

## In-class / Lab – Practice with Recursion

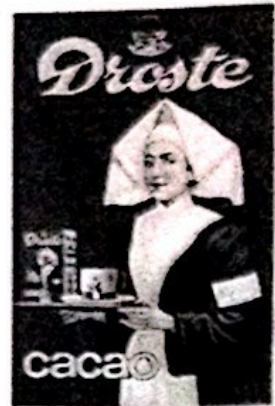
10 points

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Part I: A palindrome is a sequence of characters or numbers that reads the same both frontwards and backwards. For example the numeric string "12321" or the characters "racecar" are palindromes.

Create a Java method that will accept a String and will recursively determine if the characters/numerals in the String form a palindrome.

```
import java.util.Scanner;
```



```
public static void main(String[] args)
```

```
{ Scanner kb = new Scanner(System.in);
```

```
String pal;
```

```
System.out.println("Please enter the word you wish to check if it's a palindrome? ");
```

```
pal = kb.nextLine();
```

```
if (isPalindromeString());
```

```
System.out.println(" Palindrome! ");
```

```
else
```

```
System.out.println(" No Palindrome for you "); } //end main
```

```
public static boolean isPalindrome(String str)
```

```
{ str = str.toUpperCase();
```

```
return isPalindrome(str, 0, str.length()-1); }
```

```
private static boolean isPalindrome(String str, int top, int bottom)
```

```
{ if (bottom <= top)
```

```
return true;
```

```
if (str.charAt(top) < 'A' || (str.charAt(top) > 'Z'))
```

```
return isPalindrome(str, top+1, last);
```

```
if (str.charAt(bottom) < 'A' || (str.charAt(bottom) > 'Z'))
```

```
return isPalindrome(str, top, bottom-1);
```

```
if (str.charAt(top) != str.charAt(bottom))
```

```
return false;
```

```
return isPalindrome(str, top+1, last-1);
```

```
}
```