Assignment 1

Week 1 Reading Assignment (Milestone 1)

Objective

For the first week, your goal is to get a handle on the basics of the Swift programming language. It is important to understand the basic syntax of Swift and how to declare and use constants and variables as well as program control flow.

You should be familiar with most of the concept from the programming language(s) you are familiar with (e.g., Java), but the key difference will be syntax. While you won't need to memorise every single detail about the programming language syntax (this is what the reference manual is for), it is important that you are familiar enough with the concepts to be able to start writing your own programs.

Sections to Read

All the reading material for this week is contained in the Swift Programming Language book (available for free online or as an eBook). The labs are open this week and it is highly recommended that you use Xcode playgrounds to experiment with the concepts you are reading about (rather than just reading the book and trying to memorise its content). Make sure you read the following sections this week (subsections in dark red contain more advanced concepts that you might not be so familiar with - read them very carefully to make sure you fully understand these concepts!):

Welcome to Swift

- About Swift
- A Swift Tour

Language Guide

- The Basics
  - Constants and Variables
  - Comments
  - Semicolons
  - Integers
  - Floating-Point Numbers
  - Type Safety and Type Inference
  - Booleans
  - Optionals
- Basic Operators
  - Terminology
  - Assignment Operator
  - Arithmetic Operators
  - Compound Assignment Operators
  - Comparison Operators
  - Range Operators
  - Logical Operators
- Strings and Characters
  - String Literals
  - Initializing an Empty String
  - String Mutability
  - Strings Are Value Types
  - Working with Characters
  - Concatenating Strings and Characters
  - String Interpolation
  - Counting Characters
  - Comparing Strings
- Collection Types
  - Mutability of Collections
  - Arrays
- Control Flow
  - For Loops
  - While Loops
  - Conditional Statements
  - Control Transfer Statements
- Functions
  - Defining and Calling Functions

- Function Parameters and Return Values
- Function Types

- Classes and Structures
  - Comparing Classes and Structures
  - Classes Are Reference Types
  - Choosing Between Classes and Structures