# Beginning Programming with Swift

## Objectives

This assignment is to create a Swift program that demonstrates the use of Swift programming language constructs. You may use Xcode or the web site at http://online.swiftplayground.run/ - the web site does not save your work as you go.

Please turn in your assignment as a file with your name, such as "JeffLinwood.swift"

1. Make a comment that includes your name at the top of the file.

2. Show that you understand the difference between the var and let keywords by writing three lines of Swift code that create a constant (let) and a variable (var), assigning string (text) values to each, and then changing the value of the variable.

3. Data Types - choose four different data types, and show an example of each, declaring a constant and assigning it an appropriate value. Put a comment in above each constant with the name of the data type. Example (don't use this one):

   ```
   // Float
   let tipPercentage = 0.15
   ```

4. Demonstrate string interpolation and naming by creating constants for first name, last name, and full name, with the appropriate camel case naming conventions for each. The full name should be a string interpolation of the first name and last name, with a space in the middle.

5. Do some basic math with Swift. Find the rough population of the United States in 2016 or 2017 (a Census number from the past 10 years is fine), and create (and name) the appropriate constant or variable for that. Find the Gross Domestic Product (GDP) of the United States in the same year, and create and name a constant or variable for that. Then calculate the per capita GDP for the US (GDP divided by population). Use the correct data types for this exercise. Cite your sources (a URL is fine) for the above numbers in Swift comments.

6. Create a simple Swift function that takes a string as an argument, and returns one of two values - "short" if the length of the string is less than 10 characters, and "long" if it is ten or more characters long. You will need to use an if statement, as well as figuring out how to get the length of a string in Swift. Your function will also need to have one argument, and return a string value.

   Demonstrate the use of this function by calling it twice, once with a short argument, and once with a long argument, and then printing the results of each.

## Grading Evaluation

| Name | Points | Description |
| --- | --- | --- |
| Working Swift Program | 5 | Submitted a working Swift Program. |
| Comment | 5 | There is a Swift comment, and it has your name. |
| Variables and Constants | 10 | There is a constant declared with a value. There is a variable declared with a value. The value of the variable is changed on a separate line. |
| Data Types | 20 | There are four different data types represented, each with a constant and a comment. |
| String Interpolation and Naming | 20 | The full name is a string interpolation of the first name and last name.<br><br>All three constants use the camel-case naming convention. |
| Math Exercise | 20 | The per capita GDP is correctly calculated based on the numbers that you found.<br><br>Variables and/or constants are correctly chosen and named (using camel case) for the GDP and population).<br><br>Sources are cited using Swift comments in the playground. |
| String Length Function | 20 | The function has the correct signature (argument and return value).<br><br>The function uses an if statement correctly.<br><br>The function is called twice in the Swift program, with the correct arguments, and those results are printed out. |
| **100** | | |