

CIS1068, Program Design and Abstraction

Write loops to solve the following problems.

(Reserve.java) Read a String from the keyboard. Declare another String variable called `reverseStr`, initialized to the empty String `""`. Write a loop so that by the end of the loop, `reverseStr` contains the reverse of the String value stored.

```
String inputStr, reverseStr="";
inputStr = keyboard.nextLine();
int i;

for(i=0; i< inputStr.length(); i++){
    reverseStr += inputStr.charAt(inputStr.length()-i-1);
}
```

- (Counting.java) Read a String from the keyboard, and count how many letter 's' or 'S' are in the String that the user enters.

```
import java.util.Scanner;
public class CountSs {
    public static void main(String [] args) {
        Scanner kb = new Scanner(System.in);
        String str = kb.next();
        int numS = 0;
        for(int i=0; i<str.length(); i++) {
            char c = str.charAt(i);
            if(c == 's' || c == 'S') {
                numS++;
            }
        }
        System.out.println(numS + " s's and S's in your String");
    }
}
```

- (TotalLengh.java) Read 10 Strings from the keyboard, and compute their total length.

```
public class SumLengths {
    public static void main(String [] args) {
        Scanner kb = new Scanner(System.in);
        int totalLength = 0;
        for(int i=0; i<10; i++) {
            String str = kb.next();
            totalLength = totalLength + str.length();
        }
        System.out.println("Total length = " + totalLength);
    }
}
```

- Write code that reads in a string t and another string s from the user. The program will print out how many times string s appears in string t. For instance, “123123” and “123” will lead to a printout 2 and “2222” and “22” will lead to a printout 3.

```
Scanner kb = new Scanner (System.in);
t=kb.nextLine();
s=kb.nextLine();
int i=0;
int count = 0;
while(i<=t.length()-s.length()) {
    if(t.substring(i,i+s.length()).equals(s)
) {
        count++;
    }
    i++;
}
```

- Write code that reads in a string t and another two strings u and v from the user. The program will print out the result string t after each u’s appearance being replaced by v. For instance, “hello how are you”, “ ”, and “-” will lead to a resultant printout of “hello-how-are-you”.

```
int spacePos = t.indexOf(u);
String result = "";
while(spacePos>=0) {
    String word = t.substring(0,spacePos);
    result = result + word + v;
    t = t.substring(spacePos+u.length());
    spacePos = t.indexOf(u);
}
result = result + t;
```