

PW SKILLS

JAVA With DSA & System Design

Assignment – Arrays in Java

1. What do you mean by an array?

Ans: **Array** is a collection of similar types of elements which has a fixed contiguous memory location. It's like an object which has elements of the same datatype.

Java has an indexed based array starting from the 0th index element to the (n-1) th index element.

2. How to create an array?

Ans: We use two approaches to create and initialize an array:

- **Using element literals assigned to array:** In this method, we declare an array using array datatype, variable name of array and assign the elements in the curly braces.

For Example:

```
int num [] = {1, 2, 3, 4, 5};
```

- **Using new keyword:** We can create an array as an object using the new keyword and assigning array in the square bracket [size].

Syntax:

```
array_name = new data_type [size];
```

For Example:

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

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

Ans: NO, we cannot change the array at run time. Arrays are static in Java and you declare an array with a specified size. Once this size is specified, you cannot change it again.

There is only way to change the size of array is

- To create a new array of large size and then copy the values of existing array into the new array
- To increase the existing array size by copyOf () method and insert the new elements.

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

Ans: Yes, we can declare an array without assigning the size of an array but before using it needs to be initialized.

For Example:

```
int [] array;
```

```
String []name;
```

5. What is the default value of array?

Ans: There are the following values of array elements such as for Boolean is false, int is 0, double is 0.0, String is null, User-Defined is null.

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

Ans: A One-Dimensional Array is an array in Java programming that is a special type of variable that can store multiple values of only a single data type such as int, float, double, char, etc. at a contiguous location in computer memory.

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Syntax:

Declaration Syntax of a 1D Array in Java:

`datatype [] variable_name = new datatype[size];`

7. Write a program on a 2D array?

Ans: A program in 2D array:

```
class matrix {  
    public static void main (String args[]) {  
        //declaring and initializing 2D array  
        int arr[][]={{1,2,3},{2,4,5},{4,4,5}};  
        //printing 2D array  
        for(int i=0;i<3;i++){  
            for(int j=0;j<3;j++){  
                {  
                    System.out.print(arr[i][j]+" ");  
                }  
            }  
            System.out.println();  
        }  
    }  
}
```

Output:

```
1 2 3  
2 4 5  
4 4 5
```