**INFO 6350 Fall 2024**

**Assignment 2**

**Intro to Swift (PART 1)**

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 Variables and Constants:**

1. Create a variable called **numberOfPets** and set it to the number of pets you have. Print out a sentence using the **numberOfPets** variable.
2. Create a constant called **maxAttempts** and set it to 5. Print "The maximum number of attempts allowed is <**maxAttempts**>".
3. Create a variable called **radius** and assign it a value representing the radius of a circle. Calculate the **area** of the circle using this value and print the result.

**Swift String Interpolation:**

1. Create 2 variables: **city** and **temperature**. Assign your favorite city and its temperature today to them. Print out "It's currently <temperature> in <city>."
2. Use the **temperature** variable from the previous question and print "The temperature will be <temperature+5> in <city> tomorrow."
3. Print the length of the following string: "hi👋" as "The length of the string is <length>".

**Swift Data Types:**

(Remember to mention data type explicitly)

1. Create a **String** variable called **favoriteFood** and assign it your favorite food. Print it.
2. Create an **Integer** variable called **daysUntilVacation** and assign it the number of days left until your vacation. Print it.
3. Create a **Double** variable called **interestRate** and assign it an interest rate. Print it.
4. Create a **Float** variable called **distanceInKilometers** and assign it a value representing distance. Print it.
5. Create a **Boolean** variable called **isVerified** and set it to true or false. Print it.

**Swift Condition:**

(Remember to use If-else)

1. Create three variables **X**, **Y**, and **Z**. Print whether at least two of them are equal.
2. You are organizing an event. The venue can accommodate 50 guests. You have invited 45 people, but 3 are yet to respond. Print whether you can invite more guests or if you're at capacity.
3. You are comparing the scores of two teams in a basketball game. Team A scored 76 points, and Team B scored 89 points. Compare their scores and print the team with the higher score. If their scores are the same, print a message saying "Both teams tied."

**Swift Optionals:**

1. Declare an optional integer variable score and assign it the value 100. Write code to print the value if it's not nil, otherwise print "No score available." (Use Optional Binding)
2. Create an optional string variable userInput that may or may not contain a value. Write a program that uses a guard-let statement to check whether the userInput is nil or contains a value. If it contains a value, print "User input received: [value]"; otherwise, print "No user input provided." (Use Guard Let)

**Arrays:**

1. Create an array called **fruits** with at least 5 different fruit names. Print the entire array.
2. Using the **fruits** array, print the first and last elements of the array.
3. Create an empty array called **numbers**. Use a loop to add the numbers 1 through 5 to this array.
4. Create an array called **days** with the days of the week. Remove the last two days and print the resulting array using removeLast() function.
5. Create two arrays: **evenNumbers** with even numbers from 2 to 10, and **oddNumbers** with odd numbers from 1 to 9. Combine these two arrays into a new array called **allNumbers** and print it.

**Set:**

1. Create a set of 5 numbers. Then, remove one specific number from the set and display the updated set.
2. Create a set of fruits. Check whether the set is empty and print a message to let us know.
3. Create a set of 6 integers. Find out the smallest and largest numbers in the set and show them.
4. Create a set of 4 car brands. Add a new car brand to the set and print out the new list of brands.
5. Create a set of integers. Print out how many elements are in the set.

**Dictionary:**

1. Create and print a dictionary of **country** capitals.
2. Accesses a specific value (capital of France) in the **capitals** dictionary and print it.
3. Add a new key-value pair (Canada: Ottawa) to the **capitals** dictionary and print the dictionary.
4. Create a **studentGrades** dictionary and access a specific student's grade and print it.
5. Update a student's grade in the **studentGrades** dictionary and print it.