Introduction Document for Console-Based File Explorer Application in C++

**Design document**

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**Project Overview**

***This project aims to develop a console-based file explorer application in C++. The application will provide users with a simple and intuitive interface to manage files and directories on a Linux operating system. It will support essential file operations, including listing directory contents, creating, renaming, deleting files and directories, and viewing file contents.***

**Objectives**

**The primary objectives of the file explorer application are:**

1. ***User-Friendly Interface: Design a console-based user interface that is easy to navigate and use.***
2. ***File Management Operations: Implement core file management functionalities such as creating, renaming, deleting, and viewing files and directories.***
3. ***Directory Navigation: Enable seamless navigation through the filesystem, allowing users to move in and out of directories.***
4. ***File Viewing: Provide the capability to view the contents of text files directly within the console.***
5. ***Error Handling: Implement robust error handling to manage common filesystem errors, including permission issues and non-existent files or directories.***

**Features**

**The file explorer application will include the following features:**

1. **Listing Directory Contents:**
   * **Display a list of files and directories within the current directory.**
   * **Show detailed information such as file size, type, and last modified date.**
2. **Navigation:**
   * **Move into a directory.**
   * **Move up to the parent directory.**
   * **Jump to a specific directory.**
3. **File and Directory Operations:**
   * **Create new files and directories.**
   * **Rename existing files and directories.**
   * **Delete files and directories.**
4. **File Viewing:**
   * **Display the contents of text files within the console.**
5. **Search Functionality:**
   * **Search for files and directories by name.**
6. **Help and Instructions:**
   * **Provide help and usage instructions to guide users through the application.**

**Technical Requirements**

* **Programming Language: C++**
* **Operating System: Linux**
* **Development Tools: GNU Compiler Collection (GCC), Make, and other standard Linux development tools.**
* **Libraries: Standard C++ libraries, POSIX library for file system operations.**
* **Version Control: Git for source code management.**

**Development Plan**

1. **Requirements Analysis:**
   * **Gather detailed requirements and define the scope of the application.**
   * **Identify user needs and use cases.**
2. **Design:**
   * **Design the overall architecture of the application.**
   * **Create detailed designs for the user interface and core functionalities.**
3. **Implementation:**
   * **Develop the application in C++.**
   * **Implement file management operations and directory navigation.**
   * **Develop file viewing and search functionalities.**
4. **Testing:**
   * **Perform unit testing to ensure individual components work correctly.**
   * **Conduct integration testing to verify that components work together seamlessly.**
   * **Perform user acceptance testing to ensure the application meets user needs.**
5. **Deployment:**
   * **Prepare deployment scripts and documentation.**
   * **Deploy the application on target Linux systems.**
6. **Maintenance:**
   * **Provide ongoing maintenance and support.**
   * **Address any bugs or issues that arise post-deployment.**

**Conclusion**

**The console-based file explorer application will provide a powerful and user-friendly tool for managing files and directories on Linux systems. With its intuitive interface and robust functionality, it aims to simplify common file management tasks for users. This project will leverage C++ and POSIX libraries to create a reliable and efficient application tailored to the needs of Linux users.**

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