

CS390 Quiz3

1. (10 points) In the `week3.prob1` package, you will find a class `SearchForString`; for this problem, you must fully implement the methods in this class. The class `SearchForString` has one instance variable `List<String> list`, one constructor with signature

```
SearchForString (List<String> list)
```

and one instance method

```
public boolean search(String s).
```

The constructor should set its value into the instance variable of the class. The method `search` should be a recursive implementation of a search for the input argument `s` in the list `list`; if found, the method should return `true`; should return `false` otherwise.

Your method must implement the following recursive strategy:

Compare `s` with the first and the last element of the list. If either one is equal to `s`, return `true`. Otherwise, (recursively) search for `s` in the rest of the list.

You may assume that `list` contains zero or more non-null `Strings`, and that the argument `s` passed in to `search` is never null.

To complete the problem, complete the work in the class `SearchForString` that has been provided for you in the `week3.prob1` package. A private instance method `recurSearch`, having two arguments (`s` and an integer argument `indexFromEitherEnd`) has been included in `SearchForString`; it is strongly recommended that you make use of this method to do the actual recursion.

Hint: Do not forget to provide a base case for your recursion.

Note: If you solve this problem without using recursion, you will receive no credit.

2. (10 points) For a particular software application, suppose there is a business rule that states "when creating a new account, a minimum starting balance of \$20 is required." The code provided to you for this question implements this rule in an unsatisfactory way.

Rewrite the code so that if, in the `setStartBalance` method of `Account`, the balance is discovered to be less than `MIN_START_BAL`, a `LowBalanceException` is thrown. If this exception is thrown, it should be caught in the `createNewAccount` method of `FinancialCoordinator`, and the message from the exception should be printed to the console.

In this problem, you need to do two things:

- a. Create your own `LowBalanceException` class
- b. Write the proper exception-handling code in `Account` and `FinancialCoordinator`.