**SOURCE CODE FOR BUGFIX PROGRAM**

**import** java.util.ArrayList;

**import** java.util.Scanner;

**import** java.util.Collections;

**public** **class** Main {

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

/\*System.out.println("Hello World!");\*/

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

System.***out***.println("\tWelcome to TheDesk \n");

System.***out***.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

*optionsSelection*();

}

**private** **static** **void** optionsSelection() {

String[] arr = {"1. I wish to review my expenditure",

"2. I wish to add my expenditure",

"3. I wish to delete my expenditure",

"4. I wish to sort the expenditures",

"5. I wish to search for a particular expenditure",

"6. Close the application"

};

**int**[] arr1 = {1,2,3,4,5,6};

**int** slen = arr1.length;

**for**(**int** i=0; i<slen;i++){

System.***out***.println(arr[i]);

// display the all the Strings mentioned in the String array

}

ArrayList<Integer> arrlist = **new** ArrayList<Integer>();

ArrayList<Integer> expenses = **new** ArrayList<Integer>();

expenses.add(1000);

expenses.add(2300);

expenses.add(45000);

expenses.add(32000);

expenses.add(110);

expenses.addAll(arrlist);

System.***out***.println("\nEnter your choice:\t");

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

**int** options = sc.nextInt();

**for**(**int** j=1;j<=slen;j++){

**if**(options==j){

**switch** (options){

**case** 1:

System.***out***.println("Your saved expenses are listed below: \n");

System.***out***.println(expenses+"\n");

*optionsSelection*();

**break**;

**case** 2:

System.***out***.println("Enter the value to add your Expense: \n");

**int** value = sc.nextInt();

expenses.add(value);

System.***out***.println("Your value is updated\n");

expenses.addAll(arrlist);

System.***out***.println(expenses+"\n");

*optionsSelection*();

**break**;

**case** 3:

System.***out***.println("You are about the delete all your expenses! \nConfirm again by selecting the same option...\n");

**int** con\_choice = sc.nextInt();

**if**(con\_choice==options){

expenses.clear();

System.***out***.println(expenses+"\n");

System.***out***.println("All your expenses are erased!\n");

} **else** {

System.***out***.println("Oops... try again!");

}

*optionsSelection*();

**break**;

**case** 4:

*sortExpenses*(expenses);

*optionsSelection*();

**break**;

**case** 5:

*searchExpenses*(expenses);

*optionsSelection*();

**break**;

**case** 6:

*closeApp*();

**break**;

**default**:

System.***out***.println("You have made an invalid choice!");

**break**;

}

}

}

}

**private** **static** **void** closeApp() {

System.***out***.println("Closing your application... \nThank you!");

}

**private** **static** **void** searchExpenses(ArrayList<Integer> expenses) {

//int leng = arrayList.size();

System.***out***.println("Enter the expense you need to search:\t");

//Complete the method

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

**int** val = sc.nextInt();

**boolean** ans = expenses.contains(val);

**if** (ans)

System.***out***.println("The expenses contains: "+ val+ "\n\n"+ expenses+ "\n");

**else**

System.***out***.println("The expenses does not contains:"+ val + "\n\n" + expenses + "\n");

}

**private** **static** **void** sortExpenses(ArrayList<Integer> expenses) {

// int arrlength = arrlist.size();

//Complete the method. The expenses should be sorted in ascending order.

Collections.*sort*(expenses);

System.***out***.println("After Sorting, the expenditures are:\n"+ "\n"+ expenses + "\n");

}

}

**OUTPUT**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Welcome to TheDesk

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. I wish to review my expenditure

2. I wish to add my expenditure

3. I wish to delete my expenditure

4. I wish to sort the expenditures

5. I wish to search for a particular expenditure

6. Close the application

Enter your choice:

1

Your saved expenses are listed below:

[1000, 2300, 45000, 32000, 110]

1. I wish to review my expenditure

2. I wish to add my expenditure

3. I wish to delete my expenditure

4. I wish to sort the expenditures

5. I wish to search for a particular expenditure

6. Close the application

Enter your choice:

2

Enter the value to add your Expense:

300

Your value is updated

[1000, 2300, 45000, 32000, 110, 300]

1. I wish to review my expenditure

2. I wish to add my expenditure

3. I wish to delete my expenditure

4. I wish to sort the expenditures

5. I wish to search for a particular expenditure

6. Close the application

Enter your choice:

4

After Sorting, the expenditures are:

[110, 1000, 2300, 32000, 45000]

1. I wish to review my expenditure

2. I wish to add my expenditure

3. I wish to delete my expenditure

4. I wish to sort the expenditures

5. I wish to search for a particular expenditure

6. Close the application

Enter your choice:

5

Enter the expense you need to search:

2300

The expenses contains: 2300

[1000, 2300, 45000, 32000, 110]

1. I wish to review my expenditure

2. I wish to add my expenditure

3. I wish to delete my expenditure

4. I wish to sort the expenditures

5. I wish to search for a particular expenditure

6. Close the application

Enter your choice:

5

Enter the expense you need to search:

300

The expenses does not contains:300

[1000, 2300, 45000, 32000, 110]

1. I wish to review my expenditure

2. I wish to add my expenditure

3. I wish to delete my expenditure

4. I wish to sort the expenditures

5. I wish to search for a particular expenditure

6. Close the application

Enter your choice:

6

Closing your application...

Thank you!