**Introduction to Programming**

**SADITM** for \_\_lab1L2: Tip Calculator\_\_\_

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**Specification of the Problem:**

Find the total amount of the bill for a restaurant including tip. The percentage to tip amount must be input as an integer, while the amount for the meal must be a double. Output the total amount.

**Analysis**: Data Requirements (Include libraries that will need to be imported and primitive data types of all variables)

**Narrative: Prompt** for *tipPercentage*. **Read** *tipPercentage*. **Prompt** for *partialBill*. **Read** *partialBill*. **Compute** *tipAmount*. **Compute** *totalBill.* **Output** *totalBill.*

**External Files to Include/Import**: <stdio.h>

**Input variables**: int *tipPercentage,* double *partialBill*

**Output variables**: double *totalBill*

**Program Variables:** double *tipAmount*

**Constants**: None

**Formulas:** *tipAmount=(tipPercentage/100) \*partialBill,* *totalBill=partialBill + tipAmount*

**Design**: Algorithm (include Program Variables to store intermediate results, if any)

**Algorithm**:

**Prompt** with “Please enter the percentage at which you wish to tip: ”

**Read** *tipPercentage*.

**Prompt** with “Please enter the amount of the meal (before tip): “

**Read** *partialBill*.

**Compute** *tipAmount=(tipPercentage/100) \*partialBill*

**Compute** *totalBill=partialBill + tipAmount*

**Output** “Your total bill is: “*+ totalBill*

**Algorithm for other Methods / Functions:** None

**Test Cases**: At least three test cases

Nominal Cases

1. *partialBill* = $12.37, *tipPercentage* = 15 (typical case)

Your total bill is 14.2255

1. *partialBill* = $12.37, *tipPercentage* = 0 (0 tip)

Your total bill is $12.37

1. *partialBill* = $0, *tipPercentage* = 15 (0 cost meal)

Your total bill is 0

Fringe Cases

1. *partialBill* = $12.37, *tipPercentage* = -12 (negative tip)

Your total bill is 10.8856

1. *partialBill* = -$15.35, *tipPercentage* = 7 (negative cost meal)

Your total bill is -16.41338