SpaceAdventure
Lesson 3

Description

Add a `while` loop to validate the user input of `Y` or `N`.

```
Welcome to our solar system!
There are 8 planets to explore.
You are currently on Earth, which has a circumference of 24859.82 miles.
What is your name?
Jane
Nice to meet you, Jane. My name is Eliza, I'm an old friend of Siri.
Let's go on an adventure!
Shall I randomly choose a planet for you to visit? (Y or N)
Huh?
Sorry, I didn't get that.
Y
Ok! Traveling to...
```

Learning Outcomes

- Relate repetitive tasks to to Boolean logic and control flow with a `while` loop.
- Practice applying Boolean logic with an expression that uses not and or.

Vocabulary

input validation	Boolean/logical operator	not
or	loop	`while`
`else if`		

Materials

- **SpaceAdventure Lesson 3** Xcode project

Opening

How can we properly handle `Y`, `N` and everything else the user might type?

Agenda

- Discuss the need to ask the traveler if he wants to visit a random planet, and to prompt for another answer "as long as the traveler does not answer `Y` or `N`."
- Modify the existing user input capturing and decision making to leverage a `while` loop to carry out the repetitive task of waiting for the user to type `Y` or `N`.

```
var decision = "" // Start with empty String
while !(decision == "Y" || decision == "N") {
   decision = getln()
   if decision == "Y" {
      println("Ok! Traveling to...")
      // TOOD: travel to random planet
   } else if decision == "N" {
      println("Ok, name the planet you would like to visit...")
      // TODO: let the user select a planet to visit
   } else {
      println("Sorry, I didn't get that.")
   }
}
```

- Explain `while` loop syntax, the `!` operator for logical negation, parenthesis for grouping expressions, and the `||` operator.
- Discuss why `decision` is now a variable, as it may be assigned different values during repetitions of the loop.
- Discuss the `if` statement, the `else if` clause and the `else` clause.
- Run the program (⌘R), interact with the console (⇧⌘C), try some arbitrary input, and observe that the program continues to prompt until `Y` or `N` is entered.

Closing

Read the code aloud as if it were a story. It seems to be about `println`, `getln` and loops. How can we introduce the concept of an "adventure" into our program?

Modifications And Extensions

- Add an "easter egg" to the program, so that when the user types something like `Cookies!` instead of `Y` or `N`, the program responds accordingly.

Resources

The Swift Programming Language: About Swift https://developer.apple.com/library/prerelease/ios/documentation/Swift/Conceptual/Swift_Programming_Language/

The Swift Programming Language: A Swift Tour https://developer.apple.com/library/prerelease/ios/documentation/Swift/Conceptual/Swift_Programming_Language/GuidedTour.html

The Swift Programming Language: The Basics https://developer.apple.com/library/prerelease/ios/documentation/Swift/Conceptual/Swift_Programming_Language/TheBasics.html

The Swift Programming Language: While Loops https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/ControlFlow.html#//apple_ref/doc/uid/TP40014097-CH9-ID124

The Swift Programming Language: Logical Operators https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/BasicOperators.html#//apple_ref/doc/uid/TP40014097-CH6-ID76

The Swift Programming Language: Conditional Statements https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/ControlFlow.html#//apple_ref/doc/uid/TP40014097-CH9-ID127