Welcome back to the

Java Course

Module 2

String to Array

You can even convert a string value to an array of characters!

In this way you can search or sort elements inside a text.

String to Array

```
char new_array[] = string.toCharArray();
```

String to Array

Converting a string value to an array of characters, you can work directly with the single characters.

Then you can use a loop to re-convert to string.

String to Array

```
for (int i = 0; i < array.length; i++){
        new_string += array[i];
   }
```

Let’s practice!

Sort()

The *sort()* method is a fast and convenient way to sort an array, but it doesn’t remove duplicate values. If you want to eliminate duplicates, you will need to implement a separate process to filter them out.

Old Sorting

In the old days developers had to sort a sequence of values manually.

Can you figure out how?

Try to create a sorting algorithm that removes duplicates.

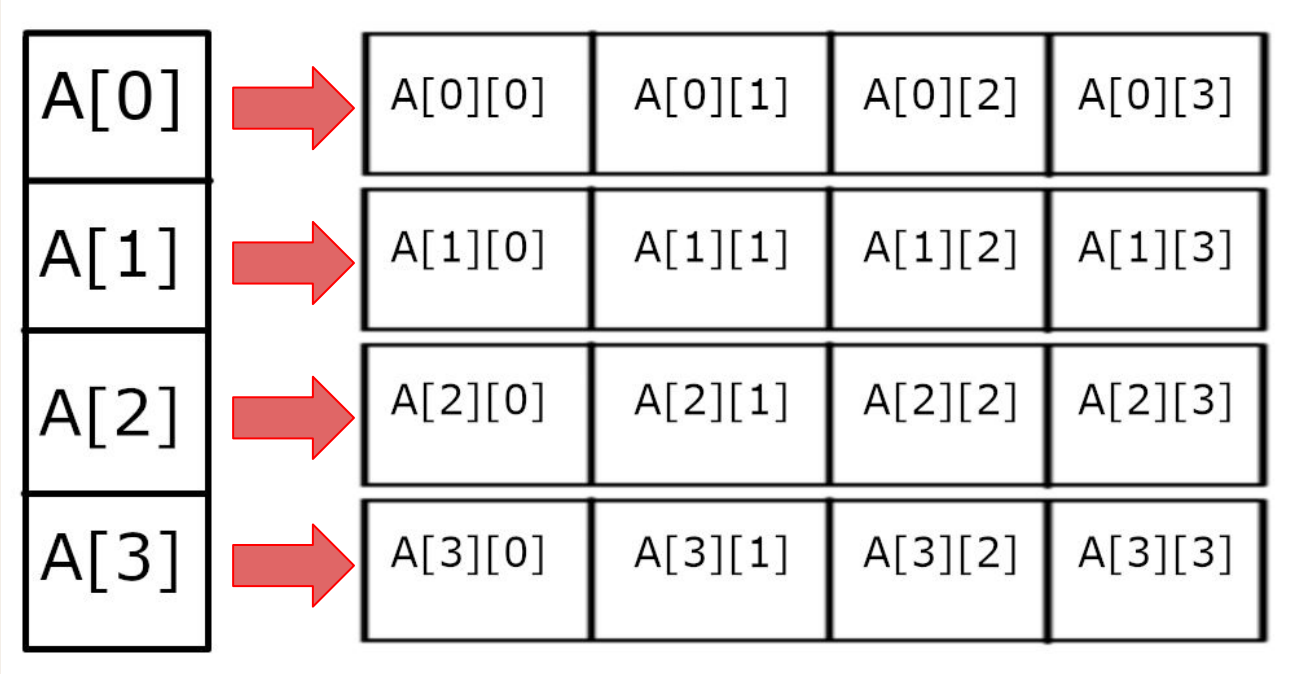
Test yourself!

Matrix

You can create an array with any type of data. So why not an array?

A matrix is substantially an array made with arrays. In fact it's called bidimensional array.

Matrix


A[0]
A[1]
A[2]
A[3]
A[0][0]
A[0][1]
A[0][2]
A[0][3]
A[1][0]
A[1][1]
A[1][2]
A[1][3]
A[2][0]
A[2][1]
A[2][2]
A[2][3]
A[3][0]
A[3][1]
A[3][2]
A[3][3]

Matrix

Using matrices we can realize and use more complex data structures.

type matrix[ ][ ] = { { $v_0$0, $v_0$1}, { $v_1$0, $v_1$1 }, { $v_2$0, $v_2$1 } };

Matrix

```
type matrix[ ][ ] =  … ;
```

Matrix

type matrix[ ][ ] = … ;

Matrix

type matrix[ ][ ] = … ;

Matrix

type matrix[ ][ ] = … ;

Matrix

… = { {first array}, { }, { } };

Matrix

… = { {first array}, { }, { } };

Matrix

…={{ },{second array}, { } };

Matrix

… = { { }, { }, {third array} };

Matrix

```
... = { { }, { }, {...} };
```

Matrix

Example:

```
int matrix[][] = { { 1, 2 , 3 }, { 4, 5 , 6 } };
```

Int this case we have an array with 2 elements.
Those elements are both an array with 3 integers.

Matrix

To select a specific element:

type matrix[ ][ ] = { { $v_0$0, $v_0$1}, { $v_1$0, $v_1$1 }, { $v_2$0, $v_2$1 } };

matrix[1][0] $\longrightarrow$ $v_1$0

Matrix

matrix[n][m]

n - is the element in the main array. So the position of the searched array.

m - is the element in the searched array. So the position of the specific value.

Matrix

Example:

```
int matrix[][] = { { 1, 2 , 3 }, { 4, 5 , 6 } };
```

matrix[1]

Matrix

Example:

```
int matrix[][] = { { 1, 2 , 3 }, { 4, 5 , 6 } };
```

matrix[1][0]

Let’s practice!