**Software Requirements Specification**

**(SRS) Document**

**< Project :- LockedMe>**

**<Date of completion :- 10-06-2022>**

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1. Introduction
2. **Purpose**: The goal of LockedMe is the digitization of the paper document management system (files). The operations done on files (physical) such as removal of files, sorting of files, the addition of new files etc are done with the help of a computer.

1. **Intended audience**: - This document is intended for anybody looking to digitize the file management process and is not necessarily restricted to the developers, testers, project managers and relevant stakeholders.
2. **Scope**: - No matter which industry you are a part of, files play an important role. The number of files may vary from a few files to many files depending on the business. Irrespective of the number of files, their upkeep is very important.

Mentioned below are some of the limitations of a paper document management system

1. Searching files requires manpower and time.
2. For obtaining paper, trees need to be cut down which poses environmental risks.
3. Storage requires physical space due to which there is always the possibility of running out of space.
4. Prone to damage due to fire, water, unexpected disasters and so on….

The advantages of using LockedMe are: -

1. Searching and sorting is easy and a matter of a few seconds.
2. Due to digitization, there is no paper trail involved.
3. As LockedMe is digitized, the manpower required is minimum with at most 1 person needed to manage the files.
4. Taking backup is easy, hence there is no need to worry about data being lost due to unexpected disasters or unexpected human errors.
5. The interface of LockedMe is very easy to understand and as such no additional training is needed to work with this software.
6. General description

* **Product Perspective**: The idea of the LockedMe project came into mind looking at the current times in which we live and, partly due to, some of the companies still being reluctant to let go of paper document management systems. The context of the LockedMe project is to make the basic tasks of a paper document management system i.e., the addition of a new file, deletion of a file, searching and sorting digitized.
* **Product features**: The primary operations which are performed by the LockedMe project are the addition of a new file, deletion of a file, searching of a file and sorting of files. A brief description of the features is mentioned below: -

1. **Addition of a file**: - This operation creates a .txt file at the specified path after taking input from the user regarding the name of the file that he wants to create. In the case of a file already existing with the same name, the file does not get created with a message stating the same.
2. **Deletion of a file**: - This operation deletes a .txt file from the specified path after taking input from the user regarding the name of the file that you want to delete. In case of the file not being present in the list of files, the file does not get deleted with a message stating the same.
3. **Searching a file**: - This operation searches a .txt file at the specified path after taking input from the user regarding the name of the file being searched. In case of the file being searched, not being present in the list of files, a message indicates the same or a message indicates that the file is found.
4. **Sorting of files**: - This operation sorts the files based on file names in an ascending fashion.

There are 2 more additional secondary features also present: -

One which exits the project and another feature which takes you back to the start where you can continue the file operations till you decide not to.

* **Technical requirements for running the project**: - To run the LockedMe project on a system, the system should have JDK installed (mandatory) along with an IDE like eclipse also running (not mandatory).
* **Assumptions and dependencies**: - To run the LockedMe project, you need to have a basic understanding of English and also some basic logic regarding the features.

1. External interface requirements

* **User Interfaces**: - There are no additional interfaces required apart from user interfaces as the project runs on command line prompts only.

Sample output is mentioned as follows

Welcome to LockedMe

Name :- Mohnish Pawar

Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

6

You have chosen an incorrect option

Please choose the correct option

Welcome to LockedMe

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Please find the operations which can be done below

0. Sort

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3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

0

The Sorted files are:

.git .metadata Additional info a.txt b.txt c.txt d.txt e.txt f.txt p.txt x.txt y.txt

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Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

1

Please enter the name of the file which you want to add

b

File already exists

Welcome to LockedMe

Name :- Mohnish Pawar

Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

1

Please enter the name of the file which you want to add

g

File created successfully

Welcome to LockedMe

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Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

2

enter file name:

A.txt

A.txtnot found and hence cannot be deleted

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Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

2

enter file name:

g.txt

g.txtdeleted successfully

Welcome to LockedMe

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Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

3

enter file name:

Z.txt

File Not found

Welcome to LockedMe

Name :- Mohnish Pawar

Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

3

enter file name:

d.txt

File Found

Welcome to LockedMe

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Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

0

The Sorted files are:

.git .metadata Additional info a.txt b.txt c.txt d.txt e.txt f.txt p.txt x.txt y.txt

Welcome to LockedMe

Name :- Mohnish Pawar

Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

4

Returned to main menu

Welcome to LockedMe

Name :- Mohnish Pawar

Email :- mohnishpwr10@gmail.com

Mobile No :- 9960393318

Please find the operations which can be done below

0. Sort

1. Add a file

2. Delete a file

3. Search a file

4. Go Back to the main menu

5. Exit the application

Please enter the option (Integer only please) to choose the operation to be done

5

Output explanation: - Please don’t get afraid by looking at the length of the output. The length of the output is due to the operations running continuously till the user decides otherwise. The various operations present are sort, add a file, delete a file, search a file, go back to the main menu, and exit the application.

* Exiting the application stops the application. The go back to the main menu option takes you back to the start of the application.
* While adding a file, in case the file gets added, "File created successfully" is the message displayed. Otherwise, "File already exists" is the message displayed when the file does not get added.
* While deleting a file, in case the file gets deleted, the name of the file which got deleted along with deleted successfully shows up in the message. Otherwise, the name of the file not found and hence cannot be deleted message is displayed.
* Sort just sorts the files, and no message is displayed.

1. Flow of the project

Chart, diagram

Description automatically generated

1. Java features used in the project.

The below mentioned java features have been used in the project

1. Throws keyword was used to take care of IOExceptions.
2. Scanner class object was used to take input from the user.
3. While loop was used to ensure that the operations are repeated continuously until the user decided otherwise.
4. Switch statement was used to provide the user with options to select the operation which the user wants to perform. The void static methods for the operations mentioned below in the next point we’re called in the switch statement.
5. Void static methods (with parameters and without parameters) were called outside of the main method to perform the business operations in the project i.e., the addition of a file, deletion of a file, searching a file and sorting a file.
6. Println method was used to print statements to the console.
7. Break statement was used to break the loop.
8. System.exit method was used to terminate the application.
9. If and else statements were used to check if a particular variable was having a certain value, depending on which the delete and the search operations were accordingly carried out.
10. Arrays were used to store the files temporarily until they were moved to lists using the aslist function to facilitate searching and sorting.
11. File class objects and methods (file.delete, file.createNewFile) assisted in all the operations.
12. Sort function of the array class was used to sort the files in the list.
13. For each loop was used to print the sorted array.
14. For loop was used to traverse the list to check if a particular file was present or not.
15. Inputs from the user were taken in the form of Strings.
16. A path was set during creation to ensure that the files were saved at a fixed path.
17. Actual implementation of the project
18. The program starts with the importing of the required packages to start the program.
19. The main method declaration with the throws keyword indicates the exception which would be handled.
20. Creation of a scanner object to take care of receiving input.
21. While loop is used to ensure that the operations repeat until the user decides to terminate the application.
22. Within the loop, a series of println statements give info about the developer as well as the various operations performed along with the options which would be taken as input from the user.
23. The switch statement is used to indicate the options and the corresponding operations which would need to be performed along with the calling of the respective methods of the operations.
24. We make use of static methods outside the main method and then call them from within the method.
25. For the effective sorting of the files, all the corresponding files and the folders at the specified path are moved into an array using the files.list. Afterwards, the contents of the array are moved to a list using the asList method. Then using the Arrays classes sort method, the files are sorted in ascending order as per their names. Finally, with the help of for each loop, the sorted files and folders (if any) are printed.
26. The procedure for searching a file is as follows: - All the corresponding files and the folders at the specified path are moved into an array using the files.list. Afterwards, a for loop is used to traverse through the files to check if the file which we are looking for exits. If it exists, then a file found message is displayed, otherwise, a file not found message is displayed. (The comparison is done via the if-else statement).
27. The procedure for deleting a file is as follows: - The file which we want to delete is first searched for. In case, the search provides a positive result, then the file classes delete method is called which deletes the file. In case, the search provides a negative result, then a file not found, hence can’t be deleted message is displayed.
28. The procedure for adding a file is as follows: - We set the path where we want to have the files created. If the file which we are looking to add already exists, then a message indicating the same is displayed else the file is created and added.
29. For the project to terminate, we use the system.exit method.
30. Go back to main menu just goes back to the start.
31. In case, the user enters an incorrect option, the user is prompted to enter the correct option.
32. The break statement within the switch statement is used to ensure that only the called operation and not the operations after it after executed at the same time.
33. Algorithms used in the project
34. Creating a new scanner object to take input from the user.
35. All the info which we want to display at the start. i.e., developer info and the various operations to be performed to be along with the options corresponding to them in the switch statement are enclosed in a while loop to have the operations performed repeatedly until the user decides to terminate the application.
36. The switch statement calls for methods of the respective operations to be performed along with any additional info such as taking info from the user whenever needed. In case, the user enters any option which is not present in the list of options, the user is prompted to enter the correct option.
37. The first 3 points are present for the main method.
38. Algorithm for file sorting operation

File file=new File("D:\\Phase 1\\LockedMe\\");

String[] files = file.list();

Arrays.asList(files);

Arrays.sort(files);

for(String i:files)

At last, print the statements using a couple of println statements.

1. Algorithm for file searching operation

File file = new File("D:\\Phase 1\\LockedMe\\");

String[] files = file.list();

for(int i = 0; i < files.length;i++)

{

if(files[i].equals(fileName))

return 1;

}

return 0;

}

1. Algorithm for file deletion operation

File file = new File("D:\\Phase 1\\LockedMe\\"+fileName);

int k = search(fileName);

if(k==1)

{

file.delete();

System.out.println(file.getName() + "deleted successfully" );

}

else

{

System.out.println(file.getName() + "not found and hence cannot be deleted");

}

1. Algorithm for file addition operation

fileName = fileName + ".txt";

String path = "D:" + File.separator + "Phase 1" + File.separator + "LockedMe" + File.separator + fileName;

File file = new File(path);

if(file.createNewFile())

{

System.out.println("File created successfully");

}

else

{

System.out.println("File already exists");

1. For the termination of the application, system.exit(0) is used for the successful termination.
2. For going back to the main menu, just print the same message using println.