

2D Array

A multi-dimensional array is an array of arrays. 2-dimensional arrays are the most commonly used. They are used to store data in a tabular manner.

| | | <i>Columns</i> → | | | | |
|---------------|---|------------------|----|----|----|----|
| | | 0 | 1 | 2 | 3 | 4 |
| ↓ <i>Rows</i> | 0 | 5 | 12 | 17 | 9 | 3 |
| | 1 | 13 | 4 | 8 | 14 | 1 |
| | 2 | 9 | 6 | 3 | 7 | 21 |

2D Array of size 3 x 5

. data_type: Type of data to be stored in the array. For example: int, char, etc.

. dimension: The dimension of the array created.

For example: 1D, 2D, etc.

. array_name: Name of the array

size1, size2, ..., sizeN: Sizes of the dimensions respectively.

Two dimensional array:

```
int[][] twoD_arr = new int[10][20];
```

Three dimensional array:

```
int[][][] threeD_arr = new int[10][20][30];
```

Declaration – Syntax:

```
data_type[][] array_name = new data_type[x][y];
```

For example: `int[][] arr = new int[10][20];`

Initialization – Syntax:

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

```
array_name[row_index][column_index] = value;
```

For example: `arr[0][0] = 1;`

print 2D Array:

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

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

```
    for (int i = 0; i < 2; i++)
```

```
        for (int j = 0; j < 2; j++)
```

```
            System.out.println("arr[" + i + "][" + j + "] =
```

```
"
```

```
    + arr[i][j]);    }
```