



Green University of Bangladesh

*Department of Computer Science and Engineering (CSE)
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Linux File Manager using shell script

*Course Title: Operating System Lab
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<u>Lab Project Status</u>	
Marks:	Signature:
Comments:	Date:

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Chapter 1

Introduction

1.1 Overview

This project will develop a simple file manager mini operating system using bash scripting. The mini operating system will be capable of creating, deleting, renaming, copying, moving, and linking files. It can also change permissions on files, view the contents of files, search for files, open files in a text editor, and run commands in the shell. The mini operating system will be a simple way to learn about file manager and bash scripting. It is also a useful tool for testing.

1.2 Motivation

I decided to choose this project:

- I am interested in learning more about file manager and bash scripting.
- I think that a simple file manager mini operating system would be a useful tool for testing.
- I think that this project would be a good challenge for me.
- I think that this project would be a good way to contribute to the open source community.
- I am excited to work on this project and I am confident that I can make a significant contribution.

1.3 Problem Definition

1.3.1 Problem Statement

There is a need for a simple and easy-to-use file manager mini operating system. Current file manager systems are often complex and difficult to use, especially for users

who are not familiar with computers. This project will develop a simple file manager mini operating system that is easy to use and learn. The mini operating system will be written in bash scripting and will use a simple text-based user interface. The mini operating system will be capable of creating, deleting, renaming, copying, moving, and linking files. It can also change permissions on files, view the contents of files, search for files, open files in a text editor, and run commands in the shell. The mini operating system will be a useful tool for testing.

1.3.2 Complex Engineering Problem

Sure, here is Table 1.1 completed according to my above discussion in detail. The column on the right side is filled only with the attributes that I have chosen to be touched by my own project:

Table 1.1: Summary of the attributes touched by the mentioned projects

Name of the P Attributes	Explain how to address
P1: Depth of knowledge required	Yes, I will need to learn about file manager, bash scripting, and the Linux operating system. I will do this by reading books, articles, and tutorials. I will also ask for help from experienced developers.
P2: Range of conflicting requirements	Yes, The project must meet the requirements of users, stakeholders, and the project team. I will need to identify all of the requirements and find a way to meet them all.
P3: Depth of analysis required	Yes, I will need to analyze the requirements, the design, and the implementation. I will also need to analyze the risks and the potential problems.
P4: Familiarity of issues	Yes, The project team is familiar with the issues that will be encountered, as we have all worked on similar projects in the past.
P5: Extent of applicable codes	No, The project does not apply to any codes.
P6: Extent of stakeholder involvement and conflicting requirements	Yes, The project team will involve stakeholders in the project and will try to resolve any conflicting requirements.
P7: Interdependence	No, The project does not depend on any other projects.

1.4 Design Goals/Objectives

The goals of my project are to:

- **Develop a simple file manager mini operating system using bash scripting:** The mini operating system will be developed using bash scripting. Bash scripting is a powerful scripting language that is commonly used for system administration tasks. It is also a good language for beginners to learn, as it is easy to read and write.
- **Make the mini operating system easy to use and learn:** The mini operating system will be designed to be easy to use and learn. The user interface will be simple and intuitive. The documentation will be clear and concise
- **Make the mini operating system useful for testing:** The mini operating system will be useful for testing. It will be able to create, delete, rename, copy, move, and link files. It can also change permissions on files, view the contents of files, search for files, open files in a text editor, and run commands in the shell.

I believe that these goals are achievable. I have experience with file manager and bash scripting, and I am a quick learner. I am also motivated and dedicated to completing this project.

1.5 Application

1. Bash Scripting
2. Linux Terminal
3. Website

Chapter 2

Design/Development/Implementation of the Project

2.1 Introduction

Shell Script-based file manager system is a powerful tool that facilitates efficient and convenient manager of files within a shell environment. With its user-friendly menu-driven interface, users can perform a range of file operations with ease. Whether it's listing files, creating new ones, deleting, renaming, setting permissions, opening, or moving files, this system simplifies these tasks, providing a seamless experience. Designed to enhance user productivity, the file manager system is a valuable asset for individuals and organizations working extensively with files in a shell environment. Its intuitive design and comprehensive functionality make it an indispensable tool for effective file manager.

2.2 Project Details

Linux File Manager by providing a user-friendly menu interface. Users can view lists, create, delete, rename, set permissions, open , and move files. The project simplifies file manager tasks in a shell environment, enhancing user productivity and efficiency.

2.3 Implementation

Code of Linux File Manager

```
#!/bin/bash

my_menu() {
    echo "Linux File Manager"
    echo "1. List files"
    echo "2. Create a file"
```

```

        echo "3. Delete a file"
        echo "4. Rename a file"
        echo "5. Set file permissions"
        echo "6. Open a file"
        echo "7. Move a file"
        echo "8. Exit"
    }

    list() {
        echo "Files in the current directory:"
        ls -l
    }

    create() {
        echo "Enter the name of the file:"
        read filename
        touch "$filename"
        echo "File created successfully."
    }

    delete() {
        echo "Enter the name of the file to delete:"
        read filename
        rm "$filename"
        echo "File deleted successfully."
    }

    rename() {
        echo "Enter the name of the file to rename:"
        read oldname
        echo "Enter the new name:"
        read newname
        mv "$oldname" "$newname"
        echo "File renamed successfully."
    }

    permission_set() {
        echo "Enter the name of the file:"
        read filename
        echo "Enter the permission string (+x,+rwx,-rwx etc.):"
        read permission
        chmod "$permission" "$filename"
        echo "File permissions set successfully."
    }

    file_open() {

```

```

        echo "Enter the name of the file to open:"
        read filename
        if [ -f "$filename" ]; then
            echo "Opening file..."
            nano "$filename"
        else
            echo "File does not exist."
        fi
    }
}

```

```

move() {
    echo "Enter the name of the file to move:"
    read filename
    echo "Enter the destination directory:"
    read destination
    mv "$filename" "$destination"
    echo "File moved successfully."
}

```

```

while true; do
    my_menu
    echo "Enter your choice:"
    read choice

    case $choice in
        1)
            list
            ;;
        2)
            create
            ;;
        3)
            delete
            ;;
        4)
            rename
            ;;
        5)
            permission_set
            ;;
        6)
            file_open
            ;;
        7)
            move
            ;;
    esac
done

```



```
8)
    echo "Exiting..."
    exit 0
    ;;
*)
    echo "Invalid choice. Please try again."
    ;;
esac

echo
done
```

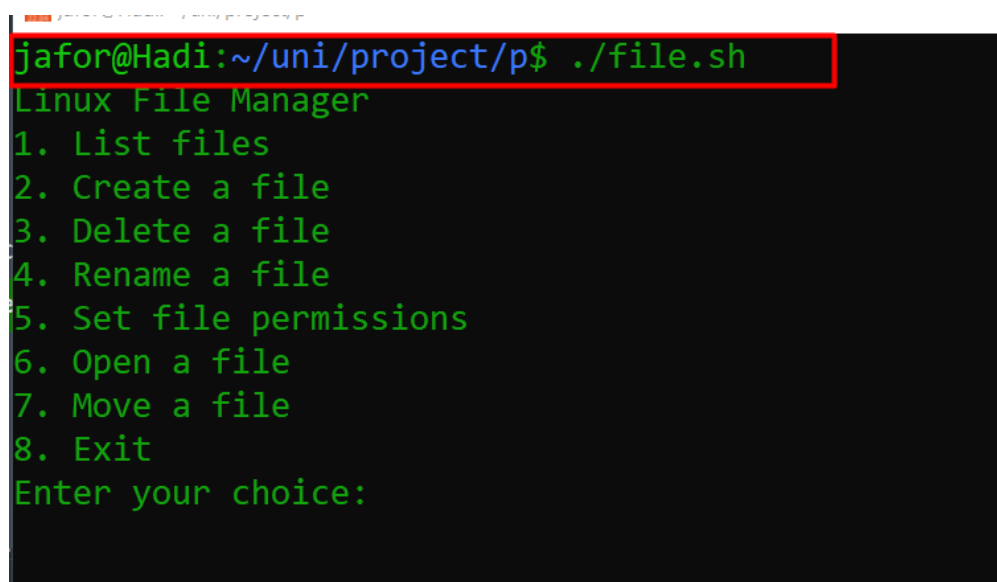
Chapter 3

Performance Evaluation

3.1 Simulation Environment/ Simulation Procedure

Run the shell script within the shell environment to validate its functionality. This can be done by executing the script from the command line using the appropriate command, such as `./file.sh`

3.2 Results Analysis/Testing

A terminal window with a black background and green text. The prompt is `jafor@Hadi:~/uni/project/p$`. The command `./file.sh` has been executed. The output is a menu titled "Linux File Manager" with eight numbered options: 1. List files, 2. Create a file, 3. Delete a file, 4. Rename a file, 5. Set file permissions, 6. Open a file, 7. Move a file, and 8. Exit. The prompt "Enter your choice:" is displayed at the bottom. A red rectangular box highlights the command line and the first two lines of the menu.

```
jafor@Hadi:~/uni/project/p$ ./file.sh
Linux File Manager
1. List files
2. Create a file
3. Delete a file
4. Rename a file
5. Set file permissions
6. Open a file
7. Move a file
8. Exit
Enter your choice:
```

Figure 3.1: Menu

```
Enter your choice:
2
Enter the name of the file:
miti.txt
File created successfully.

Linux File Manager
1. List files
2. Create a file
3. Delete a file
4. Rename a file
5. Set file permissions
6. Open a file
7. Move a file
8. Exit
Enter your choice:
1
Files in the current directory:
total 4
drwxr-xr-x 1 jafor jafor 512 Jun 21 18:24 'New folder'
-rwxr-xr-x 1 jafor jafor 2074 Jun 21 23:01 file.sh
-rwxr-xr-x 1 jafor jafor 0 Jun 21 18:26 hadi.txt
-rw-r--r-- 1 jafor jafor 0 May 19 23:27 jafor.sh
-rwxr-xr-x 1 jafor jafor 0 Jun 21 23:01 k.txt
-rw-r--r-- 1 jafor jafor 0 Jun 21 23:48 miti.txt
-rw-r--r-- 1 jafor jafor 0 Jun 21 23:04 project.txt
```

Figure 3.2: Create file & list file

```
Enter your choice:
5
Enter the name of the file:
miti.txt
Enter the permission string (+x,+rwx,-rwx etc.):
+x
File permissions set successfully.

Linux File Manager
1. List files
2. Create a file
3. Delete a file
4. Rename a file
5. Set file permissions
6. Open a file
7. Move a file
8. Exit
Enter your choice:
1
Files in the current directory:
total 4
drwxr-xr-x 1 jafor jafor 512 Jun 21 18:24 'New folder'
-rwxr-xr-x 1 jafor jafor 2074 Jun 21 23:01 file.sh
-rwxr-xr-x 1 jafor jafor 0 Jun 21 18:26 hadi.txt
-rw-r--r-- 1 jafor jafor 0 May 19 23:27 jafor.sh
-rwxr-xr-x 1 jafor jafor 0 Jun 21 23:01 k.txt
-rwxr-xr-x 1 jafor jafor 0 Jun 21 23:48 miti.txt
-rw-r--r-- 1 jafor jafor 0 Jun 21 23:04 project.txt
```

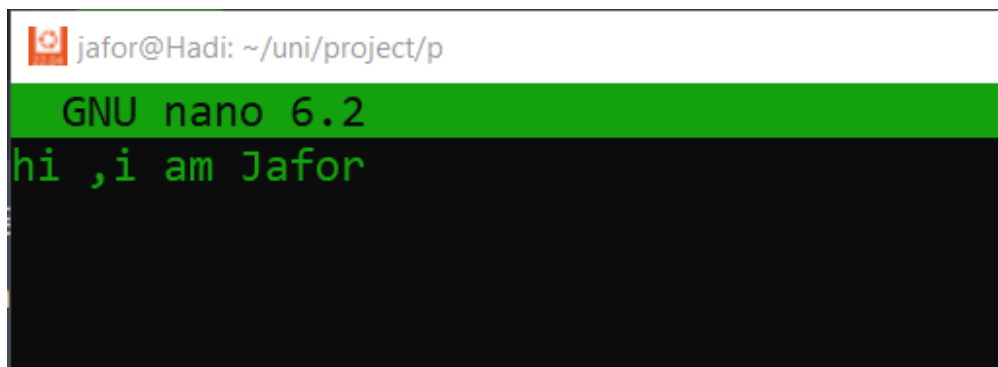
Figure 3.3: Set file permissions

```
Linux File Manager
1. List files
2. Create a file
3. Delete a file
4. Rename a file
5. Set file permissions
6. Open a file
7. Move a file
8. Exit
Enter your choice:
3
Enter the name of the file to delete:
jafor.sh
File deleted successfully.
```

Figure 3.4: Delete file

```
Linux File Manager
1. List files
2. Create a file
3. Delete a file
4. Rename a file
5. Set file permissions
6. Open a file
7. Move a file
8. Exit
Enter your choice:
6
Enter the name of the file to open:
miti.txt
Opening file...
```

Figure 3.5: Open file part 1



```
jafor@Hadi: ~/uni/project/p
GNU nano 6.2
hi ,i am Jafor
```

Figure 3.6: Open file part 2

Chapter 4

Conclusion

4.1 Discussion

Implementation of a Linux file manager system using shell scripting. It covers various basic file operations such as listing files, creating files, deleting files, renaming files, setting file permissions, opening files, and moving files. Provides a critical analysis of the file management system implemented using shell scripting, discussing its strengths and limitations.

4.2 Limitations

Limitations of the project:

- It can not restore deleted data
- It can not support copying files across different directories or creating a complex file
- It can not provide error messages

4.3 Scope of Future Work

Future work for the file management system using shell scripting could include:

- Implementing file compression and decompression zip
- Adding sort file
- Enhancing the file search for files based on different criteria.
- Implementing file synchronization features to keep files updated across multiple locations.

References

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