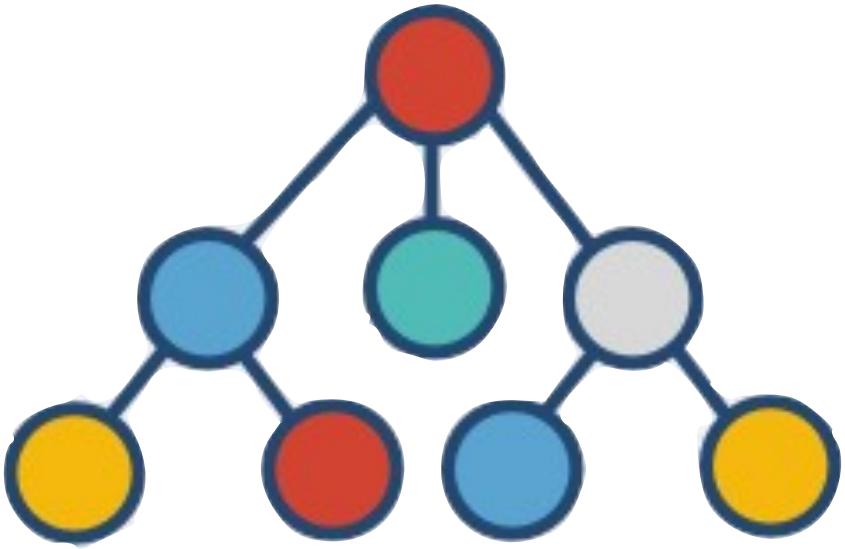
# DATA STRUCTURE & ALGORITHMS



**(By Prince Agarwal)**

**( “HELLO WORLD” )**

# Multidimensional Arrays

- **Multidimensional array means, —> Array of Array**
- **Two dimensional array: int two_d[10][20];**
- **Three dimensional array: int three_d[10][20][30];**

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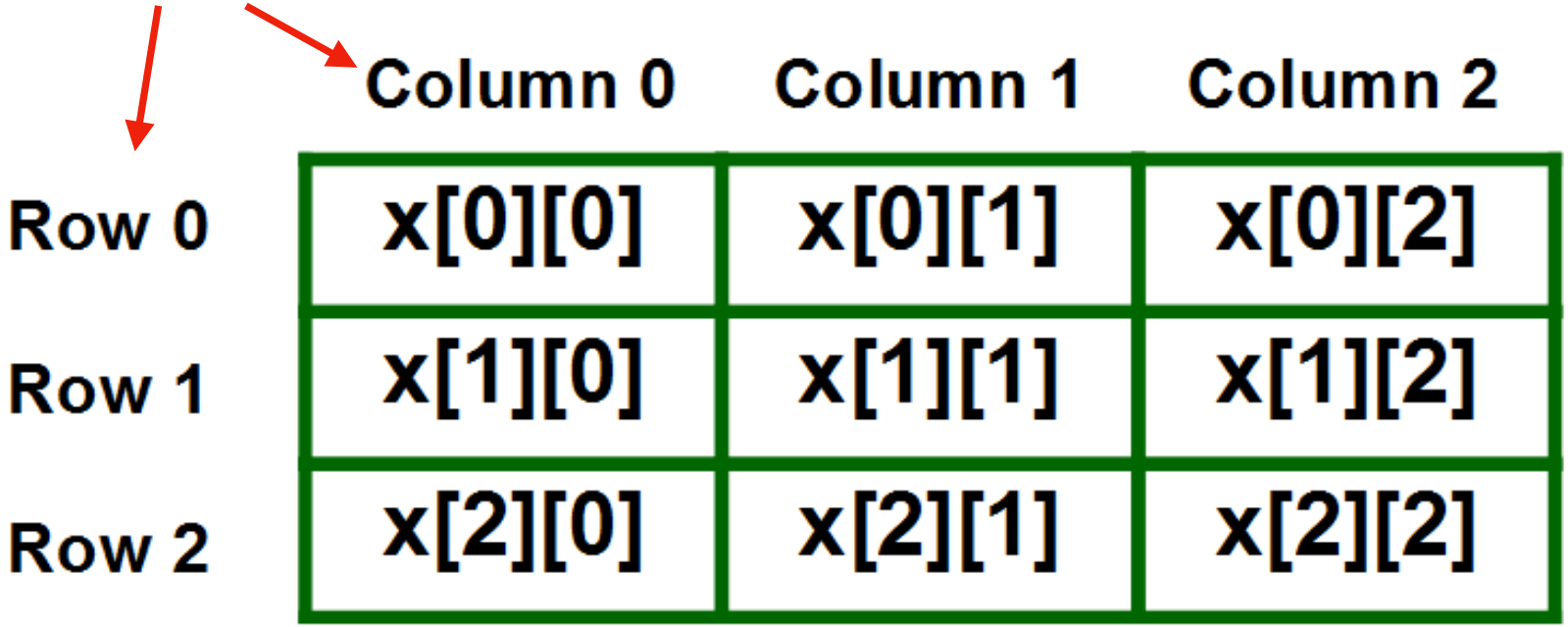
# Multidimensional Arrays

- Multidimensional array means, —> Array of Array
- Two dimensional array: int two_d[10][20];
- Int arr [ 3 ] [ 3 ] ;

arr [ i ] [ j ]

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# Multidimensional Arrays

- Multidimensional array means, —> Array of Array

- Int arr [ 3 ] ;
- Int arr [ 3 ] = { 4, 0, -1 } ;
- int x [ 3 ] [ 4 ] = { 0, 1 ,2 ,3 ,4 , 5 , 6 , 7 , 8 , 9 , 10 , 11 }
- int x [ 3 ] [ 4 ] = { { 0,1,2,3 }, { 4,5,6,7 }, { 8,9,10,11 } };

int x [ 3 ] [ 4 ]

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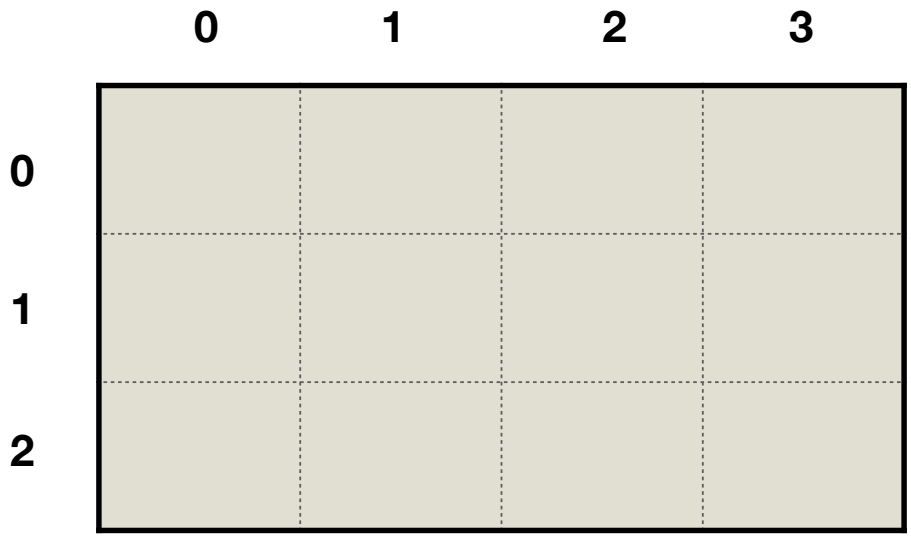
# Multidimensional Arrays

**int x [ 3 ] [ 4 ]**

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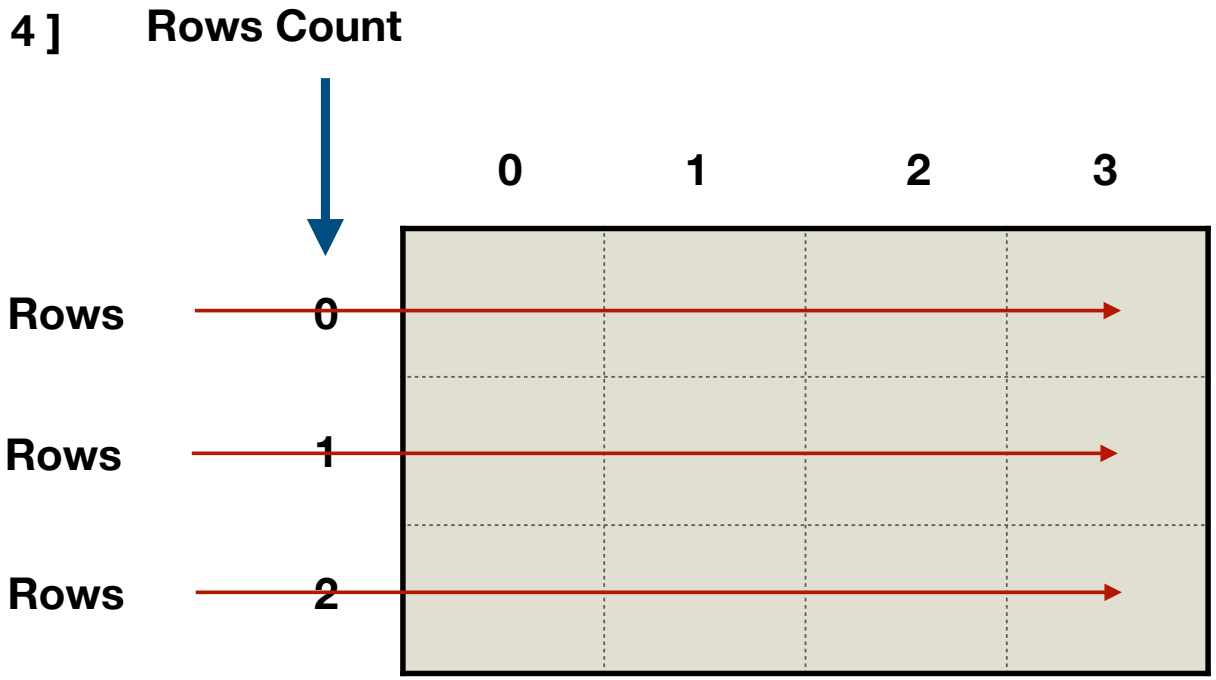
# Multidimensional Arrays

**int x [ 3 ] [ 4 ]**

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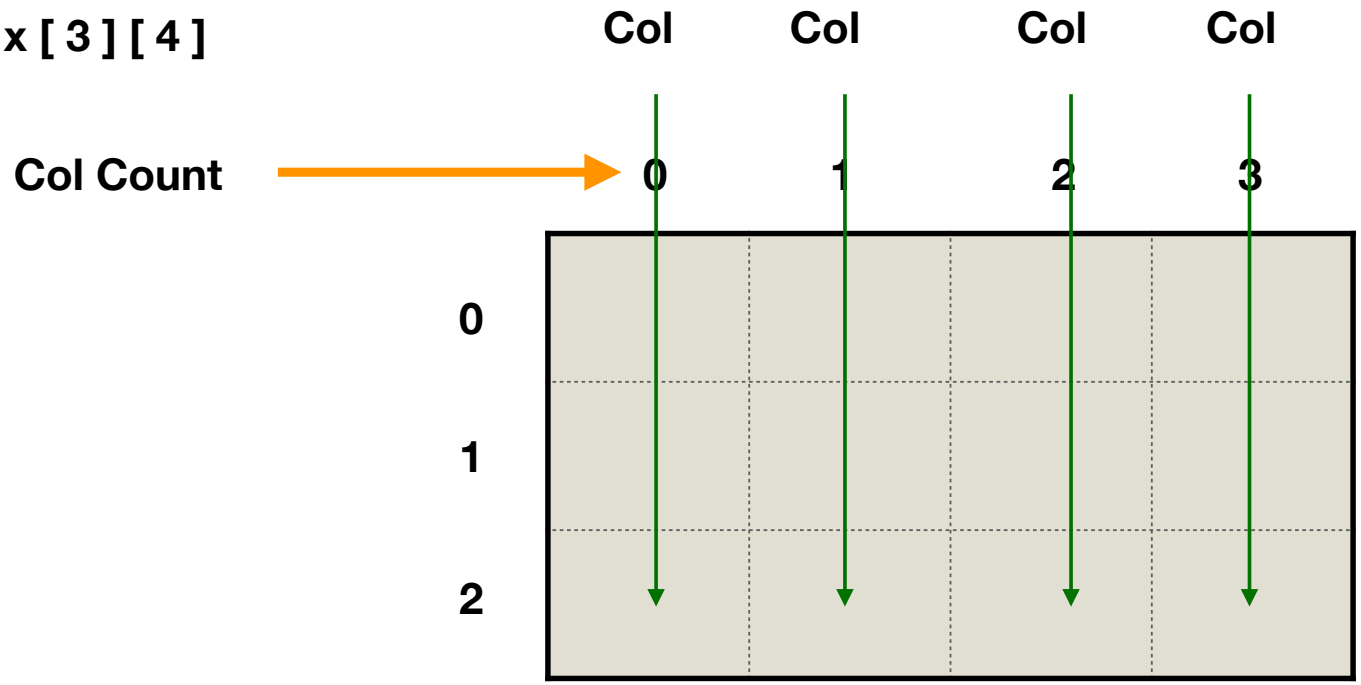
# Multidimensional Arrays

int x [ 3 ] [ 4 ]

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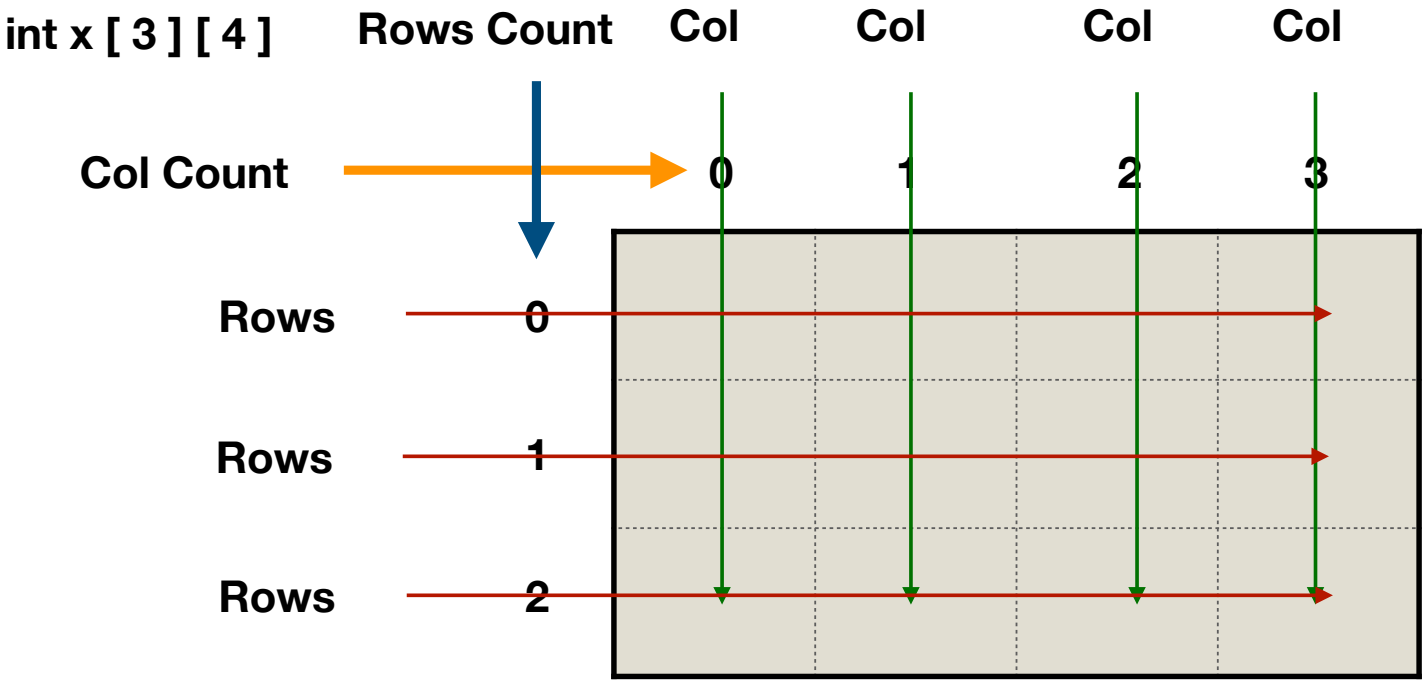
# Multidimensional Arrays

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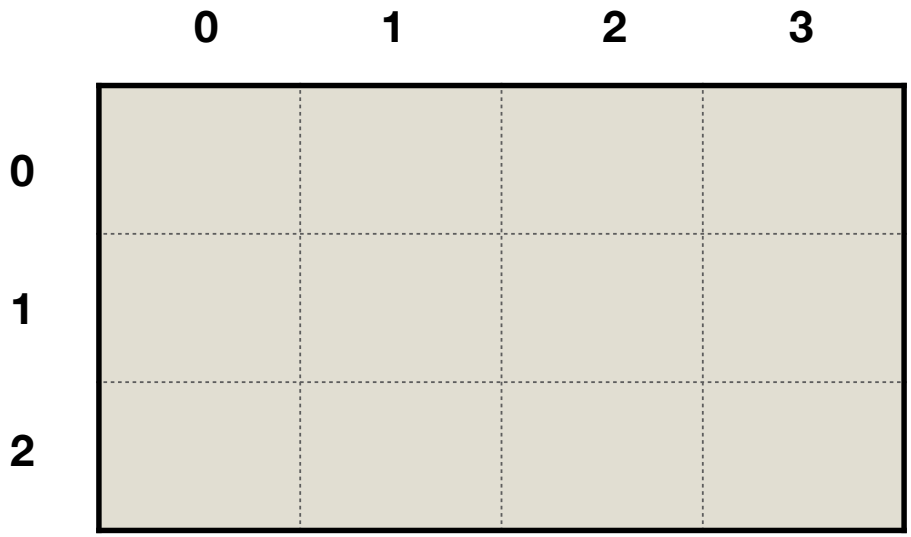
# Multidimensional Arrays

- **Operations in MATRIX** **Print the MATRIX**

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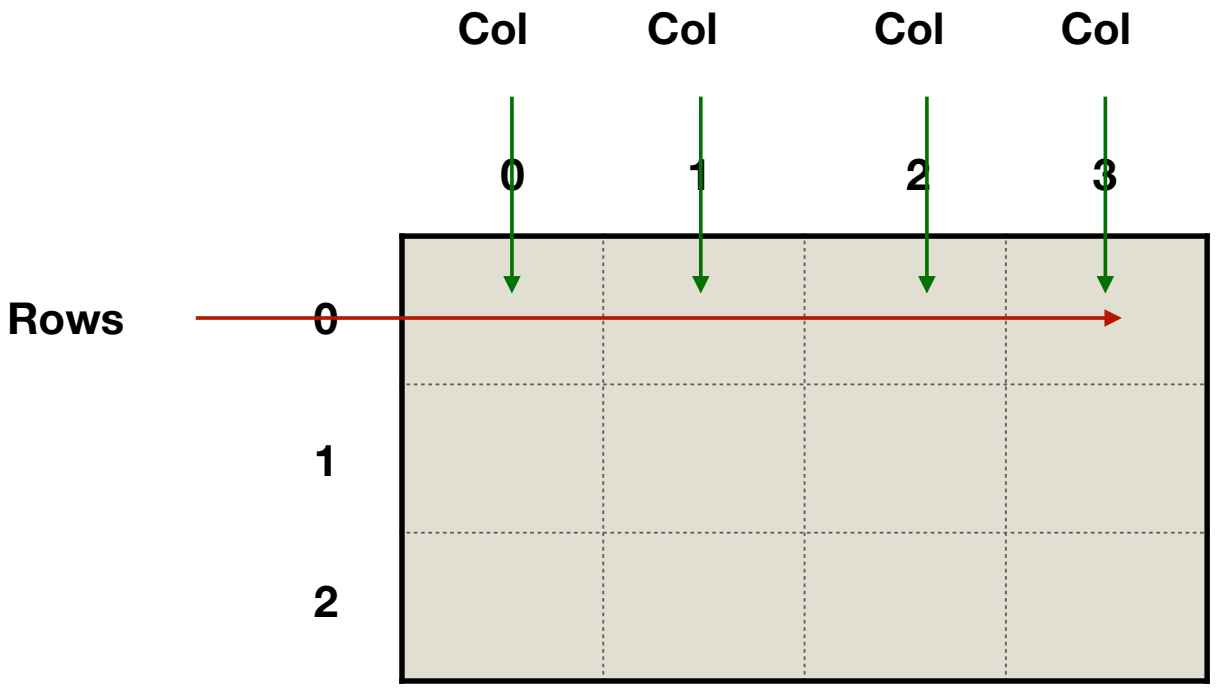
# Multidimensional Arrays

- **Operations in MATRIX** **Print the MATRIX**

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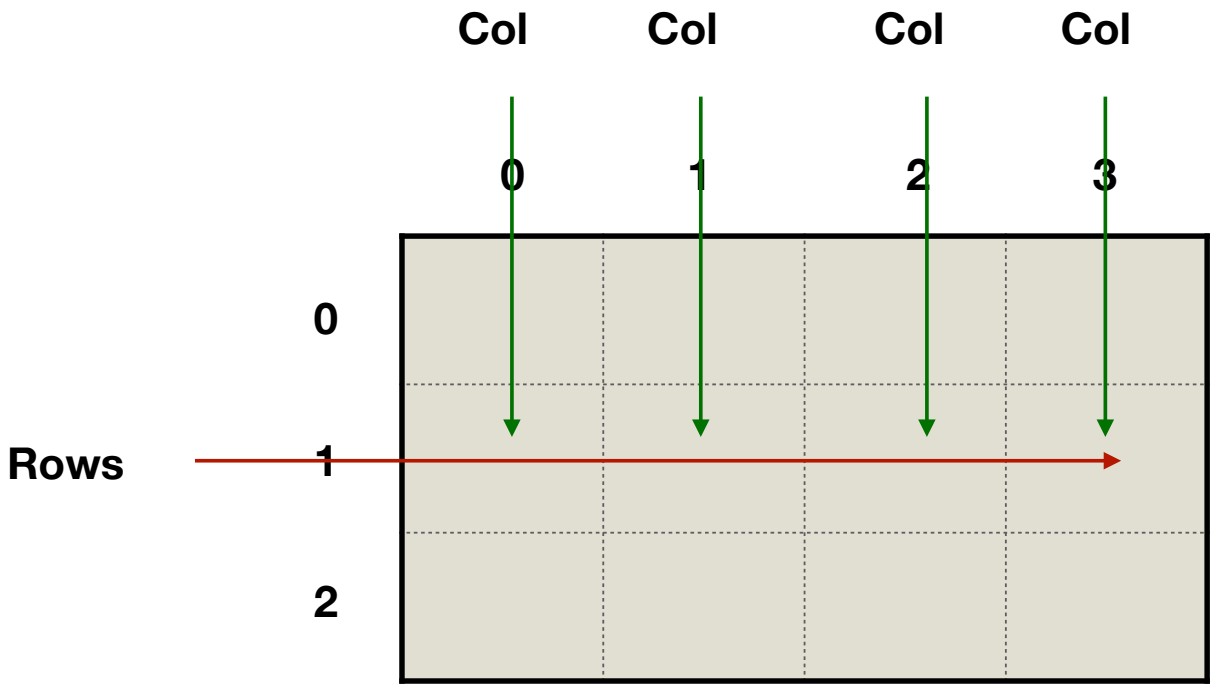
# Multidimensional Arrays

- **Operations in MATRIX** **Print the MATRIX**

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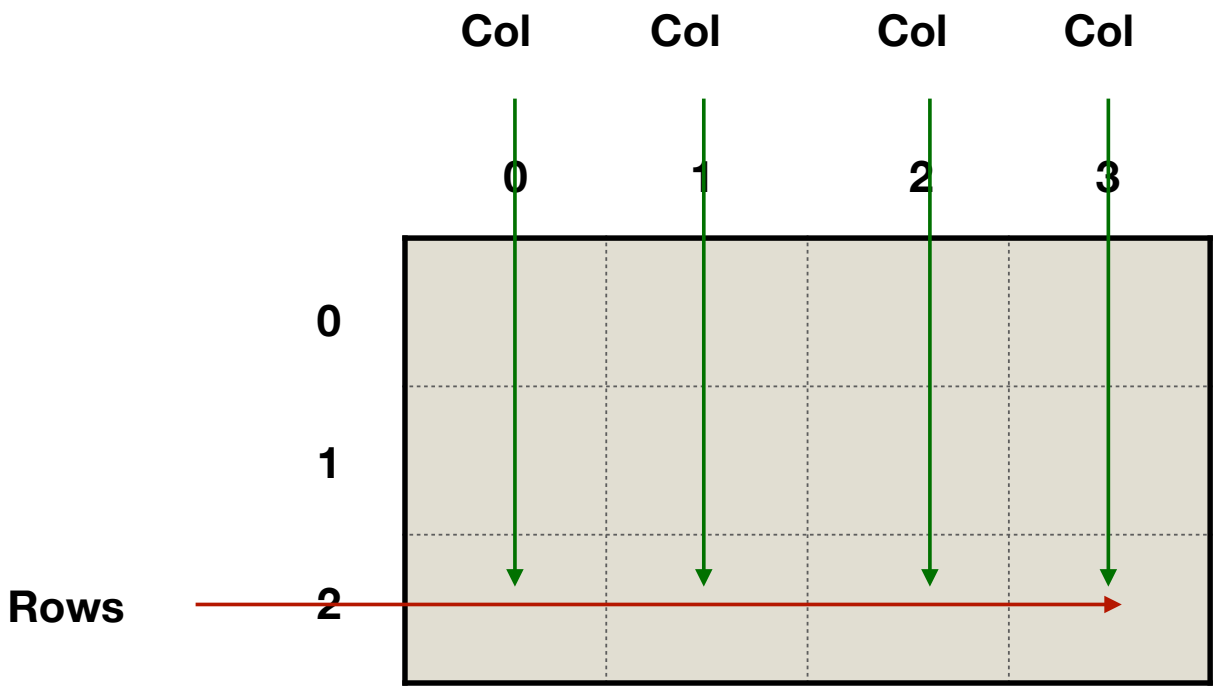
# Multidimensional Arrays

- **Operations in MATRIX** **Print the MATRIX**

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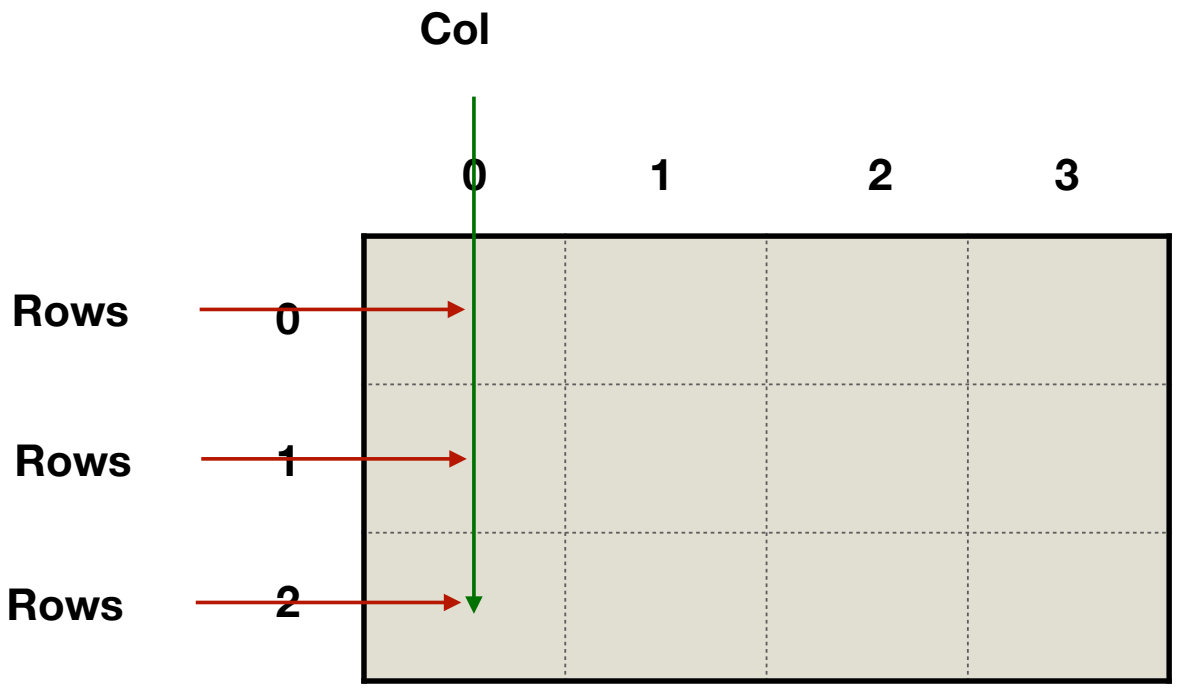
# Multidimensional Arrays

- Now, You can ask me, we can also start with a column

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## Multidimensional Arrays

**Now, You can ask me, we can also start with a column**

| | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| **0** | 4 | 5 | -7 | 1 |
| **1** | 0 | 3 | 8 | 12 |
| **2** | 7 | 3 | 12 | 5 |

**4, 5, -7 , 1, 0 , 3, 8, 12, 7, 3, 12, 5**

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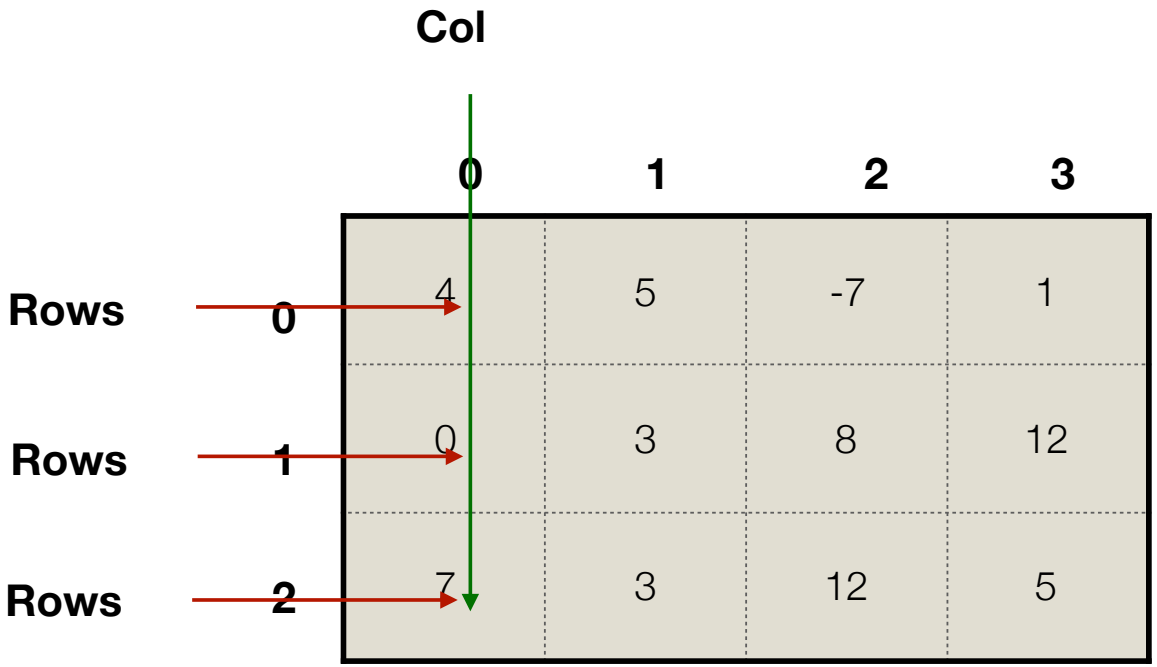
# Multidimensional Arrays

- **Now, You can ask me, we can also start with a column**




**4, 0, 7 , 5, 3 , 3, . . . . . .**

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# Multidimensional Arrays

- **Now, You can ask me, we can also start with a column**

**Matrix [ 3 ] [ 4 ] =**

| | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| **0** | 4 | 5 | -7 | 1 |
| **1** | 0 | 3 | 8 | 12 |
| **2** | 7 | 3 | 12 | 5 |

**Matrix [ n ] [ m ]**

```
Int row_size = matrix.size( ) ;
Int col_size = matrix[0].size( ) ;
```

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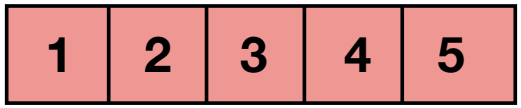
# Multidimensional Arrays

- Now, You can ask me, we can also start with a column

Matrix [ 3 ] [ 4 ] =

| | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| 0 | 4 | 5 | -7 | 1 |
| 1 | 0 | 3 | 8 | 12 |
| 2 | 7 | 3 | 12 | 5 |




Matrix [ 1 ] [ 5 ]

```
Int row_size = matrix.size( ) ;
Int col_size = matrix[0].size( ) ;
```

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