdirname

Multiple choice Questions

1 . Any file's attribute information is stored in which structure on the disk:

a) Inode

b) Data blocks

c) File blocks

d) Directory file

2. Directory entry consist of_____.

a. File type, file name and file size

b. File type, file name and i-node

c. File type and i-node

d. File name and i-node

3. What system call read a byte at a time from the standard input?

a. read(3,buff,1);

b. read(1,buff,1);

c. read(2,buff,1);

d. **read(0,buff,1);**

4. Which system call is used to create a hard link?
a) hardlink
b) link
c) symlink
d) ln

5. Every File or directory has unique
a. Inode
b. Directory
c. Pathname
d. Inode & pathname

Useful Links
1. https://www.geeksforgeeks.org/input-output-system-calls-c-create-open-close-read-write/
2. https://www.cs.uregina.ca/Links/class-info/330/SystemCall_IO/SystemCall_IO.html
3. https://www.qnx.com/developers/docs/7.0.0/#com.qnx.doc.neutrino.lib_ref/topic/o/opendir.html