

SIMPLILEARN

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:

Project phase 1

Course: Java Full Stack Developer

*This Project is Developed by **Bhageerathi***

Link to the GitHub Repository:

<https://github.com/bhageerathi1as/Virtual-key-for-repositories.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*

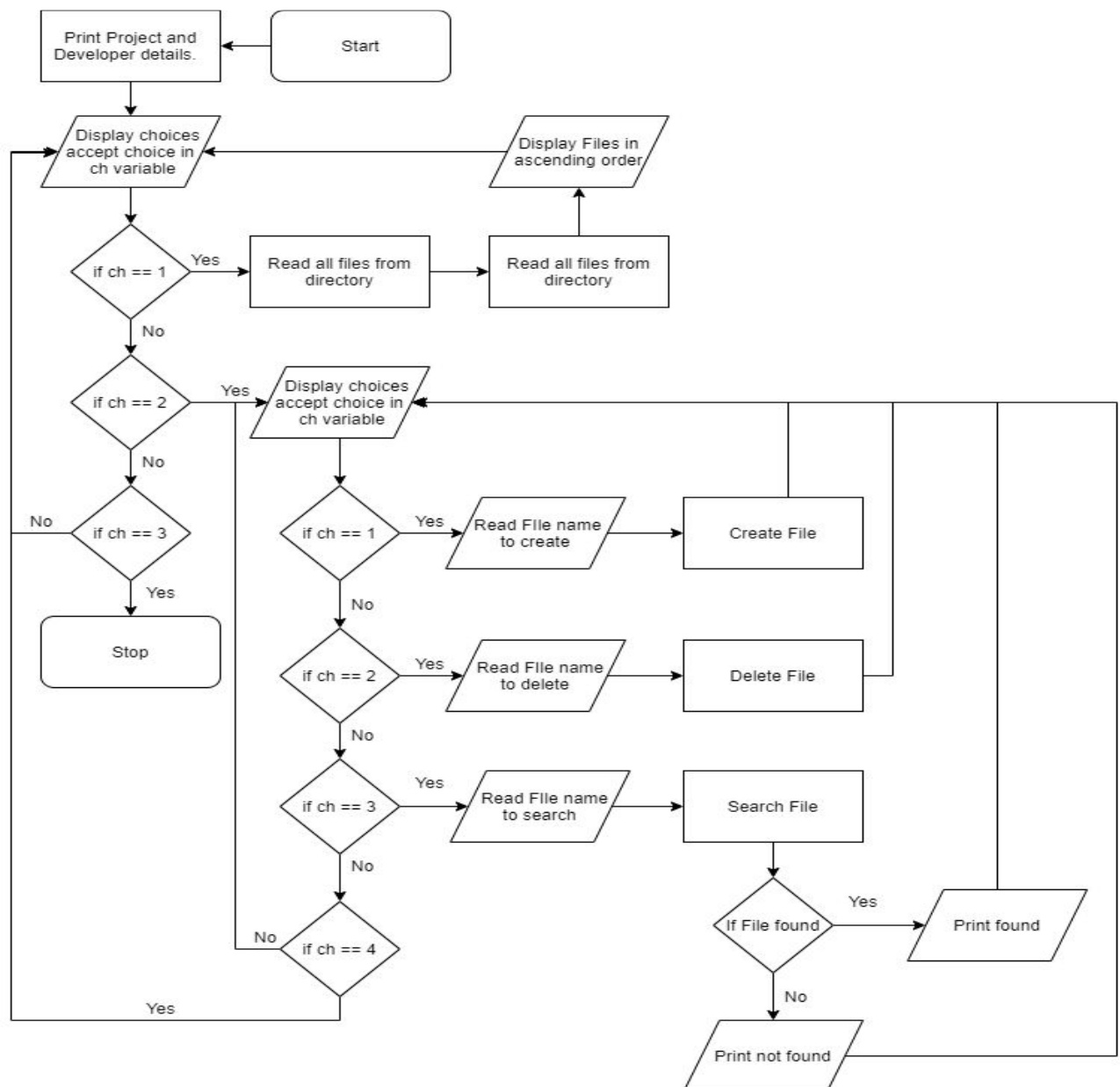
Sprint 2:

- 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.*

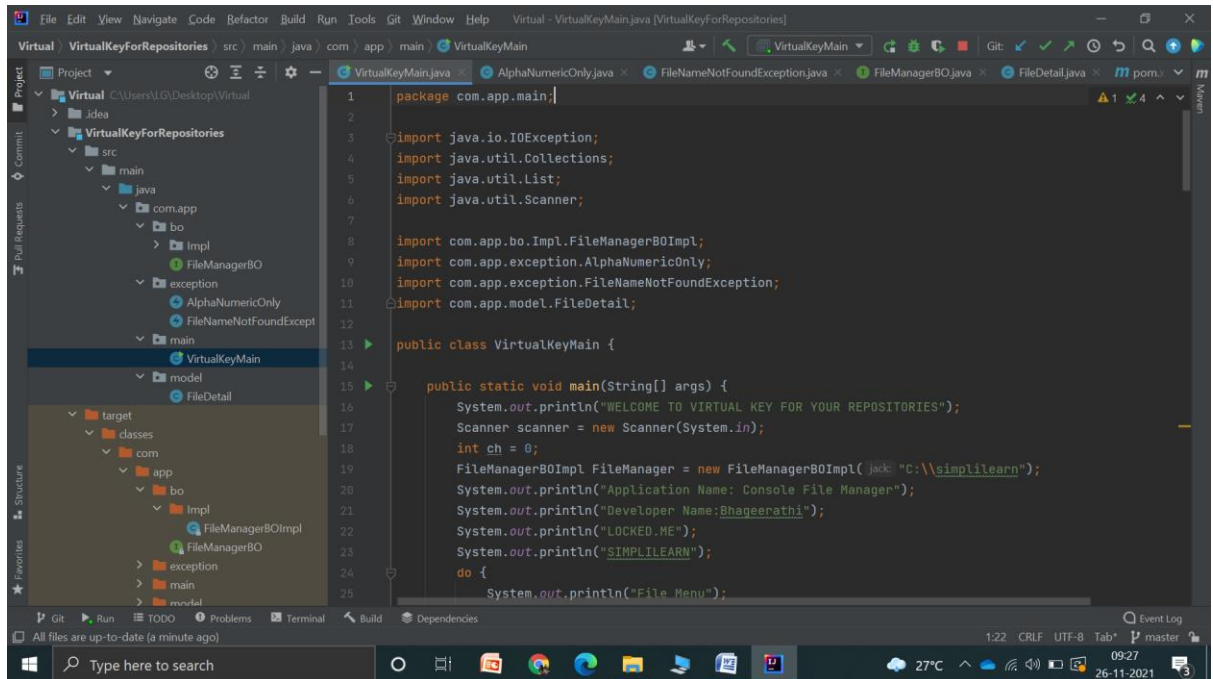
PROJECT GIT REPOSITORY:

Link to the GitHub Repository:

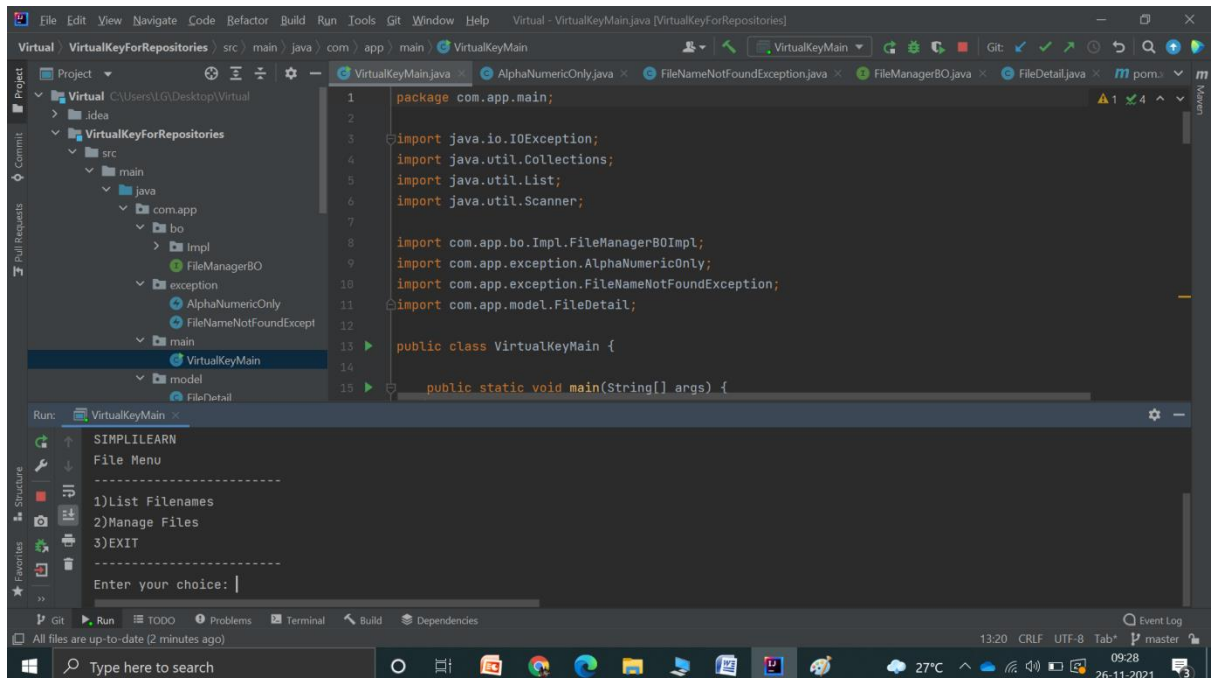
<https://github.com/bhageerathilas/Virtual-key-for-repositories.git>

❖ SCREENSHOTS OF PROGRAM OUTPUT:

WELCOME SCREEN:



```
1 package com.app.main;
2
3 import java.io.IOException;
4 import java.util.Collections;
5 import java.util.List;
6 import java.util.Scanner;
7
8 import com.app.bo.Impl.FileManagerBOImpl;
9 import com.app.exception.AlphaNumericOnly;
10 import com.app.exception.FileNameNotFoundException;
11 import com.app.model.FileDetail;
12
13 public class VirtualKeyMain {
14
15     public static void main(String[] args) {
16         System.out.println("WELCOME TO VIRTUAL KEY FOR YOUR REPOSITORIES");
17         Scanner scanner = new Scanner(System.in);
18         int ch = 0;
19         FileManagerBOImpl FileManager = new FileManagerBOImpl( jack: "C:\\\\simplilearn");
20         System.out.println("Application Name: Console File Manager");
21         System.out.println("Developer Name:Bhageerathi");
22         System.out.println("LOCKED.ME");
23         System.out.println("SIMPLILEARN");
24         do {
25             System.out.println("File Menu");
```



```
Run: VirtualKeyMain x
SIMPLILEARN
File Menu
-----
1)List Filenames
2)Manage Files
3)EXIT
-----
Enter your choice: |
```

```
Virtual - VirtualKeyMain.java [VirtualKeyForRepositories]
File Edit View Navigate Code Refactor Build Run Tools Git Window Help
Virtual - VirtualKeyMain.java
src \ main \ java \ com \ app \ main \ VirtualKeyMain
VirtualKeyMain
AlphaNumericOnly.java
FileNotFoundException.java
FileManagerBO.java
FileDetail.java
pom.xml
Run: VirtualKeyMain
Returning to main menu...
File Menu
-----
1)List Filenames
2)Manage Files
3)EXIT
-----
Enter your choice: 1
-----
File List
-----
Name | Length | Parent | Path
-----
SDK | 0 | C:\simplilearn | C:\simplilearn\SDK
ab | 0 | C:\simplilearn | C:\simplilearn\ab
java | 0 | C:\simplilearn | C:\simplilearn\java
program | 0 | C:\simplilearn | C:\simplilearn\program
-----
File Menu
-----
1)List Filenames
2)Manage Files
3)EXIT
-----
Type here to search
119:20 CRLF UTF-8 Tab* master
09:32
26-11-2021
```

```
Virtual - VirtualKeyMain.java [VirtualKeyForRepositories]
File Edit View Navigate Code Refactor Build Run Tools Git Window Help
Virtual - VirtualKeyMain.java
src \ main \ java \ com \ app \ main \ VirtualKeyMain
VirtualKeyMain
AlphaNumericOnly.java
FileNotFoundException.java
FileManagerBO.java
FileDetail.java
pom.xml
Run: VirtualKeyMain
Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 1
-----
Enter Filename: program
-----
Manage Files Menu
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: |
-----
Type here to search
145:20 CRLF UTF-8 Tab* master
09:35
26-11-2021
```

```
Virtual - VirtualKeyMain.java [VirtualKeyForRepositories]
Virtual VirtualKeyForRepositories src main java com app main VirtualKeyMain
Run: VirtualKeyMain
Enter Filename: program

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

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

```
Virtual - VirtualKeyMain.java [VirtualKeyForRepositories]
Virtual VirtualKeyForRepositories src main java com app main VirtualKeyMain
Run: VirtualKeyMain
-----
1)Add File
2)Delete File
3)Search File
4)Exit to main
-----
Enter your choice: 2
-----

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

THANK YOU FOR USING OUR APP

Process finished with exit code 0
```

Conclusion:

The file manager was created using the three-tier architecture. 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 compareTo method to help in sorting.