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TECHNOLOGY COLLEGE OF ENGINEERING
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DEPARTMENT OF NETWORKING AND
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**21CSC202J-Operating Systems , Mini-Project
Presentation**

FILE MANAGEMENT SYSTEM

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Objective

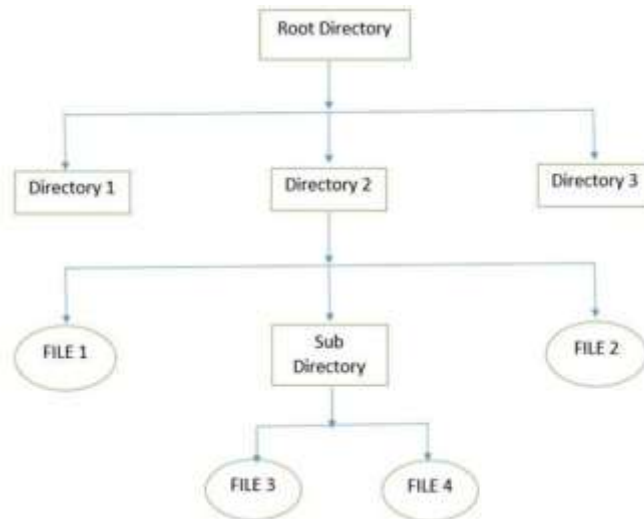
- File management is one of the basic and important features of operating system. Operating system is used to manage files of computer system. All the files with different extensions are managed by operating system.
- A file is collection of specific information stored in the memory of computer system. File management is defined as the process of manipulating files in computer system, it management includes the process of creating, modifying and deleting the files.

Problem Statement Architecture/ Flow chart

The file is actually the collection of associated information. This file-system prearranged into directory for efficient usage. Every directory has a number of files and other directories.

The directory is defined as a bit which distinguish the entries that explained file and subdirectories in the recent directory. By theoretically we may change the file into a directory by changing its bit. A file system is considered as an element of an operating system that manage the storage space and operation of files on media like disks.

A ***file management system*** is a type of software that manages data files in a computer system. It has limited capabilities and is designed to manage individual or group files, such as special office documents and records.



The above figure shows the general hierarchy of the storage in an operating system. In this figure the root directory is present at the highest level in the hierarchical structure. It includes all the subdirectories in which the files are stored. Subdirectory is a directory present inside another directory in the file storage system. The directory base storage system ensures better organization of files in the memory of the computer system.

Hardware/Software requirements

- Any Linux Operating System or Others With terminal

Implementation- Code snippet

Menu Code:

```
#include <stdio.h> int main(void) {

printf("=====
\n");

printf("      File Management Project
      \n");

printf("=====
\n");

printf("Welcome, The Main Menu is given below:\n");


printf("1- List all Files and Directories\n");
printf("2- Create New Files\n"); printf("3-
Delete Existing Files\n"); printf("4- Rename
Files\n"); printf("5- Edit File Content\n");
printf("6- Search Files\n");
printf("7- Details of Particular File\n");
printf("8- View Content of File\n"); printf("9-
Sort File Content\n");

printf("10- List only Directories(Folders)\n");
printf("11- List Files of Particular
Extension\n"); printf("12- Count Number of
Directories\n"); printf("13- Count Number of
Files\n");

printf("14- Sort Files in a Directory\n");
printf("0- Exit\n");
```

```
printf("\nWhat action you want to Perform?\nEnter 1-14\n");  
return 0;  
}
```

Main Code:

```
#!/bin/bash i="0"  
  
while [ $i -lt 100 ]  
do  
gcc project.c -o proj  
./proj read opt1  
if [ $opt1 == 1 ] then  
echo "List all files and Directories here.." echo "Showing all  
files and directories...." sleep 3  
echo "Loading.." sleep 3
```

```
echo "-----Output-----"  
-----"
```

```
ls
```

```
echo " "
```

```
elif [ $opt1 == 2 ]
```

```
then
```

```
echo "Create New Files here.."
```



```

    echo "Which type of file you want to create !"

    echo "1- .c"

    echo "2- .sh"
    echo "3- .txt"
    echo "Enter your choice from 1-3" read
    filechoice

    if [ $filechoice == 1 ]
    then
        echo "Enter File Name without .c Extension"
        read filename
        touch $filename.c

        echo "-----OutPut-----"
        -----"
        echo "File Created Successfully" echo " "

        elif [ $filechoice == 2 ]
        then
            echo "Enter File Name without .sh Extension"
            read filename2
            touch $filename2.sh

            echo "-----OutPut-----"
            -----"
            echo "File Created Successfully" echo " "

        elif [ $filechoice == 3 ]
        then

```

```

        echo "Enter File Name without .txt Extension"
        read filename3 touch $filename3.txt

        echo "-----OutPut-----"
        echo "File Created Successfully" echo " "
    else
        echo "Inavlid Input..Try Again." echo " "
    fi

elif [ $opt1 == 3 ]
then
    echo "Delete existing files here.. "
    echo "Enter name of File you want to Delete!"
    echo "Note: Please Enter full Name with Extension." read
    delfile

    echo "-----OutPut-----"

    if [ -f "$delfile" ];
    then
        if [ -f "$delfile" ]; then

            rm $delfile

            echo "Successfully Deleted."
            echo " "

```

```
else
echo "File Does not Exist..Try
again"  echo " "
fi
```

```
elif [ $opt1 == 4 ]
```

```
then
```

```
        echo "-----OutPut-----"
-----"
```

```
echo "Rename files here.."
```

```
echo "Enter Old Name of File with Extension.."  read old
```

```
echo "Checking for file..."  sleep 3
```

```
if [ -f "$old" ];
```

```
then
```

```
echo "Ok File Exist."
```

```
echo "Now Enter New Name for file with Extension"  read new
```

```
mv $old $new
```

```
echo "Successfully Rename."
```

```
echo "Now Your File Exist with $new Name"
```

```
else
```

```
echo "$old does not exist..Try again with correct filename."
```

```
fi
```

```
echo " "
```

```

elif [ $opt1 == 5 ]
then
echo "Edit file content here.."
echo "Enter File Name with Extension : " read
edit

echo "-----OutPut-----"
echo "Checking for file.." sleep 3

if [ -f "$edit" ];
then
echo "Opening file.." sleep 3
nano $edit echo " "
else
echo "$edit File does not exist..Try again."
fi

elif [ $opt1 == 6 ] then
echo "Search files here.."
echo "Enter File Name with Extension to search" read f

echo "-----OutPut-----"
if [ -f "$f" ]; then

```

```
    echo "Searching for $f File"
    echo "File Found."  find /home -name $f

    echo " "

    else
    echo "File Does not Exist..Try again."
    echo " "

    fi
```

```
elif [ $opt1 == 7 ]
then then

echo "Detail of file here.."
echo "Enter File Name with Extension to see Detail : "  read
detail
```

```
    echo "-----OutPut-----"
    -----"
    echo "Checking for file.."  sleep 4
```

```
    if [ -f "$detail" ];
    then
    echo "Loading Properties.."  stat
    $detail
```

```
    else

    echo "$detail File does not exist..Try
    again"
```

```

        fi

echo " "


elif [ $opt1 == 8 ]
then
echo "View content of file here.." echo
"Enter File Name : "

read readfile

        echo "-----OutPut-----"
        -----"
if [ -f "$readfile" ]; then
echo "Showing file content.."

sleep 3

cat $readfile
else

echo "$readfile does not exist"
fi
echo " "


elif [ $opt1 == 9 ]
then
echo "Sort files content here.."
echo "Enter File Name with Extension to sort :" read
sortfile

        echo "-----OutPut-----"
        -----"
if [ -f "$sortfile" ]; then

```

```

        echo "Sorting File Content.."
        sleep 3
        sort $sortfile

    else
        echo "$sortfile File does not exist..Try again."
    fi  echo " "

elif [ $opt1 == 10 ]
then
    echo "-----OutPut-----"
    echo "List of all Directories here.."  echo
    "showing all Directories..."  echo "Loading.."
    sleep 3  ls -d */  echo " "

elif [ $opt1 == 11 ]
then

    echo "List of Files with Particular extensions here.."
    echo "Which type of file list you want to see?"  echo "1-
    .c"

    echo "2- .sh"

```

```
    echo "3- .txt"

    echo "Enter your choice from 1-3"

    read extopt

    echo "-----OutPut-----"
    -----"
    if [ $extopt == 1 ]
    then
        echo "List of .c Files shown below."  echo
        "Loading.."

        sleep 3
        ls *.c
    elif [ $extopt == 2 ]
    then
        echo "List of .sh Files shown below."  echo
        "Loading.."

        sleep 3  ls *.sh

    elif [ $extopt == 3 ]
    then
        echo "List of .txt Files shown below."
        echo "Loading.."

        sleep 3  ls *.txt

    else
        echo "Invalid Input..Try again.."
    fi
    echo " "
```



```

elif [ $opt1 == 12 ]
then
    echo "-----OutPut-----"
    echo "Total number of Directories here.." echo
    "Loading all directories.."
    sleep 3
    echo "Counting.." sleep 3
    echo "Number of Directories are : " echo */ | wc -w
    echo " "

```

```

elif [ $opt1 == 13 ]
then
    echo "-----OutPut-----"
    echo "Total Numbers of Files in Current Directory here.." echo
    "Loading all files.."
    sleep 3
    echo "Number of Files are : "
    ls -l | grep -v 'total' | grep -v '^d' | wc -l echo " "

```

```

elif [ $opt1 == 14 ]

then
    echo "-----OutPut-----"
    ---

```

```
echo "Sort Files here.."
echo "Your Request of Sorting file is
Generated."  echo "Sorting.."
sleep 3
ls | sort  echo " "
```

```
elif [ $opt1 == 0 ]
then
echo "Good Bye.."
echo "Successfully Exit"  break

else
echo "Invalid Input..Try again...."
fi

i=${i+1}  done
```

Results- Screen Shots of Output

Main Menu:

```
aqib@aqibMehmo0d: ~$ bash test.sh
-----File Management Project-----
Welcome, The Main Menu is given below:
1- List all Files and Directories
2- Create New Files
3- Delete Existing Files
4- Rename Files
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
```

Choice 01 Output:

If user enter 1 then the List of all Files and Directories will be displayed.

```
aqib@aqibMehmo0d: ~$ bash test.sh
2- Create New Files
3- Delete Existing Files
4- Rename Files
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
1
List all files and Directories here..
Showing all files and directories....
Loading..
-----OutPut-----
F1.txt  another.txt  ccppaste.txt.save  hello.c  lab471.sh  lab6task2.c  project.c  test1
F2.txt  assign1.c    ccppaste.txt.save.1  ila.sh   lab473.sh  lab6task3.c  project.sh  test2
F3.txt  assign1.txt  empty.txt          fact.c   lab1.sh    lab474.c     lab8task3.c  record.txt  test3
File.txt  assign172.c  lab2.c             lab5t0.sh  lab97task02.c  rubab.txt    text.txt
IoT      combine.sh    fibo.c             lab3.sh    lab5t001.sh  main.rs      sample.c     tracefile.txt
OEL_1    copyPaste.txt  fiboNew.c          lab3.txt   lab5t002.sh  mylog        shell.sh     tracing.sh
OEL_2    ccppaste.txt  grep.txt           lab471     lab5task2.sh  proj         test.sh      z.txt.txt
-----
```

Choice 02 Output:

If user wants to create new file then he needs to enter 2.

```
aqib@AqibMehmood: ~
2- Create New Files
3- Delete Existing Files
4- Rename Files
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
2
Create New Files here..
Which type of file you want to create !
1- .c
2- .sh
3- .txt
Enter your choice from 1-3
1
Enter File Name without .c Extension
z
-----OutPut-----
File Created Successfully
=====
```

Choice 03 Output:

If user wants to delete existing file then he needs to enter 3.

```
aqib@AqibMehmood: ~
-----File Management Project-----
Welcome, The Main Menu is given below:
1- List all Files and Directories
2- Create New Files
3- Delete Existing Files
4- Rename Files
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
3
Delete existing files here..
Enter name of File you want to Delete!
Note: Please Enter full Name with Extension.
Z.c
-----OutPut-----
Successfully Deleted.
=====
```

Choice 04 Output:

If user wants to rename an existing file then he needs to enter 4.

```
sqib@sqibMehmoed ~
1- List all Files and Directories
2- Create New Files
3- Delete Existing Files
4- Rename Files
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
4
-----OutPut-----
Rename files here..
Enter Old Name of File with Extension..
file.sh
Checking for file...
Ok File Exist.
Now Enter New Name for file with Extension
ali.sh
Successfully Rename.
Now Your File Exist with ali.sh Name
=====
```

Choice 05 Output:

If user wants to edit file content then he needs to enter 5.

```
sqib@sqibMehmoed ~
=====
-----File Management Project-----
=====
Welcome, The Main Menu is given below:
1- List all Files and Directories
2- Create New Files
3- Delete Existing Files
4- Rename Files
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
5
Edit file content here..
Enter File Name with Extension :
F1.txt
-----OutPut-----
Checking for file..
Opening file..
=====
```

Choice 06 Output:

If user wants to search for a file then he needs to enter 6.

```
aqib@AqibMehmood: ~$
-----File Management Project-----
Welcome, The Main Menu is given below:
1- List all Files and Directories
2- Create New Files
3- Delete Existing Files
4- Rename Files
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
6
Search files here..
Enter File Name with Extension to search
ali.sh
-----Output-----
Searching for ali.sh File
File Found.
/home/aqib/ali.sh
=====
```

Choice 07 Output:

If user wants to see the details of file then he needs to enter 7.

```
aqib@AqibMehmood: ~$
5- Edit File Content
6- Search Files
7- Details of Particular File
8- View Content of File
9- Sort File Content
10- List only Directories(Folders)
11- List Files of Particular Extension
12- Count Number of Directories
13- Count Number of Files
14- Sort Files in a Directory
0- Exit

What action you want to Perform?
Enter 1-14
7
Detail of file here..
Enter File Name with Extension to see Detail :
F2.txt
-----Output-----
Checking for file..
Loading Properties..
File: F2.txt
Size: 13          Blocks: 0          IO Block: 512    regular file
Device: 2h/2d Inode: 1970324836990827 Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/   aqib)   Gid: ( 1000/   aqib)
Access: 2020-02-29 14:08:21.277237900 +0500
Modify: 2020-06-07 00:41:53.547858800 +0500
Change: 2020-06-07 00:41:53.547858800 +0500
Birth: -
=====
```

Conclusion

The project contains some basic functionalities regarding file management like creating new files, delete existing files, rename files, edit files, read or write files and so on.

All the functionalities are working on the basis of user's input from keyboard. There are different basic functions that users can perform on files. These functions are written in C language and bash scripting.

All these functionalities are discussed above in the form of code as well as in simple natural language. So everyone having the basic knowledge of computer can use this file management system to perform different functions on files.

Thank You