COP 3331 Summer 2017: Programming Assignment 1
Due: Tuesday, 23 May, 11:55 pm

Submission:
Please include the following files in a zipped folder and submit the zipped file via the assignment link on Canvas. The zipped file should have the name "proj1-xxx.zip" where xxx is your NetID.

- newfizzbuzz.cpp: Your source code for problem 1 (New Fizz Buzz)
- cointoss.cpp: Your source code for problem 2 (Coin Toss)
- README file: A plain text including instructions on how to compile and run your code in the IDE you used. This file should include any special instruction/information that the TA should know to be able to run your code.

Important Notes:
- Your source codes should be well-commented showing clearly what each part/block of the program does.
- Each .cpp file should have your name and description of the file in comments at the top of the file.

Problem 1: New Fizz Buzz (20 pts)

Week 1's lectures included the code to solve the popular fizz buzz problem in C++. Modify the code so that it does the following:

1. In addition to the rules for Fizz (3) and Buzz (5), for multiples of 7, print "Woof" instead of the number.
    a. For multiples of 3 and 7, print "FizzWoof".
    b. For multiples of 5 and 7, print "BuzzWoof".
2. Format your output so that it prints 5 values per line.

(Don't worry about multiples of 3, 5 and 7 in this version).

Output

The expected output is shown below:

```
          1          2       Fizz          4       Buzz
       Fizz       Woof          8       Fizz       Buzz
         11       Fizz         13       Woof   FizzBuzz
         16         17       Fizz         19       Buzz
   FizzWoof         22         23       Fizz       Buzz
         26       Fizz       Woof         29   FizzBuzz
         31         32       Fizz         34   BuzzWoof
```

```
Fizz        37        38      Fizz      Buzz
  41  FizzWoof        43        44  FizzBuzz
  46        47      Fizz      Woof      Buzz
Fizz        52        53      Fizz      Buzz
Woof      Fizz        58        59  FizzBuzz
  61        62  FizzWoof        64      Buzz
Fizz        67        68      Fizz  BuzzWoof
  71      Fizz        73        74  FizzBuzz
  76      Woof      Fizz        79      Buzz
Fizz        82        83  FizzWoof      Buzz
  86      Fizz        88        89  FizzBuzz
Woof        92      Fizz        94      Buzz
Fizz        97      Woof      Fizz      Buzz
```

Problem 2: Coin Toss (30 pts)

Write a program that simulates a coin toss and determines if it is realistic.

1. For each toss of the coin, the program should print "Heads" or "Tails".
2. Prompt the user to enter the number of times the coins should be tossed. The coin should be tossed at least 10 times. Include an input validation statement to enforce this request.
3. Count the number of times each side of the coin appears.
4. Your program should call a separate function that takes no arguments, but returns 0 for heads and 1 for tails.
5. Format your output so that 10 tosses are printed per line.
6. Your program will call another function to determine if the simulation was realistic. This function will accept the number of heads (or the number of tails) and the number of tosses as arguments.
    a. If the selected side of the coin appears approximately half of the time, (between 45% and 55%) return true. Your code should print "This simulation was realistic." Otherwise, your code should print "This simulation was not realistic."

Sample Output 1

```
Enter the number of times you want to toss the coin: 5
The number of tosses must be greater than 10. Re-enter: 50
Tails Tails Heads Heads Heads Tails Tails Tails Heads Tails
Heads Heads Tails Heads Heads Heads Tails Tails Tails Heads
Tails Heads Heads Heads Heads Tails Tails Heads Heads Heads
Tails Tails Tails Tails Heads Tails Tails Tails Tails Heads
Tails Heads Tails Tails Tails Tails Tails Tails Heads Heads

The total number of Heads was 22
The total number of Tails was 28
This simulation is not realistic.
```

Sample Output 2

```
Enter the number of times you want to toss the coin: 30
Heads Tails Heads Heads Tails Heads Tails Tails Heads Tails
Heads Tails Heads Tails Heads Tails Heads Tails Tails Heads
Tails Heads Tails Heads Heads Heads Tails Tails Tails Tails

The total number of Heads was 14
The total number of Tails was 16
This simulation is realistic.
```