Lab Exercise 2

Basic Operators

Assignment Operator

We have already used the assignment operator for simple values.

```
var value = 17
value = 1337
```

Exercise 2.1

What would happen if you used the assignment operator in the following way? (This is mainly an exercise for Objective-C coders.)

```
var value = 17

if value = 19 {
    print("Whatever and stuff.")
}
```

Arithmetic Operators

Everyone knows how these work. They're basically the same as in other lanugages.

+, -, *, -

Exercise 2.2

Use all the arithmetic operators in a single statement and assign the result to a constant.

Exercise 2.3

Append the string "Larionov" to the end of the string "Igor " and assign the resulting string to a constant.

Exercise 2.4

What happens if you try the unary increment operator (e.g. `value++`) from other C-like languages?

```
var value = 0
value++
```

Exercise 2.5

How do you check if two strings are equal in Swift?

Exercise 2.6

Let's compare some tuples. Guess if these are true or false:

```
(1, "zebra") < (2, "apple")

(2, "zebra") < (1, "apple")

(3, "apple") < (3, "bird")

(4, "dog") == (4, "dog")

(4, "dog") == (4, "cat")
```

Ternary Conditional Operator

Exercise 2.7

Use the ternary conditional operator to assign the correct number of days in a year to the constant `daysInYear`depending on the value of `leapYear`.

```
var leapYear = true
```

Nil-Coalescing Operator

Coalescing is not the easiest word to spell. You could think of it as the default operator, I guess.

Exercise 2.8

Use the nil-coalescing operator `??` to provide a fallback value if a value for the optional variable `name` has not been provided.

```
// The first name is optional in this example.
var firstName: String? = nil

// The last name is however not optional.
var lastName: String = "Jones"

// Use ?? operator here to provide a fallback value,
// if no first name has been provided.
// For example, the default value could be "Dr.",
// because this code is to be used at a medical conference.
var name: String = firstName

name += " " + lastName
print(name)
```

Range Operators

Exercise 2.9: Closed Range Operator

Define a closed range, e.g. for an amplifier volume knob that goes from 0 to 11. The range should include both 0 and 11, because this amplifier really does go to 11.

Exercise 2.10: Open Range Operator

Define an open range, e.g. for an amplifier volume knob that goes from 0 to 10. The range should include both 0 and 10, but not 11.

Strings and Characters

Exercise 2.11

Create the string "Detroit Red Wings" from the following variables/constants and assign it to the constant `hockeyTeam`:

```
let city: String = "Detroit"
var color = "Red"
let wings = "Wings"
```

First do it using concatenation and then again using interpolation.

Exercise 2.12

Assign the length of the string "4, 8, 15, 16, 23, 42" to the variable `length`.

Exercise 2.13

The book states that you can modify/mutate a string by making it a variable and not a constant, as follows:

```
var variableString = "Detroit"
variableString += " Red Wings"
```

How does this work with regards to strings being value types?