Bug Fixing Program

```java
package bugfixing;

import java.util.ArrayList;
import java.util.Collection;
import java.util.Collections;
import java.util.Scanner;

public class bugfixing {

    private static Object expenses;
    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();
```

```
44          for(int j=1;j<=slen;j++){
45              if(options==j){
46                  switch (options){
47                      case 1:
48                          System.out.println("Your saved expenses are listed below: \n");
49                          System.out.println(expenses+"\n");
50                          optionsSelection();
51                          break;
52                      case 2:
53                          System.out.println("Enter the value to add your Expense: \n");
54                          int value = sc.nextInt();
55                          expenses.add(value);
56                          System.out.println("Your value is updated\n");
57                          expenses.addAll(arrlist);
58                          System.out.println(expenses+"\n");
59                          optionsSelection();
60
61                          break;
62                      case 3:
63                          System.out.println("You are about the delete all your expenses!
64                          int con_choice = sc.nextInt();
65                          if(con_choice==options){
66                                 expenses.clear();
67                              System.out.println(expenses+"\n");
68                              System.out.println("All your expenses are erased!\n");
69                          } else {
70                              System.out.println("Oops... try again!");
71                          }
72                          optionsSelection();
73                          break;
74                      case 4:
75                          sortExpenses(expenses);
76                          optionsSelection();
77                          break;
78                      case 5:
79                          searchExpenses(expenses);
80                          optionsSelection();
81                          break;
82                      case 6:
83                          closeApp();
84                          break;
85                      default:
86                          System.out.println("You have made an invalid choice!");
87                          break;
88                  }
89              }
90          }
91
92      }
```

```
93      private static void closeApp() {
94          System.out.println("Closing your application... \nThank you!");
95              }
96      private static void searchExpenses(ArrayList<Integer> arrayList) {
97          int leng = arrayList.size();
98          System.out.println("Enter the expense you need to search:\t");
99
100         //Complete the method
101
102         Scanner s1 = new Scanner(System.in);
103
104         int d1 = s1.nextInt();
105         boolean f3 = arrayList.contains(d1);
106
107         if(f3)
108
109             System.out.println("Value is Found"+  " " +d1);
110
111         else
112
113             System.out.println("Not Found");
114
115     }
116
```

```
117     private static void sortExpenses(ArrayList<Integer> arrayList) {
118         int arrlength =  arrayList.size();
119         //Complete the method. The expenses should be sorted in ascending order.
120          Collections.sort(arrayList);
121          System.out.println("Your Sorting process is completed , now you can see your e
122          System.out.println("Your Sorting elements are = " + " "+arrayList);
123
124
125
126
127
128     }
129 }
```

OutPut Of the program :-

When we run the program : -

```
**************************************

        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:
```

- ***Here showing all expenses :-***

```
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
```

- ***Here expenses are updated :-***

```
1111
Your value is updated

[1000, 2300, 45000, 32000, 110, 1111]

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:
```

- ***Here expenses are Sorted : -***

```
Enter your choice:
4
Your Sorting process is completed , now you can see your elements in sorted manner.
Your Sorting elements 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:
```

- ***Here search any expenses :-***

```
Enter your choice:
5
Enter the expense you need to search:
1000
Value is Found 1000
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:
```

- ***By using this option to close the program :-***

```
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!
```

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