Full-Stack: The Desk Application

Fixed Bugs of the Application:

1. Initializing scanner class outside of optionsSelection() method.
2. Initializing arrlist, expenses arrays as static, It needs to update every time of operations performed.
3. Used Linear Search Algorithm to search an expense value in an expenses array.
4. Used Collections. sort() built-in method to sort the expenses array which uses the mergesort algorithm because Merge sort is a fast, stable sorting routine with guaranteed $O(n*log(n))$ efficiency.

Linear Search Algorithm:

Linear Search (Array A, Value x)
- The x value is taken through the console.
Step 1: Set i to 0
Step 2: if i > n then go to step 7
Step 3: if A[i] = x then go to step 6
Step 4: Set i to i + 1
Step 5: Go to Step 2
Step 6: Print Element x Found at index i and go to step 8
Step 7: Print element not found
Step 8: Exit

MergeSort Algorithm:

MergeSort(arr[], l, r)
If r > l
       Step 1: Find the middle point to divide the array into two halves:
                middle m = l+ (r-l)/2
       Step 2: Call mergeSort for the first half:
                Call mergeSort(arr, l, m)
       Step 3: Call mergeSort for the second half:
                Call mergeSort(arr, m+1, r)
       Step 4: Merge the two halves sorted in step 2 and 3:
                Call merge(arr, l, m, r)

GitHub Repo Link:

https://github.com/UshasriMavuri1999/Full-Stack---The-Desk-Application-.git