

## Lab 04 Travel Cost: Restaurant and Mileage

### Problem One: Car Travel

You have purchased a new car and the car holds 15 gallons of gasoline. On a full tank the car can travel 375 miles before refueling. Hence, we can calculate the number of miles per gallon the car gets by using the following equation:

$$\text{MPG} = \text{Miles Driven} / \text{Gallons of Gas Used}$$

Now, assuming you are traveling to an exciting travel destination on the spring break and you want to measure how many times you need to stop in order to refuel on your way.

In this assignment, you are to write a program to determine the number of times you need to stop to refuel for a given distance to your travel destination.

### Sample Input:

What is the travel distance?: 800

### Sample Output:

Your car's MPG is 25 and on your 800 miles travel, you need to stop 2 time(s).

*Please name the program Travel.cpp*

### Problem Two: Restaurant Bill

On your travel you decided to stop at a restaurant for a dinner. Now, you want to write a program that computes the tax and the tip on a restaurant bill for a given meal charge. The tax is 6.75 percent of the meal cost. The tip is 20 percent of the total after adding the tax. Your program should display the meal cost, the tax amount, the tip amount, and the total bill on the screen.

Tax amount:  $\text{Meal Cost} * \text{Tax Amount} / 100$

Tip amount:  $(\text{Meal Cost} + \text{Tax Amount}) * 20 / 100$

Total cost:  $\text{Meal Cost} + \text{Tax Amount} + \text{Tip Amount}$

**Sample Input:**

What is the meal charge?: 80

**Sample Output:**

Your meal cost is: \$80

Tax amount: \$5.4

Tip amount: \$17.08

Total cost: \$102.48

*Name your program Restaurant.cpp*

In this assignment, you have to submit two program files. You might have to use magic numbers and that's fine for this assignment. However, pay attention to the following:

- use reasonable line length. If needed break your lines at operators
- indent levels consist of two spaces
- matching curly braces are aligned vertically as best as possible
- use meaningful variable names
- always terminate output with an end-line (`endl`)

As always, make sure you have a file header comment that gives your name and the program's purpose. When you are satisfied with your program, by the due date of 5:00 pm on 8 February submit the program file on Blackboard. Thank you.