LockedMe – Virtual Key for Repositories

This document contains sections for:

● Sprint planning and Task completion

● Core concepts used in project

● Flow of the Application.

● Demonstrating the product capabilities, appearance, and user interactions.

● Unique Selling Points of the Application

● Conclusions

The code for this project is hosted at https://github.com/reemasoud/LockedMe.com.git

The project is developed by **Reema Sarhan**.

Sprints planning and Task completion

The project is planned to be completed in 3 sprint.

Tasks assumed to be completed in the 1st sprint are:

• Creating the flow of the application.

• Creating the use case of the application.

• Initializing git repository to pushing the project.

• Create Java program and write some code like: write welcome screen ,Menu methods and methods handle with it.

Tasks assumed to be completed in the 2nd sprint are:

• Create database and connect with java program.

• complete the rest of the code like:

    • Add, search and delete file.

    • Registration and login operation.

    • return the current file names in ascending order.

Tasks assumed to be completed in the 3rd sprint are:

• Testing the Java program with different kinds of User input

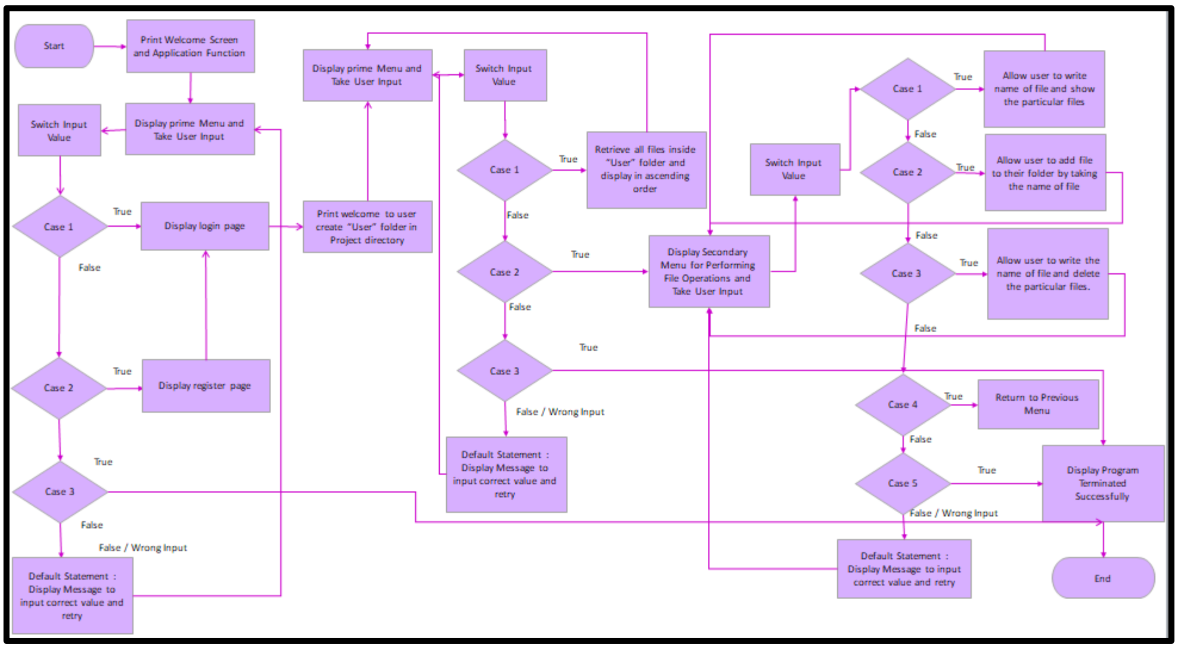
• Pushing code to GitHub.

• Creating this specification document highlighting application capabilities, appearance, and user interactions.

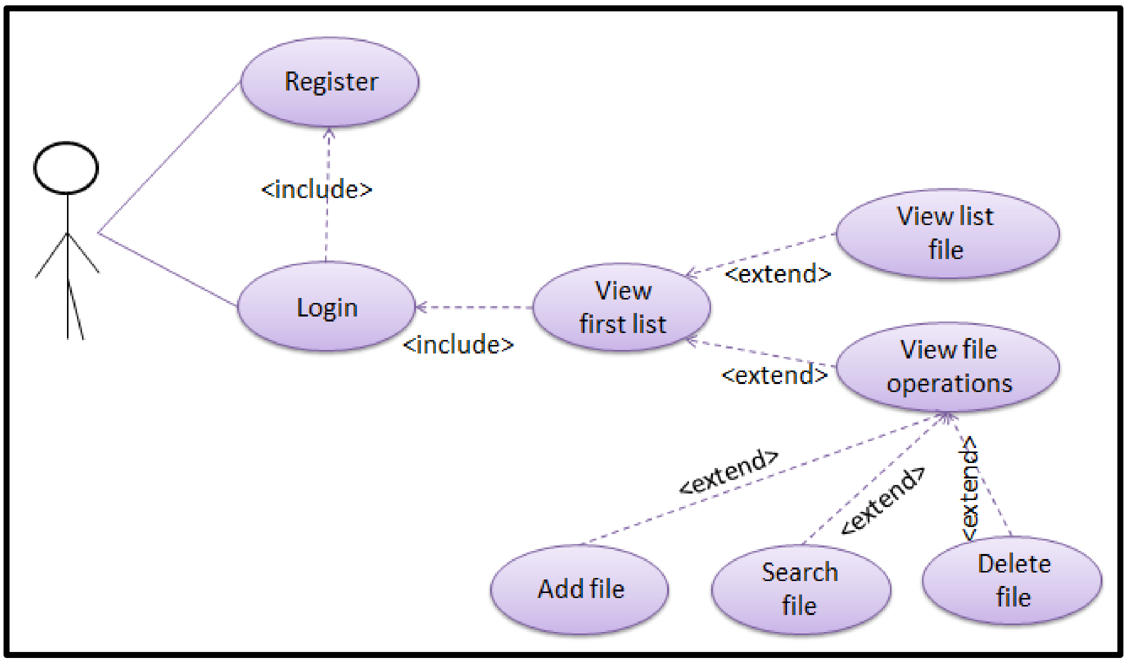
Core concepts used in project

Collections framework, File Handling, Sorting, Flow Control, Recursion, Exception Handling, Database.

Flow of the Application


Start
Print Welcome Screen and Application Function
Display prime Menu and Take User Input
Switch Input Value
Case 1
True
Display login page
False
Case 2
True
Display register page
Case 3
True
False
False / Wrong Input
Default Statement : Display Message to input correct value and retry
Print welcome to user create "User" folder in Project directory
Display prime Menu and Take User Input
Switch Input Value
Case 1
True
Retrieve all files inside "User" folder and display in ascending order
False
Case 2
True
False
Case 3
True
False / Wrong Input
Default Statement : Display Message to input correct value and retry
Display Secondary Menu for Performing File Operations and Take User Input
Switch Input Value
Case 1
True
Allow user to write name of file and show the particular files
False
Case 2
True
Allow user to add file to their folder by taking the name of file
False
Case 3
True
Allow user to write the name of file and delete the particular files.
False
Case 4
True
Return to Previous Menu
False
Case 5
True
Display Program Terminated Successfully
False / Wrong Input
Default Statement : Display Message to input correct value and retry
End

Use case of the Application



Demonstrating the 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 of the application (LockedMeMain.java).

3-Writing a program in Java to display Menu options available for the user and methods to handle with it (Menu.java).

4- Writing a program in Java to perform the File operations as specified by user (FileOperations.java).

5- Writing a program in Java to allow user to enter the program and deal with it(User.java).

6- Pushing the code to GitHub repository.

Step 1: 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 LockedMeMain in any class name, check the checkbox “public static void main(String[] args)”, and click on “Finish.”

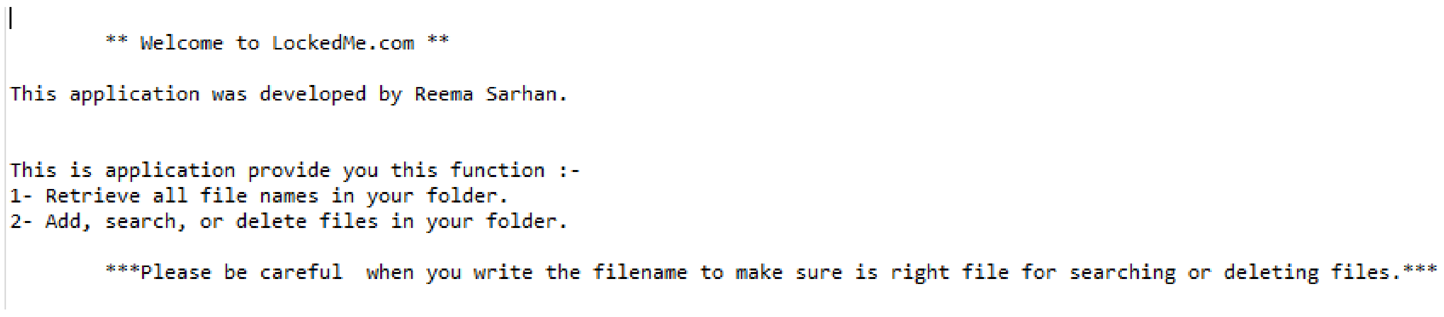
Step 2: Writing a program in Java for the entry point of the application (LockedMeMain.java)

- It have a method to display welcome screen.

```
public class LockedMeMain {

    public static void WelcomeScreen() {

       String Information = "\t** Welcome to LockedMe.com ** \n"+"\nThis
application was developed by Reema Sarhan. \n\n";
```

```
        System.out.println(Information);

        String appFeatures = "This is application provide you this function 
:-\n"
                              + "1- Retrieve all file names in your folder.\n"
                              + "2- Add, search, or delete files in your 
folder.\n"
                              + "\n\t***Please be careful  when you write the 
filename to make sure is right file for searching or deleting files.***\n";

        System.out.println(appFeatures);


    }
        public static void main(String[] args) {


            WelcomeScreen();

            Menu.RunMenu();




        }
```

Output



```
        ** Welcome to LockedMe.com **

This application was developed by Reema Sarhan.


This is application provide you this function :-
1- Retrieve all file names in your folder.
2- Add, search, or delete files in your folder.

        ***Please be careful  when you write the filename to make sure is right file for searching or deleting files.***
```

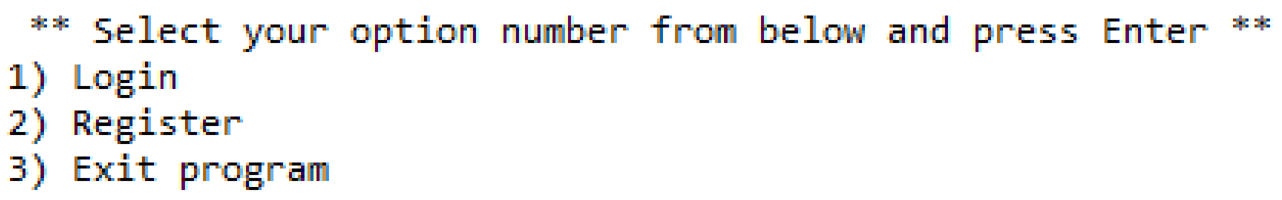
Step 3: Writing a program in Java to display Menu options available for the user (Menu.java)

- Create class it called Menu.
- Menu consists methods for :-
  3.1. Displaying account Menu.
  3.2. Displaying prime Menu.
  3.3. Displaying File Options Menu
  3.4. Handling input chosen by user in account Menu.
  3.5. Handling input chosen by user in prime Menu.
  3.6. Handling input chosen by user in File Options Menu.

Step 3.1: Writing method to display account Menu

```
public static void accountMenu() {

        String accountMenu = "\n ** Select your option number from below and
press Enter **\n"
                    + "1) Login\n"
                    + "2) Register\n"
                    + "3) Exit program\n";
        System.out.println(accountMenu);

        }
```

Output

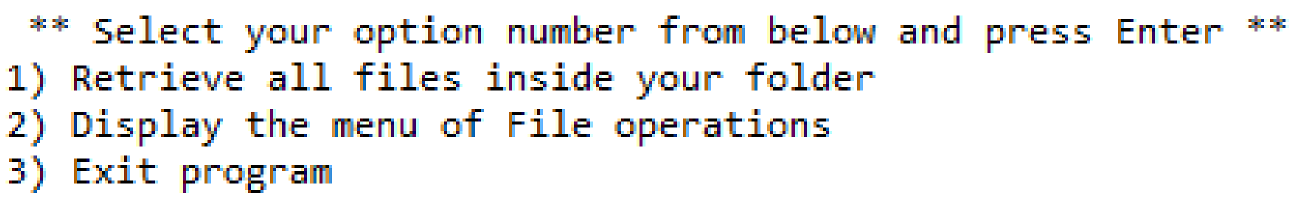


```
 ** Select your option number from below and press Enter **
1) Login
2) Register
3) Exit program
```

Step 3.2: Writing method to display prime Menu

```
public static void primeMenu() {

                String primmenu = "\n ** Select your option number from below
and press Enter **\n"
                            + "1) Retrieve all files inside your folder\n"
                            + "2) Display the menu of File operations\n"
                            + "3) Exit program\n";
                System.out.println(primmenu);

        }
```

Output

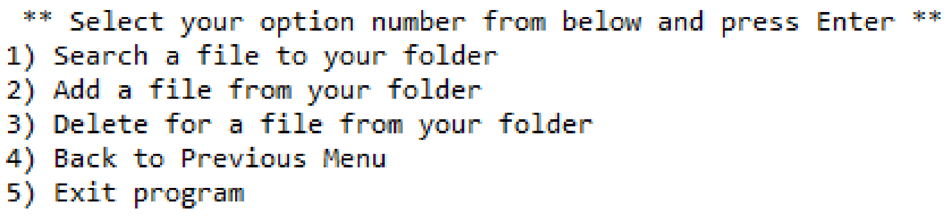


```
 ** Select your option number from below and press Enter **
1) Retrieve all files inside your folder
2) Display the menu of File operations
3) Exit program
```

Step 3.3: Writing method to display File Options Menu

```
        public static void FileOptionsMenu() {

                String fileMenu = "\n ** Select your option number from below
and press Enter **\n"
                            + "1) Search a file to your folder\n"
                            + "2) Add a file from your folder\n"
                            + "3) Delete for a file from your folder\n"
                            + "4) Back to Previous Menu\n"
                            + "5) Exit program\n";
                System.out.println(fileMenu);
        }
```

Output

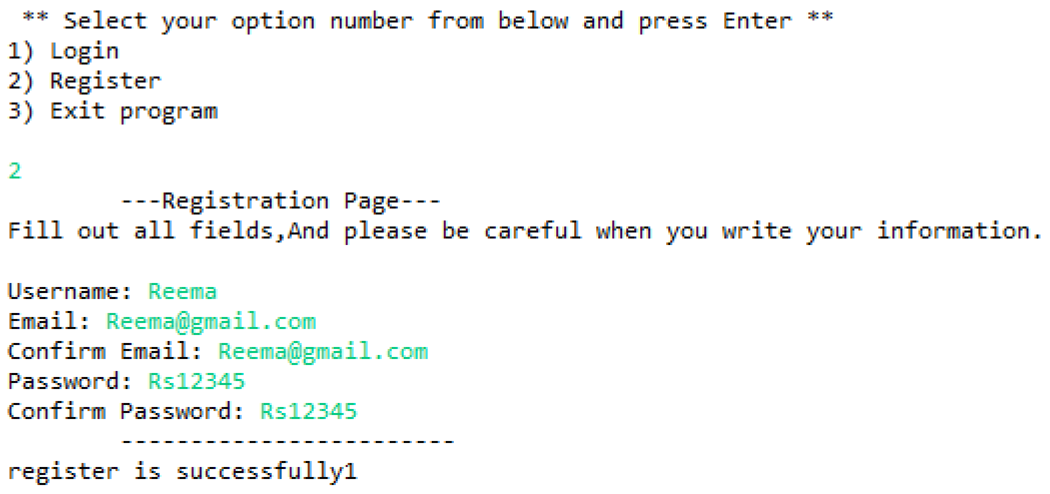


```
 ** Select your option number from below and press Enter **
1) Search a file to your folder
2) Add a file from your folder
3) Delete for a file from your folder
4) Back to Previous Menu
5) Exit program
```

Step 3.4: Writing method to handle user input in account Menu

```
public static void RunAccountMenu() {

                Scanner sc = new Scanner(System.in);
                accountMenu();

                        try {

                                int input =sc.nextInt();
                                switch(input) {
                                case 1://For Login.

                                        User.login();
        FileOperations.createfolder("Main/"+User.getName());
                                        Menu.RunprimeMenu();
                                        break;
                                case 2://for registration.
                                        User.registration();
                                        User.login();

        FileOperations.createfolder("Main/"+User.getName());
                                        Menu.RunprimeMenu();
                                        break;
                                case 3://Exit program.
                                        System.out.println("Program exited
successfully"+"\n\tsee you soon.");
                                        sc.close();
                                        System.exit(0);
                                        break;
                                default:
                                        System.out.println("Please choose a right
option from above.");
                                }

                        }catch(Exception e){
                                System.out.println(e.getClass().getName());

                        }


        }
```

Output

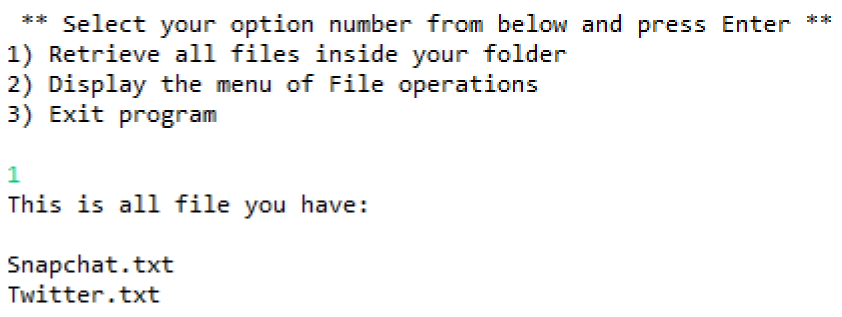


```
 ** Select your option number from below and press Enter **
1) Login
2) Register
3) Exit program

2
        ---Registration Page---
Fill out all fields,And please be careful when you write your information.

Username: Reema
Email: Reema@gmail.com
Confirm Email: Reema@gmail.com
Password: Rs12345
Confirm Password: Rs12345
        ------------------------
register is successfully1
```

Step 3.5: Writing method to handle user input in prime Menu

```
public static void RunprimeMenu() {
		boolean run = true;
		Scanner sc = new Scanner(System.in);
	do {
		try {
			primeMenu();
			int input =sc.nextInt();
			switch(input) {
			case 1://Retrieve all files inside user folder.
	FileOperations.showAllFiles("Main/"+User.getName());
				break;
			case 2://Display the menu of File operations.
				RunFileOptionsMenu();
				break;
			case 3://Exit program.
				System.out.println("Program exited 
successfully"+"\n\tsee you soon.");
				run = false;
				sc.close();
				System.exit(0);
				break;
			default:
				System.out.println("Please choose a right option 
from above.");
			}

		}catch(Exception e){
			System.out.println(e.getClass().getName());

		}


	}while(run == true);


	}
```

Output



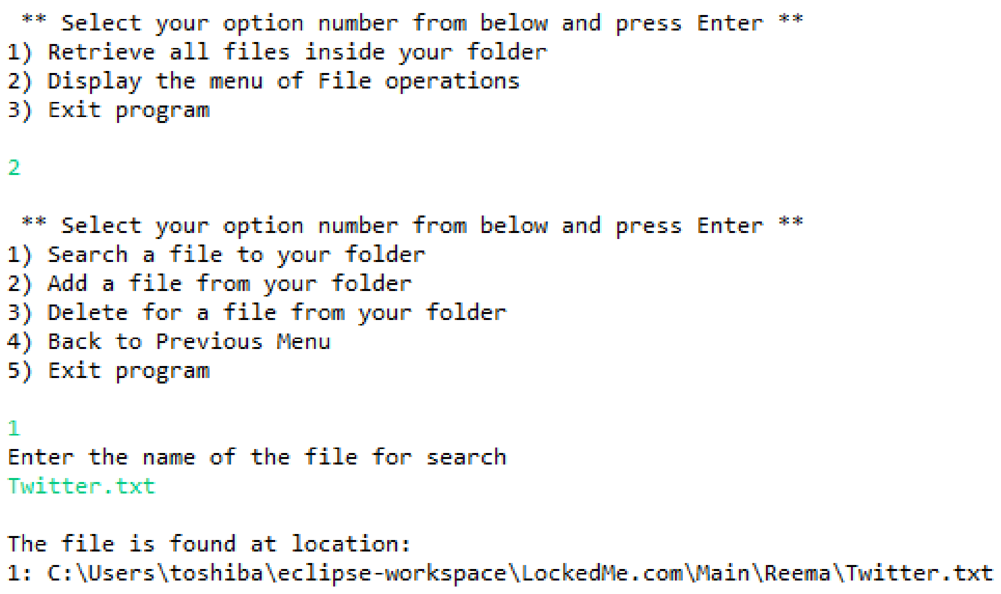
```
 ** Select your option number from below and press Enter **
1) Retrieve all files inside your folder
2) Display the menu of File operations
3) Exit program

1
This is all file you have:

Snapchat.txt
Twitter.txt
```

Step 3.5: Writing method to handle user input in File Options Menu

```
public static void RunFileOptionsMenu() {
		boolean run = true;
		Scanner sc = new Scanner(System.in);
	do {
		try {

			FileOptionsMenu();
			int input =sc.nextInt();

			switch(input) {
			case 1://Search a file to user folder
				System.out.println("Enter the name of the file
for search");
				String filenameser =sc.next();
				FileOperations.showFileLocations(filenameser,
"Main/"+User.getName());
				break;
			case 2://Add a file from user folder.
				System.out.println("Enter the name of the file
for add");
				String filenameAd =sc.next();
				FileOperations.createfile(filenameAd);
				break;
			case 3://Delete for a file from user folder.
				System.out.println("Enter the name of the file
for delete");
				String filenamedel =sc.next();
				List<String> filesnamedel =
FileOperations.showFileLocations(filenamedel, "Main/"+User.getName());
				if(!filesnamedel.isEmpty()) {

	FileOperations.deleteFile(filesnamedel.get(0));

				}
				break;
			case 4://Back to Previous Menu.
				return;

			case 5://Exit program.
				System.out.println("Program exited
successfully"+"\n\tsee you soon.");
				run = false;
```

```
                        sc.close();
                        System.exit(0);
                        break;
                    default:
                        System.out.println("Please choose a right option
from above.");
                    }

                }catch(Exception e){
                    System.out.println(e.getClass().getName());
                }

        }while(run == true);


        }
```

Output



```
 ** Select your option number from below and press Enter **
1) Retrieve all files inside your folder
2) Display the menu of File operations
3) Exit program

2

 ** Select your option number from below and press Enter **
1) Search a file to your folder
2) Add a file from your folder
3) Delete for a file from your folder
4) Back to Previous Menu
5) Exit program

1
Enter the name of the file for search
Twitter.txt

The file is found at location:
1: C:\Users\toshiba\eclipse-workspace\LockedMe.com\Main\Reema\Twitter.txt
```

Step 4: Writing a program in Java to perform File Operations as specified by user (FileOperations.java)

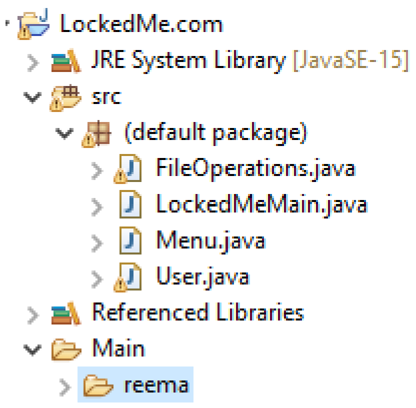
- Create class it called FileOperations.
- FileOperations consists methods for :-
  4.1. Creating user folder in project.
  4.2. Creating a file as specified by user input.
  4.3. Showing all files in user folder in ascending order .
  4.4. Search files as specified by user input in user folder .
  4.5. Deleting a file from user folder.

Step 4.1: Writing method to create user folder in project.

```
    public static void createfolder(String folderName) {
```

```
                File file = new File(folderName);

                // If file doesn't exist, then create it
                if (!file.exists()) {
                        file.mkdirs();
                }

        }
```

Output


```
LockedMe.com
  JRE System Library [JavaSE-15]
  src
    (default package)
      FileOperations.java
      LockedMeMain.java
      Menu.java
      User.java
  Referenced Libraries
  Main
    reema
```

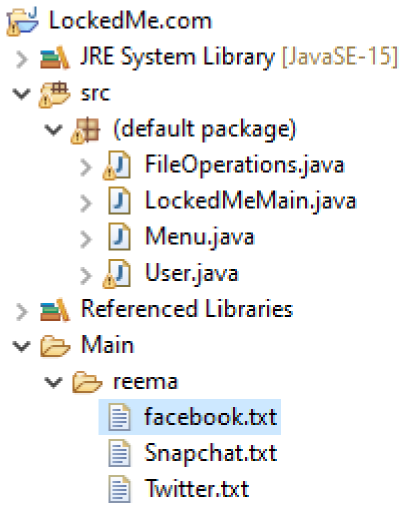
Step 4.2: Writing method to create a file as specified by user input.

```
public static void createfile(String filenameAd) {

                Path path = Paths.get("./Main/"+User.getName()+"/"+
filenameAd);
                Scanner sc = new Scanner(System.in);
                try {

                        Files.createDirectories(path.getParent());
                        Files.createFile(path);
                        System.out.println(filenameAd + " created
successfully");

                        System.out.println("Would you like to write in the
file? (Y/N)");
                        String choice = sc.next().toLowerCase();

                        sc.nextLine();
                        if (choice.equals("y")) {
                                System.out.println("\n Write your content and
press enter\n");
                                String content = sc.nextLine();
                                Files.write(path, content.getBytes());
                                System.out.println("\nContent written
successfully at " + filenameAd);

                        }


                }catch(IOException e){
                        System.out.println("Failed to create file " +
filenameAd);
```

```
                    System.out.println(e.getClass().getName());

                }
        }
```

Output

```
 ** Select your option number from below and press Enter **
1) Search a file to your folder
2) Add a file from your folder
3) Delete for a file from your folder
4) Back to Previous Menu
5) Exit program

2
Enter the name of the file for add
facebook.txt
facebook.txt created successfully
Would you like to write in the file? (Y/N)
y

 Write your content and press enter

username:Reemasoud Password:Rs192366

Content written successfully at facebook.txt
```

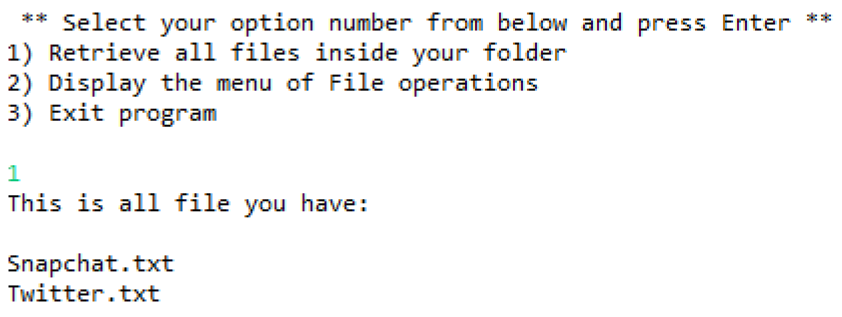


Step 4.3: Writing method to show all files in user folder in ascending order.

```
public static void showAllFiles(String path) {

             File dir = new File(path);
             File[] files = dir.listFiles();
             List<File> filesList = Arrays.asList(files);
             List<String> fileListName = new ArrayList<>();

             Collections.sort(filesList);

             System.out.println("This is all file you have:\n");
             if(files!=null && files.length>0) {
                    for (File file : filesList) {
```

```
                                        fileListName.add(file.getName());

                                }

                                fileListName.stream().forEach(System.out::println);
                        }else {
                                System.out.println("The Directory is Empty");
                        }

                }
```

Output



```
 ** Select your option number from below and press Enter **
1) Retrieve all files inside your folder
2) Display the menu of File operations
3) Exit program

1
This is all file you have:

Snapchat.txt
Twitter.txt
```

Step 4.4: Writing method to search files as specified by user input in user folder.

```
public static List<String> showFileLocations(String filenameser, String
path){
                List<String> fileList = new ArrayList<>();
                FileOperations.searchFile(path, filenameser, fileList);

                if(fileList.isEmpty()){

                        System.out.println("\n* Couldn't find any file with
given file name \"" + filenameser + "\" *\n");

                }else {

                        System.out.println("\nThe file is found at location:");

                        List<String> files = IntStream.range(0,
fileList.size())
                                        .mapToObj(index -> (index + 1) + ": " +
fileList.get(index)).collect(Collectors.toList());

                        files.forEach(System.out::println);
                }
                return fileList;

        }
        // ----------------------------

        public static void searchFile(String path, String filenameser,
List<String> fileListN) {

                File dir = new File(path);
                File[] files = dir.listFiles();
```

```
		List<File> filesList = Arrays.asList(files);

		if(files!=null && files.length>0) {
			for (File file : filesList) {

				if(file.getName().startsWith(filenameser)) {

					fileListN.add(file.getAbsolutePath());
				}

			}
		}
	}
```

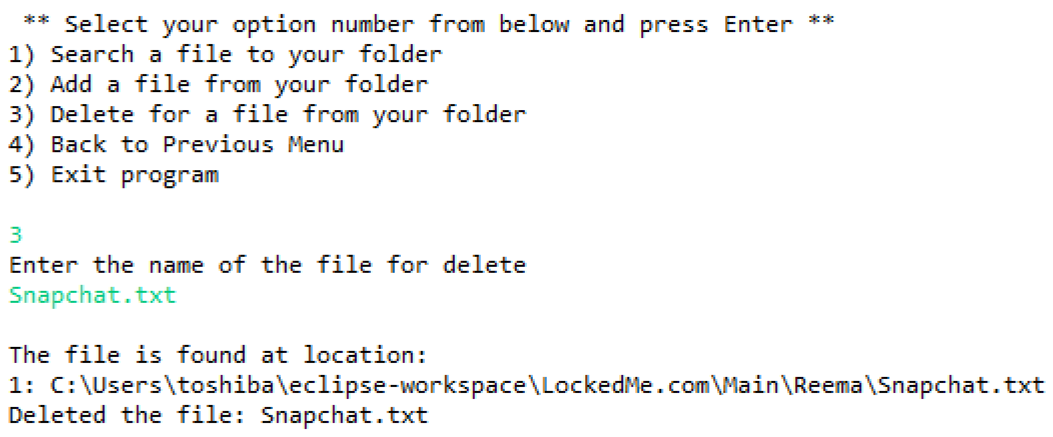
Output

```
 ** Select your option number from below and press Enter **
1) Retrieve all files inside your folder
2) Display the menu of File operations
3) Exit program

2

 ** Select your option number from below and press Enter **
1) Search a file to your folder
2) Add a file from your folder
3) Delete for a file from your folder
4) Back to Previous Menu
5) Exit program

1
Enter the name of the file for search
Twitter.txt

The file is found at location:
1: C:\Users\toshiba\eclipse-workspace\LockedMe.com\Main\Reema\Twitter.txt
```

Step 4.5: Writing method to delete a file from user folder.

```
	public static void deleteFile(String path) {

		File filedel = new File(path);


		if (filedel.delete()) {
		     System.out.println("Deleted the file: " + 
filedel.getName());
		 } else {
		     System.out.println("Failed to delete the file.");
		 }


	}
```

Output



```
 ** Select your option number from below and press Enter **
1) Search a file to your folder
2) Add a file from your folder
3) Delete for a file from your folder
4) Back to Previous Menu
5) Exit program

3
Enter the name of the file for delete
Snapchat.txt

The file is found at location:
1: C:\Users\toshiba\eclipse-workspace\LockedMe.com\Main\Reema\Snapchat.txt
Deleted the file: Snapchat.txt
```

Step 5: Writing a program in Java to allow user to enter the program and deal with it(User.java).

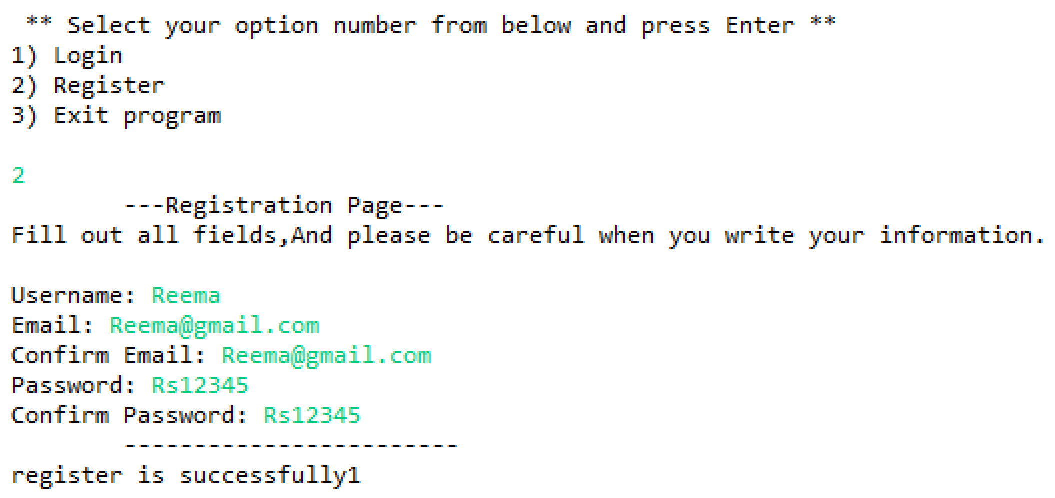
- Create class it called User.
- User consists methods for :-
  5.1. Creating register page for user account in project.
  5.2. Creating login page for user account in project.

Step 5.1: Writing method to create register page for user account in project.

```
public static void registration() {
             Scanner input = new Scanner(System.in);
             boolean checkEmail = false;
             boolean checkName = true;
             boolean checkPass = false;
             User db =new User();
             do {

              System.out.println("\t---Registration Page---");
              System.out.println("Fill out all fields,And please be careful 
when you write your information.\n");
              System.out.printf("Username: ");
              String userName=input.next();
              db.setName(userName);
              System.out.printf("Email: ");
              String userEmail=input.next();
              db.setEmail(userEmail);
              System.out.printf("Confirm Email: ");
              String ConfirmEmail=input.next();
              System.out.printf("Password: ");
              String userPassword=input.next();
              db.setPassword(userPassword);
              System.out.printf("Confirm Password: ");
              String ConfirmPassword=input.next();



              if(userEmail.equals(ConfirmEmail)) {
                    checkEmail=true;
              }else {
                    System.out.println("The email is not match ");
              }
              if(!isValid(userEmail)) {
                     checkEmail=false;
                           System.out.println("Email is valid");
                     }

              if(checkUsername(userName)) {
                    checkName=false;
                    System.out.println("This username already exist try
again");
              }
              if(userPassword.equals(ConfirmPassword)) {
                    checkPass=true;
              }else {
                    System.out.println("The password is not match ");
              }
             System.out.println("\t------------------------");

          } while(checkEmail == false || checkName == false || checkPass
== false);


              // ---------------------------------------

              Connection myCon =null;
              PreparedStatement   stat=null;

                    try {


                           myCon=
DriverManager.getConnection("jdbc:mysql://localhost:3306/lockedme", user,
pass);
                           String insert = "insert into user
(Email,Name,Password)values (?, ?, ?)";
                           stat = myCon.prepareStatement(insert);
                           stat.setString (1,db.getEmail());
                           stat.setString (2,User.getName());
                           stat.setString (3,db.getPassword());
                           int result = stat.executeUpdate();

                                        System.out.println("register is
successfully"+result);
                    }catch (Exception e) {
                       e.printStackTrace();

                   } finally {
                       if (stat != null) {
                           try {
                                 stat.close();
                           } catch (Exception ex) {
                               ex.printStackTrace();
                           }
                       }
                       if (myCon != null) {
                           try {
                                 myCon.close();
                           } catch (Exception ex) {
                               ex.printStackTrace();
```

```
                        }
                    }
                }

        }

    // -----------------------------------------
        public static boolean isValid(String email)
        {
            String emailRegex = "^[a-zA-Z0-9_+&*-]+(?:\\."+
                                "[a-zA-Z0-9_+&*-]+)*@" +
                                "(?:[a-zA-Z0-9-]+\\.)+[a-z" +
                                "A-Z]{2,7}$";

            Pattern pat = Pattern.compile(emailRegex);
            if (email == null)
                return false;
            return pat.matcher(email).matches();
        }

        // -----------------------------------------


        public static boolean checkUsername(String username)
        {
          Connection myCon =null;
          PreparedStatement   stat=null;
          ResultSet   result=null;


            boolean checkUser = false;


            try {
                 myCon=
DriverManager.getConnection("jdbc:mysql://localhost:3306/lockedme", user,
pass);
                  String query = "SELECT * FROM `user` WHERE `Name` =?";
                  stat = myCon.prepareStatement(query);
                 stat.setString(1, username);

                 result = stat.executeQuery();

                if(result.next())
                {
                    checkUser = true;
                }
            } catch (SQLException e) {
                 System.out.println(e.getClass().getName());
            }
             return checkUser;
        }
```

Output



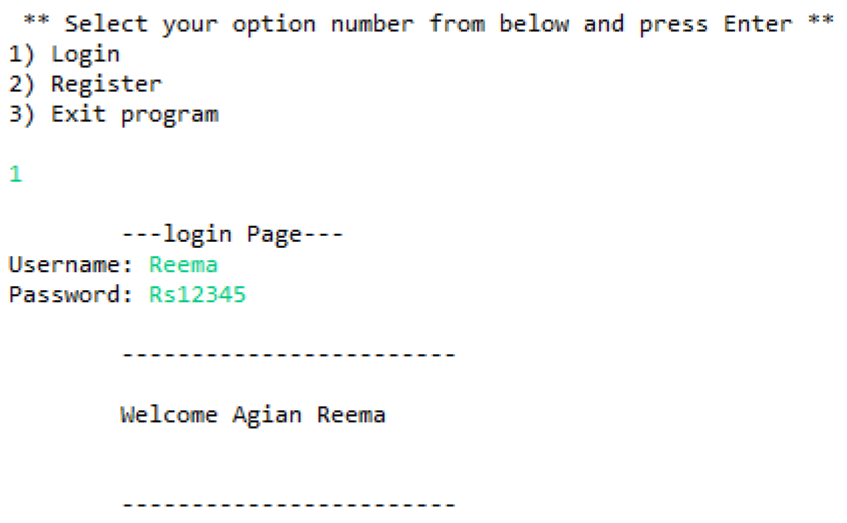
```
 ** Select your option number from below and press Enter **
1) Login
2) Register
3) Exit program

2
        ---Registration Page---
Fill out all fields,And please be careful when you write your information.

Username: Reema
Email: Reema@gmail.com
Confirm Email: Reema@gmail.com
Password: Rs12345
Confirm Password: Rs12345
        -----------------------
register is successfully1
```

Step 5.2: Writing method to create login page for user account in project.

```
public static  void login() {
             Scanner input = new Scanner(System.in);
              String DBName="";


              System.out.println("login Page");
              User db =new User();
              System.out.printf("Username: ");
              String userName=input.next();
              System.out.printf("Password: ");
              String userPassword=input.next();

                    Connection myCon =null;
                    PreparedStatement   stat=null;
                    ResultSet   result=null;
             try {

                    myCon=
DriverManager.getConnection("jdbc:mysql://localhost:3306/lockedme", user,
pass);
                    String query = "SELECT * FROM `user` WHERE `Name` =?
AND `Password` =? ";
                    stat = myCon.prepareStatement(query);
                    stat.setString(1, userName);
                    stat.setString(2, userPassword);
                    result = stat.executeQuery();

                    if(result.next()) {
                           DBName = result.getString("Name");

                           db.setName( DBName);

                    }else {
                           System.out.println("Incorrect Username Or
Password , try again");
                           login();
                    }
             }catch (Exception e) {
                   e.printStackTrace();
```

```
    } finally {
        if (stat != null) {
            try {
                stat.close();
            } catch (Exception ex) {
                ex.printStackTrace();
            }
        }
        if (myCon != null) {
            try {
                myCon.close();
            } catch (Exception ex) {
                ex.printStackTrace();
            }
        }
    }
  System.out.println("\n\t------------------------");
  System.out.println("\n\tWelcome Agian "+User.getName());
  System.out.println("\n\n\t------------------------");
}
```

Output



```
 ** Select your option number from below and press Enter **
1) Login
2) Register
3) Exit program

1

        ---login Page---
Username: Reema
Password: Rs12345

        ------------------------

        Welcome Agian Reema


        ------------------------
```

Step 6: Pushing the code to GitHub repository

```
cd C:\Users\toshiba\eclipse-workspace\Project1

git init

git add .

git commit .  -m  "push the project"

git push -u origin master
```

Unique Selling Points of the Application

1. Even if there are exceptions, the program is meant to keep operating and accepting user input. The relevant option must be selected to terminate the application.
2. The application can take any file name as input.
3. The user is also given the option of writing text into the newly generated file if they so desire.
4. Even after doing any essential function such as adding, searching, removing, or retrieving files, the user may easily transition between choices or return to the previous menu.

Conclusions

The application may be improved further, for example:

- Allowing user create folder inside their folder and If the selected directory is not empty, then Asking user to confirm their want to remove it.
- Retrieving files based on various criteria such as Last Modified, Type, and so on.
- Allow the user to append data to the existing file.