

Types of Array:-

1. One-dimensional Array.
2. Two-dimensional Array.

1. One dimensional Array:- A single dimensional array of Java is a normal array where, the array contains seq elements of same type.

```
int[] myArray = {10, 20, 30, 40};
```

1. Example:-

```
class Demo
{
    public static void main (String [] args)
    {
        int a [] = {10, 20, 30, 40, 50};
        System.out.println (a [3]);
    }
}
```

Output :- 40

2. Example (2):- Using new keyword

class Demo

{

public static void main (String [] args)

{

int a[] = new int [5];

a[0] = 10;

a[1] = 20;

a[2] = 30;

a[3] = 40;

a[4] = 50;

for (int i = 0; i <= 4; i++)

{

System.out.println (a[i]); // Printing all elements

}

}

}

Output:-

10

20

30

40

50

Example 3: (Dynamic Array)

(Using Scanner)

```

import java.util.Scanner;
class Demo
{
    public static void main (String [] args)
    {
        int size, i;
        Scanner r = new Scanner (System.in);
        System.out.println ("Enter size of Array");
        size = r.nextInt ();
        int a [] = new int [size];

        for (i = 0; i < size; i++)
        {
            a[i] = r.nextInt ();
        }
        System.out.print ("printed Array Elements");
        for (i = 0; i < size; i++)
        {
            System.out.print (a[i] + " ");
        }
    }
}

```

Output:-

Enter size of Array 3

10

20

30

Printed Array Elements 10 20 30

2. Two dimensional Arrays:-

- Two dimensional Array can be defined as array of arrays.
- The 2D array is organized as matrices which can be represented as the collection of rows and columns.
- Example:- Chess Board

	col1	col2	col3	col4
row1				
row2				
row3				

- In a 2D array, every element is associated with a row number and column number:
- declaration of 2d Array:-

```
int arr [max_rows] [max_columns];
```

• example:

```
int arr [2] [2] = {0, 1, 2, 3};
```

The number of elements that can be present in a 2D array will always be equal to (number of rows * number of columns).

Example:- (Matrix Program Using 2D Array)

```

import java.util.Scanner;
class A
{
    public static void main (String[] args)
    {
        int a[][] = new int [2][2];
        Scanner r = new Scanner (System.in);
        System.out.print ("Enter Array Elements ");

        for (int i = 0; i < 2; i++)
        {
            for (int j = 0; j < 2; j++)
            {
                a[i][j] = r.nextInt ();
            }
        }
        System.out.print ("Matrix :- \n");
        for (int i = 0; i < 2; i++)
        {
            for (int j = 0; j < 2; j++)
            {
                System.out.print (a[i][j] + " ");
            }
        }
        System.out.print ("\n");
    }
}

```

Output:-

Enter Array Elements

10

20

30

40

Matrix:

10 20

30 40