

## Bug Fixing in the Application

### Step 1:

Fixed an error in the welcome statement which missed a space.

### Step 2:

Removed the for loop with a while loop and removed the if statement which might be unnecessary at that place.

### Step 3:

Instead calling the operationsSelection() method each time in the options of Switch case, provided the options inside the cases themselves.

### Step 4:

In the default case of Switch statement, provided the option to enter a valid choice again.

### Step 5:

Completed the searchExpenses() method for searching the given amount in the expenses list with the following code. Used the simple search algorithm with List iterator to find whether the element exists or not.

```
static void searchExpenses(ArrayList<Integer> arrayList) {  
    //Complete the method  
    System.out.println("Enter the expense you need to search:\t");  
    Scanner sc= new Scanner(System.in);  
    int exp= sc.nextInt(); int f=0;  
    //Checking if the element is present  
    ListIterator<Integer> itr= arrayList.listIterator();  
  
    if(arrayList.isEmpty()){  
        System.out.println("The given amount "+exp+" is not present in the expenses list\n");  
        return;  
    }  
  
    else{  
        while(itr.hasNext()==true){  
            if(exp==itr.next()){  
                f=1;  
                System.out.println("The given amount "+exp+" is present in the expenses list\n");  
                return;  
            }  
        }  
    }  
  
    if(f==0){  
        System.out.println("The given amount "+exp+" is not present in the expenses list\n");  
        return;  
    }  
}
```

### Step 6:

Completed sortExpenses() method with Quicksort algorithm to sort the elements. Used compareTo() and swap() method from the Collections framework for this implementation.

```
static void searchExpenses(ArrayList<Integer> arrayList) {  
    //Complete the method  
    System.out.println("Enter the expense you need to search:\t");  
    Scanner sc= new Scanner(System.in);  
    int exp= sc.nextInt(); int f=0;  
    //Checking if the element is present  
    ListIterator<Integer> itr= arrayList.listIterator();  
  
    if(arrayList.isEmpty()){  
        System.out.println("The given amount "+exp+" is not present in the expenses list\n");  
        return;  
    }  
  
    else{  
        while(itr.hasNext()==true){  
            if(exp==itr.next()){  
                f=1;  
                System.out.println("The given amount "+exp+" is present in the expenses list\n");  
                return;  
            }  
        }  
    }  
  
    if(f==0){  
        System.out.println("The given amount "+exp+" is not present in the expenses list\n");  
        return;  
    }  
}
```

### Conclusion:

Thus, fixed all the bugs and errors in the program and implemented the necessary methods that were missing.

### GitHub Link for all the files:

<https://github.com/VigneshRaaj-NS/Simplilearn-Java-FSD/tree/main/Phase%201/Practice%20Project/5.20-Fixing%20Bugs>