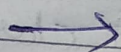


Assignment

Q.1



What do you mean by an Array?

An Array is a fundamental data structure in Computer programming that is used to store & organize collection of elements of the same data type.

These elements are stored in Contiguous memory locations. Making it easy to access and manipulating them using their index positions.

Each element is identified by index or position within an array.

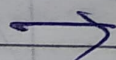
Usually index starts from 0 for the first element.

ex:-

1) `int arr[] = new int [5];`

2) `int[] arr = {1, 2, 3, 4, 5, 6};`

Q.2



How to create An Array?

Use the 'new' keyword along with the array type & size to create the array object in memory.

Initialize the array you can assign values to the individual element of the array.

Syntax

`data-type[] array_name = new data-type [array size]`

ex:-

`int[] num = new int [5];`

Q.3) Can we change the size of an array at a runtime?
In Java, the size of an array is fixed once it's created. This means that you cannot directly change the size of an array. It has been initialized. Once you allocate memory for an array with a certain size, that memory allocation can't be resized dynamically.

Q.4) Can you declare an array without assigning the size of an array?
Yes, we can declare an array without assigning the size of an array at point of declaration. You need to provide the size of array when you actually create the array object using 'new' keyword.

```
int[] num;
```

```
num = new int[5];
```

Q.5) What is default value of array?
The default value for element in array depends on data type of an array.

1. For numeric types (byte, short, int, long, float, double).

• default value: 0.

2. For 'char' type.

Default value: '\u0000' which represents unicode character with 0. (null character).

3. For boolean type.

• default value: false.

6. What is 1D Array with example?

→ A One-dimensional Array (1D) Array in Java is linear data structure that holds a collection of elements of the same type of data. Each element array is accessed using an index which starts from 0 for the first element.

ex:-

```

Public class OneDimensionalArray {
    Public static void main (String[] args)
    {
        int[] numbers = {10, 20, 30, 40, 50};
        int sum = 0;
        for (int i = 0; i < numbers.length; i++)
        {
            sum += numbers[i];
        }
        System.out.println ("Sum of array element  
+ sum");
    }
}

```

Q.7) Write a program on 2D Array

```
→ public class TwoArrayAddition {
```

```
Public Static Void main (String[] args) {  
    int[][] matrix1 = { {1, 2, 3}, {4, 5, 6},  
                          {7, 8, 9} };  
    int[][] matrix2 = { {2, 3, 4}, {5, 6, 7},  
                          {8, 9, 1} };  
}
```



```
int rows = matrix1.length;  
int columns = matrix2.length;
```

```
int[][] result = new int [rows] [columns];
```

```
for (int i=0; i<rows; i++) {  
    for (int j=0; j<columns; j++)  
    {  
        result[i][j] = matrix1[i][j] + matrix2[i][j];  
    }  
}
```

```
System.out.println("result matrix:");  
for (int i=0; i<rows; i++) {  
    for (int j=0; j<columns; j++) {  
        System.out.println(result[i][j] + " ");  
    }  
    System.out.println();  
}
```