

Stage 3 Report

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1 Code Description

1.1 main function

Takes input a list and it's size. String of the list are stored in List_data and Main_list_pointers contains the address of the strings stored in List_data. It also take comparison mode and duplicate removal option as inputs. It then calls mergesort function to sort the list and finally outputs the sorted list using output_list.

1.2 mergesort function

This function takes input a list of pointers and outputs the rearranged list of pointers such that string that these pointers point to are in sorted order using mergesort algorithm.

Base case is when the input list size is 1, and return the size of the list i.e 1 in r7 and address in r0.

For non-base case it calculates the size the left half and right half of list recursively calls merge sort for left and right half. The two lists and its sizes returned by two recursive calls are merged by merge function (Done in Stage 2). Some changes are done in merge function which are indicated using comments in the file newmerge.s. Changes are made because merge function was giving error in case of lists with duplicate strings.

2 Test Cases

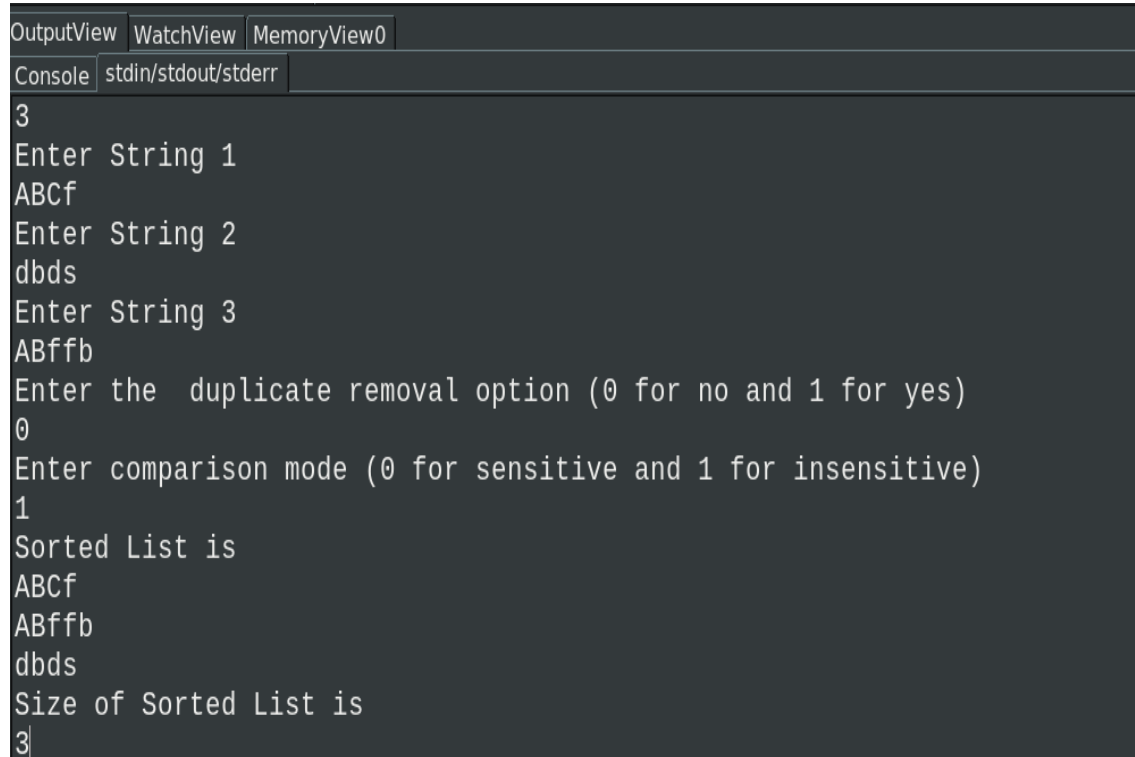
2.1 Test Case 1

```
Console | stdin/stdout/stderr |
Enter the size of list
4
Enter String 1
abcd
Enter String 2
ABCD
Enter String 3
fegs
Enter String 4
Fegs
Enter the duplicate removal option (0 for no and 1 for yes)
1
Enter comparison mode (0 for sensitive and 1 for insensitive)
1
Sorted List is
abcd
fegs
Size of Sorted List is
2|
```

2.2 Test Case 2

```
OutputView | WatchView | MemoryView0 |
Console | stdin/stdout/stderr |
Enter the size of list
3
Enter String 1
aaa
Enter String 2
aaa
Enter String 3
aab
Enter the duplicate removal option (0 for no and 1 for yes)
1
Enter comparison mode (0 for sensitive and 1 for insensitive)
0
Sorted List is
aaa
aab
Size of Sorted List is
2
```

2.3 Test Case 3



```
OutputView WatchView MemoryView0
Console stdin/stdout/stderr
3
Enter String 1
ABCf
Enter String 2
dbds
Enter String 3
ABffb
Enter the duplicate removal option (0 for no and 1 for yes)
0
Enter comparison mode (0 for sensitive and 1 for insensitive)
1
Sorted List is
ABCf
ABffb
dbds
Size of Sorted List is
3
```