**Pseudocode**

***FileExplorer.h***

// File: FileExplorer.h

// Include necessary headers

Include <string>

Include "Logger.h"

// Define the FileExplorer class

Class FileExplorer:

Private:

Reference to Logger logger\_

Public:

// Constructor to initialize the FileExplorer with a Logger reference

FileExplorer(Logger logger)

// Method to list files in a directory

Method listFiles(string directory)

// Method to copy a file from source to destination

Method copyFile(string src, string dest)

// Method to move a file from source to destination

Method moveFile(string src, string dest)

// Method to delete a file

Method deleteFile(string path)

// Method to create a new file

Method createFile(string path)

// Method to search for a file by name

Method searchFile(string filename)

// Method to set file permissions

Method setPermissions(string path, int permissions)

***Logger.h***

// File: Logger.h

// Include necessary headers

Include <string>

Include <fstream>

// Define the Logger class

Class Logger:

Private:

File logFile\_

Public:

// Constructor to initialize the Logger with a file name

Logger(string filename)

// Method to log messages to the file

Method log(string message)

***FileExplorer.cpp***

// File: FileExplorer.cpp

// Include necessary headers

Include "FileExplorer.h"

Include <filesystem>

Include <iostream>

Include <fstream>

Include <unistd.h>

Include <sys/stat.h>

// Implement the FileExplorer constructor

FileExplorer::FileExplorer(Logger logger):

Set logger\_ to logger

// Implement the method to list files in a directory

Method FileExplorer::listFiles(string directory):

Log "Listing files in directory: directory"

Try:

For each file entry in directory:

Print entry path to stdout

Catch exception:

Log "Listing files failed: exception message"

// Implement the method to copy a file from source to destination

Method FileExplorer::copyFile(string src, string dest):

Log "Copying file from src to dest"

Try:

Copy src to dest

Log "File copied successfully"

Return true

Catch exception:

Log "Copy failed: exception message"

Return false

// Implement the method to move a file from source to destination

Method FileExplorer::moveFile(string src, string dest):

Log "Moving file from src to dest"

Try:

Rename src to dest

Log "File moved successfully"

Return true

Catch exception:

Log "Move failed: exception message"

Return false

// Implement the method to delete a file

Method FileExplorer::deleteFile(string path):

Log "Deleting file: path"

Try:

Remove file at path

Log "File deleted successfully"

Return true

Catch exception:

Log "Delete failed: exception message"

Return false

// Implement the method to create a new file

Method FileExplorer::createFile(string path):

Log "Creating file: path"

Try:

Open and close file at path

Log "File created successfully"

Return true

Catch exception:

Log "File creation failed"

Return false

// Implement the method to search for a file by name

Method FileExplorer::searchFile(string filename):

Log "Searching for file: filename"

Try:

For each file entry in the current directory and subdirectories:

If entry filename matches filename:

Log "File found: entry path"

Return true

Log "File not found"

Return false

Catch exception:

Log "Search failed: exception message"

Return false

// Implement the method to set file permissions

Method FileExplorer::setPermissions(string path, int permissions):

Log "Setting permissions for file: path"

Try:

Set permissions for file at path

Log "Permissions set successfully"

Return true

Catch exception:

Log "Setting permissions failed: exception message"

Return false

***Logger.cpp***

// File: Logger.cpp

// Include necessary headers

Include "Logger.h"

Include <iostream>

// Implement the Logger constructor

Logger::Logger(string filename):

Open logFile in append mode

// Implement the method to log messages to the file

Method Logger::log(string message):

If logFile is open:

Write message to logFile

Else:

Print "Failed to open log file" to stderr

***Main.cpp***

// File: main.cpp

// Include necessary headers

Include <iostream>

Include "FileExplorer.h"

Include "Logger.h"

// Main program

Function main:

Create Logger logger with filename "file\_explorer.log"

Create FileExplorer explorer with logger

Declare integer choice

Declare string path, src, dest, filename

Declare integer permissions

Do:

Print "File Explorer Options:"

Print "1. List Files in Directory"

Print "2. Copy File"

Print "3. Move File"

Print "4. Delete File"

Print "5. Create File"

Print "6. Search File"

Print "7. Set File Permissions"

Print "8. Exit"

Print "Enter your choice: "

Input choice

Switch choice:

Case 1:

Print "Enter directory path: "

Input path

Call explorer.listFiles(path)

Break

Case 2:

Print "Enter source file name: "

Input src

Print "Enter destination file name: "

Input dest

If explorer.copyFile(src, dest):

Print "File copied successfully"

Else:

Print "File copy failed"

Break

Case 3:

Print "Enter source file name: "

Input src

Print "Enter destination file name: "

Input dest

If explorer.moveFile(src, dest):

Print "File moved successfully"

Else:

Print "File move failed"

Break

Case 4:

Print "Enter file name to delete: "

Input path

If explorer.deleteFile(path):

Print "File deleted successfully"

Else:

Print "File delete failed"

Break

Case 5:

Print "Enter file name to create: "

Input path

If explorer.createFile(path):

Print "File created successfully"

Else:

Print "File creation failed"

Break

Case 6:

Print "Enter file name to search: "

Input filename

If explorer.searchFile(filename):

Print "File found"

Else:

Print "File not found"

Break

Case 7:

Print "Enter file name to set permissions: "

Input path

Print "Enter permissions (e.g., 755): "

Input permissions

If explorer.setPermissions(path, permissions):

Print "Permissions set successfully"

Else:

Print "Setting permissions failed"

Break

Case 8:

Print "Exiting..."

Break

Default:

Print "Invalid choice. Please try again."

While choice is not 8

Return 0