

CSCI 1301 – Lab 30

November 18, 2019

1 Comparing Two Arrays

Execute the following code:

```
int[] arrayA = { 1, 3, 4 };
int[] arrayB = { 1, 3, 4 };
if (arrayA == arrayB){Console.WriteLine("The arrays are the same!");}
```

and see for yourself that you can not use == to test for equality of arrays.

Then, like we did in class:

- Write a snippet that displays “The arrays are the same!” only if arrayA and arrayB have the same values.
- Change your snippet to makes it more generic: it should first test if arrayA and arrayB have the same size, and, if they do, display “The arrays are the same!” only if arrayA and arrayB have the same values.
- Then, write a **static** class with three methods:
 - One that takes two array of integers as arguments, and return true only if the two arrays are identicals (same size, same values).
 - One that takes two array of integers as arguments and an integer x, and return true only if the two arrays have the same first x values, and false if they are shorter than x or have different values in the first x slots.

Once you are done with this, write two other copy methods taking three arguments: one for arrays of decimals, and one for arrays of strings. Can you give them the same name as for the one that takes arrays of integers as arguments? Why, or why not?

2 Pushing Further (Optional)

Have a look at <https://docs.microsoft.com/en-us/dotnet/api/system.array.copy?view=netframework-4.8> and <https://stackoverflow.com/q/17212254/> to see other implementations of methods to copy and compare arrays. Note that the solution discussed in the second post requires to use using System.Linq; at the beginning of your program:

```
using System;
using System.Linq;

class MainClass {
    public static void Main (string[] args) {

        int[] arrayA = { 1, 8, 9, 10, 1, 30, 1, 32, 3 };
        int[] arrayB = { 1, 8, 9, 10, 1, 30, 1, 32, 3 };
        int[] arrayC = { 1000000, 8, 9, 10, 1, 30, 1, 32, 3 };
```

```
if (arrayA.SequenceEqual(arrayB)) {  
    Console.WriteLine("The arrays arrayA and arrayB are the same!");  
}  
if (arrayA.SequenceEqual(arrayC)) {  
    Console.WriteLine("The arrays arrayA and arrayC are the same!");  
}  
  
}  
}
```