

Project Phase – I

Virtual Key for Your Repositories

Project details:

This is a console based java application that can list (in ascending order) create, delete and search for files. It does not crash and provides options to exit.

Developer detail's:

This Project is Developed by Sachin Bali . This project is hosted on git repository: <https://github.com/SachinBali333/Virtual-key-for-your-repository.git>

Sprint 1:

1. Decide Flow of the program
2. Design Classes and Methods
3. Design Exceptions
4. Create Project Structure
5. Code Data tier
6. Code Business tier interface

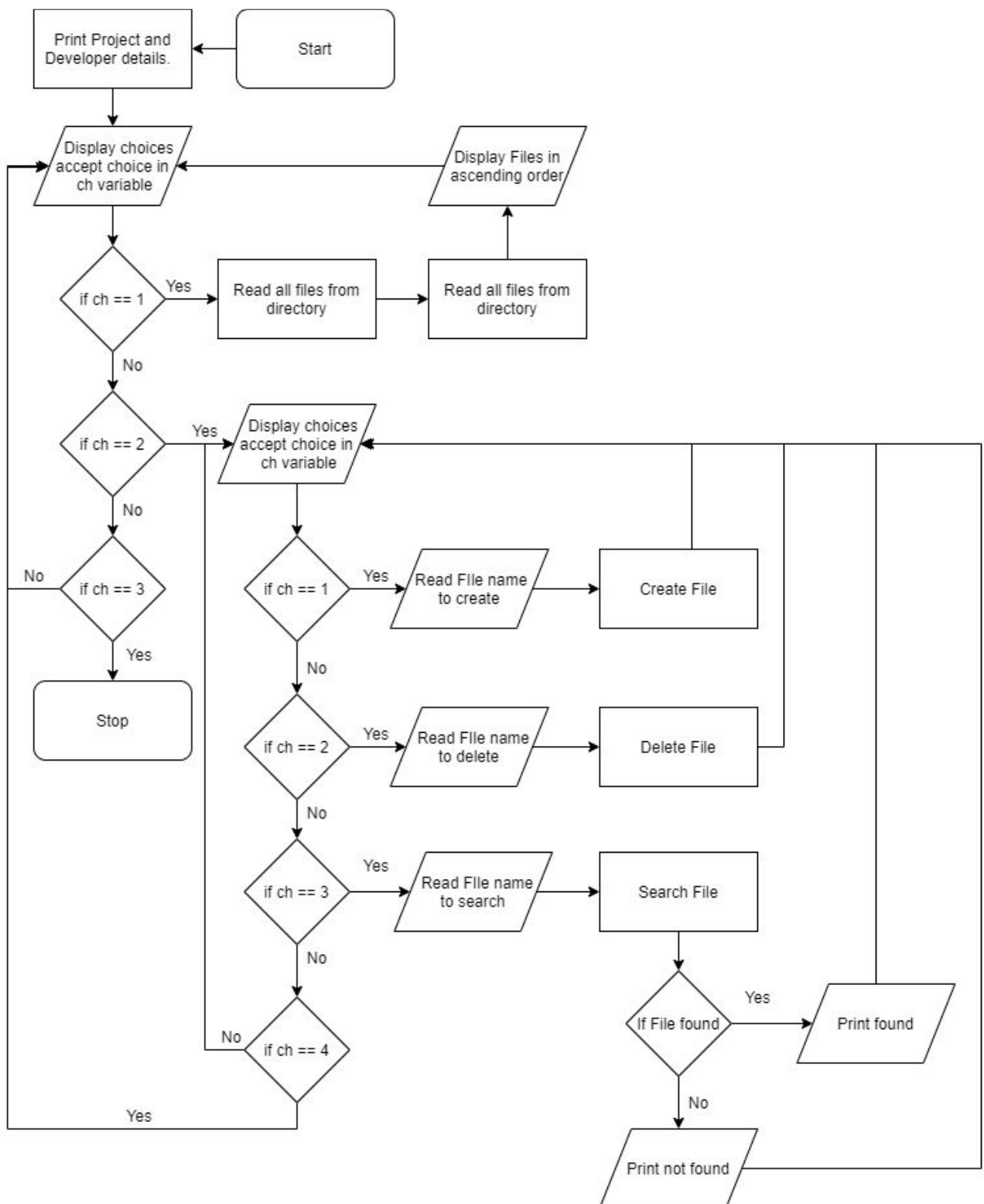
Sprint 2:

1. Code Business Tier Methods
 - a. List File Method
 - b. Create File Method
 - c. Search File Method
 - d. Delete File Method
2. Code the level one menu
3. Code the level two menu
4. Call the Business Tier Methods in the Main File
5. Use String Formatting to display the output in a standard manner

Algorithm:

- 1) Start
- 2) Print Options to list, manage files and exit
- 3) If choice is 1
 - a) Read all files in the directory
 - b) Sort files in ascending order using Collections.sort()
 - c) Print all the files
 - d) Goto 3
- 4) If the choice is 2
 - a) Print Options to add, search and delete files
 - b) If the choice is 1
 - i) Accept file name from the user
 - ii) Create a new file with that name
 - iii) Goto b
 - c) If the choice is 2
 - i) Accept file name from the user
 - ii) Delete the file with that name
 - iii) Goto b
 - d) If the choice is 3
 - i) Accept file name from the user
 - ii) Search for file with that name
 - iii) If file found print found
 - iv) Else print Not found
 - v) Goto b
 - e) If the choice is 4 goto a
- f) Goto 2
- 5) If the choice is 3 goto 7
- 6) Goto 2
- 7) Stop

Flowchart of the System:



Core Concepts Implemented:

1. Encapsulation: FileDetail class in the data layer encapsulates all the file data such as file name, file parent, file length, file path by making them private and providing public methods to access them.
2. Abstraction: The class FileManagerBOImpl abstracts all the implementation details from the presentation layer class (VirtualKeyMain) and the interface (FileManagerBO)
3. Inheritance: The AlphaNumericOnly and the FileNameNotFoundException.java class extend/ inherit from the RuntimeException class to provide user-defined exception messages if the file name provided by the user is not a valid name and if the file name provided to delete by the user is not available.
4. Polymorphism: The FileDetail class overrides the toString method to provide custom string output. It also overrides the compareTo method of the comparator method to provide the sorting capability. It also has overloaded constructors.
5. java.util.File was used to create delete, search and list files from the directory
6. Linked List was used to store the list of files in the directory and Collections.sort was used to sort them.

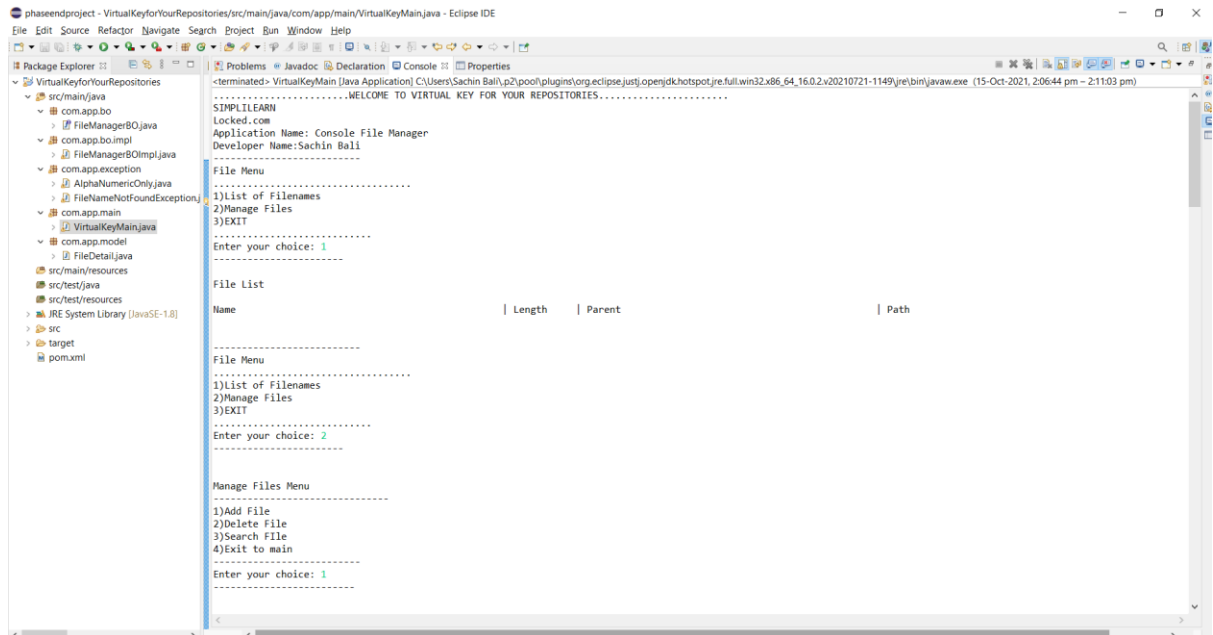
PROJECT GIT REPOSITORY:

Link to the GitHub Repository:

<https://github.com/SachinBali333/Virtual-key-for-your-repository.git>

❖ SCREENSHOTS OF OUTPUT:

❖ WELCOME SCREEN:



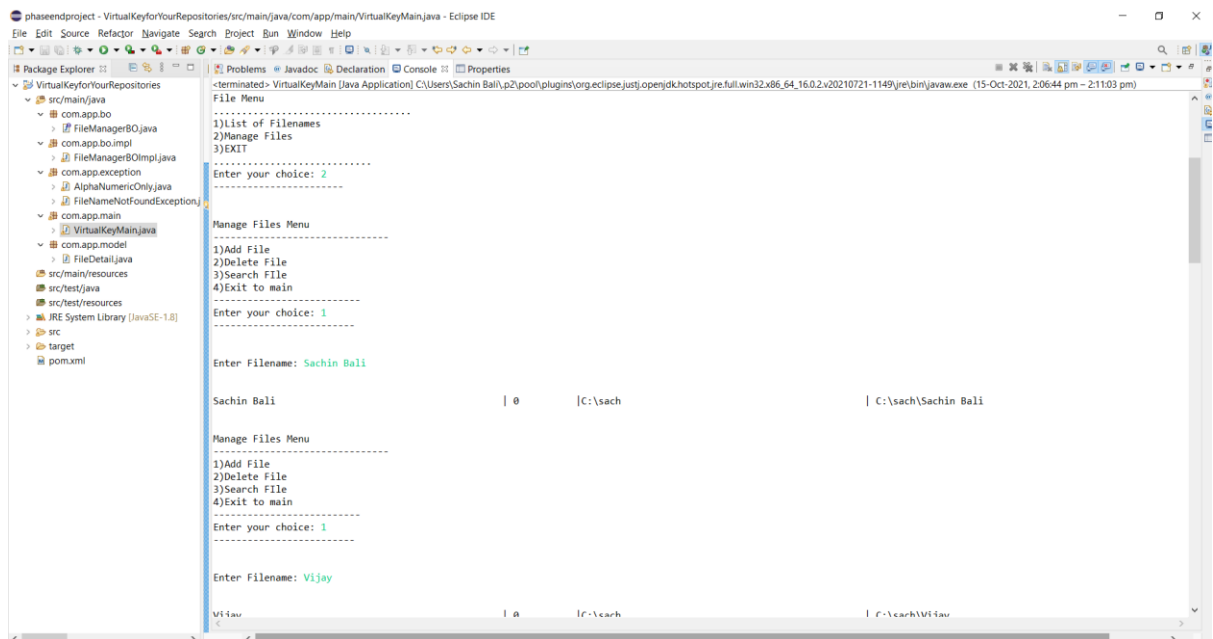
The screenshot shows the Eclipse IDE interface. The Package Explorer on the left displays the project structure for 'VirtualKeyforYourRepositories'. The main editor area shows the output of the application, which includes a welcome message, application details, and a menu. The application is titled 'VirtualKeyMain [Java Application]' and is located at 'C:\Users\Sachin Bali\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe'. The output text is as follows:

```
<terminated> VirtualKeyMain [Java Application] C:\Users\Sachin Bali\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (15-Oct-2021, 2:06:44 pm - 2:11:03 pm)
SIMPLILEARN
Locked.com
Application Name: Console File Manager
Developer Name:Sachin Bali
-----
File Menu
-----
1)List of FileNames
2)Manage Files
3)EXIT
-----
Enter your choice: 1
-----

File List
-----
Name | Length | Parent | Path
-----
-----

File Menu
-----
1)List of FileNames
2)Manage Files
3)EXIT
-----
Enter your choice: 2
-----

Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 1
-----
```



The screenshot shows the Eclipse IDE interface. The Package Explorer on the left displays the project structure for 'VirtualKeyforYourRepositories'. The main editor area shows the output of the application, which includes a menu and a file list. The application is titled 'VirtualKeyMain [Java Application]' and is located at 'C:\Users\Sachin Bali\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe'. The output text is as follows:

```
File Menu
-----
1)List of FileNames
2)Manage Files
3)EXIT
-----
Enter your choice: 2
-----

Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 1
-----

Enter Filename: Sachin Bali

Sachin Bali | 0 | C:\sach | C:\sach\Sachin Bali

Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 1
-----

Enter Filename: Vijay

Vijay | 0 | C:\sach | C:\sach\Vijay
```

phaseendproject - VirtualKeyforYourRepositories/src/main/java/com/app/main/VirtualKeyMain.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer Problems Javadoc Declaration Console Properties

VirtualKeyforYourRepositories

- src/main/java
 - com.app.bo
 - FileManagerBO.java
 - com.app.bo.impl
 - FileManagerBOImpl.java
 - com.app.exception
 - AlphaNumericOnly.java
 - FileNameNotFoundException.java
 - com.app.main
 - VirtualKeyMain.java
 - com.app.model
 - FileDetail.java
 - src/main/resources
 - src/test/java
 - src/test/resources
- JRE System Library [JavaSE-1.8]
- src
- target
- pom.xml

<terminated> VirtualKeyMain [Java Application] C:\Users\Sachin Bali\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.16.0.2.v20210721-1149\jre\bin\javaw.exe (15-Oct-2021, 2:06:44 pm - 2:11:03 pm)

```
-----
Manage Files Menu
1)Add File
2)Delete File
3)Search File
4)Exit to main
Enter your choice: 1
-----
Enter Filename: Vijay
-----
Vijay | 0 | C:\sach | C:\sach\Vijay
-----
Manage Files Menu
1)Add File
2)Delete File
3)Search File
4)Exit to main
Enter your choice: 4
-----
Returning to main menu...
-----
File Menu
1)List of Filenames
2)Manage Files
3)EXIT
Enter your choice: 1
-----
File List
-----
Name | Length | Parent | Path
-----
-----
```

phaseendproject - VirtualKeyforYourRepositories/src/main/java/com/app/main/VirtualKeyMain.java - Eclipse IDE

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VirtualKeyforYourRepositories

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 - com.app.bo.impl
 - FileManagerBOImpl.java
 - com.app.exception
 - AlphaNumericOnly.java
 - FileNameNotFoundException.java
 - com.app.main
 - VirtualKeyMain.java
 - com.app.model
 - FileDetail.java
 - src/main/resources
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 - src/test/resources
- JRE System Library [JavaSE-1.8]
- src
- target
- pom.xml

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```
-----
Returning to main menu...
-----
File Menu
1)List of Filenames
2)Manage Files
3)EXIT
Enter your choice: 1
-----
File List
-----
Name | Length | Parent | Path
-----
Sachin Bali | 0 | C:\sach | C:\sach\Sachin Bali
Vijay | 0 | C:\sach | C:\sach\Vijay
-----
File Menu
1)List of Filenames
2)Manage Files
3)EXIT
Enter your choice: 2
-----
Manage Files Menu
1)Add File
2)Delete File
3)Search File
4)Exit to main
Enter your choice: 2
-----
Enter Filename: Vijay
-----
```

phaseendproject - VirtualKeyForYourRepositories/src/main/java/com/app/main/VirtualKeyMain.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- VirtualKeyForYourRepositories
 - src/main/java
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 - JRE System Library [JavaSE-1.8]
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Problems Javadoc Declaration Console Properties

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```
-----
Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 2
-----

Enter Filename: Vijay

-----
Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 4
-----

Returning to main menu...
-----
File Menu
-----
1)List of Filenames
2)Manage Files
3)EXIT
-----
Enter your choice: 1
-----

File List
-----
Name                               Length  Parent  Path
-----
Sachin Bali                        0       C:\sachin Bali  C:\sachin Bali
```

phaseendproject - VirtualKeyForYourRepositories/src/main/java/com/app/main/VirtualKeyMain.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- VirtualKeyForYourRepositories
 - src/main/java
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 - src/main/resources
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 - src/test/resources
 - JRE System Library [JavaSE-1.8]
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```
-----
1)List of Filenames
2)Manage Files
3)EXIT
-----
Enter your choice: 2
-----

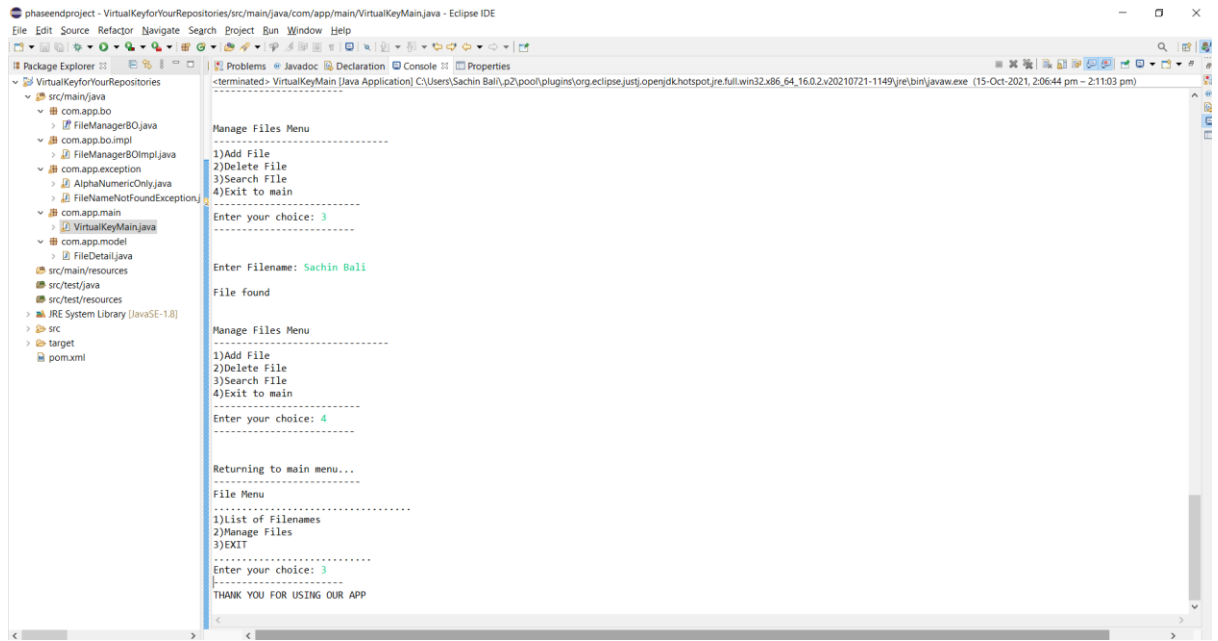
Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 3
-----

Enter Filename: Sachin Bali

File found

-----
Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 4
-----

Returning to main menu...
-----
File Menu
-----
1)List of Filenames
2)Manage Files
```



The output taken from command prompt :

```
C:\Windows\System32\cmd.exe
C:\Users\Sachin Bali\Desktop\phaseendproject\VirtualKeyForYourRepositories>mvn test
[INFO] Scanning for projects...
[INFO] -----< LockedMe.com:VirtualKeyForYourRepositories >-----
[INFO] Building Virtual-Key-for-Your-Repositories 0.0.1-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ VirtualKeyForYourRepositories ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ VirtualKeyForYourRepositories ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ VirtualKeyForYourRepositories ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ VirtualKeyForYourRepositories ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ VirtualKeyForYourRepositories ---
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.790 s
[INFO] Finished at: 2021-10-15T14:16:18+05:30
[INFO] -----
C:\Users\Sachin Bali\Desktop\phaseendproject\VirtualKeyForYourRepositories>
```

Conclusion:

The file manager was created using the three-tier architecture. Special attention was paid to implement the pillars of the OOPM. Best practices were followed as and when possible. Rigorous testing was done to ensure that there are no spontaneous exits and all exceptions are handled. Some Exceptions are handled using Custom exception classes. The throws and throw keywords were used to handle exceptions. The Comparable interface was used to provide the compare To method to help in sorting..