U6L2: Traversing Arrays

Looping through an array

It is often useful to loop through all the elements of an array one at time. For example, if we were given the following array of Scooby Doo characters

names

0	1	2	3	4
"Shaggy"	"Scooby"	"Velma"	"Daphne"	"Fred"

We could write a for loop that iterates from `0` to `4` to print each out on a separate line.

```
1 for(int i = 0; i < 5; i++){
2     System.out.println(names[i]);
3 }
```

A better way to write this would be to use `names.length` instead of the *magic number* `5`

```
1 for(int i = 0; i < names.length; i++){
2     System.out.println(names[i]);
3 }
```

Off By One Errors

Can you find the error in the following code?

```
1 for(int i = names.length; i <= 0; i--){
2     System.out.println(names[i]);
```

Enhanced For Loops

Enahnced for loops were added in Java 7. They result in a more readable for loop that can be used with any Java *collection* such as *Array* and *ArrayList* objects.

Our Scooby Doo example can now be rewritten as:

```
1 for(String name: names){
2     System.out.println(name);
3 }
```

For Each Loops cannot Mutate an Array.

Consider the following:

LAB-023

Write a class named Team