String Class in Java - GeeksQuiz

String is a sequence of characters. In java, objects of String are immutable which means a constant and cannot be changed once created.

Creating a String

There are two ways to create string in Java:

- ***String literal***

```
String s = “GeeksforGeeks”;
```

String Methods

- **int length():** Returns the number of characters in the String.

```
"GeeksforGeeks".length();  // returns 13
```

- **Char charAt(int i):** Returns the character at i^{th} index.

```
"GeeksforGeeks".charAt(3); // returns  ‘k’
```

- **String substring (int i):** Return the substring from the i^{th} index character to end.

```
"GeeksforGeeks".substring(3); // returns “ksforGeeks”
```

- **String substring (int i, int j):** Returns the substring from i to j-1 index.

```
 "GeeksforGeeks".substring(2, 5); // returns “eks”
```

- **String concat(String str):** Concatenates specified string to the end of this string.

```
 String s1 = ”Geeks”;
 String s2 = ”forGeeks”;
 String output = s1.concat(s2); // returns “GeeksforGeeks”
```

- **int indexOf (String s):** Returns the index within the string of the first occurrence of the specified string.

```
 String s = ”Learn Share Learn”;
 int output = s.indexOf(“Share”); // returns 6
```

- **int indexOf (String s, int i):** Returns the index within the string of the first occurrence of the specified string, starting at the specified index.

```
 String s = ”Learn Share Learn”;
 int output = s.indexOf(‘a’,3);// returns 8
```

- **Int lastindexOf(int ch):** Returns the index within the string of the last occurrence of the specified string.

```
 String s = ”Learn Share Learn”;
 int output = s.lastindexOf(‘a’); // returns 14
```

- **boolean equals(Object otherObj):** Compares this string to the specified object.

  ```
  Boolean out = “Geeks”.equals(“Geeks”); // returns true
  Boolean out = “Geeks”.equals(“geeks”); // returns false
  ```

- **boolean equalsIgnoreCase (String anotherString):** Compares string to another string, ignoring case considerations.

  ```
  Boolean out= “Geeks”.equalsIgnoreCase(“Geeks”); // returns true
  Boolean out = “Geeks”.equalsIgnoreCase(“geeks”); // returns true
  ```

- **int compareTo(String anotherString):** Compares two string lexicographically.

  ```
  int out = s1.compareTo(s2);  // where s1 ans s2 are
                              // strings to be compared

  This returns difference s1-s2. If :
  out < 0  // s1 comes before s2
  out = 0  // s1 and s2 are equal.
  out >0   // s1 comes after s2.
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  This returns difference s1-s2. If :
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  out = 0   // s1 and s2 are equal.
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  ```

  Note- In this case, it will not consider case of a letter (it will ignore whether it is uppercase or lowercase).

- **String toLowerCase():** Converts all the characters in the String to lower case.

  ```
  String word1 = “HeLLo”;
  String word3 = word1.toLowerCase(); // returns “hello"
  ```

- **String toUpperCase():** Converts all the characters in the String to upper case.

  ```
  String word1 = “HeLLo”;
  String word2 = word1.toUpperCase(); // returns “HELLO”
  ```

- **String trim():** Returns the copy of the String, by removing whitespaces at both ends. It does not affect whitespaces in the middle.

  ```
  String word1 = “ Learn Share Learn “;
  String word2 = word1.trim(); // returns “Learn Share Learn”
  ```

- **String replace (char oldChar, char newChar):** Returns new string by replacing all occurrences of *oldChar* with *newChar.*

```
String s1 = “feeksforfeeks“;
String s2 = “feeksforfeeks”.replace(‘f’ ,’g’); // returns “geeksgorgeeks”
```

Note:- s1 is still feeksforfeeks and s2 is geeksgorgeeks

Program to illustrate all string methods:

```
// Java code to illustrate different constructors and methods // String class.
import java.io.*;
import java.util.*;
class Test
{
    public static void main (String[] args)
    {
        String s= "GeeksforGeeks";
        // or String s= new String ("GeeksforGeeks");
        // Returns the number of characters in the String.
        System.out.println("String length = " + s.length());
        // Returns the character at ith index.
        System.out.println("Character at 3rd position = "
                           + s.charAt(3));
        // Return the substring from the ith  index character
        // to end of string
        System.out.println("Substring " + s.substring(3));
        // Returns the substring from i to j-1 index.
        System.out.println("Substring  = " + s.substring(2,5));
        // Concatenates string2 to the end of string1.
        String s1 = "Geeks";
        String s2 = "forGeeks";
        System.out.println("Concatenated string  = " +
                            s1.concat(s2));
        // Returns the index within the string
        // of the first occurrence of the specified string.
        String s4 = "Learn Share Learn";
        System.out.println("Index of Share " +
                           s4.indexOf("Share"));
        // Returns the index within the string of the
        // first occurrence of the specified string,
        // starting at the specified index.
        System.out.println("Index of a  = " +
                           s4.indexOf('a',3));
        // Checking equality of Strings
        Boolean out = "Geeks".equals("geeks");
        System.out.println("Checking Equality  " + out);
        out = "Geeks".equals("Geeks");
        System.out.println("Checking Equality  " + out);
        out = "Geeks".equalsIgnoreCase("gEeks ");
        System.out.println("Checking Equality" + out);
        int out1 = s1.compareTo(s2);
        System.out.println("If s1 = s2" + out);
        // Converting cases
        String word1 = "GeeKyMe";
        System.out.println("Changing to lower Case " +
                            word1.toLowerCase());
        // Converting cases
        String word2 = "GeekyME";
        System.out.println("Changing to UPPER Case " +
                            word1.toUpperCase());
        // Trimming the word
        String word4 = " Learn Share Learn ";
        System.out.println("Trim the word " + word4.trim());
        // Replacing characters
        String str1 = "feeksforfeeks";
        System.out.println("Original String " + str1);
        String str2 = "feeksforfeeks".replace('f' ,'g') ;
        System.out.println("Replaced f with g -> " + str2);
    }
}
```