Final Project LockedMe Specifications

Class: Implement OOPS using JAVA with Data Structures and Beyond

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Application: LockedMe.com

Date: 8/8/2021

LockerApp

Contents

Project Description:

- This project focused on making a standalone app that would be used as a locker for files stored in a specific folder, in this case, the source folder. I wanted to keep the main method lightweight and keep most of the class variables hidden from the user since they won't be interacting with them other than for inputting text to fetch, add and delete files. For that reason, all variables, and methods other than the main method will be kept to private and static for self-reference since there are no other dependencies.

Java technologies utilized:

- Access modifiers by using the private keyword for methods and variables that the application will need but the user won't interact with.
- Static keywords for self-references since these are properties of the LockedMe app.
- Scanner was used for handling user input and closed using the finalize keyword at the end of the main method to make sure it closes properly.
- Exception handling was implementing by having the main method deal with the exceptions while using the throws keyword to let it know that the called methods will possibly throw exceptions.
- Return type void was used since most of the interaction is with the console and the program was segmented by screen options.
- In order to loop through the options a switch case was used to break up the file handling
- For each loop was used to cycle through the files in directory.
- Strings were used to hold data related to pathing and inputs.
- Parallel sorting used to keep files in ascending order.
- Linear search was used as the main method of searching.

Possible enhancements

- Once the app is available for more heavy-duty files, consider switch the array of files to an Array list to keep the fetching times constant.
- More modularity such as breaking down the second menu further into classes will help in future projects where these similar methods are used.

Unique Selling Points

This excellent application provides the following features to the customer:

- Ease of use, all the menus have user interaction information displayed on the console describing all the options available to the user.
- Security, all of the class variables are set to private, and resources closed and only accessible to the class itself. Only letting the main method access the multiple resources.
- Bullet proof, sentinel values are used for input validation and making sure the user is aware of possible mistakes during inputting data.

Sprint breakdown

Project Backlog

Code to display the welcome screen. It should display:

- Application name and the developer details
- The details of the user interface such as options displaying the user interaction information
- Features to accept the user input to select one of the options listed

The first option should return the current file names in ascending order. The root directory can be either empty or contain few files or folders in it

The second option should return the details of the user interface such as options displaying the following:

- Add a file to the existing directory list
  - You can ignore the case sensitivity of the file names
- Delete a user specified file from the existing directory list
  - You can add the case sensitivity on the file name in order to ensure that the right file is deleted from the directory list
  - Return a message if FNF (File not found)
- Search a user specified file from the main directory
  - You can add the case sensitivity on the file name to retrieve the correct file
  - Display the result upon successful operation
  - Display the result upon unsuccessful operation
- Option to navigate back to the main context

There should be a third option to close the application

Implement the appropriate concepts such as exceptions, collections, and sorting techniques for source code optimization and increased performance

Sprint 1 Backlog

Code to display the welcome screen. It should display:

Application name and the developer details

The details of the user interface such as options displaying the user interaction information

Features to accept the user input to select one of the options listed

The first option should return the current file names in ascending order. The root directory can be either empty or contain few files or folders in it

Sprint 1: Story 1	Sprint 1: Story 2
Code to display the welcome screen. It should display: Application name and the developer details The details of the user interface such as options displaying the user interaction	The first option should return the current file names in ascending order. The root directory can be either empty or contain few files or folders in it.

Sprint 2 Backlog

The second option should return the details of the user interface such as options displaying the following:

Add a file to the existing directory list

You can ignore the case sensitivity of the file names

Delete a user specified file from the existing directory list

You can add the case sensitivity on the file name in order to ensure that the right file is deleted from the directory list

Return a message if FNF (File not found)

Search a user specified file from the main directory

You can add the case sensitivity on the file name to retrieve the correct file

Display the result upon successful operation

Display the result upon unsuccessful operation

Option to navigate back to the main context

There should be a third option to close the application

Implement the appropriate concepts such as exceptions, collections, and sorting techniques for source code optimization and increased performance

Sprint 2: Story 1

The second option should return the details of the user interface such as options displaying the following:

Add a file to the existing directory list

You can ignore the case sensitivity of the file names

Delete a user specified file from the existing directory list

You can add the case sensitivity on the file name in order to ensure that the right file is deleted from the directory list

Return a message if FNF (File not found)

Search a user specified file from the main directory

You can add the case sensitivity on the file name to retrieve the correct file

Display the result upon successful operation

Display the result upon unsuccessful

Sprint 2 Task 1: Add a file to the existing directory list

Sprint 2 Task 2: Add a file to the existing directory list

Sprint 2 Task 3: Search a user specified file from the main directory.

Sprint 2: Story 2

Option to navigate back to the main context

There should be a third option to close the application

Implement the appropriate concepts such as exceptions, collections, and sorting techniques for source code optimization and increased performance

Finished Product

Improvements on the UI.

Tweaks to Sprint 2 Task 1 to add content to the created file.

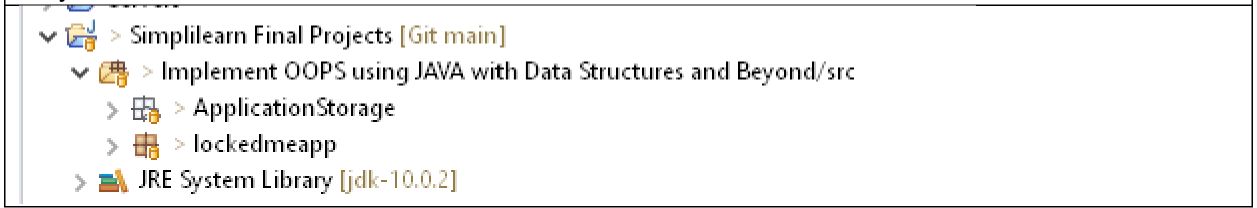
Comments to the program.

Program Details:

GitHub:

https://github.com/ProgrammedPeinado/PracticeJava/blob/cd8e6f74265e1b614b1c580f7a1f8c478b07f711/Simplilearn/Final%20Projects/Implement%20OOPS%20using%20JAVA%20with%20Data%20Structures%20and%20Beyond/src/lockedmeapp/LockedMe.java

Project Folder

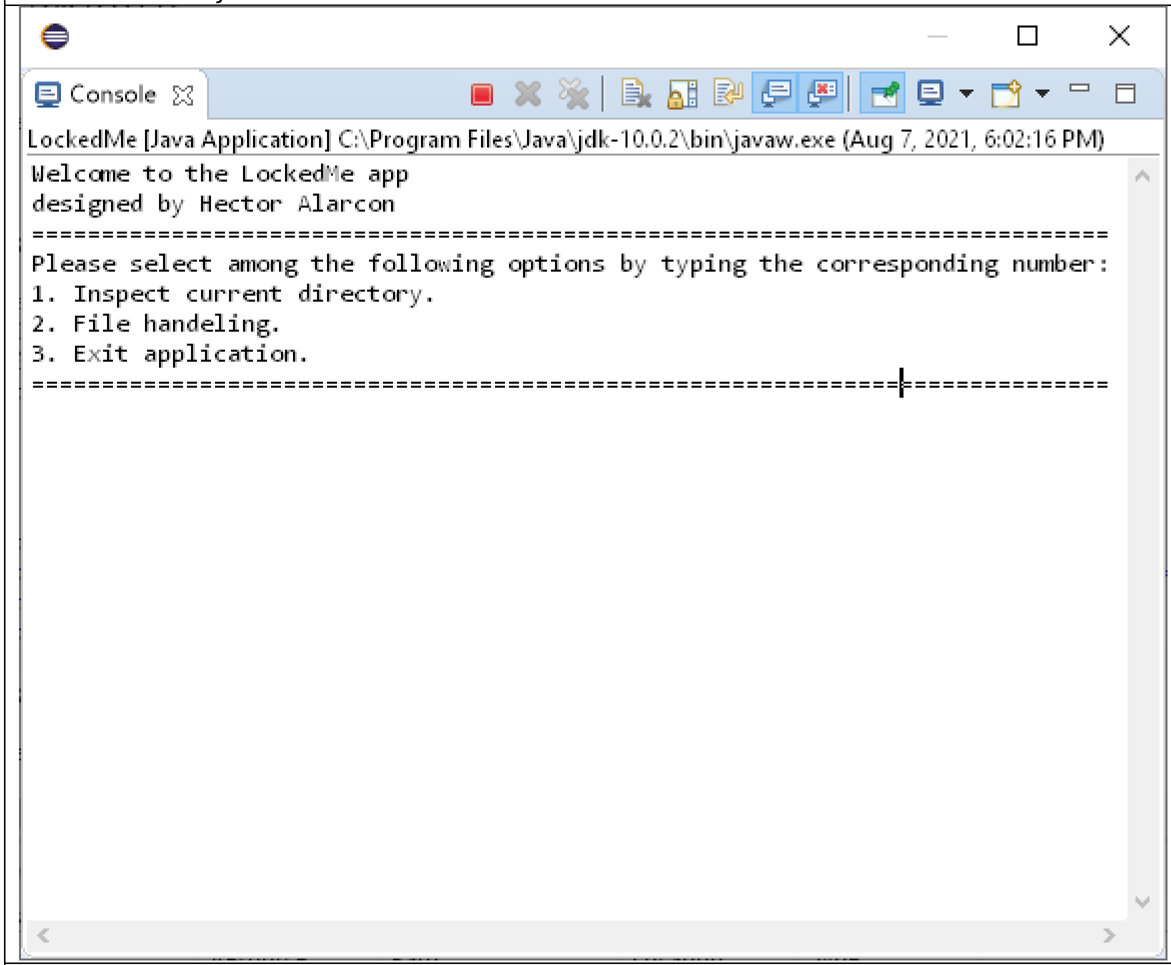


```
v Simplilearn Final Projects [Git main]
  v Implement OOPS using JAVA with Data Structures and Beyond/src
    > ApplicationStorage
    > lockedmeapp
  > JRE System Library [jdk-10.0.2]
```

Program

```
private static void mainScreen() throws Exception
      {
            //Mainscreen user interaction information and welcome message.
            System.out.print("Welcome to the LockedMe app\ndesigned by Hector
Alarcon\n");

      System.out.println("========================================================
=====================");
            System.out.println("Please select among the following options by
typing the corresponding number:");
            System.out.println("1. Inspect current directory.");
            System.out.println("2. File handeling.");
            System.out.println("3. Exit application.");

      System.out.print("==========================================================
===================\n");
            sel = input.nextLine();
            System.out.println();
            updateList();
            Arrays.parallelSort(dir); //Updating the stored files if any had been
modified.

            //Sentinel value logic, making sure user inputs a number
corresponding to the options.
            while(!sel.startsWith("1") && !sel.startsWith("2")
&& !sel.startsWith("3"))
            {
                  System.out.println("INVALID INPUT");

      System.out.println("========================================================
=====================");
                  System.out.println("Please select among the following options
by typing the corresponding number:");
                  System.out.println("1. Inspect current directory.");
                  System.out.println("2. File handeling.");
                  System.out.println("3. Exit application.");
```

```
		System.out.print("=========================================================
===================\n");
			sel = input.nextLine();
			System.out.println();
		}
		
		//Mainscreen options
		if(sel.startsWith("1"))
		{
			firstOption();
		}
		else if(sel.startsWith("2"))
		{
			secondOption();
		}
		else if(sel.startsWith("3"))
		{
			System.out.println("Exiting..");
		}
		}
```



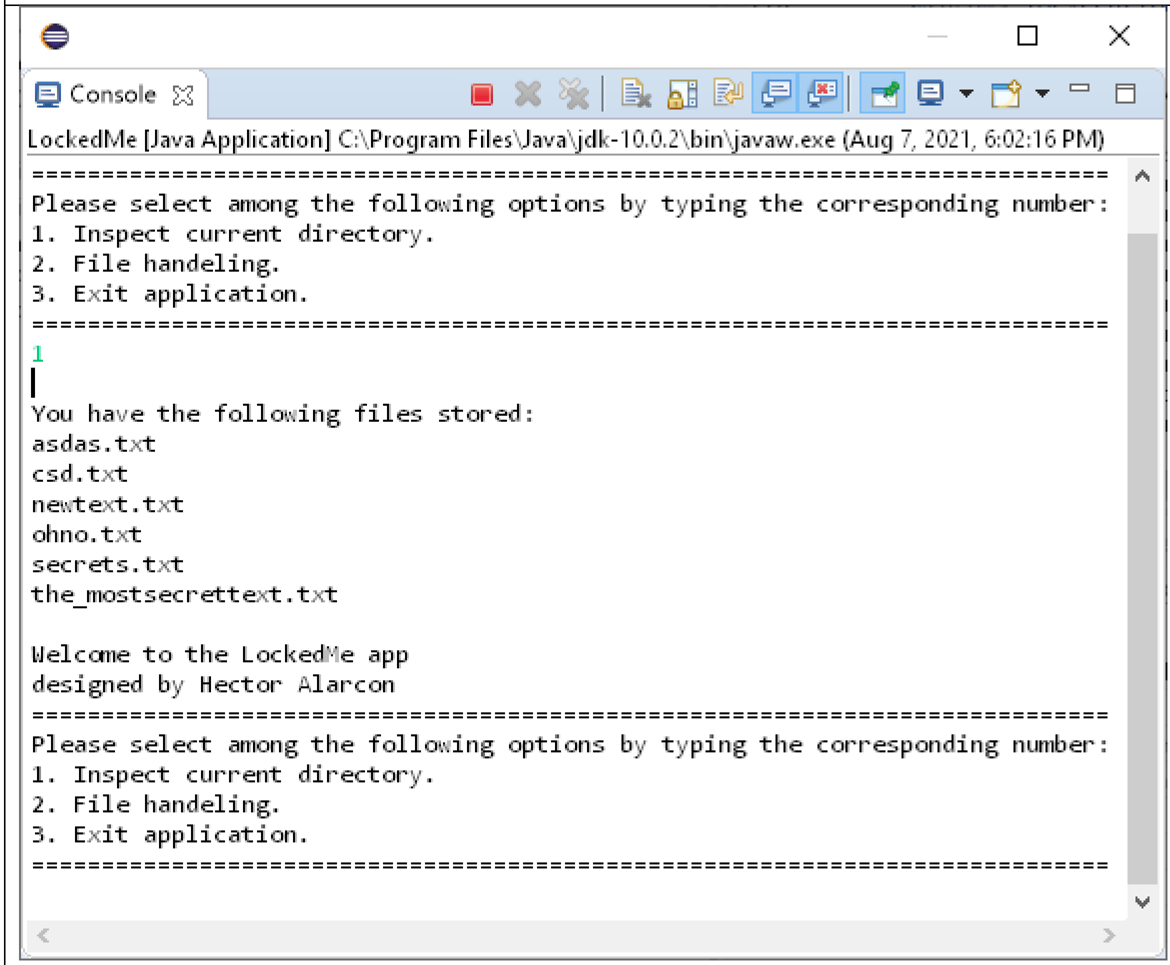
LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:02:16 PM)

```
Welcome to the LockedMe app
designed by Hector Alarcon
=============================================================================
Please select among the following options by typing the corresponding number:
1. Inspect current directory.
2. File handeling.
3. Exit application.
=============================================================================
```

Main Menu Screenshot

Program

```
private static void firstOption() throws Exception
	{
		//If directory is not empty, display the file names, otherwise let the user known its empty.
		if(dir != null)
		{
			System.out.println("You have the following files stored:");
			for(File f : dir)
				System.out.println(f.getName());
		}
		else
		{
			System.out.println("The current repository is empty.\n\n");
		}
		System.out.print("\n");
		mainScreen();
	}
```



LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:02:16 PM)

```
============================================================================
Please select among the following options by typing the corresponding number:
1. Inspect current directory.
2. File handeling.
3. Exit application.
============================================================================
1

You have the following files stored:
asdas.txt
csd.txt
newtext.txt
ohno.txt
secrets.txt
the_mostsecrettext.txt

Welcome to the LockedMe app
designed by Hector Alarcon
============================================================================
Please select among the following options by typing the corresponding number:
1. Inspect current directory.
2. File handeling.
3. Exit application.
============================================================================
```

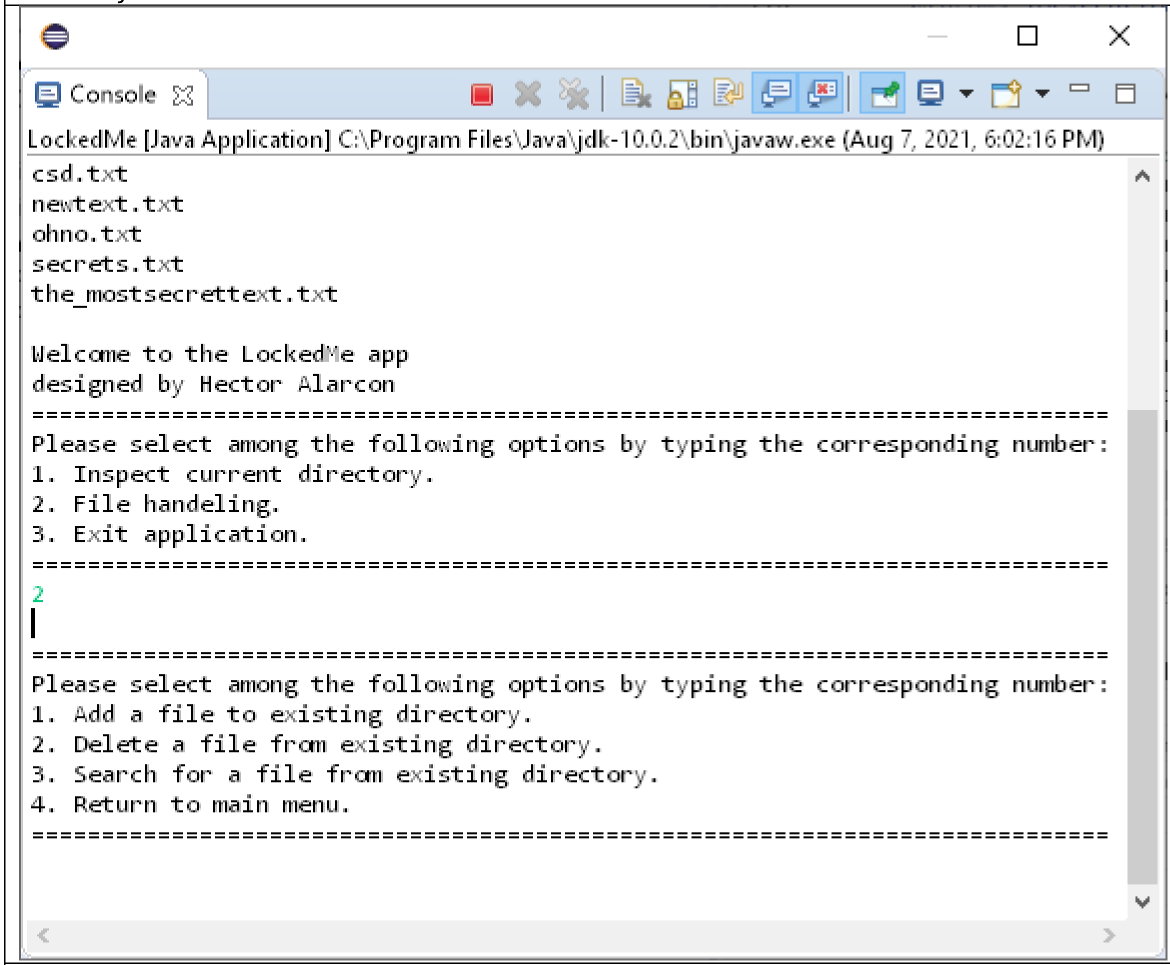
First Option-Files in directory Screenshot

Program

```
private static void secondOption() throws IOException, Exception
	{
		//Second option user interaction information.

	System.out.println("============================================================
=====================");
		System.out.println("Please select among the following options by
typing the corresponding number:");
		System.out.println("1. Add a file to existing directory.");
		System.out.println("2. Delete a file from existing directory.");
		System.out.println("3. Search for a file from existing directory.");
		System.out.println("4. Return to main menu.");

	System.out.println("============================================================
=====================\n");
		sel = input.nextLine();
		System.out.println();

		//Sentinel value logic, making sure user inputs a number
corresponding to the options.
		while(sel.charAt(0) != '1' && sel.charAt(0) != '2' &&
sel.charAt(0) != '3' && sel.charAt(0) != '4')
		{
			System.out.println("INVALID INPUT");

	System.out.println("============================================================
=====================");
			System.out.println("Please select among the following options
by typing the corresponding number:");
			System.out.println("1. Add a file to existing directory.");
			System.out.println("2. Delete a file from existing
directory.");

			System.out.println("3. Search for a file from existing
directory.");

			System.out.println("4. Return to main menu.");

	System.out.println("============================================================
=====================\n");
			sel = input.nextLine();
			System.out.println();
		}

		switch(sel.charAt(0))
		{
			case('1'):
			{
				boolean finished = false;

				System.out.println("Please type the name of the new
file:\n");
				sel = input.nextLine();
				System.out.println();
```

```
                            File upload = new
File(storage.getAbsoluteFile()+"\\"+sel.toLowerCase());
                            PrintWriter pw = new
PrintWriter(upload.getAbsoluteFile());

                            System.out.println("Proceeds to type in the content of
the file:");

        System.out.println("==========================================================
======================");
                            while(!finished)
                            {
                                    pw.println(input.nextLine());

                                    System.out.println("If you are done, please type
"+"Exit"+" otherwise, press Enter.");
                                    if(input.nextLine().contentEquals("Exit"))
                                    {
                                            finished = true;
                                    }
                            }

        System.out.println("==========================================================
=====================\n");



                            //Giving confirmation to the user about whether or not
the operation was successful.
                            System.out.println("File created successfully.\n");

                            //Updating the list, re-sorting, and closing the
writer.Back to menu.
                            pw.close();
                            updateList();
                            Arrays.parallelSort(dir);
                            secondOption();
                            break;
                    }
                    case('2'):
                    {
                            System.out.println("Please type the name of the file you
want to delete:");

        System.out.println("==========================================================
=====================\n");
                            sel = input.nextLine();
                            System.out.println();
                            boolean deleted = false;
                            int i=1;


                            for(File f: dir)
                            {
                                    if(f.getName().equals(sel))
```

```
                                        {
                                                f.delete();
                                                deleted = true;
                                                System.out.println("File deleted 
successfully.\n");
                                        }
                                        else if(i == dir.length-1 && deleted == false)
                                        {
                                                System.out.println("File not found.\n");
                                        }
                                        i++;
                                }
                                //No need to sort after elimination since the rest of 
the files will be sorted already
                                //Updating the list. Back to menu.
                                updateList();
                                secondOption();
                                break;
                        }
                        case('3'):
                        {
                                System.out.println("Please type the name of the file you 
are looking for:");
                                
        System.out.println("=============================================================
=====================\n");
                                sel = input.nextLine();
                                System.out.println();
                                boolean found = false;
                                int i=0;
                                
                                for(File f: dir)
                                {
                                        if(f.getName().equals(sel))
                                        {
                                                found = true;
                                                System.out.println(dir[i].getName()+" has 
been found in position "+i+" of the directory.\n");
                                        }
                                        else if(i == dir.length-1 && found == false)
                                        {
                                                System.out.println("File not found.\n");
                                        }
                                        i++;
                                }
                                
                                //Back to menu
                                secondOption();
                                break;
                        }
                        case('4'):
                        {
                                //Back to mainscreen
                                mainScreen();
                                break;
                        }
                }
        }
```



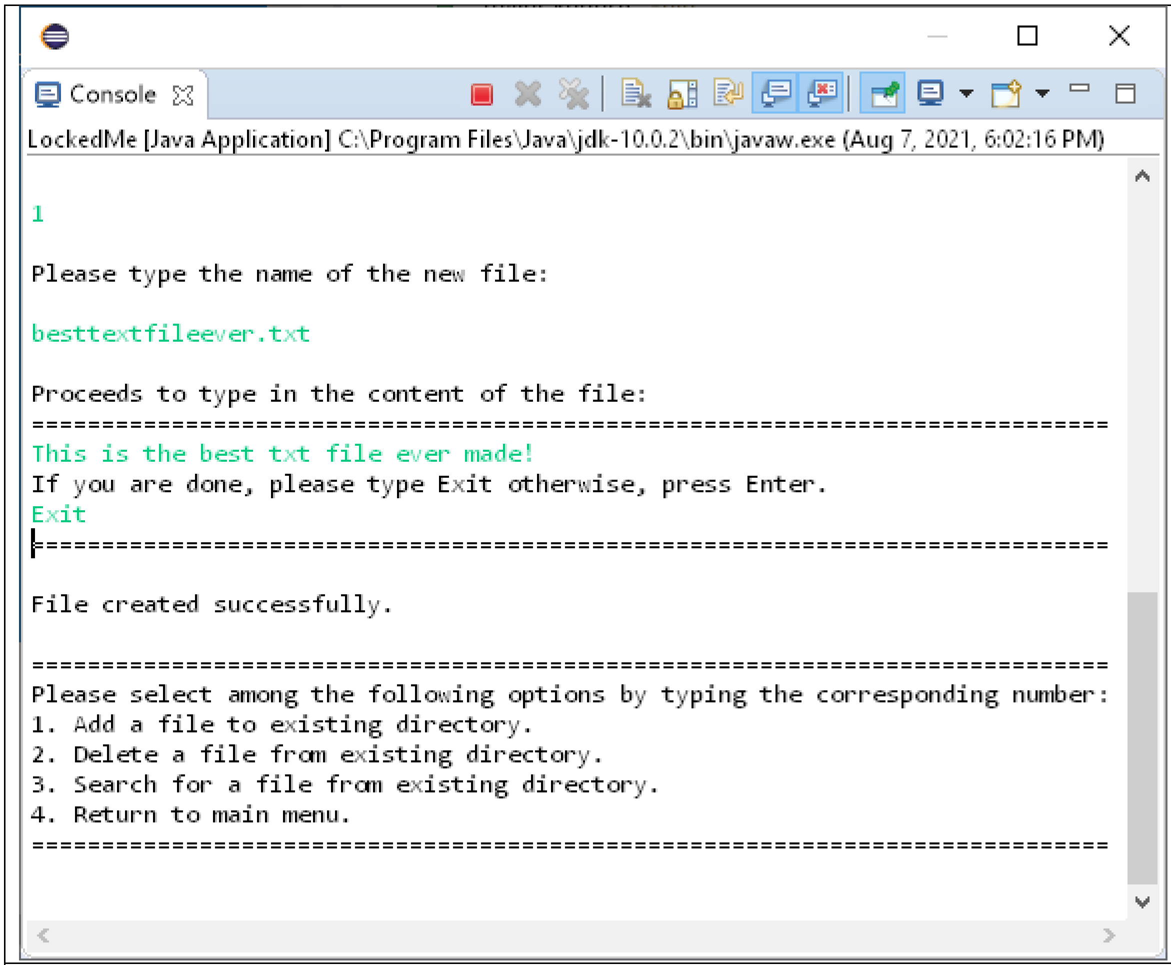
LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:02:16 PM)

```
csd.txt
newtext.txt
ohno.txt
secrets.txt
the_mostsecrettext.txt

Welcome to the LockedMe app
designed by Hector Alarcon
=============================================================================
Please select among the following options by typing the corresponding number:
1. Inspect current directory.
2. File handeling.
3. Exit application.
=============================================================================
2

=============================================================================
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
=============================================================================
```

Second Option Screenshot

Program

```
case('1'):
                    {
                          boolean finished = false;

                          System.out.println("Please type the name of the new 
file:\n");
                          sel = input.nextLine();
                          System.out.println();
                          File upload = new 
File(storage.getAbsoluteFile()+"\\"+sel.toLowerCase());
                          PrintWriter pw = new 
PrintWriter(upload.getAbsoluteFile());

                          System.out.println("Proceeds to type in the content of 
the file:");

      System.out.println("=========================================================
=====================");
                          while(!finished)
                          {
                                pw.println(input.nextLine());

                                System.out.println("If you are done, please type 
"+"Exit"+" otherwise, press Enter.");
                                if(input.nextLine().contentEquals("Exit"))
                                {
                                      finished = true;
                                }
                          }

      System.out.println("=========================================================
=====================\n");



                          //Giving confirmation to the user about whether or not 
the operation was successful.
                          System.out.println("File created successfully.\n");

                          //Updating the list, re-sorting, and closing the 
writer.Back to menu.
                          pw.close();
                          updateList();
                          Arrays.parallelSort(dir);
                          secondOption();
                          break;
                    }
```



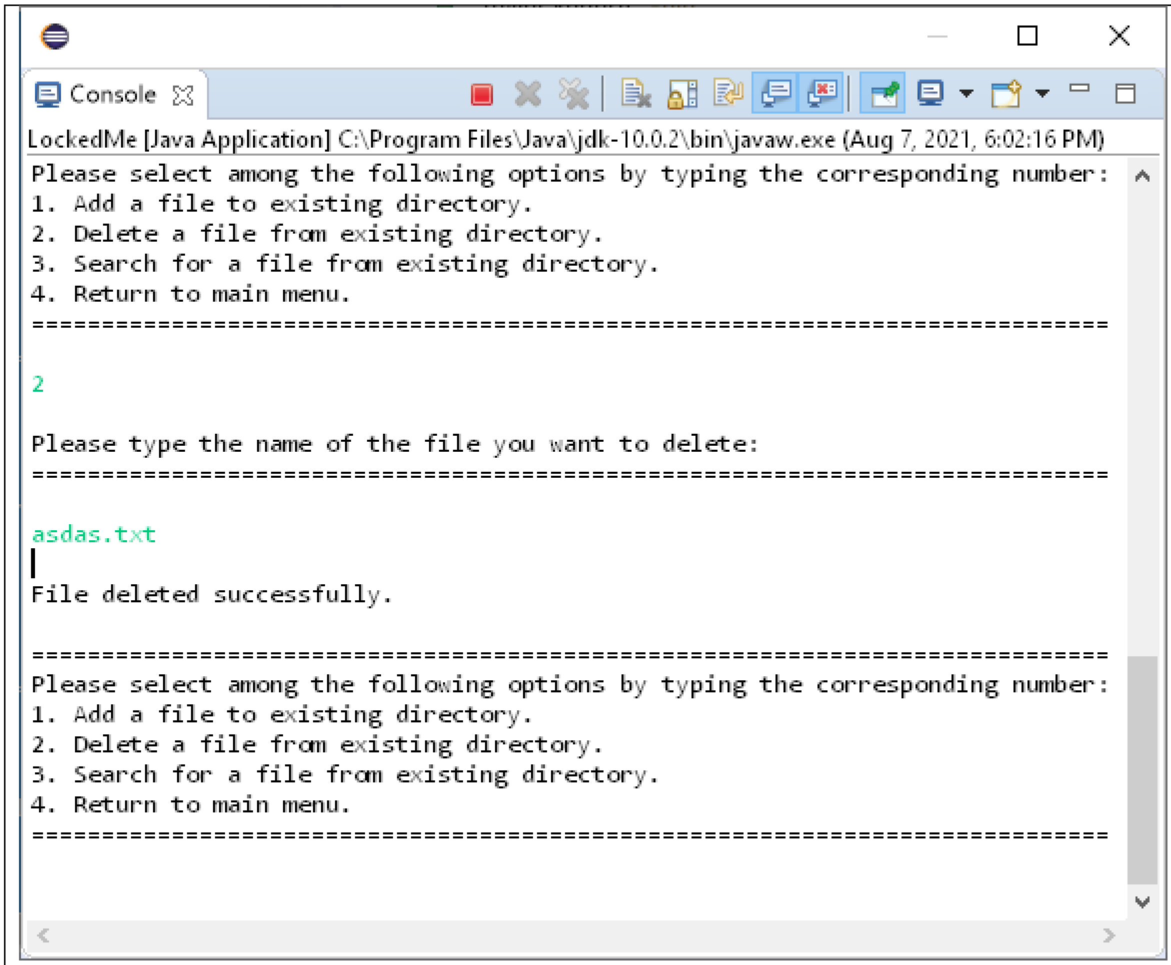
LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:02:16 PM)

```
1

Please type the name of the new file:

besttextfileever.txt

Proceeds to type in the content of the file:
==============================================================================
This is the best txt file ever made!
If you are done, please type Exit otherwise, press Enter.
Exit
==============================================================================

File created successfully.

==============================================================================
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
==============================================================================
```

Second Option – First Business order, add files Screenshot

Program

```
case('2'):
                    {
                          System.out.println("Please type the name of the file you 
want to delete:");
      
      System.out.println("==============================================================
=====================\n");
                          sel = input.nextLine();
                          System.out.println();
                          boolean deleted = false;
                          int i=1;
                          
                          
                          for(File f: dir)
                          {
                                if(f.getName().equals(sel))
                                {
                                      f.delete();
                                      deleted = true;
                                      System.out.println("File deleted 
successfully.\n");
                                }
                                else if(i == dir.length-1 && deleted == false)
                                {
                                      System.out.println("File not found.\n");
                                }
                                i++;
                          }
                          //No need to sort after elimination since the rest of 
the files will be sorted already
                          //Updating the list. Back to menu.
                          updateList();
                          secondOption();
                          break;
                    }
```

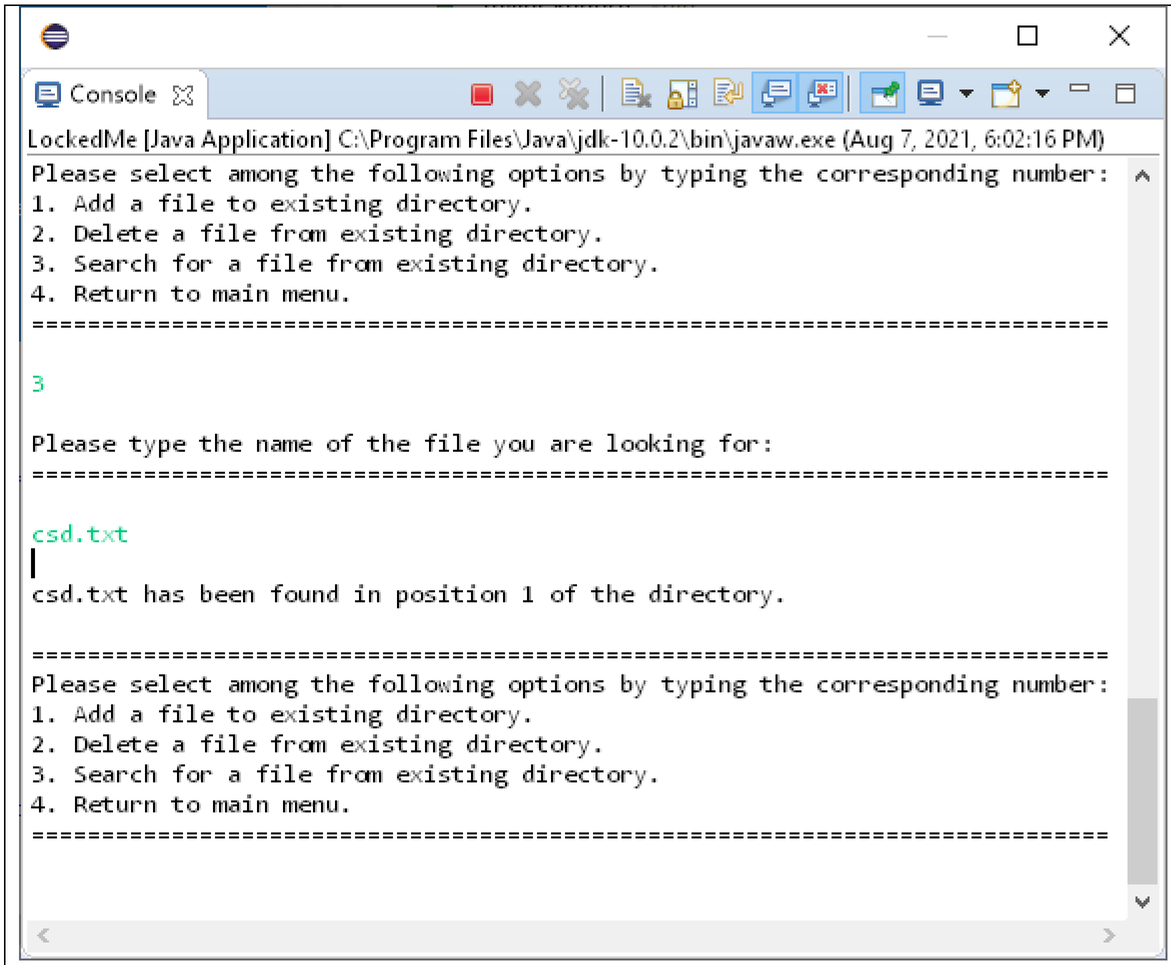


```
LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:02:16 PM)
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
============================================================================

2

Please type the name of the file you want to delete:
============================================================================

asdas.txt

File deleted successfully.

============================================================================
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
============================================================================
```

Second Option – Second Business order, delete files Screenshot

Program

```
case('3'):
                    {
                          System.out.println("Please type the name of the file you 
are looking for:");

      System.out.println("===========================================================
=====================\n");
                          sel = input.nextLine();
                          System.out.println();
                          boolean found = false;
                          int i=0;

                          for(File f: dir)
                          {
                                if(f.getName().equals(sel))
                                {
                                      found = true;
                                      System.out.println(dir[i].getName()+" has 
been found in position "+i+" of the directory.\n");
                                }
                                else if(i == dir.length-1 && found == false)
                                {
                                      System.out.println("File not found.\n");
                                }
                                i++;
                          }

                          //Back to menu
                          secondOption();
                          break;
                    }
```

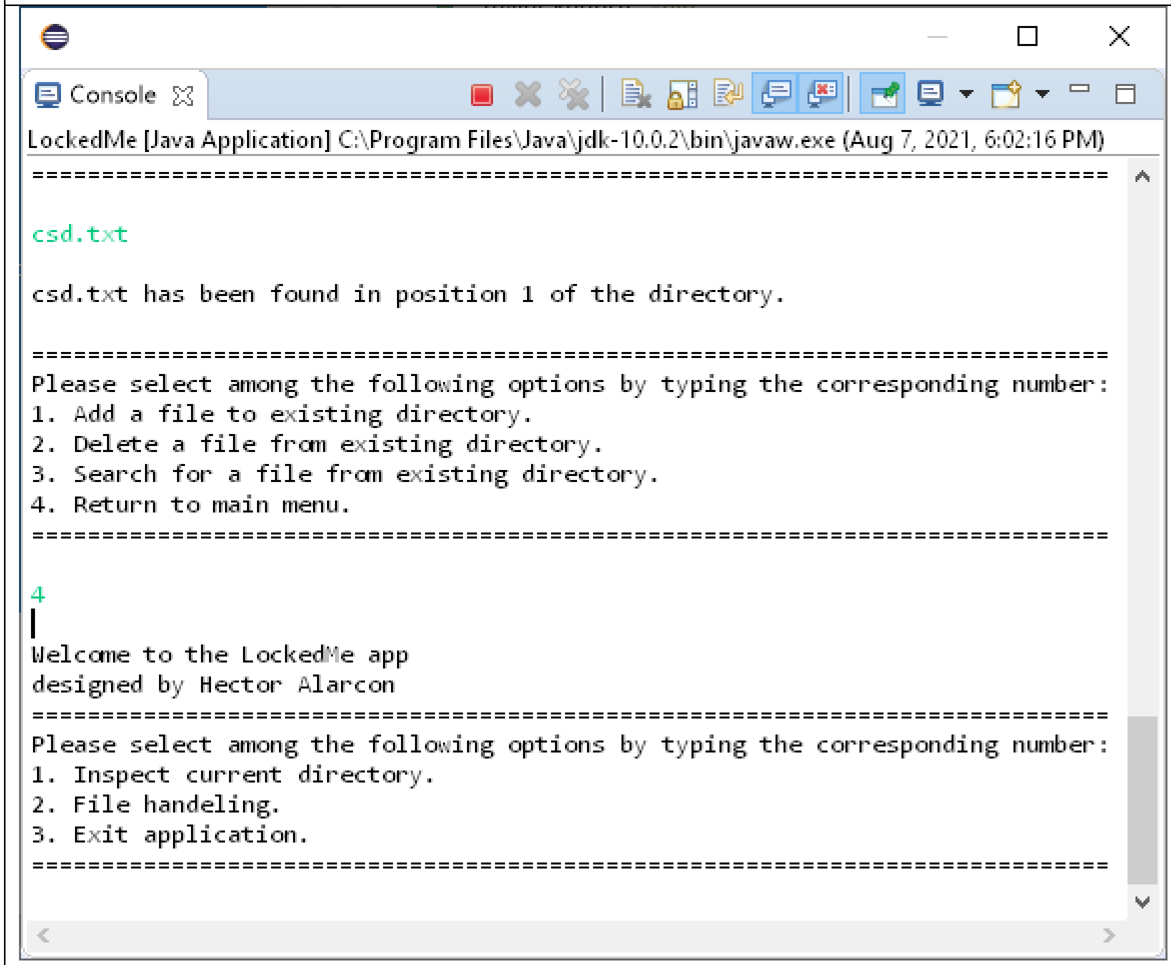


```
LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:02:16 PM)
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
=============================================================================

3

Please type the name of the file you are looking for:
=============================================================================

csd.txt

csd.txt has been found in position 1 of the directory.

=============================================================================
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
=============================================================================
```

Second Option – Third Business order, search files Screenshot

Program

```
case('4'):
                    {
                            //Back to mainscreen
                            mainScreen();
                            break;
                    }
```



Console

LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:02:16 PM)

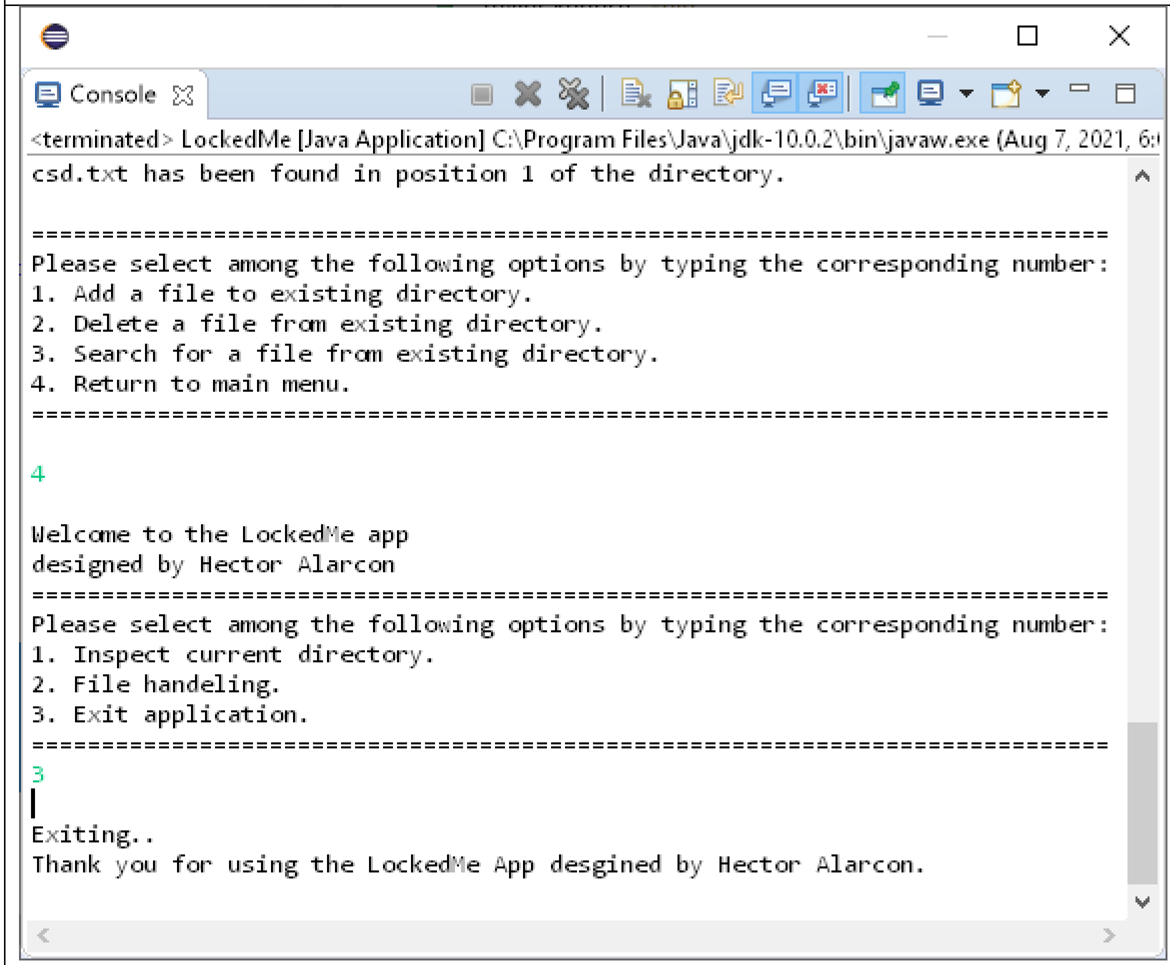
```
============================================================================

csd.txt

csd.txt has been found in position 1 of the directory.

============================================================================
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
============================================================================

4

Welcome to the LockedMe app
designed by Hector Alarcon
============================================================================
Please select among the following options by typing the corresponding number:
1. Inspect current directory.
2. File handeling.
3. Exit application.
============================================================================
```

Second Option – Forth Business order, back to main Screenshot

Program

```
finally
             {
                    System.out.println("Thank you for using the LockedMe App
desgined by Hector Alarcon.");
                    //Closing the scanner object and exiting the application.
                    input.close();
                    System.exit(0);
```

```
                }
```



Console
<terminated> LockedMe [Java Application] C:\Program Files\Java\jdk-10.0.2\bin\javaw.exe (Aug 7, 2021, 6:

```
csd.txt has been found in position 1 of the directory.

==============================================================================
Please select among the following options by typing the corresponding number:
1. Add a file to existing directory.
2. Delete a file from existing directory.
3. Search for a file from existing directory.
4. Return to main menu.
==============================================================================

4

Welcome to the LockedMe app
designed by Hector Alarcon
==============================================================================
Please select among the following options by typing the corresponding number:
1. Inspect current directory.
2. File handeling.
3. Exit application.
==============================================================================
3

Exiting..
Thank you for using the LockedMe App desgined by Hector Alarcon.
```

Third Option – Exit application