

Arrays 2 - D



By

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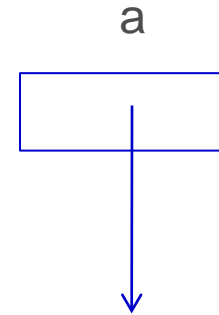
2 – D Array – Declaration

- ✓ Don't declare the size
- ✓ Create a Reference Variable

`type name[][];` or `type[][] name;`

- ✓ Example

```
int a[ ][ ];
```

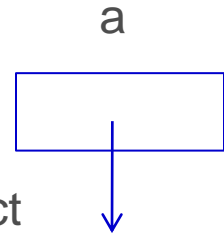


Points Nowhere

2 – D Array – Memory Allocation

```
type name[ ][ ];
```

```
name[ ][ ] = new type[size][size];
```



Points to int Object

✓ Example

```
int a[ ][ ];  
a = new int [3][3];
```

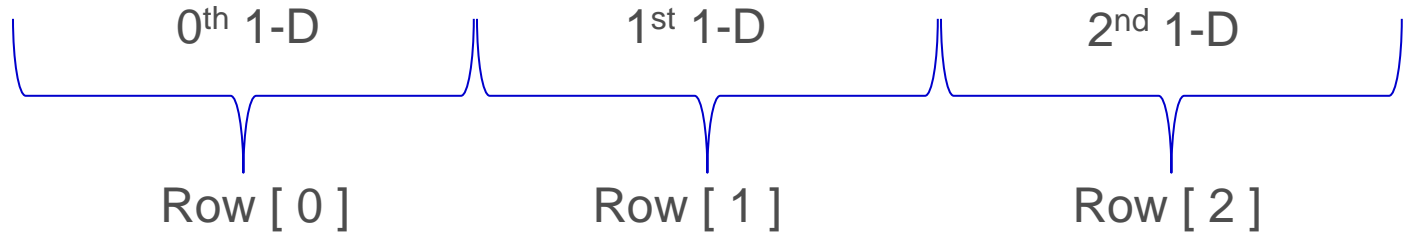
	Col [0]	Col [1]	Col [2]
Row [0]	[0][0]	[0][1]	[0][2]
Row [1]	[1][0]	[1][1]	[1][2]
Row [2]	[2][0]	[2][1]	[2][2]

2 – D Array – Memory Allocation

Col [0] Col [1] Col [2] Col [0] Col [1] Col [2] Col [0] Col [1] Col [2]



Points to int Object



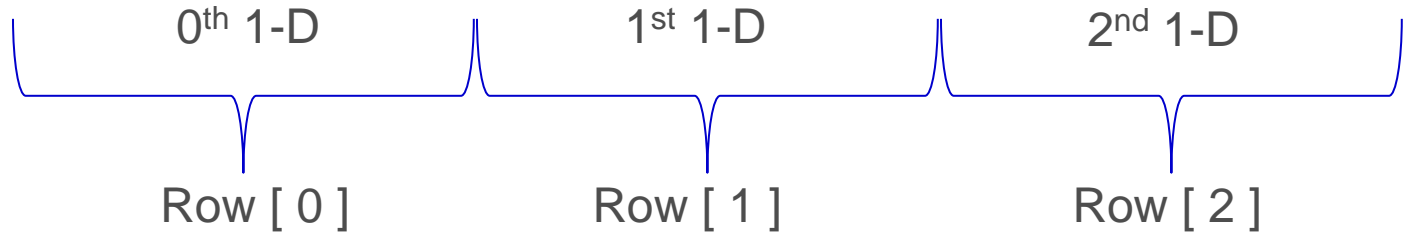
```
int a[ ][ ] = new int [3][3];
```

2 – D Array – Initialization

Col [0] Col [1] Col [2] Col [0] Col [1] Col [2] Col [0] Col [1] Col [2]



Points to int Object



```
a[0][0] = 1;      a[0][1] = 2;      a[0][2] = 3;  
a[1][0] = 4;      a[1][1] = 5;      a[1][2] = 6;  
a[2][0] = 7;      a[2][1] = 8;      a[2][2] = 9;
```

Example1 – Array 2D

```
class Array_2D_Ex1
```

```
{  
    public static void main(String args[])  
    {  
        int a[ ][ ] = new int[3][3];  
        a[0][0] = 1;  
        a[0][1] = 2;  
        a[0][2] = 3;  
        a[1][0] = 4;  
        a[1][1] = 5;  
        a[1][2] = 6;  
        a[2][0] = 7;  
        a[2][1] = 8;  
        a[2][2] = 9;  
    }  
}
```

```
System.out.println(" The Given List is : ");  
for (int i = 0; i < 3; i++)  
{  
    for (int j = 0; j < 3; j++)  
    {  
        System.out.print(" " + a[i][j]);  
    }  
    System.out.println();  
}
```

Example2 – Array 2D

```
class Array_2D_Ex2
{
    public static void main(String args[])
    {
        int a[ ][ ] = {{1,2,3},{4,5,6},{7,8,9}};
        System.out.println(" The Given List is : ");
        for (int i = 0; i < 3; i++)
        {
            for (int j = 0; j < 3; j++)
            {
                System.out.print(" " + a[i][j]);
            }
            System.out.println();
        }
    }
}
```

Example3 – Array 2D

```
class Array_2D_Ex3
{
    public static void main(String args[])
    {
        int a[ ][ ] = {{1,2,3},{4,5,6},{7,8,9}};
        int b[ ][ ] = {{1,2,3},{4,5,6},{7,8,9}}; int c[ ][ ] = new int[3][3];
        System.out.println("Array - A : ");
        for (int i = 0; i < 3; i++)
        {
            for (int j = 0; j < 3; j++)
            {
                System.out.print(" " + a[i][j]);
            }
            System.out.println();
        }
    }
}
```


Example4 – Array 2D

```
System.out.println("Array - B : ");
    for (int i = 0; i < 3; i++)
    {
        for (int j = 0; j < 3; j++)
        {
            System.out.print(" " + b[i][j]);
        }
        System.out.println();
    }
```

Example4 – Array 2D

```
System.out.println("Array - C is initialized to zero: ");
    for (int i = 0; i < 3; i++)
    {
        for (int j = 0; j < 3; j++)
        {
            c[i][j] = 0;
        }
        System.out.println();
    }
```

Example4 – Array 2D

```
System.out.println(" Array - C: ");
    for (int i = 0; i < 3; i++)
    {
        for (int j = 0; j < 3; j++)
        {
            c[i][j] = a[i][j] + b[i][j];
            System.out.print(" " + c[i][j]);
        }
        System.out.println();
    }
}
```

References

- ✓ Programming with Java – A Primer - E. Balagurusamy, 3rd Edition, TMH

Thank You