

Training On Java

Lecture – 4 Array And String In Java

- ❖ Arrays are used to represent group of elements as a single entity but these elements are homogeneous & fixed size.
- ❖ The size of Array is fixed it means once we created Array it is not possible to increase and decrease the size.
- ❖ Array in java is index based first element of the array stored at 0 index.

Advantages of array:-

- ❖ Instead of declaring individual variables we can declare group of elements by using array it reduces length of the code.
- ❖ We can store the group of objects easily & we are able to retrieve the data easily.
- ❖ We can access the random elements present in the any location based on index.
- ❖ Array is able to hold reference variables of other types.

Array In Java (cont..)

Different ways to declare an array:-

```
int[] values;  
int []values;  
int values[];
```

Declaration& instantiation & initialization :-

Approach 1:- `int a[]={ 10,20,30,40};` **//declaring, instantiation, initialization**

Approach 2:- `int[] a=new int[100];` **//declaring, instantiation**

`a[0]=10;` **//initialization**

`a[1]=20;`

`;;;;;;;;;`

`;;;;;;;;;`

`a[99]=40;`

Example Application -1

//Taking array elements from dynamic input by using Scanner class.

```
import java.util.*;
class Test {
public static void main(String[] args) {
    int[] a=new int[5];
    Scanner s=new Scanner(System.in);
    System.out.println("enter values");
    for (int i=0;i<a.length;i++) {
        System.out.println("enter "+i+" value");
        a[i]=s.nextInt();
    }
    for (int a1:a)
    {
        System.out.println(a1);
    }
}
```

String is used to represent group of characters or character array enclosed with in the double quotes.

Import Built-in Methods Of String Class:-

toUpperCase():- The toUpperCase() method of String class converts string into the Upper Case.

toLowerCase():- The toLowerCase() method of String class converts string into the Lower Case.

length():- The length() method of String class find the no. of characters in given string.

equals():- The equals() method of String class check the given two strings are equal or not. This method returns boolean value.

equalsIgnoreCase():- The equalsIgnoreCase() method of String class also check the given two strings are equal or not. This method also return boolean value but this method avoid case sensitivity.

trim():- The trim() function of String class removes starting and ending spaces of given string.

String Class In Java (cont..)

contains():- The contains() method check the given char is presented in string or not.

replace():- The replace() method of String class is used to replace() one character to another.

charAt():- The charAt() method of String class is used to find character at given position.

indexOf():- The indexOf() method find the position of given character.

split():- The split() method return a split string matching regex.

valueOf():- The valueOf() method converts given type into String. It is an overloaded method.

isEmpty():- The isEmpty() method checks if string is empty.

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Example Application -2

```
//Develop a program in java to compare two strings for equality
import java.util.Scanner;
class Test {
public static void main(String [] args) {
Scanner sc=new Scanner(System.in);
System.out.print("Enter first string : ");
String str1=sc.nextLine();
System.out.print("Enter second string : ");
String str2=sc.nextLine();
if(str1.equals(str2)==true)
System.out.println("Both strings are equal");
else
System.out.println("Both strings are not equal");
}
}
```

Example Application -3

//Develop a program in java to search a pattern in a string

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

```
class Test {
```

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

```
Scanner sc=new Scanner(System.in);
```

```
System.out.print("Enter main string : ");
```

```
String str=sc.nextLine();
```

```
System.out.print("Enter substring : ");
```

```
String substr=sc.nextLine();
```

```
if(str.contains(substr)==true)
```

```
System.out.println("The substring : "+substr+" is available in main string : "+str);
```

```
else
```

```
System.out.println("The substring is not available in main string");
```

```
}
```

```
}
```


Example Application - 4

//Develop a program in java to check given string is palindrome or not.

```
import java.util.Scanner;
class Test {
public static void main(String [] args) {
Scanner sc=new Scanner(System.in);
System.out.print("Enter a string : ");
String str=sc.nextLine();
String revstr="";
for(int i=0;i<str.length();i++) {
revstr=revstr+str.charAt(i)+" ";
}
if(str.equals(revstr)==true)
System.out.println("String is palindrome");
else
System.out.println("String is non-palindrome");
}
}
```

Example Application - 5

/*Develop a program in java to take a sentence as input. Find a word in sentence. Replace the word with another word in sentence.*/

```
import java.util.Scanner;
class Test {
public static void main(String [] args){
String sentence, fw, rw;
Scanner sc=new Scanner(System.in);
System.out.print("Enter a sentence : ");
sentence=sc.nextLine();
System.out.print("Find what : ");
fw=sc.nextLine();
System.out.print("Replace with : ");
rw=sc.nextLine();
System.out.println("Modified sentence : "+sentence.replace(fw,rw));
}
}
```

Example Application - 6

/* Develop a program in java to take the user name as input and display the short name.

E.g. I/P: Ajay Kumar Singh

O/P: A.K.Singh*/

```
import java.util.Scanner;
class Test{
public static void main(String [] args){
Scanner sc=new Scanner(System.in);
System.out.print("Enter your name : ");
String name=sc.nextLine();
String shortname[]=name.split(" ");
System.out.print("Your short name : ");
for(int i=0;i<shortname.length-1;i++)
{
System.out.print(shortname[i]+"");
}
System.out.print(shortname[shortname.length-1]);
}
}
```