OKANAGAN COLLEGE

Computer Science 316

iOS App Development

Lab Assignment #1

Due: Sunday, January 23, 2022 (Before midnight)

1. Use Xcode to create a Playground (name it *PrimeNumbers*) with a few closures as specified below:

   Prime numbers between num1 and num2 (inclusive), where num1 and num2 are two integer parameters for the function.

   a) Write a function named *printPrimeNumbers* to print all the prime numbers between num1 and num2.

   b) Write a function named *getPrimeNumbers* to return an array holding the prime numbers between num1 and num2.

   c) Repeat (b) using a local closure with a reference named *PrimeNumbers* instead of using a function

   Use the following function calls to see the results:
   printPrimeNumbers (num1: 1, num2: 50)
   print (getPrimeNumbers(num1: 1, num2: 50))
   print (primeNumbers(1, 50))

2. Use Xcode to create second Playground (name it *PayCheck_ReverseDigits*) with a few closures as specified below:

   a) Write a function named *payCheck* which takes four parameters (name: String, hoursworked: Double, hourlyrate: Double and bonus: Double), and it performs calculation and returns the paycheck amount for an employee. Please note that bonus is optional, not every employee will get a bonus for their paycheck. Also note that 80 hours of work is the maximum for a two-week period. Any hours over 80 hours will be considered as overtime hours, and will get 1.5 times of the regular hourly rate.

   Use the following calls:
   print (payCheck ("John Doe", 70.5, 21.5, 150.0) // output: John Doe: $1665.75
   print (payCheck ("Peter Chan", 88.5, 20.0) // output: Peter Chan: $1855.00

   b) Write a recursive function named *reverseDigits* which takes two arguments (*num :Int* and *reversedStr: String*) and return a reversedStr which contains all digits of num in reverse order. Use underscore symbol "_" in the function heading to suppress using external names of the two parameters when the function is invoked.

Use the following calls:

```
print (reverseDigits (1234, “”))        // output:  4321
print (reverseDigits (-1230, “”))       // output:  -0321
print (reverseDigits (0, “”))           // output:  0
```

Submitting your work:

Copy your two playground files into **Lab1** folder. Then compress **Lab1** folder and submit it via Lab 1 link on our Moodle course page by *Sunday, January 23, 2022 (before midnight).*