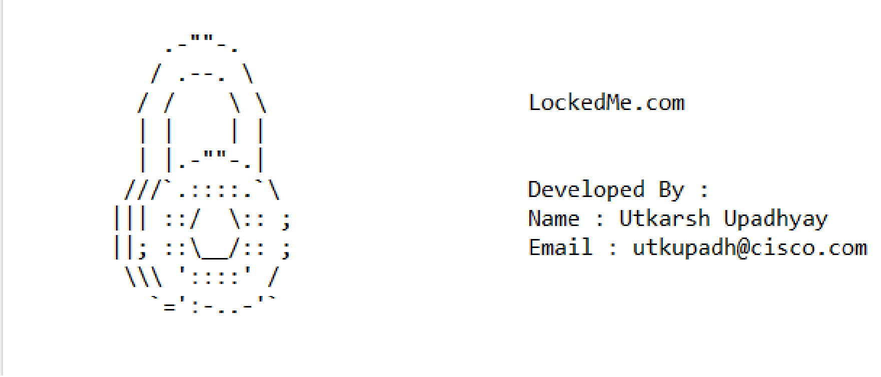
LockedMe.com

Developed By :
Name: Utkarsh Upadhyay
Email: utkupadh@cisco.com
Code: https://github.com/Utkarshthgr8/LockedMe



```
    .-""-.
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 ///`.::::.`\
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||; ::\__/:: ;
 \\\ '::::' /
   `=':-..-'`
```

```
LockedMe.com


Developed By :
Name : Utkarsh Upadhyay
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```

Contents

Sprints plan and task completion

I planned two sprints to finish the project.

Sprint 1 Backlog

- I want to version control.
- I want a welcome screen.
- I want the main menu.
- I want the expert mode where the user can perform operations on the files.
- I want the application to automatically create a folder and store default files at the start.
- I want to see all files stored in a sorted manner.

- I want the ability to search for files.
- I want the ability to create/add new files.
- I want the ability to write to a file. (create it if it does not exist)
- I want the ability to delete files.
- I want the ability to go back to the main menu.
- I want the ability to exit the application.
- I want my application to be robust.

Sprint 2 Backlog

- I want a better welcome screen.
- I want the options to be better laid out in terms of use.
- I want better error messages in case of exceptions.
- I want to sort like File 1, File 2 and File 10 instead of File 1, File 10 and File 2.
- I want the application to handle invalid inputs and close when the user specifies.
- I want the application to be tested against generally expected errors.
- I want my source code to be better laid out.
- I want detailed documentation.

Task completion with steps

1. Create a new project in eclipse named LockedMe
2. Create a package in LockedMe named com.lockedme.com
3. Create LockedMeMain class.
    a. *Create the main method.*

```
public static void main(String[] args) {
                IOHandler.makeNewFolderAndFiles();
                DisplayOptions.DisplayIntro("Utkarsh Upadhyay",
"utkupadh@cisco.com");
                IOHandler.DisplayMenu1Handler();
                System.out.println("Bbye!");
        }
```

4. Create DisplayOptions class.
    a. *Create the DisplayIntro method.*

```
public static void DisplayIntro(String name, String email) {
                String asciiLockIntro = String.format("" + "\r\n" + "
.-\"\"-.\n" + "          / .--. \\\n"
                                + "          / /    \\ \\ \t\t\tLockedMe.com\n" + "
| |    | |\n" + "          | |.-\"\"-.|\n"
                                + "         ///`.::::.`\\ \t\t\tDeveloped By :\n" + "
||| ::/  \\:: ; \t\t\tName : %s\n"
                                + "        ||; ::\\__/:: ; \t\t\tEmail : %s\n" + "
\\\\\\ '::::' /\n"
```

```
                    + "          `=':-..-'`\n", name, email);
            System.out.println(asciiLockIntro);
        }
```

b. *Create the DisplayMenu1Handler method.*

```
public static void DisplayMenu1Handler() {
            String menuString = "\nSelect an option from below and press
enter.\n" + "1. Show all files.\n"
                    + "2. Display menu for operations. (Expert
Mode)\n" + "3. Exit Program.";
            System.out.println(menuString);
        }
```

c. *Create the DisplayMenu2Handler method.*

```
public static void DisplayMenu2Handler() {
            String menuFile = "\nSelect an option from below and press
enter.\n" + "1. Search a file.\n"
                    + "2. Add a file.\n" + "3. Write to a file.\n" + "4.
Delete file.\n" + "5. Main Menu.\n"
                    + "6. Exit program.";
            System.out.println(menuFile);
        }
```

5. Create IOHandler class.

```
static Scanner sc = new Scanner(System.in);
static final String rootPathString = "./FilesFolder";
```

a. *Create the makeNewFolderAndFiles method.*

```
public static void makeNewFolderAndFiles() {
            try {
                Files.createDirectories(Paths.get(rootPathString));
            } catch (FileAlreadyExistsException e) {
                // IGNORING THIS EXCEPTION
            } catch (IOException e) {
                System.out.println("**An error occurred in creating
FilesFolder Directory.");
                e.printStackTrace();
            }

            for (int i = 1; i < 11; i++) {
                Path fileName = Paths.get(rootPathString, "/File " + i +
".txt");
                IOHandler.makeNewDefaultFile(fileName);
                }
        }
```

b. *Create the makeNewDefaultFile method.*

```
public static void makeNewDefaultFile(Path fileName) {
                try {
                        Files.createFile(fileName);
                } catch (FileAlreadyExistsException e) {
                        // IGNORING THIS EXCEPTION
                } catch (IOException e) {
                        System.out.println("**An error occurred in creating " +
fileName + ".");
                        e.printStackTrace();
                }
        }
```

c. *Create the DisplayMenu1Handler method.*

```
public static void DisplayMenu1Handler() {
                boolean run = true;
                while (run) {
                        try {
                                DisplayOptions.DisplayMenu1Handler();
                                int option = sc.nextInt();

                                switch (option) {
                                case 1:
                                        IOHandler.showAllFiles();
                                        break;
                                case 2:
                                        IOHandler.ExpertOptions();
                                        break;
                                case 3:
                                        System.out.println("Exiting
LockMe.com");
                                        run = false;
                                        sc.close();
                                        return;
                                default:
                                        System.out.println("Enter a valid option
from 1-3\n");
                                }
                        } catch (InputMismatchException e) {
                                System.out.println("Enter a valid option from
1-3.\n");
                                sc.nextLine();
                DisplayMenu1Handler();
                return;
            }
        }
    }
```

d. Create the showAllFiles method.

```
public static void showAllFiles() {
        Path rootPath = Paths.get(rootPathString);

        try {
            Stream<Path> pathStart = Files.walk(rootPath);

            List<String> sortableList = new ArrayList<String>();

            if(sortableList.isEmpty()) {
                System.out.println("No files in " +
rootPathString);
                pathStart.close();
                return;
            }

            pathStart.forEach(object -> {
                File myObj = new File(object.toString());
                if (!myObj.isDirectory()) {
                    sortableList.add(myObj.getName());
                }
            });

            Collections.sort(sortableList, new Comparator<String>()
{
                public int compare(String o1, String o2) {
                    return extractInt(o1) - extractInt(o2);
                }

                int extractInt(String s) {
                    String num = s.replaceAll("\\D", "");
                    return num.isEmpty() ? 0 :
Integer.parseInt(num);
                }
            });

            sortableList.forEach(fileName -> {
                System.out.println(fileName);
            });

            pathStart.close();
        } catch (IOException e) {
            System.out.println("**An error occured in printing all
files in FilesFolder.");
            e.printStackTrace();
        }
    }
```

e. *Create the ExpertOptions method.*

```
public static void ExpertOptions() {
        boolean run = true;
        try {
            while (run) {
                DisplayOptions.DisplayMenu2Handler();
                int option = sc.nextInt();

                String fileName;
                Path fileNamePath;

                switch (option) {
                case 1:
                    sc.nextLine();
                    System.out.println("Enter the name of
the file to search below.");
                    fileName = sc.nextLine();
                    fileNamePath =
Paths.get(rootPathString, "/" + fileName + ".txt");
                    searchFile(fileNamePath);
                    break;
                case 2:
                    sc.nextLine();
                    System.out.println("Enter the name of
the file to add below.");
                    fileName = sc.nextLine();
                    fileNamePath =
Paths.get(rootPathString, "/" + fileName + ".txt");
                    makeNewFile(fileNamePath);
                    break;
                case 3:
                    sc.nextLine();
                    System.out.println("Enter the name of
the file to write below.");
                    fileName = sc.nextLine();
                    fileName = rootPathString + "/" +
fileName + ".txt";
                    writeFile(fileName);
                    break;
                case 4:
                    sc.nextLine();
                    System.out.println("Enter the name of
the file to delete below. (Case Insensitive)");
                    fileName = sc.nextLine();
                    fileNamePath =
Paths.get(rootPathString, "/" + fileName + ".txt");
                    deleteFile(fileNamePath);
                    break;
                case 5:
                    System.out.println("Exiting To Main
Menu.");
                    return;
                case 6:
                    System.out.println("Exiting
LockMe.com\nBbye!");
                    run = false;
                    sc.close();
                    System.exit(0);
                    return;
                default:
                    System.out.println("Enter a valid option
from 1-6");
                }
            }
        } catch (InputMismatchException e) {
            System.out.println("Enter a valid option from 1-6.\n");
            sc.nextLine();
            ExpertOptions();
        }
    }
```

f. *Create the makeNewFile method.*

```
private static void makeNewFile(Path fileNamePath) {
        try {
            Files.createFile(fileNamePath);
            System.out.println(fileNamePath + " created
successfully.");
        } catch (FileAlreadyExistsException e) {
            // IGNORING THIS EXCEPTION
        } catch (IOException e) {
            System.out.println("**An error occured in creating " +
fileNamePath + ".");
            e.printStackTrace();
        }
    }
```

g. *Create the writeFile method.*

```
private static void writeFile(String fileNamePath) {
        try {
            BufferedWriter writer = new BufferedWriter(new
FileWriter(fileNamePath));
            System.out.println("Enter the text you want to write to "
+ fileNamePath);
            String textToWrite = sc.nextLine();
            writer.write(textToWrite);
            writer.close();
            System.out.println("File written successfully.");
        } catch (IOException e) {
            System.out.println("**An error occured in writing in " +
fileNamePath + ".");
            e.printStackTrace();
        }
    }
```

h. *Create the searchFile method.*

```
private static void searchFile(Path fileName) {
        if (Files.exists(fileName)) {
            System.out.println(fileName + " exists.");
        } else {
            System.out.println(fileName + " does not exist.");
        }
    }
```

i. *Create the deleteFile method.*

```
private static void deleteFile(Path fileName) {
        try {
            Files.delete(fileName);
            System.out.println(fileName + " deleted successfully.");
        } catch (NoSuchFileException e) {
            System.out.println("**An error occured in deleting " +
fileName + ".\n**" + fileName + " does not exist.");
        } catch (IOException e) {
            System.out.println("**An error occured in deleting " +
fileName + ".");
            e.printStackTrace();
        }
    }
```

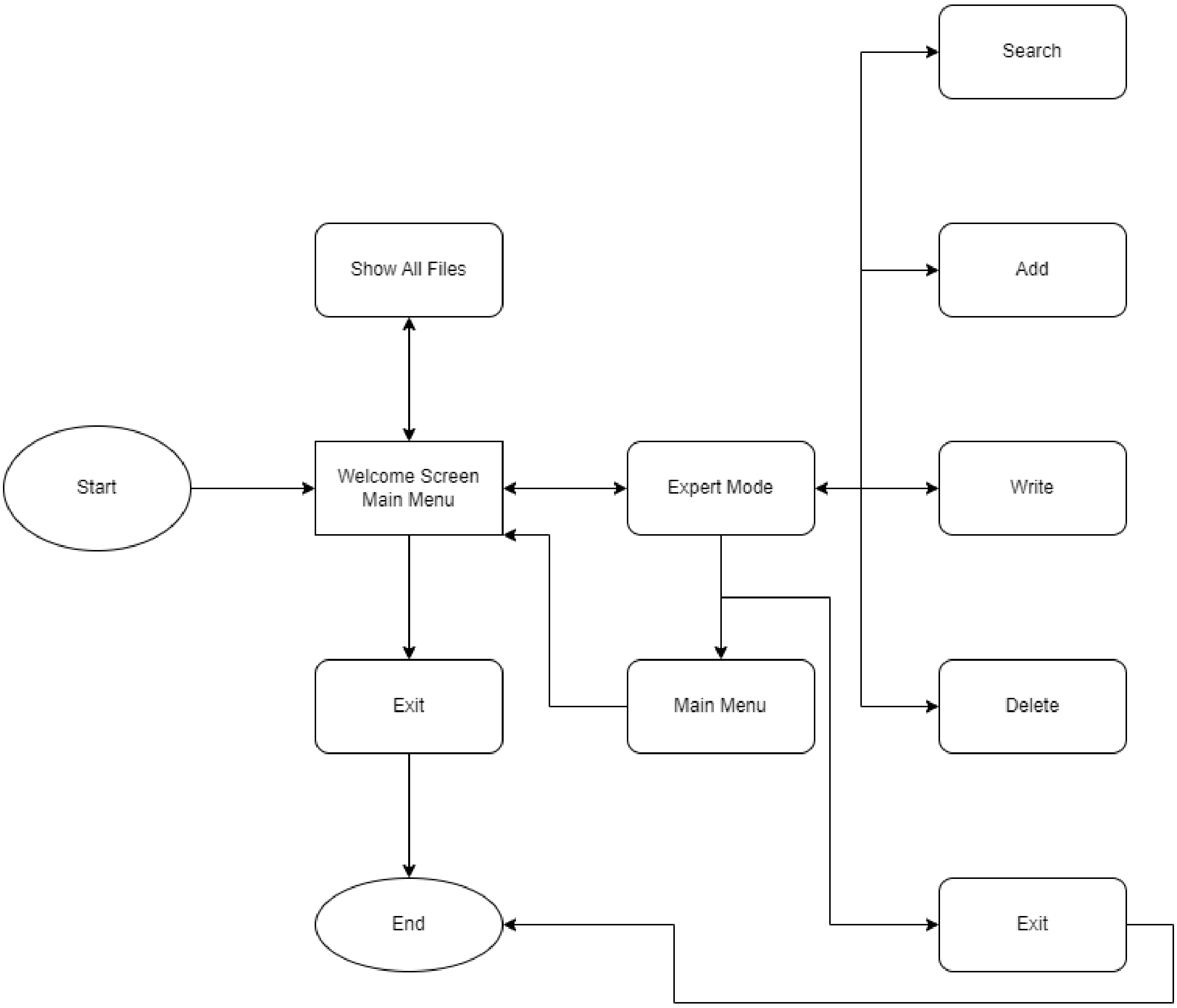
6. Upload to GitHub.
    a. *git init*
    b. *git remote add origin *RepositoryLink**
    c. *git remote -v*
    d. *git add .*
    e. *git commit -m "Comment Here"*
    f. *git push origin master*

Core concepts used in the project

- File handling
- Exception handling
- Recursion
- Flow Control
- Collection frameworks
- Comparator
- Sorting
- Stream

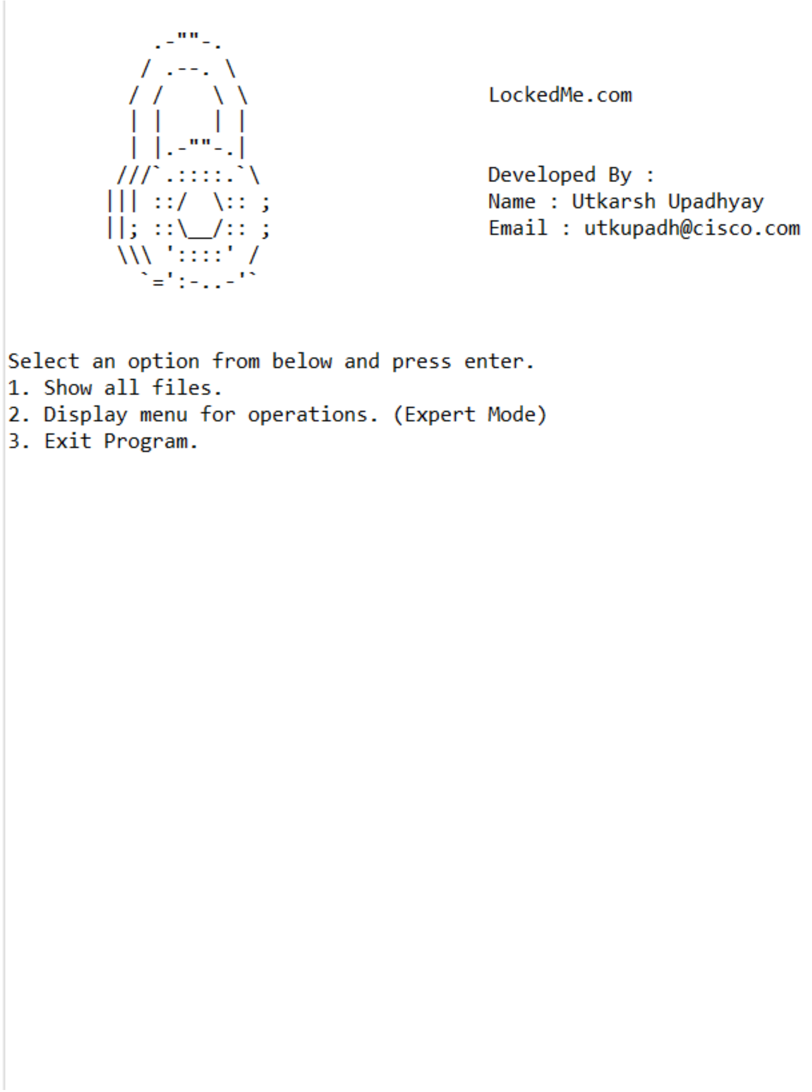
The flow of the application

Flowchart



Product capabilities, appearance and user interactions

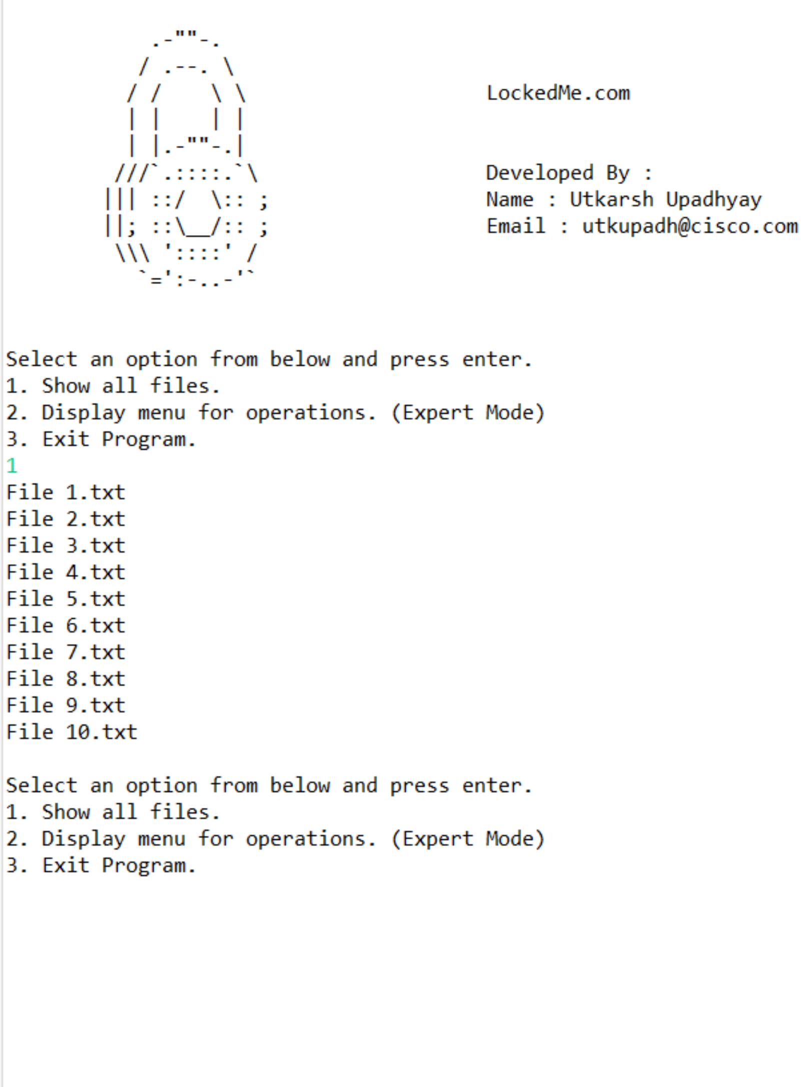
1. Welcome Screen.



```
            .-""-.
           / .--. \
          / /    \ \                    LockedMe.com
          | |    | |
          | |.-""-.|
         ///`.::::.`\                   Developed By :
        ||| ::/  \:: ;                  Name : Utkarsh Upadhyay
        ||; ::\__/:: ;                  Email : utkupadh@cisco.com
         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
```

2. Show all files.



```
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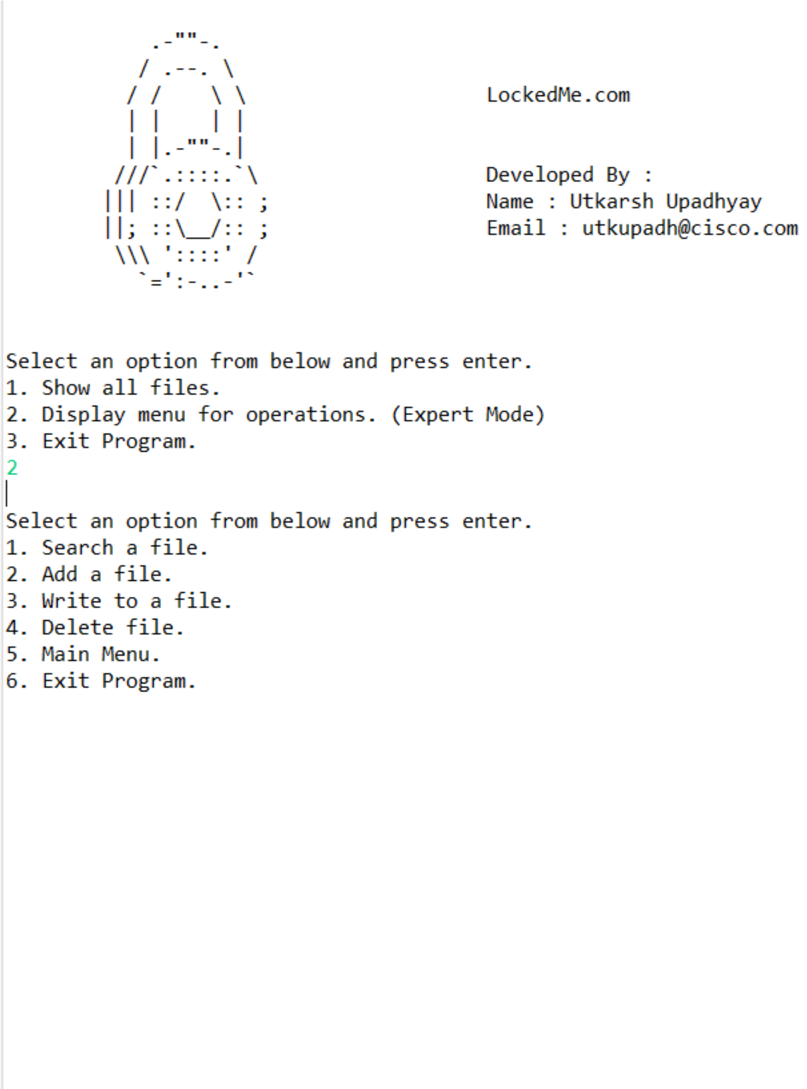
         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
1
File 1.txt
File 2.txt
File 3.txt
File 4.txt
File 5.txt
File 6.txt
File 7.txt
File 8.txt
File 9.txt
File 10.txt

Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
```

3. Display menu for operations. (Expert Mode)



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          | |    | |
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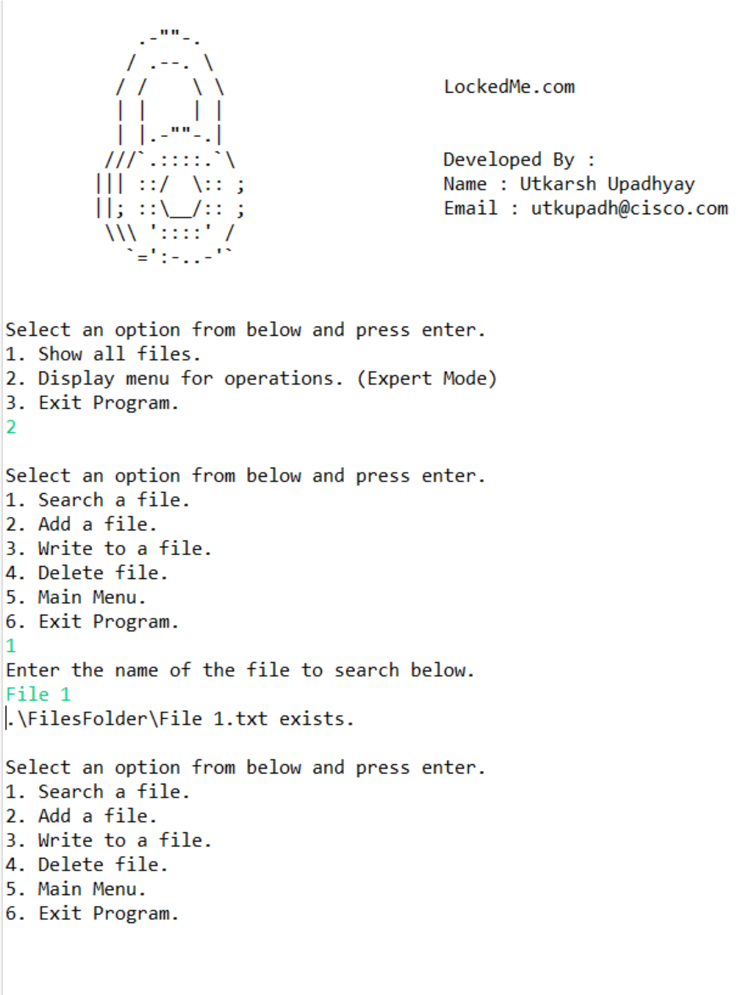
        ||; ::\__/:: ;                  Email : utkupadh@cisco.com
         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
2

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
```

a. *Search a file.*



```
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          / /    \ \                    LockedMe.com
          | |    | |
          | |.-""-.|
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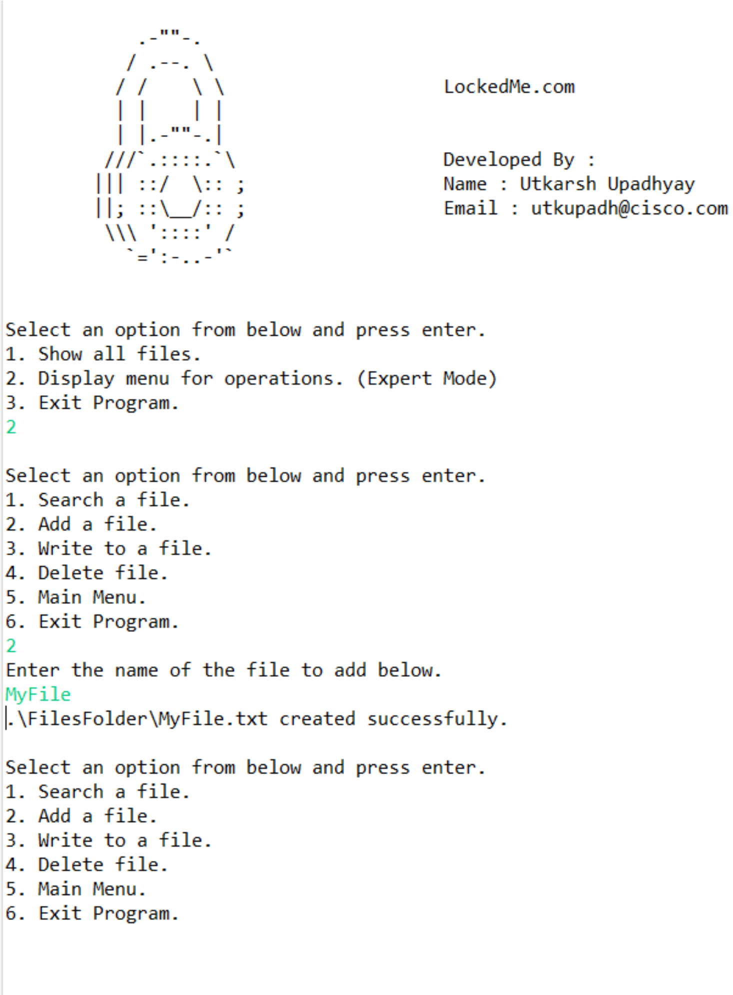
        ||; ::\__/:: ;                  Email : utkupadh@cisco.com
         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
2

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
1
Enter the name of the file to search below.
File 1
.\FilesFolder\File 1.txt exists.

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
```

b. *Add a file.*



```
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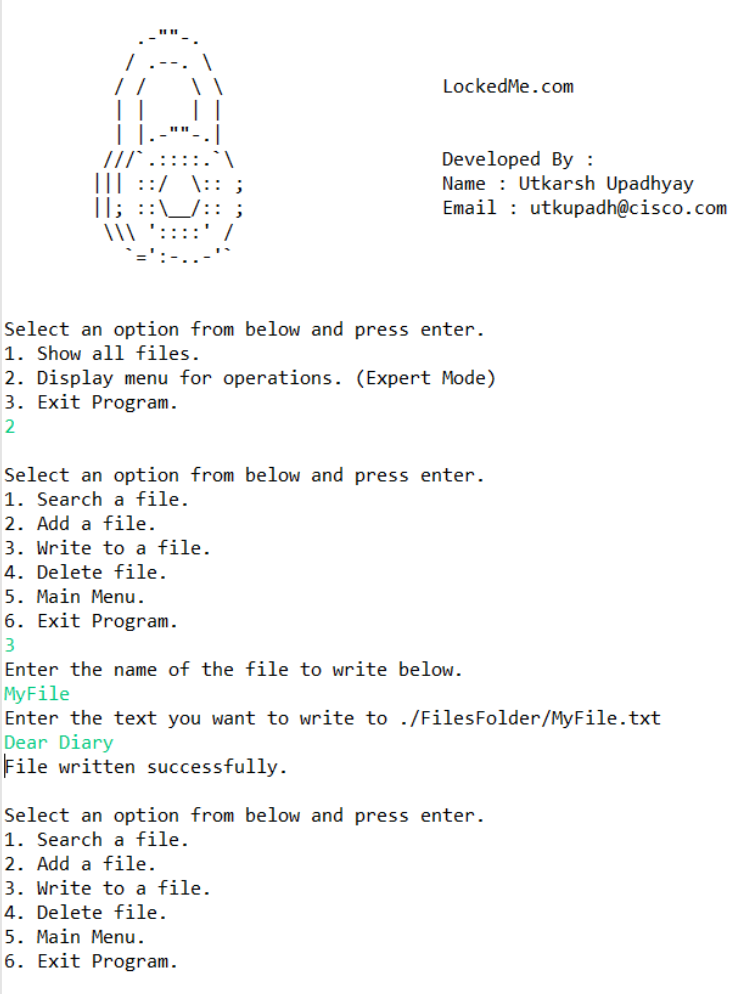
          / /    \ \                    LockedMe.com
          | |    | |
          | |.-""-.|
         ///`.::::.`\                   Developed By :
        ||| ::/  \:: ;                  Name : Utkarsh Upadhyay
        ||; ::\__/:: ;                  Email : utkupadh@cisco.com
         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
2

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
2
Enter the name of the file to add below.
MyFile
.\FilesFolder\MyFile.txt created successfully.

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
```

c. Write to a file.



```
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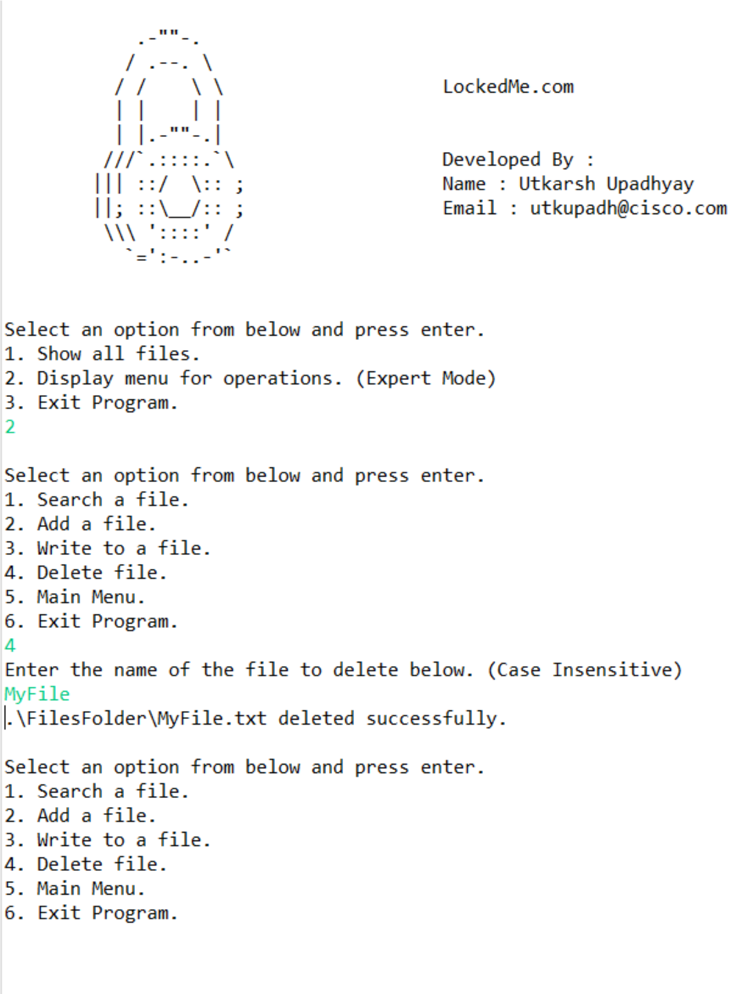
          / /    \ \                    LockedMe.com
          | |    | |
          | |.-""-.|
         ///`.::::.`\                   Developed By :
        ||| ::/  \:: ;                  Name : Utkarsh Upadhyay
        ||; ::\__/:: ;                  Email : utkupadh@cisco.com
         \\\ '::::' /
          `=':-..-'`

Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
2

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
3
Enter the name of the file to write below.
MyFile
Enter the text you want to write to ./FilesFolder/MyFile.txt
Dear Diary
File written successfully.

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
```

d. *Delete file.*



```
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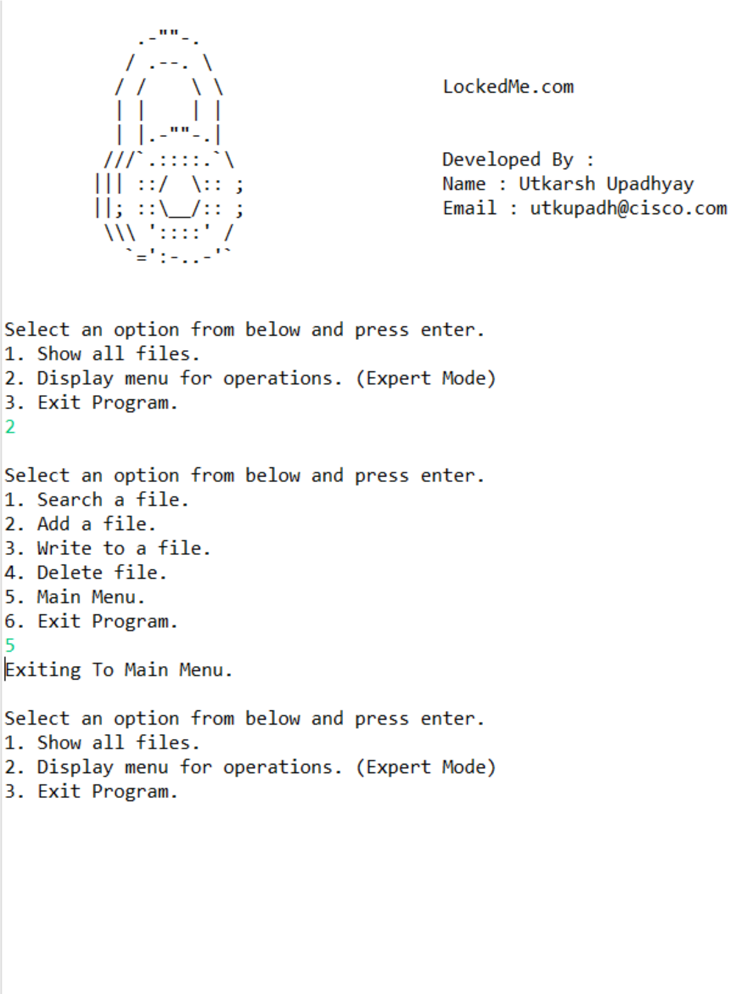
        ||; ::\__/:: ;                  Email : utkupadh@cisco.com
         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
2

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
4
Enter the name of the file to delete below. (Case Insensitive)
MyFile
.\FilesFolder\MyFile.txt deleted successfully.

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
```

e. Main Menu.



```
            .-""-.
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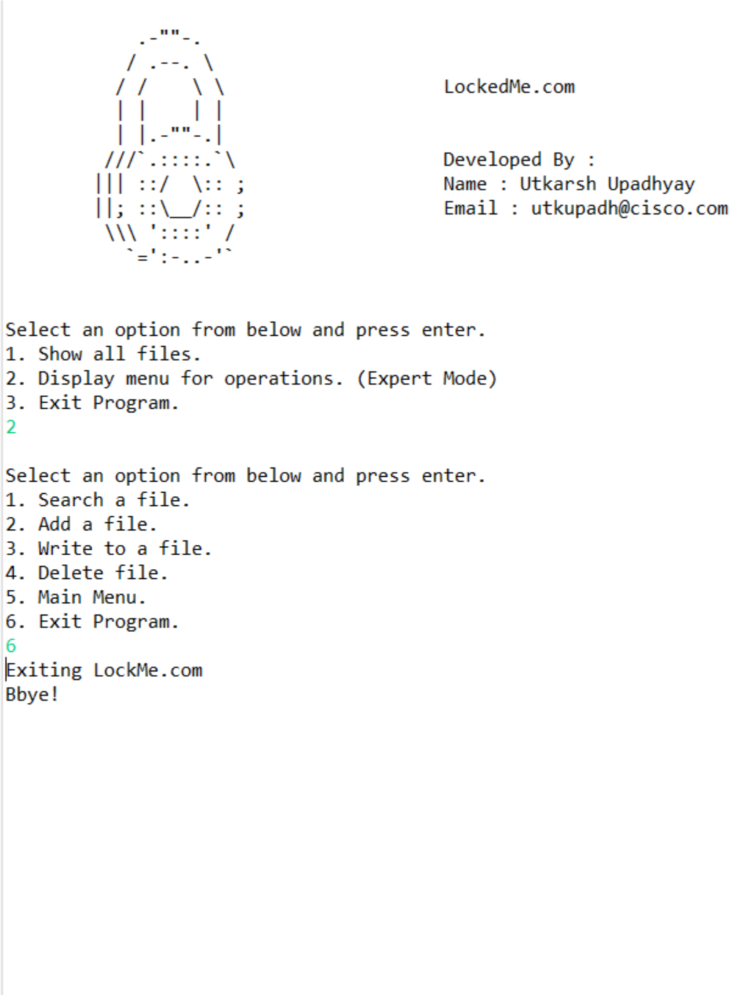
         \\\ '::::' /
          `=':-..-'`

Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
2

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
5
Exiting To Main Menu.

Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
```

f. *Exit program.*



```
            .-""-.
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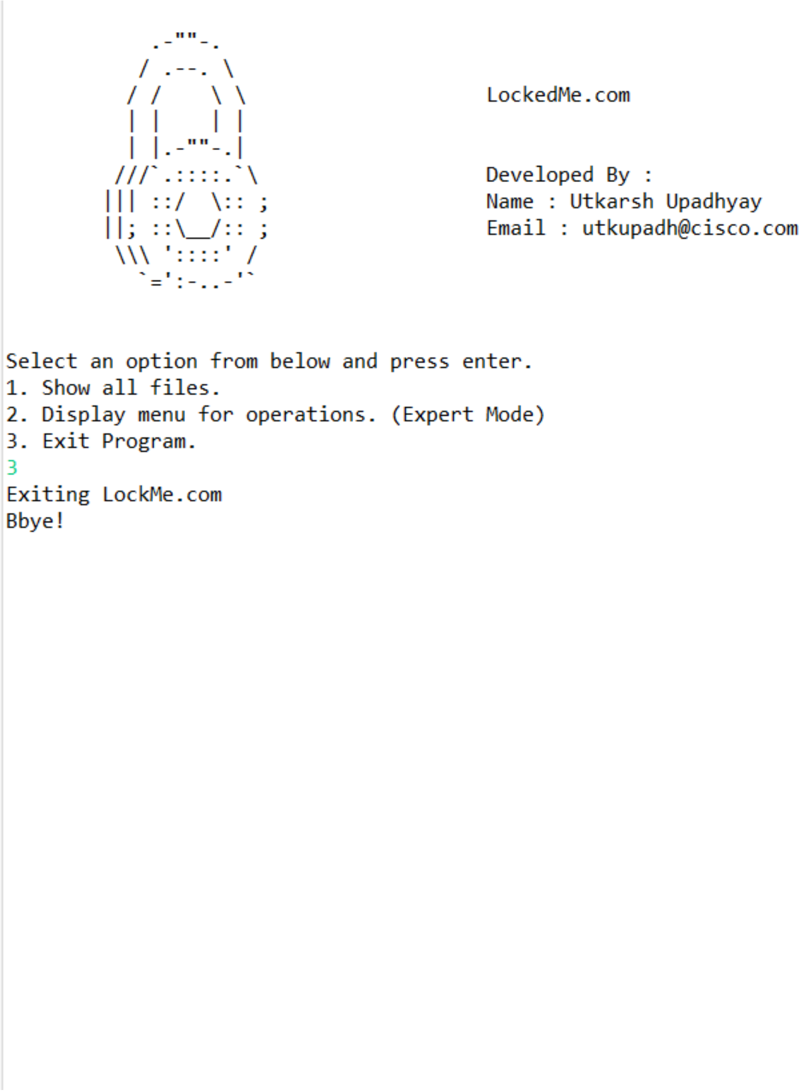
         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
2

Select an option from below and press enter.
1. Search a file.
2. Add a file.
3. Write to a file.
4. Delete file.
5. Main Menu.
6. Exit Program.
6
Exiting LockMe.com
Bbye!
```

4. Exit Program.



```
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         \\\ '::::' /
           `=':-..-'`


Select an option from below and press enter.
1. Show all files.
2. Display menu for operations. (Expert Mode)
3. Exit Program.
3
Exiting LockMe.com
Bbye!
```

Unique selling points of the application

- Sorting is in order File 1, File 2 and File 10. Rather than the string-based approach of File 1, File 10, and File 2.
- No need to specify .txt file extension while creating, searching or deleting files as the program has been hardcoded to add the .txt file extension automatically to every search query to reduce efforts and ease of use. (this behaviour can be easily modified in code)
- A single .FilesFolder/ directory created (automatically on startup) for all files.
- Automatically creates a set of 10 files from File 1 to File 10 on startup.
- Automatically creates the file if it does not exist during creation.
- Provides relative file path and file name with most operations for added information.
- The application is robust.

Future enhancements

- Marking files as read-only after each operation to prevent data misuse/corruption.
- Directory support.
- Verification before exit and delete commands.
- Ability to read and display files in the application.
- Ability to append to the files.
- Ability to see all files in Expert Mode rather than having to go back to the main menu.
- Ability to filter files based on certain criteria.