Course-end Project 1

Mohammed Kaif

Virtual Key for Your Repositories

GitHub link: [kaif2106/LockedMe.com (github.com)](https://github.com/kaif2106/LockedMe.com)

This is a command-line application that allows users to manage files in a directory called "Data" within the current working directory. Users can perform operations such as listing files, adding new files, deleting files, and searching for files.

Sprints and Tasks

The project was developed using an Agile methodology with the following sprints and tasks:

Sprint 1: Initial Setup and Basic Functionality

- Set up the project structure and dependencies
- Implement the main menu and navigation
- Implement the functionality to list files in ascending order
- Implement the functionality to add new files to the "Data" directory

Sprint 2: File Operations and User Experience

- Implement the functionality to delete files from the "Data" directory
- Implement the functionality to search for files in the "Data" directory
- Add case-insensitivity for adding new files
- Add case sensitivity for deleting files
- Enhance the user interface with a welcome screen and clear instructions

Sprint 3: Refactoring and Optimization

- Refactor the code for better readability and maintainability
- Optimize the file operations by using appropriate data structures and algorithms
- Implement exception handling for better error management
- Perform testing and debugging

Algorithms and Flowcharts

Main Algorithm

1. Display the welcome screen
2. Create the "Data" directory if it doesn't exist
3. Display the initial menu
4. Handle user input and navigate to the respective operation

List Files in Ascending Order

1. Get the list of files in the "Data" directory
2. Sort the list of files in ascending order
3. Display the sorted list of file names

Add New File

1. Prompt the user to enter the file name
2. Convert the file name to lowercase for case-insensitivity
3. Create a new file with the specified name in the "Data" directory
4. If the file already exists, display an error message
5. If the file is created successfully, display a success message

Delete File

1. Prompt the user to enter the file name
2. Get the list of files in the "Data" directory
3. Iterate over the list of files
4. If a file with the specified name is found, delete the file
5. If the file is deleted successfully, display a success message
6. If the file is not found, display an error message
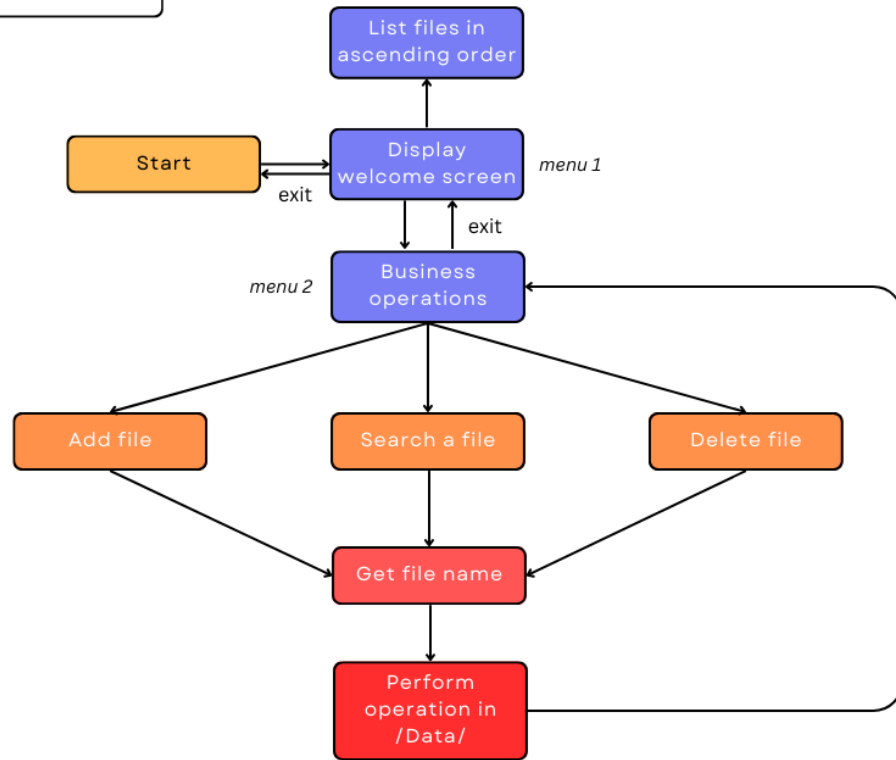
Search File

1. Prompt the user to enter the name of the file they want to search for.
2. Get the list of files in the "Data" directory using the listFiles method.
3. Create an empty ArrayList called fileNames to store the names of all files in the directory.
4. Check if the list of files is not null (i.e., the "Data" directory is not empty).
5. If the list of files is null (the directory is empty), print a message indicating that the "Data" directory is empty, and return.
6. Iterate over the list of files:
    a. For each file, get its name using the getName method.

       b.   Add the file name to the fileNames list using the add method.
7. After populating the fileNames list with all file names in the directory, check if the fileNames list contains the file name entered by the user using the contains method.
8. If the file name is found in the fileNames list:
       a.   Create a new File object with the file name in the "Data" directory using new File(DATA_DIRECTORY, fileName).
       b.   Get the absolute path of the file using the getAbsolutePath method.
       c.   Print a message indicating that the file was found, along with its absolute path.
9. If the file name is not found in the fileNames list, print a message indicating that the file does not exist in the "Data" directory.

Core Concepts Used

- Object-Oriented Programming (OOP) principles
- File I/O operations
- String manipulation
- Exception handling
- Data structures (arrays, collections)
- Sorting algorithms (Arrays.sort, Comparator)
- User input handling
- Control flow statements (loops, conditionals)

Flowchart

List files in
ascending order

Display
welcome screen   *menu 1*

Start

exit

exit

menu 2   Business
operations

Add file   Search a file   Delete file

Get file name

Perform
operation in
/Data/

Screenshot

LockedMe.java Sprint_Plan.txt

LockedMe.java
public class LockedMe {

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
D:\Kaif\FR\IT\Project\LockedMe.com>cd "d:\Kaif\FR\IT\Project\LockedMe.com\" && javac LockedMe.java && java LockedMe
========================================
        Welcome to LockedMe.com File Management Application
                Developed by: Mohammed Kaif san
========================================
This application allows you to manage files in a directory.
You can perform the following operations:
1. List files in ascending order
2. Access business-level operations (add, delete, search files)
3. Exit the application
========================================
Select an option:
1. List files in ascending order
2. Business level operations
3. Exit
2
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
1
Enter the name of the file to be added:
firstFile.txt
File created successfully: D:\Kaif\FR\IT\Project\LockedMe.com\Data\firstfile.txt
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
```

Ln 32, Col 1   Spaces: 4   UTF-8   CRLF   Java   Go Live   Prettier

LockedMe.java M Sprint_Plan.txt

LockedMe.java
public class LockedMe {

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

```
========================================
        Welcome to LockedMe.com File Management Application
                Developed by: Mohammed Kaif san
========================================
This application allows you to manage files in a directory.
You can perform the following operations:
1. List files in ascending order
2. Access business-level operations (add, delete, search files)
3. Exit the application
========================================
Select an option:
1. List files in ascending order
2. Business level operations
3. Exit
2
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
2
Enter the name of the file to delete:
secondFile.txt
The file does not exist.
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
2
Enter the name of the file to delete:
secondfile.txt
File deleted successfully: D:\Kaif\FR\IT\Project\LockedMe.com\Data\secondfile.txt
Select an option:
```

Ln 91, Col 50   Spaces: 4   UTF-8   CRLF   Java   Go Live   Prettier

LockedMe.java M ×   Sprint_Plan.txt

LockedMe.java
9   public class LockedMe {

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   COMMENTS

```
D:\Kaif\FR\IT\Project\LockedMe.com>cd "d:\Kaif\FR\IT\Project\LockedMe.com\" && javac LockedMe.java && java LockedMe

========================================================
            Welcome to LockedMe.com File Management Application
                    Developed by: Mohammed Kaif san
========================================================
This application allows you to manage files in a directory.
You can perform the following operations:
1. List files in ascending order
2. Access business-level operations (add, delete, search files)
3. Exit the application
========================================================
Select an option:
1. List files in ascending order
2. Business level operations
3. Exit
2
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
3
Enter the name of the file to search for:
firstfile.txt
File found: D:\Kaif\FR\IT\Project\LockedMe.com\Data\firstfile.txt
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
```

Ln 91, Col 50   Spaces: 4   UTF-8   CRLF   Java   Go Live   Prettier

12:52 PM
16-Jun-24

LockedMe.java M ×   hello.txt U   Sprint_Plan.txt

LockedMe.java
6   public class LockedMe {
19   System.out.println("==");
20   System.out.println("   Welcome to LockedMe.com File Management Application");
21   System.out.println("   Developed by: Mohammed Kaif san");

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   COMMENTS

```
Enter the name of the file to be added:
okay.txt
File created successfully: D:\Kaif\FR\IT\Project\LockedMe.com\Data\okay.txt
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
4
Files in the Data directory (D:\Kaif\FR\IT\Project\LockedMe.com/Data) ordered by last modified date:
okay.txt (Last Modified: Sun Jun 16 13:14:54 IST 2024)
hello.txt (Last Modified: Sun Jun 16 13:14:38 IST 2024)
firstfile.txt (Last Modified: Fri Jun 14 17:30:56 IST 2024)
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
4
Files in the Data directory (D:\Kaif\FR\IT\Project\LockedMe.com/Data) ordered by last modified date:
hello.txt (Last Modified: Sun Jun 16 13:15:18 IST 2024)
okay.txt (Last Modified: Sun Jun 16 13:14:54 IST 2024)
firstfile.txt (Last Modified: Fri Jun 14 17:30:56 IST 2024)
Select an option:
1. Add a new file
2. Delete a file
3. Search for a file
4. List files by last modified date
5. Back to main menu
```

Ln 13, Col 32   Spaces: 4   UTF-8   CRLF   Java   Go Live   Prettier

1:15 PM
16-Jun-24