**Lab 3- High Order Functions in Kotlin**

Below is a lab exercise on Higher-Order Functions in Kotlin. This exercise focuses on creating and using higher-order functions with lambdas. Feel free to use an IDE or an online Kotlin compiler to run the code.

// Lab Exercise: Higher-Order Functions in Kotlin

// Task 1: Create a higher-order function named 'operation' that takes two integers

// and a function as parameters. It should apply the function to the numbers and return the result.

fun operation(a: Int, b: Int, operationFunction: (Int, Int) -> Int): Int {

return operationFunction(a, b)

}

// Task 2: Declare a lambda function named 'add' that takes two integers as parameters

// and returns their sum.

val add: (Int, Int) -> Int = { a, b -> a + b }

// Task 3: Declare a lambda function named 'subtract' that takes two integers as parameters

// and returns their difference.

val subtract: (Int, Int) -> Int = { x, y -> x - y }

// Task 4: Create a function named 'main' and perform the following tasks:

fun main() {

// Task 5: Call the 'operation' function with different numbers and the 'add' function.

val resultAdd = operation(10, 5, add)

println("Result of addition: $resultAdd")

// Task 6: Call the 'operation' function with different numbers and the 'subtract' function.

val resultSubtract = operation(8, 3, subtract)

println("Result of subtraction: $resultSubtract")

// Task 7: Declare a higher-order function named 'printMessage' that takes a message

// and a function that prints the message in a specific way. It should apply the function to the message.

fun printMessage(message: String, messagePrinter: (String) -> Unit) {

messagePrinter(message)

}

// Task 8: Declare a lambda function named 'printUpperCase' that takes a string and prints it in uppercase.

val printUpperCase: (String) -> Unit = { str -> println(str.toUpperCase()) }

// Task 9: Call the 'printMessage' function with a message and the 'printUpperCase' function.

printMessage("Hello, Kotlin!", printUpperCase)

}

**Instructions:**

Create the higher-order function 'operation' as instructed in the comments.

Declare the lambda functions 'add' and 'subtract' as instructed in the comments.

In the main function, call the 'operation' function with different numbers and the 'add' and 'subtract' functions.

Implement the higher-order function 'printMessage' and the lambda function 'printUpperCase' as instructed in the comments.

Call the 'printMessage' function with a message and the 'printUpperCase' function.

This exercise is designed to reinforce your understanding of higher-order functions and their usage in Kotlin. Feel free to experiment with additional scenarios and modify the code as needed.