

Report-Stage2-Assignment-COL216

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1 Objective

To make a function in ARM for merging two sorted lists of Strings.

2 Implementation

It uses Legacy pluggins for input.

1. We will take input as length of both the strings, Case, Duplicate Option, Initial Pointer of List Addresses.
2. We will take input using Legacy SWI (0x6a and 0x6c) and 0x69 for printing any string
3. I have four files : Input.s, Output.s, Merge.s, Compare.s.
4. Input.s is taking length, case, duplicate, and the strings and then converting that to arguments for function Merge.
5. Merge will take arguments in a memory location.
6. In each iteration it will compare the string, and accor to output returned by compare will compute.
7. The output will be stored in a list which will contain initial pointers of all strings in sorted way.
8. Output.s will print the List of sorted string.

3 Test-Cases

```
Press 0 for Not Keeping Duplicate Option and 1 for Keeping Duplicate Option : 0
Enter the length of String of List 1 : 4
Enter the length of String of List 2 : 3
Enter the First List of String :
app
gij
kite
zm
Enter the Second List of String :
rut
vik
hj
app,gij,kite,rut,vik,hj,zm

Press 0 for Case Sensitive Merging and 1 for Insensitive Merging : 0
Press 0 for Not Keeping Duplicate Option and 1 for Keeping Duplicate Option : 0
Enter the length of String of List 1 : 4
Enter the length of String of List 2 : 5
Enter the First List of String :
era
ddd
fgh
liki
Enter the Second List of String :
era
DDD
ujk
zzz
zzzz
era,era,DDD,ddd,fgh,liki,ujk,zzz,zzzz
```

```
Press 0 for Case Sensitive Merging and 1 for Insensitive Merging : 0
Press 0 for Not Keeping Duplicate Option and 1 for Keeping Duplicate Option : 1
Enter the length of String of List 1 : 4
Enter the length of String of List 2 : 3
Enter the First List of String :
a
bhg
jkl
try
Enter the Second List of String :
a
bhg
jkl
a,bhg,jkl,try
```

```
Press 0 for Case Sensitive Merging and 1 for Insensitive Merging : 1
Press 0 for Not Keeping Duplicate Option and 1 for Keeping Duplicate Option : 1
Enter the length of String of List 1 : 4
Enter the length of String of List 2 : 3
Enter the First List of String :
Aaa
Bgh
ert
wert
Enter the Second List of String :
Aaa
Bdf
ert
Aaa,Bdf,Bgh,ert,wert
```

```

Press 0 for Case Sensitive Merging and 1 for Insensitive Merging : 1
Press 0 for Not Keeping Duplicate Option and 1 for Keeping Duplicate Option : 0
Enter the length of String of List 1 : 3
Enter the length of String of List 2 : 2
Enter the First List of String :
AAA
fg
ll
Enter the Second List of String :
aa
Fg
aa,AAA,fg,Fg,ll

```

```

Press 0 for Case Sensitive Merging and 1 for Insensitive Merging : 1
Press 0 for Not Keeping Duplicate Option and 1 for Keeping Duplicate Option : 1
Enter the length of String of List 1 : 4
Enter the length of String of List 2 : 4
Enter the First List of String :
aaaA
fgHJ
klooI
ZIO
Enter the Second List of String :
AAaAAA
BHI
FGhj
klooII
aaaA,AAaAAA,BHI,fgHJ,klooI,klooII,ZIO

```

4 How to use my Program

1. It will ask for a Case Sensitive or Insensitive, for Case Sensitive press 0 and for Insensitive press 1.
2. Then it will ask for whether it should have duplicates or not.
3. It will then ask for length, give the length and press enter 4. Similarly for Second length
5. It will then take the strings as input, after giving every element press enter

6. Same for Second List
7. After final element press enter. 8. It will show list merged in form of A,B,C,d

5 Use of Memory and Arguments at Each Step

First of all I take the input Case, Duplicate, Length1, Length2, List of Address1, List of Address 2.

I am storing these inputs in a seperate list which is iterated by r10.

Then I call a function Merge which takes these inputs and sort them in a new List.

After that, I iterate over this new List which will contain the addresses of all strings in sorted order.

Print it using swi 0x69.

For Sorting compare them if output is 0 then strings are equal, 1 for List 1 string greater, 2 for List 2 string greater.

If output is 3 or 4 then it means one of the list is at its end. If both the lists are empty then comparison will give output 5.

6 Limitations

1. List has been allocated length of 102400 bytes so if all the strings are of size 1024 length and list is of 100 such strings then it will be out of space.

7 File-Order for Execution

1. Input.s
2. Merge.s
3. CompareString.s
4. Output.s