**INFO 6350 Fall 2024**

**Assignment 3**

**Introduction to Swift (PART 2)**

Use Swift playground and/or the command line for macOS (open XCode, create a new XCode project, macOS, command line tool), and practice the following exercises:

**Swift Loops:**

1. Print only odd numbers in the range of 1-20 using a for loop.

2. Print the numbers from 30 down to 10 using a for loop.

3. Print the numbers from 15 down to 5 using a while loop.

4. Print the numbers from 1-50 but skip any multiple of 5 using a for loop.

5. Create an array of colors and iterate over it to print each element.

**Swift Functions:**

1. Write a function named “multiply” that multiplies two integers and returns the result.

2. Create a function called “joinWords” that takes two strings as parameters and returns them combined with a space in between.

3. Implement a function named “fahrenheitToCelsius” that converts a temperature in Fahrenheit to Celsius.

4. Write a function named “isOdd” that takes an integer as input and returns true if it's odd, false otherwise.

5. Create a function called “farewell” that takes a name as a parameter and returns a goodbye message.

**Swift Enumerations:**

1. Create a simple enum for months. Print the enum cases.

2. Define a weather condition enum with cases for sunny, rainy, cloudy, and windy. Print a random weather condition.

3. Define a FileError enum with cases like fileNotFound, permissionDenied, etc. Print a sample error case.

4. Declare an enum for car types like sedan, SUV, etc., and associate relevant data with each case.

5. Create an enum for planets with their average distance from the sun in kilometers as a raw value. Print the raw value of any case.

**Swift Structures:**

1. Define a Swift structure named ‘Movie’ with four properties. Declare these properties and their types.

2. Add a method called summary to the Movie structure that returns a brief description of the movie.

3. Create three instances of the ‘Movie’ structure with different values for title, director, duration, and releaseYear. Provide the details for each instance.

4. Choose one of the instances of the ‘Movie’ structure and call the summary method on it. Show the output on the console.

**Swift Class:**

1. Define a class ‘Animal’ with two methods: ‘speak()’ and ‘move()’.

2. Create a subclass ‘Dog’ inheriting from ‘Animal’ with a property ‘breed’, and override methods for making the dog speak and move.

3. Define another subclass ‘Bird’ inheriting from ‘Animal’ with a property ‘wingSpan’, and override methods for making the bird speak and fly.

4. Instantiate a ‘Dog’ with a specific breed and a ‘Bird’ with a specific wingSpan.

5. Print both the ‘speak()’ and ‘move()’ behavior for the ‘Dog’ using a method called ‘displayActions’.

6. Similarly, print both the ‘speak()’ and ‘move()’ behavior for the ‘Bird’ using a method called ‘displayActions’.