

# Session 7 Lab Report

## Title: Console-Based Tip Calculator Using Kotlin

### 1. Objective

To build a console-based Kotlin program that calculates a tip based on bill amount and percentage, with an optional round-up feature.

### 2. Source Code

```
import kotlin.math.ceil

fun main() {
    println("===== Tip Calculator =====")

    print("Enter bill amount: ")
    val billInput = readLine()?.toDoubleOrNull()

    print("Enter tip percentage: ")
    val tipInput = readLine()?.toDoubleOrNull()

    print("Round up tip? (yes/no): ")
    val roundInput = readLine()

    if (billInput == null || tipInput == null) {
        println("Invalid input. Please enter numeric values.")
        return
    }

    val roundUp = roundInput.equals("yes", ignoreCase = true)

    val tipAmount = calculateTip(billInput, tipInput, roundUp)
    println("Tip Amount: █%.2f".format(tipAmount))
}

fun calculateTip(amount: Double, tipPercent: Double, roundUp: Boolean): Double {
    var tip = (amount * tipPercent) / 100

    if (roundUp) {
        tip = ceil(tip)
    }

    return tip
}
```

### 3. Explanation (Concise)

- The program accepts bill amount and tip percentage from the user.
- `toDoubleOrNull()` ensures safe numeric conversion.
- `calculateTip()` function computes the tip using  $(\text{amount} \times \text{percentage}) / 100$ .

- Conditional logic applies ceil() if round-up is selected.
- String formatting ensures the tip is displayed with two decimal places.

## 4. Conclusion

This lab demonstrates core Kotlin concepts including functions, conditional statements, numeric operations, null safety, and formatted output. It builds foundational programming logic.