Array and string

Introduction:-

What is an Array?
An array is a very common type of data structure wherein all elements must be of the same data type. Once defined, the size of an array is fixed and cannot increase to accommodate more elements.The first element of an array starts with index zero.

An array is defined as an ordered set of similar data items. All the data items of an array are stored in consecutive memory locations in RAM. The elements of an array are of same data type and each item can be accessed using the same name..

One Dimensional Array Program in Java:-

In this article, we will detail in on all the different methods to describe the one-dimensional array program in Java with suitable examples & sample outputs.
All the methods will be explained with sample programs and suitable examples. The compiler has also been added so that you understand the whole thing clearly.

One-dimensional array in Java programming is an array with a bunch of values having been declared with a single index.

```
One dimensional array elements are
10
20
30
```

As you can see in the example given above, firstly, you need to declare the elements that you want to be in the specified array.

One Dimensional Array – Using Standard Method

```java
class OnedimensionalStandard
{
public static void main(String args[])
{
int[] a=new int[3];//declaration
a[0]=10;//initialization
a[1]=20;
a[2]=30;
//printing array
System.out.println("One dimensional array elements are");
System.out.println(a[0]);
System.out.println(a[1]);
System.out.println(a[2]);
}
```

output

```
1  One dimensional array elements are
2  10
3  20
4  30
```

Two Dimensional Array in Java

The Two Dimensional Array in Java programming language is nothing but an Array of Arrays. If the data is linear we can use the One Dimensional Array but to work with multi-level data we have to use Multi-Dimensional Array.

Two Dimensional Array in Java is the simplest form of Multi-Dimensional Array. In Java Two Dimensional Array, data is stored in row and columns and we can access the record using both the row index and column index (like an Excel File).

Declaration of Two Dimensional Array in Java
The following code snippet will show you the declaration of two dimensional array in Java Programming Language:
Data_Type[][] Array_Name;

Create Two dimensional Array in Java

In order to create a two dimensional array in Java, we have to use the New operator as we shown below:
Data_Type[][] Array_Name = new int[Row_Size][Column_Size];

Row_Size: Number of Row elements an array can store. For example, Row_Size = 5 then array will have 5 rows.
Column_Size: Number of Column elements an array can store. For example, Column_Size = 6 then array will have 6 Columns.

```
double [][] anStudentArray;
// Declaration of Two dimensional array in java
// Crating an Java two dimensional Array anStudentArray = new int[5][3];
```

Java Two Dimensional Array example

In this Java two dimensional array program, We will declare 2 Two dimensional arrays.
Next, we initialize them with some values and then we will declare one more Two dimensional array to store the sum those 2 arrays.

```java
// Two Dimensional Array in Java Example
package ArrayDefinitions;

 public class TwoDimentionalArray {
 public static void main(String[] args) {
int[][] a = { {15, 25, 35}, {45, 55, 65} };
int[][] b = {{12, 22, 32}, {55, 25, 85} };
 int[][] Sum = new int[2][3];
int rows, columns; for(rows = 0; rows < a.length; rows++) {
for(columns = 0; columns < a[0].length; columns++) {
Sum[rows][columns] = a[rows][columns] + b[rows][columns];
} }
System.out.println("Sum Of those Two Arrays are: ");
for(rows = 0; rows < a.length; rows++) {
for(columns = 0; columns < a[0].length; columns++) {
System.out.format("%d \t", Sum[rows][columns]); } System.out.println("");
} } }
```

Output:-

Sum of those two array are:-

27	47	67
100	80	150

Java String Array:-

Java String array is used to hold fixed number of Strings. String array is very common in simple java programs, specially among beginners to java and to test some specific scenarios. Even java main method argument is string array

Java String array is basically an array of objects.
There are two ways to declare string array – declaration without size and declare with size.
There are two ways to initialize string array – at the time of declaration, populating values after declaration.
We can do different kind of processing on string array such as iteration, sorting, searching etc.

Java String Array Declaration
Below code snippet shows different ways for string array declaration in java.

String[] strArray; //declare without size String[] strArray1 = new String[3];
//declare with size

Note that we can also write string array as String strArray[] but above shows way is the standard and recommended way. Also in the above

code, strArray is null whereas strArray1 value is [null, null, null].

String method

string is basically an object that represents sequence of char values. An array of characters works same as Java string
.
Java String class provides a lot of methods to perform operations on string such as compare(), concat(), equals(), split(), length(), replace(), compareTo(), intern(), substring() etc.

Creating Strings

The most direct way to create a string is to write −
String greeting = "Hello world!";

Example

```
public class StringDemo {
public static void main(String args[]) {
char[] helloArray = { 'h', 'e', 'l', 'l', 'o', '.' };
 String helloString = new String(helloArray);
 System.out.println( helloString );
 }
 }
```

This will produce the following result –

Output

hello.

String Length :-

Methods used to obtain information about an object are known as **accessor methods**. One accessor method that you can use with strings is the length() method, which returns the number of characters contained in the string object. The following program is an example of **length()**, method String class.

Example
```
public class StringDemo {
public static void main(String args[]) {
String palindrome = "Dot saw I was Tod";
int len = palindrome.length();
System.out.println( "String Length is : " + len );
 }
 }
```
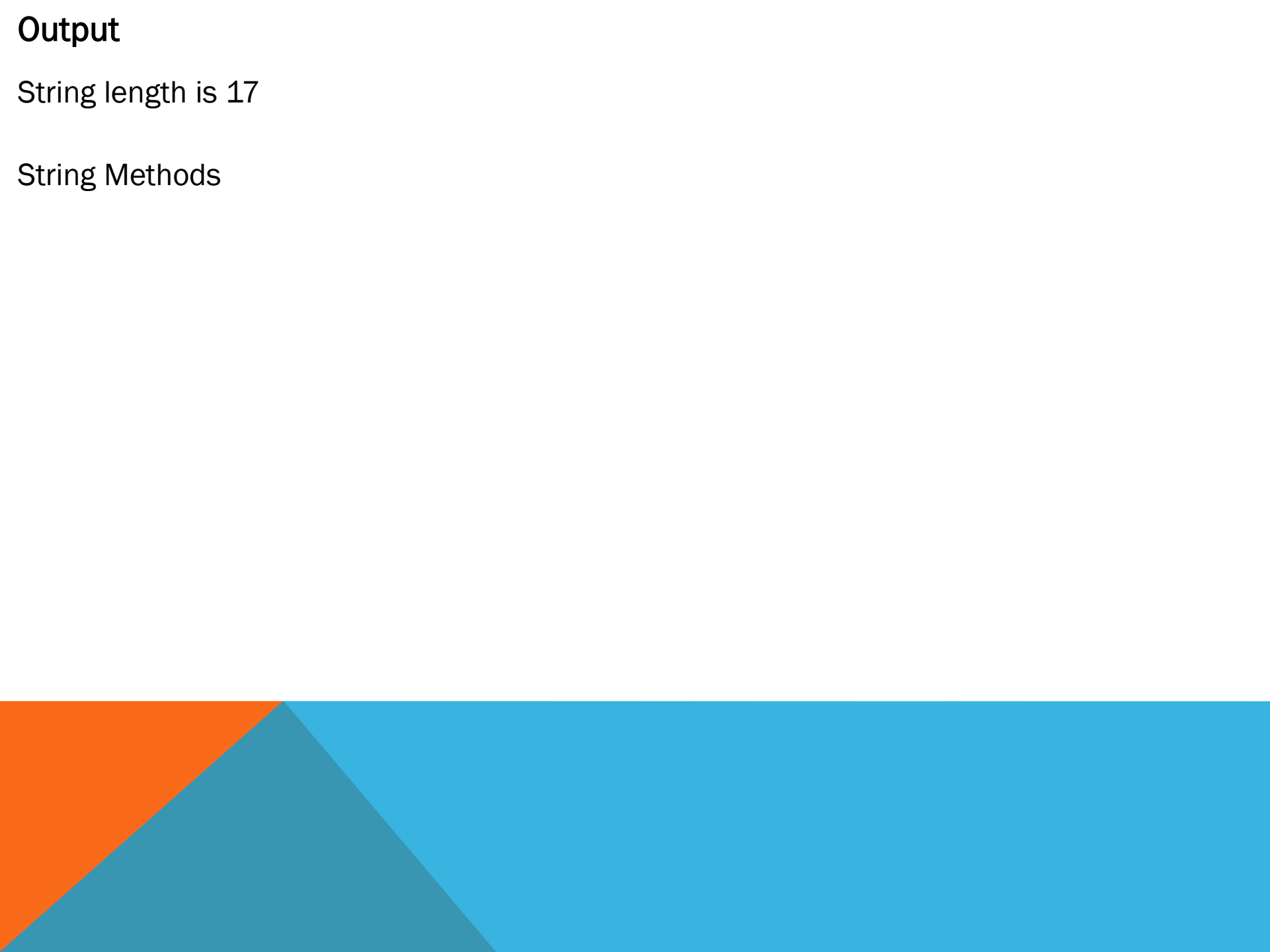
Output

String length is 17

String Methods

String Methods

Sr.No.	Method & Description
	char charAt(int index)Returns the character at the specified index.
2	int compareTo(Object o)Compares this String to another Object.
3	int compareTo(String anotherString)Compares two strings lexicographically.
4	int compareToIgnoreCase(String str)Compares two strings lexicographically, ignoring case differences.
5	String concat(String str)Concatenates the specified string to the end of this string.
6	boolean contentEquals(StringBuffer sb)Returns true if and only if this String represents the same sequence of characters as the specified StringBuffer.
7	static String copyValueOf(char[] data)Returns a String that represents the character sequence in the array specified.
8	static String copyValueOf(char[] data, int offset, int count)Returns a String that represents the character sequence in the array specified.
9	boolean endsWith(String suffix)Tests if this string ends with the specified suffix.
10	boolean equals(Object anObject)Compares this string to the specified object.