

# String Handling in Java

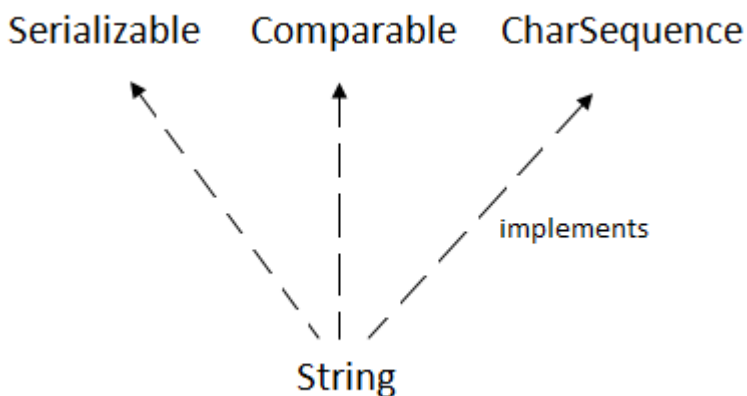
In [Java](#)

, string is basically an object that represents sequence of char values. An [array](#) of characters works same as Java string. For example

1. `char[] ch={'N','I','E','T','G','N','O','I','D','A'};`
2. `String s=new String(ch);`
3. `String s="NIETGNOIDA";`

**Java String** class provides a lot of methods to perform operations on strings such as `compare()`, `concat()`, `equals()`, `split()`, `length()`, `replace()`, `compareTo()`, `intern()`, `substring()` etc.

The `java.lang.String` class implements *Serializable*, *Comparable* and *CharSequence* [interfaces](#)



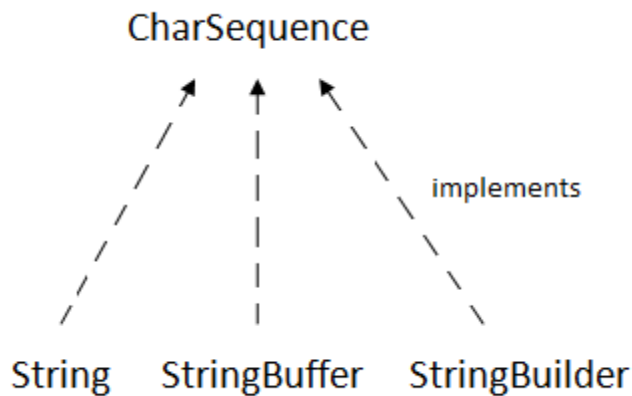
## CharSequence Interface

The `CharSequence` interface is used to represent the sequence of characters.

`String`, [StringBuffer](#)

and [StringBuilder](#)

classes implement it. It means, we can create strings in Java by using these three classes.



**The Java String is immutable which means it cannot be changed. Whenever we change any string, a new instance is created. For mutable strings, you can use StringBuffer and StringBuilder classes.**

## What is String in Java?

Generally, String is a sequence of characters. But in Java, string is an object that represents a sequence of characters. The `java.lang.String` class is used to create a string object.

## How to create a string object?

There are two ways to create String object:

1. By string literal
2. By new keyword

Java String literal is created by using double quotes. For Example

1. `String s="welcome";`

## Why Java uses the concept of String literal?

To make Java more memory efficient (because no new objects are created if it exists already in the string constant pool).

## 2) By new keyword

1. String s=**new** String("Welcome");//creates two objects and one reference variable

```
public class StrExp{  
public static void main(String args[]){  
String s1="java";//creating string by Java string literal  
char ch[]={'s','t','r','i','n','g','s'};  
String s2=new String(ch);//converting char array to string  
String s3=new String("example");//creating Java string by new keyword  
System.out.println(s1);  
System.out.println(s2);  
System.out.println(s3);  
}  
}
```

## Immutable String in Java

A String is an unavoidable type of variable while writing any application program. String references are used to store various attributes like username, password, etc. In Java, **String objects are immutable**. Immutable simply means unmodifiable or unchangeable.

Once String object is created its data or state can't be changed but a new String object is created.

```
class Testimmutablestring{  
public static void main(String args[]){  
String s="Sachin";  
s.concat(" Tendulkar") ;  
System.out.println(s);  
}  
}
```

//concat() method appends the string at the end  
//will print Sachin because strings are immutable objects

```
class Testimmutablestring1{
    public static void main(String args[]){
        String s="Sachin";
        s=s.concat(" Tendulkar");
        System.out.println(s);
    }
}

public class SubstringExample{
    public static void main(String args[]){
        String s1="javatpoint";
        System.out.println(s1.substring(2,4));//returns va
        System.out.println(s1.substring(2));//returns vatpoint
    }
}

public class SubstringExample2 {
    public static void main(String[] args) {
        String s1="Javatpoint";
        String substr = s1.substring(0); // Starts with 0 and goes to end
        System.out.println(substr);
        String substr2 = s1.substring(5,10); // Starts from 5 and goes to 10
        System.out.println(substr2);
        String substr3 = s1.substring(5,15); // Returns Exception
    }
}
```

```
Javatpoint
point
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: begin 5,
```

### Question 1

Write a program to input a sentence. Find and display the following:

(i) Number of words present in the sentence

(ii) Number of letters present in the sentence

Assume that the sentence has neither include any digit nor a special character.

```
import java.util.Scanner;

public class NietStr
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter a sentence:");
        String str = in.nextLine();

        int wCount = 0, lCount = 0;
        int len = str.length();
        for (int i = 0; i < len; i++) {
            char ch = str.charAt(i);
            if (ch == ' ')
                wCount++;
            else
                lCount++;
        }

        /*
         * Number of words in a sentence are one more than
         * the number of spaces so incrementing wCount by 1
         */
        wCount++;

        System.out.println("No. of words = " + wCount);
        System.out.println("No. of letters = " + lCount);
    }
}
```

Write a program in Java to accept a word/a String and display the new string after removing all the vowels present in it.

Sample Input: COMPUTER APPLICATIONS

Sample Output: CMPTR PPLCTNS

```

import java.util.Scanner;

public class NietStr
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter a word or sentence:");
        String str = in.nextLine();

        int len = str.length();
        String newStr = "";

        for (int i = 0; i < len; i++) {

            char ch = Character.toUpperCase(str.charAt(i));

            if (ch == 'A' ||
                ch == 'E' ||
                ch == 'I' ||
                ch == 'O' ||
                ch == 'U') {
                continue;
            }

            newStr = newStr + ch;
        }

        System.out.println("String with vowels removed");
        System.out.println(newStr);
    }
}

```

Write a program in Java to accept a name(Containing three words) and Display only the initials (i.e., first letter of each word).

Sample Input: LAL KRISHNA ADVANI

Sample Output: L K A

```

import java.util.Scanner;

public class NietStr
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter a name of 3 or more words:");
        String str = in.nextLine();
        int len = str.length();
    }
}

```

```

        System.out.print(str.charAt(0) + " ");
        for (int i = 1; i < len; i++) {
            char ch = str.charAt(i);
            if (ch == ' ') {
                char ch2 = str.charAt(i + 1);
                System.out.print(ch2 + " ");
            }
        }
    }
}

```

Write a program in Java to accept a name containing three words and display the surname first, followed by the first and middle names.

Sample Input: MOHANDAS KARAMCHAND GANDHI

Sample Output: GANDHI MOHANDAS KARAMCHAND

```

import java.util.Scanner;

public class KboatSurnameFirst
{
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter a name of 3 words:");
        String name = in.nextLine();

        /*
         * Get the last index
         * of space in the string
         */
        int lastSpaceIdx = name.lastIndexOf(' ');

        String surname = name.substring(lastSpaceIdx + 1);
        String initialName = name.substring(0, lastSpaceIdx);

        System.out.println(surname + " " + initialName);
    }
}

```

Write a program in Java to accept a word and display the ASCII code of each character of the word.

Sample Input: BLUEJ

Sample Output:

ASCII of B = 66

ASCII of L = 76

ASCII of J = 74

[illegible]