Simple Learn – Phase 1 Project

Virtual Key for Your Repositories
Specification Document

PROJECT OBJECTIVE:

As a Full Stack Developer, complete the features of the application by planning the development in terms of sprints and then push the source code to the GitHub repository. As this is a prototyped application, the user interaction will be via a command line.

GitHub Repository: *https://github.com/Prem-Ravi/LockedMe.com.git*

SPRINTS PLANNING:

SPRINT 1:

- Setup the workspace in eclipse IDE.
- Creating GitHub Repository to keep the project in track.
- Flow of the application is designed.
- Java Core concepts to be implemented are planned.

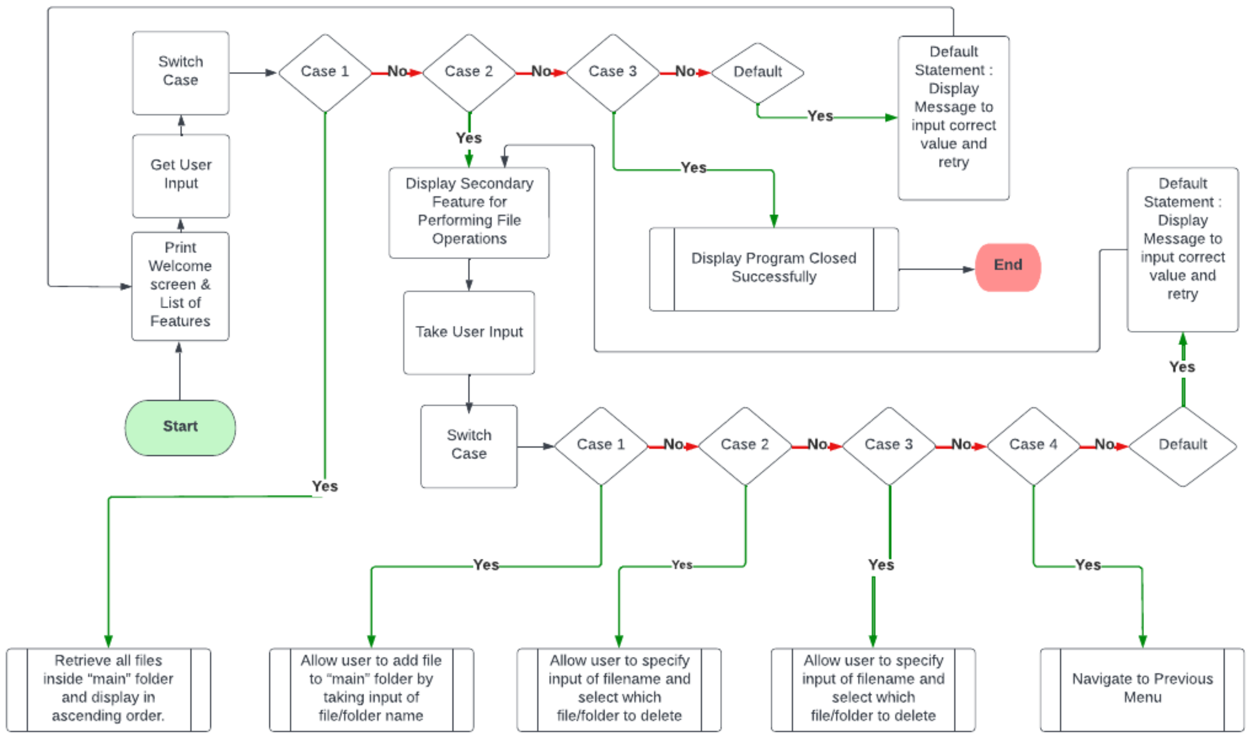
SPRINT 2:

- Java Program to implement all the concepts as per the Flow plan.
- Execution of the program as per the requirements.
- Testing the program with different inputs
- Final corrections are done as the application won't close, exit, or throw an exception if the user specifies an invalid input.

SPRINT 3:

- Pushing the code to the GitHub Repository.
- Creating documents like specification document, source code and output screenshots.
- Final check and completion of the project.

FLOW OF THE APPLICATION:


Start
Print Welcome screen & List of Features
Get User Input
Switch Case
Case 1
No
Case 2
No
Case 3
No
Default
Yes
Default Statement : Display Message to input correct value and retry
Yes
Display Secondary Feature for Performing File Operations
Take User Input
Switch Case
Yes
Display Program Closed Successfully
End
Yes
Retrieve all files inside "main" folder and display in ascending order.
Case 1
No
Case 2
No
Case 3
No
Case 4
No
Default
Yes
Default Statement : Display Message to input correct value and retry
Yes
Allow user to add file to "main" folder by taking input of file/folder name
Yes
Allow user to specify input of filename and select which file/folder to delete
Yes
Allow user to specify input of filename and select which file/folder to delete
Yes
Navigate to Previous Menu

CORE CONCEPTS USED IN THE PROJECT:

- Collections Framework
- File Handling
- Sorting
- Flow Control
- Recursion
- Exception Handling

PRODUCT CAPABILITIES, APPEARANCE, AND USER INTERACTIONS:

To demonstrate the product capabilities, below are the sub-sections configured to highlight appearance and user interactions for the project:

1. Creating the project in Eclipse
2. Writing a program in Java for the entry point to list the features of the application (**Main.java**)
3. Writing a program in Java to work on the features listed in main.java (**BusinessOperations.java**)
4. Pushing the code to GitHub repository

CREATING A NEW PROJECT IN ECLIPSE:

- Open Eclipse
- Go to File -> New -> Project -> Java Project -> Next.
- Type in any project name and click on “Finish.”
- Select your project and go to File -> New -> Class.
- Enter **Main** in any class name, check the checkbox “public static void main(String[] args)”, and click on “Finish.”

WRITING A PROGRAM IN JAVA FOR THE ENTRY POINT OF THE APPLICATION (LockedMeMain.java)

```
package VirtualKeyforYourRepositories;

import java.io.IOException;
import java.util.Scanner;

public class Main {
public static void main(String[] args) throws IOException {

int ch=0, choice=0;
Scanner sc =new Scanner(System.in);

System.out.println("****************************************************");
System.out.println("\t\t LockedMe.com ");
System.out.println("****************************************************\n");
System.out.println("\tDeveloper\t: Prem Ravi \n \tCompany \t: Lockers Pvt. Ltd. \n \tProduct \t: SL
Phase 1 Project \n");
System.out.println("****************************************************\n");

while(true)
{
System.out.println("Features: \n");
System.out.println("1. Retrive Files");
System.out.println("2. Business Operations");
System.out.println("3. Close Application\n");
System.out.println("Choose one of the above feature:");


try
{
ch = sc.nextInt();
}
catch(Exception e)
          {
            System.err.println("Sorry! Please type a number between 1 and 3");
            break;
          }

switch(ch)
{

case 1: //List function feature to list all files in ascending order.
BusinessOperations.listFiles();
break;
case 2:
boolean flag=true;
while(flag) {

System.out.println("Please choose one of the following options :");
System.out.println("1. Add a File");
System.out.println("2. Delete a File");
System.out.println("3. Search for a File");
System.out.println("4. Navigate to previous Menu options");
try{
choice = sc.nextInt();
}
catch(Exception e)
              {
           System.err.println("Sorry! Please type a number between 1 and 3");
           break;
              }

switch(choice)
{
case 1:
//Creation of a file takes place
System.out.println("Input the name of a file to be created: ");
String fileCreate = sc.next();

// Calling the function to create the file
BusinessOperations.createFile(fileCreate);
break;
case 2:
//deletion of a file takes place
System.out.print("Input the name of a file to be deleted: ");
String fileDelete = sc.next();

// Calling the function to delete the file
BusinessOperations.deleteFile(fileDelete);
break;
case 3:
//Search for a file takes place
System.out.println("Input the name of a file to be searched: ");
String fileSearch = sc.next();

// Calling the function to search the file
BusinessOperations.searchFile(fileSearch);
break;
case 4:
flag = false;
break;

default:
//In the case of unprecedented input execute this
System.err.println("\n Opps! Invalid Input,Re-do the process\n");
break;
}
}

break;

case 3:

//Voluntarily exiting the application
sc.close();
System.out.println("\nIt was nice having you here! See you again. Good bye...");
System.exit(1);
break;

default:
//In the case of unprecedented input execute this
System.err.println("\n\n Opps! Invalid Input, Select within the range of 1-3\n");
break;

}
}
}
}
```

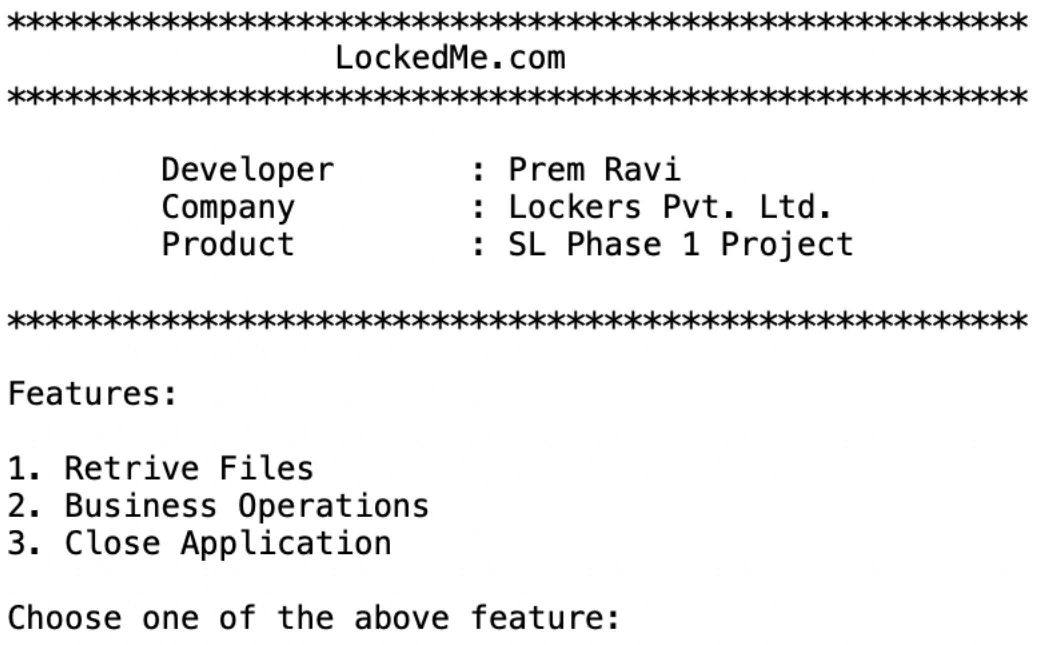
WRITING A PROGRAM IN JAVA TO WORK ON THE FEATURES LISTED IN main.java (**BusinessOperations.java**)

```
package VirtualKeyforYourRepositories;


import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileWriter;
import java.io.IOException;
import java.io.InputStreamReader;
import java.io.PrintWriter;
import java.util.ArrayList;
import java.util.Scanner;

public class BusinessOperations {

public static String[] sort_sub(String array[], int size) {
String temp = "";
for (int i = 0; i < size; i++) {
for (int j = 1; j < (size - i); j++) {
if (array[j - 1].compareToIgnoreCase(array[j]) > 0) {
temp = array[j - 1];
array[j - 1] = array[j];
array[j] = temp;
}
}
}
return array;
}

// File listing function
public static void listFiles() {

int fileCount = 0;
ArrayList<String> filenames = new ArrayList<String>();

File directoryPath = new File(System.getProperty("user.dir"));
File[] listOfFiles = directoryPath.listFiles();
fileCount = listOfFiles.length;

System.out.println("Files in ascending order: ");
for (int i = 0; i < fileCount; i++) {
if (listOfFiles[i].isFile()) {
filenames.add(listOfFiles[i].getName());
}
}

String[] str = new String[filenames.size()];
```

```
for (int i = 0; i < filenames.size(); i++) {
str[i] = filenames.get(i);
}

String[] sorted_filenames = sort_sub(str, str.length);

for (String currentFile : sorted_filenames) {
System.out.println(currentFile);
}

}

// File delete function
public static void deleteFile(String fileToBeDeleted) {

File file = new File((System.getProperty("user.dir")) + "\\" + fileToBeDeleted);

if (file.exists()) {
if (file.delete()) {
System.out.println("Hoorah! File deleted successfully!");
}
} else {
System.out.println("Sorry, File wasn't deleted (File Not Found)");
}
}

// File search function
public static void searchFile(String fileToBeSearched) {

File file = new File((System.getProperty("user.dir")) + "\\" + fileToBeSearched);
if (file.exists()) {
System.out.println("Yep! File found!");
} else {
System.out.println("Sorry, File is not here (File Not Found)");
}
PrintWriter pw;
try {
pw = new PrintWriter(fileToBeSearched); // may throw exception
pw.println("saved");
}
// providing the checked exception handler
catch (FileNotFoundException e) {

System.out.println(e);
}
}

// File creation function
public static void createFile(String fileToBeCreated) {
	File file = new File((System.getProperty("user.dir")) + "\\" + fileToBeCreated);
```

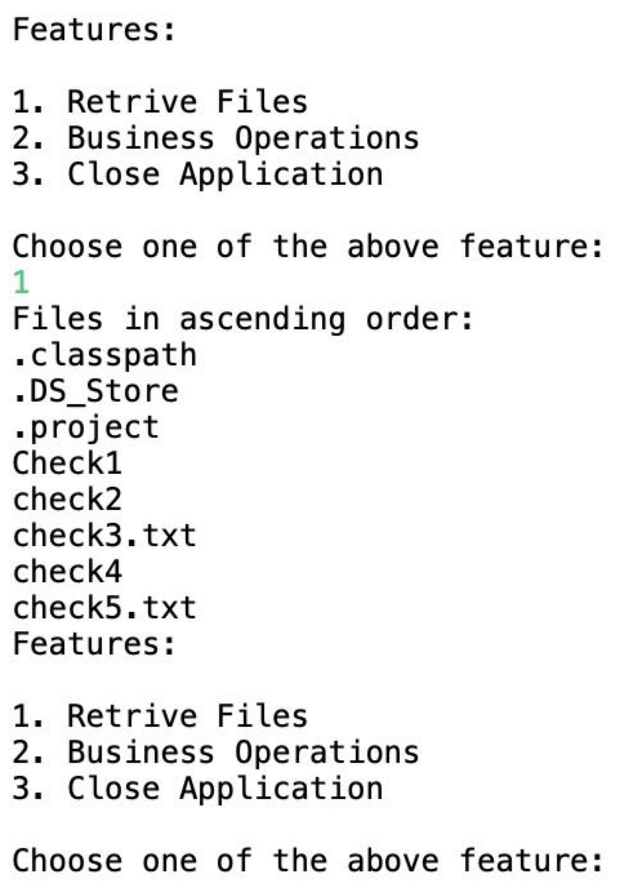
```
        try {
            if (file.createNewFile()) {
                System.out.println("File Created!");

                }

             else {
                System.out.println("File already exists :(");
            }
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

Welcome Screen of LockedMe.com



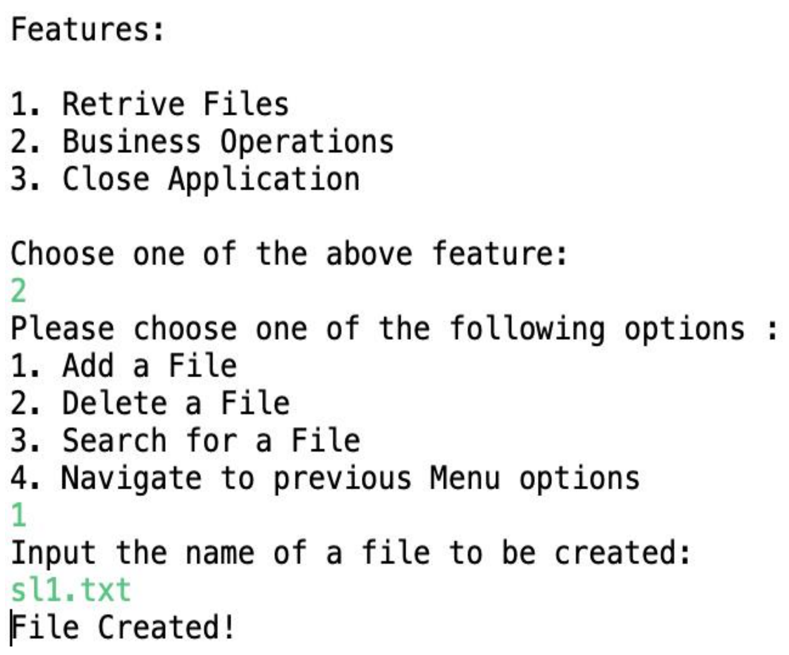
```
*****************************************************
                 LockedMe.com
*****************************************************

        Developer       : Prem Ravi
        Company         : Lockers Pvt. Ltd.
        Product         : SL Phase 1 Project

*****************************************************

Features:

1. Retrive Files
2. Business Operations
3. Close Application

Choose one of the above feature:
```

Retriving files in ascending order.



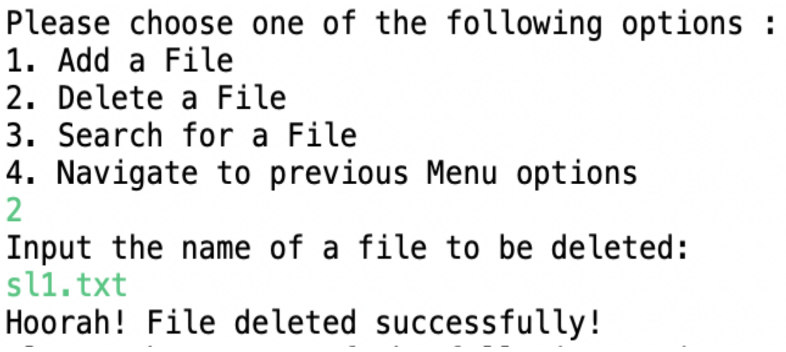
```
Features:

1. Retrive Files
2. Business Operations
3. Close Application

Choose one of the above feature:
1
Files in ascending order:
.classpath
.DS_Store
.project
Check1
check2
check3.txt
check4
check5.txt
Features:

1. Retrive Files
2. Business Operations
3. Close Application

Choose one of the above feature:
```

Adding New File



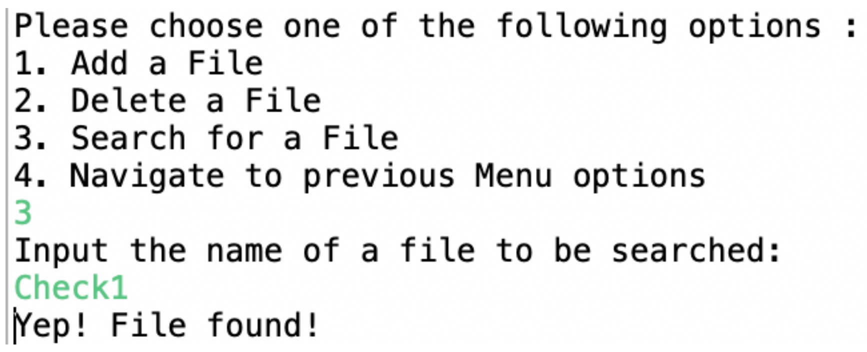
```
Features:

1. Retrive Files
2. Business Operations
3. Close Application

Choose one of the above feature:
2
Please choose one of the following options :
1. Add a File
2. Delete a File
3. Search for a File
4. Navigate to previous Menu options
1
Input the name of a file to be created:
sl1.txt
File Created!
```

Deletion of a file



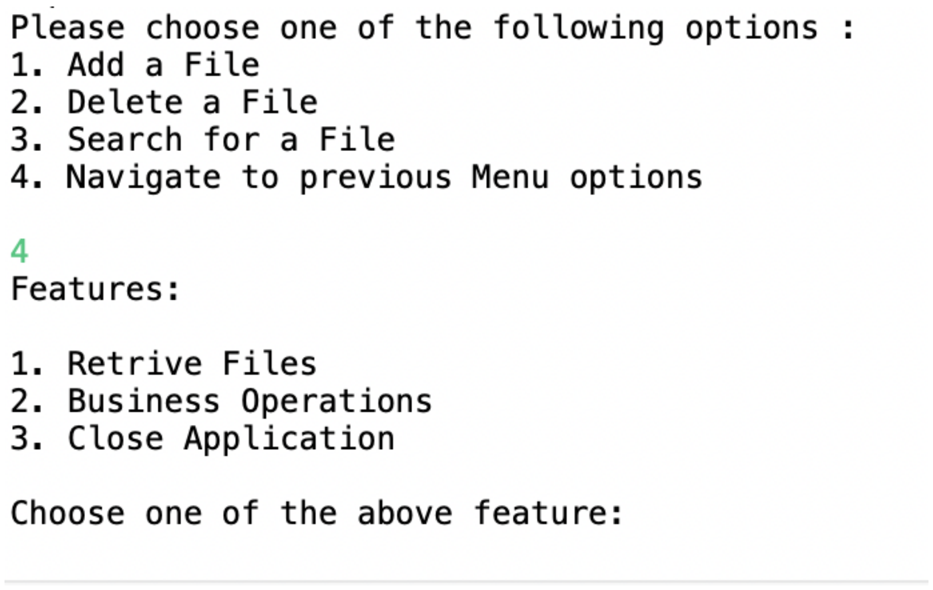
```
Please choose one of the following options :
1. Add a File
2. Delete a File
3. Search for a File
4. Navigate to previous Menu options
2
Input the name of a file to be deleted:
sl1.txt
Hoorah! File deleted successfully!
```

Search of a file



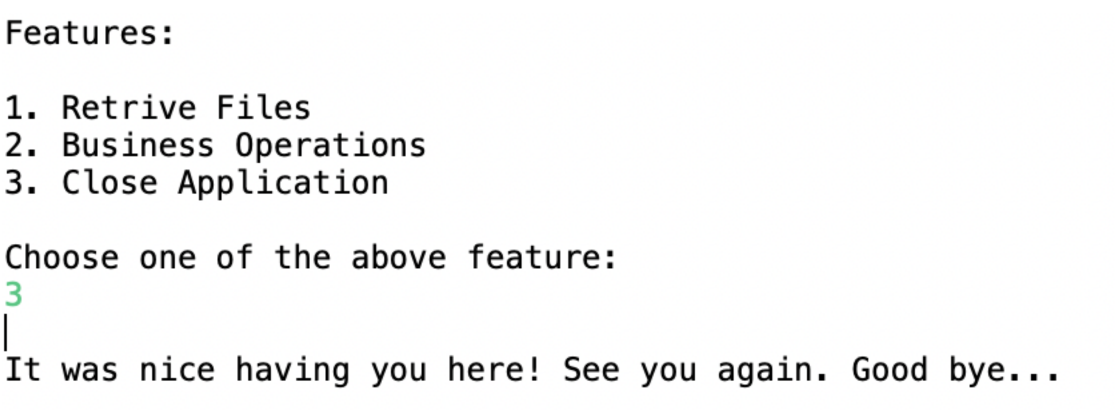
```
Please choose one of the following options :
1. Add a File
2. Delete a File
3. Search for a File
4. Navigate to previous Menu options
3
Input the name of a file to be searched:
Check1
Yep! File found!
```

Navigate to previous menu



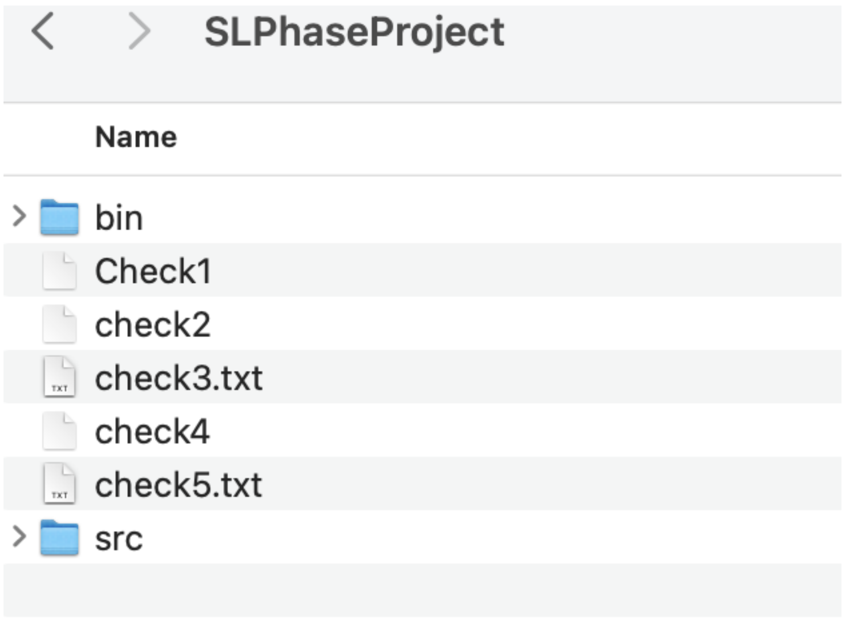
```
Please choose one of the following options :
1. Add a File
2. Delete a File
3. Search for a File
4. Navigate to previous Menu options

4
Features:

1. Retrive Files
2. Business Operations
3. Close Application

Choose one of the above feature:
```

Close the Application.



```
Features:

1. Retrive Files
2. Business Operations
3. Close Application

Choose one of the above feature:
3
|
It was nice having you here! See you again. Good bye...
```

Files present in disk.



```
SLPhaseProject

Name
bin
Check1
check2
check3.txt
check4
check5.txt
src
```

PUSHING THE CODE TO GITHUB REPOSITORY:

- Open your command prompt and navigate to the folder where you have created your files.
  cd <folder path>

- Initialize repository using the following command:
  git init

- Add all the files to your git repository using the following command:
  git add .

- Commit the changes using the following command:

git commit . -m <commit done>

- Push the files to the folder you initially created using the following command:
  git push -u origin main

UNIQUE SELLING POINTS OF THE APPLICATION:

- The application is made to continue functioning and accepting user input even in the face of errors. The proper option must be chosen in order to terminate the application.
- The application can take any file/folder name as input. The user can specify a relative path and the application will create the necessary folder structure even if the user wants to create nested folder structures.
- Additionally, the user is given the choice to add content to the newly generated file if they so choose.
- The application doesn't restrict user to specify the exact filename to search/delete file/folder. They can specify the starting input, and the program searches all files/folder starting with the value and displays it. The user is then provided the option to select all files or to select a specific index to delete.
- The application also allows user to delete folders which are not empty.
- The user is able to seamlessly switch between options or return to previous menu even after any required operation like adding, searching, deleting or retrieving of files is performed.
- When the option to retrieve files in ascending order is selected, user is displayed with two options of viewing the files.

- Ascending order of folders first which have files sorted in them,
- Ascending order of all files and folders inside the “main” folder.
- The application is designed with modularity in mind. Even if one wants to update the path, they can change it through the source code. Application has been developed keeping in mind that there should be very less “hardcoding” of data.

CONCLUSIONS:

- Further enhancements to the application can be made which may include:
- Conditions to check if user is allowed to delete the file or add the file at the specific locations.
- Asking user to verify if they really want to delete the selected directory if it’s not empty.
- Retrieving files/folders by different criteria like Last Modified, Type, etc.
- Allowing user to append data to the file.