01 Feb'23 Arrays In Java Assignment-9

1. **What do you mean by an Array?**

Ans: It refers to **index collection** of fixed no of **homogeneous data elements**. **Single variable** holding **multiple values** which improves **readability** of the program.

2. **How to create an Array?**

Ans: In Java, you can create an array just like an **object** using the **new** keyword. The syntax of creating an array in Java using **new** keyword −

type[] reference = **new** type[10];
Where,

type is the **data type** of the elements of the array.
reference is the **reference** that holds the array.

Array declarations.
1. Single Dimension Array
Declaration of array:

- int[ ] a; //recommended to use as variable is separated from type.
- int a[ ];
- int [ ]a;
- int[6] a; // compile time error. we cannot specify the size.

3. **Can we change the size of an array at run time?**

Ans: No, we can't change the size of an array at run time. If you create an array by initializing its values directly, the **size** will be the number of **elements** in it.

Thus the **size** of the array is determined at the time of its **creation** or, **initialization** once it is done you **cannot change** the **size** of the **array**.

Still if you try to assign value to the **element** of the array **beyond its size** a **run time exception** will be generated.

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4. **Can you declare an array without assigning the size of an array?**

Ans: No, we can't declare an array without assigning the size of an array. At the time of Array construction compulsorily we should specify the size. It is legal to have an array with size zero.

5. **What is the default value of Array?**

Ans: Since no values are passed during initialization, all elements of the array are set to their default value of **0**.

6. **What is a 1D array with an example?**

Ans: **Single Dimensional Array** in Java is basically a **linear array** that allows its user to store **multiple values** of the **same data type**. It's a collection of data that stores elements of the **same type** in a sequentially allocated space in memory.

7. **Write a program on a 2D array?**

Ans:
```
public class Main {
    public static void main(String args[]) {
        int[][] StudentMarks = new int[3][3];

        // Marks Attained By Student 1
        StudentMarks[0][0] = 90;  // English
        StudentMarks[0][1] = 70;  // Maths
        StudentMarks[0][2] = 84;  // Science

        // Marks Attained By Student 2
        StudentMarks[1][0] = 75;  // English
        StudentMarks[1][1] = 77;  // Maths
        StudentMarks[1][2] = 89;  // Science

        // Marks Attained By Student 3
        StudentMarks[2][0] = 69;  // English
        StudentMarks[2][1] = 93;  // Maths
```

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```
        StudentMarks[2][2] = 83;  // Science

        // Displaying Marks of Students
        System.out.println("Student Marks Matrix");
        System.out.println(Arrays.deepToString(StudentMarks));

    }
}
```

Output:

Student Marks Matrix
[[90, 70, 84], [75, 77, 89], [69, 93, 83]]