

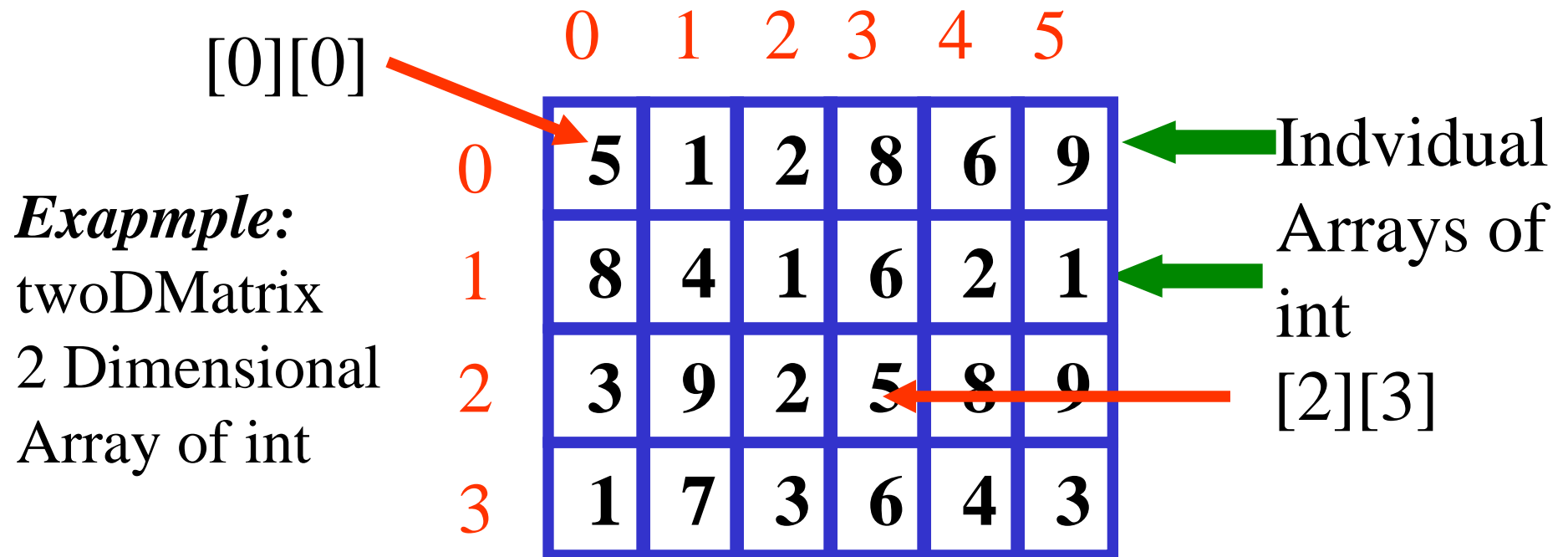
3. Fundamentals of Java Programming

Lesson 3: Arrays -Part 2

3.6. Arrays

3.6.7. Multi Dimensional Arrays

- In Java Multi Dimensional Arrays are just Arrays of Arrays.



3.6. Arrays

3.6.7. Multi Dimensional Arrays (continued)

- Can be created in either way as follows

```
int twoDMatrix [ ][ ] = new int [4][6];
```

```
int twoDMatrix [ ][ ] = { {5,1,2,8,6,9},  
                           {8,4,1,6,2,1},  
                           {3,9,2,5,8,9},  
                           {1,7,3,6,4,3} };
```

Note:

twoDMatrix.length=4

(Number of rows)

twoDMatrix[0].length=6

(length of first row Array)

twoDMatrix[1].length=6

3.6. Arrays

3.6.7. Multi Dimensional Arrays Cont..

- Since Java Multi Dimensional Arrays are Arrays of Arrays,
 - It is possible to create *Ragged Arrays*

```
int twoDMatrix [ ][ ] = { {5,1,2,8,6,9}  
                           {8,4,1,1}  
                           {3,9,2,5,8}  
                           {1,7,3,6,4,3} };
```

Variable, row array lengths

twoDMatrix[1].length=4

(length of second row Array)

twoDMatrix[2].length=5

(length of third row Array)

3.6. Arrays

3.6.7. Multi Dimensional Arrays Cont ...

– Alternatively

- It is possible to declare the same **Ragged Array** as follows:

```
int twoDMatrix [ ] [ ] = new int [4] [ ];
```

```
twoDMatrix [0] = new int [6];
```

```
twoDMatrix [1] = new int [4];
```

```
twoDMatrix [2] = new int [5];
```

```
twoDMatrix [3] = new int [6];
```

Size of second
Dimension is
not Specified

3.6. Arrays

3.6.7. Multi Dimensional Arrays Cont...

- Each element can be accessed using two subscripts

`twoDMatrix [0][0];`

`twoDMatrix [0][1];`

- Each element can be changed as follows

`twoDMatrix [0][0] = 6;`

`twoDMatrix [0][1] = 8;`