CSC 134
M3HW1

Instructions:

All questions involve using **if** statements to make the program perform different behavior, based on user input. You may want to review **cin**, **cout**, and **if**.

Bronze (max 80/100): Complete any two questions.
Silver (max 90/100): Complete any three questions.
Gold (max 100/100): Complete all four questions.

Please add to your top of file comment block a note on which tier you are attempting. Example:

```
// CSC 134
// M3HW1 - Silver
// Name
// Date
```

For setting up your program, you have three options.

First, you can simply make one file for each question. (M3HW1_Name_Q1, for example). This is the easiest but requires the most effort, since you have to upload each file.

Second, you could answer all the questions in main, with a cout message between them. Example:

```
// Question 1
cout << "Question 1" << endl;
// Question 1 code goes here

// Question 2
Cout << "Question 2" << endl;
// Question 2 code goes here

// etc.
```

If you do this, remember you can't declare the same name for a variable twice, so if you have **int x;** in Question 1, you can't also have **int x;** in Question 2. Using different variable names gets around this. (Not that you should have a variable called "x" anyway, it's not descriptive.)

Third, and the method we'll use once we fully cover functions, is to look at how M3LAB2 example file 3 handled the issue, creating different functions for each question. (This is only recommended if you're comfortable working with functions already, for example if you've used them in a different language.)

The Questions

Question 1. Write a very simple "chat bot" that has a very short conversation. A sample transcript of the program output follows, write yours so that it follows the script. (User input is

in **bold**). If your output is different, but the behavior is about the same (it answers in three different ways), that is fine.

Sample Run 1

```
Hello, I'm a C++ program!
Do you like me? Please type yes or no.
yes
That's great! I'm sure we'll get along.
```

Sample Run 2

```
Hello, I'm a C++ program!
Do you like me? Please type yes or no.
no
Well, maybe you'll learn to like me later.
```

Sample Run 3

```
Hello, I'm a C++ program!
Do you like me? Please type yes or no.
(any input other than 'yes' or 'no')
If you're not sure… that's OK.
```

(Notes: If you'd like to see a more complicated chatbot in action, try out Eliza: https://www.masswerk.at/elizabot/ is one version. You might try asking it for advice about your c++ homework. It's a really good listener.)

Question 2. Use the "receipt calculator" program you wrote in the previous module as a base.

Add this functionality to the program:

Ask them to enter the price of the meal.

Ask them if the order is dine in or takeaway. (You might do this by a line such as "`Please enter 1 if the order is dine in, 2 if it is to go`").

If the order is dine in, add a 15% tip. (This is similar to how you already handled tax, you calculate a $ tip based on the meal price multiplied by the tip percentage.)

Then print the meal price, the tax, the tip (if any), and finally the total amount due, using a receipt format like from the previous assignment.

Question 3. Create a simple "Choose Your Own Adventure" game, where the user types in commands and the program tells a simple story. You may wish to use the M3LAB2 assignment for an idea of where to start.

In this game, you should offer the user a choice of two actions. One answer leads to a game over, and the other leads to a second choice of two actions. One answer leads to defeat, and one to victory.

If a CYOA game doesn't interest you, you can set up the same structure to ask the user to answer some questions for a quiz, such as "What Harry Potter house are you?"

(Notes: You will probably need to use a nested **if** structure, so that only one of the two answers to the first question leads to the second question. The chapter gives a few examples.

One way to try out this kind of game if you have an Alexa enabled device is to say **"Alexa, Skyrim"**. I'm not kidding.

Another, very silly, example of a Choose Your Own Adventure is in the "Adventure Call" skits from the Scottish TV program "Limmy's Show". If you like absurd humor, you might check them out: **https://www.youtube.com/playlist?list=PL14FE43CDC4AA21F0**)

Question 4. Write a simple "Math practice" program that meets the following requirements.

The program should generate two single digit numbers at random.

The program should print out the numbers as a simple addition problem.

The program should ask the user to enter the answer.

Finally, the program will tell the user whether or not their answer was correct.

Sample Run (your output may vary from this format)

```
What is 4 plus 5?
8
Incorrect.
```

(Notes: The previous chapter explains how to generate pseudorandom numbers.)