BROWARD COLLEGE
Define yourself.

COP1334C
Introduction to C++ Programming

Chapter 6
Functions
Lab

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1. **Rectangle Area**

   Write a program that will ask the user to enter the width and length of a rectangle, and then display the rectangle's area. The program calls the following functions:

   - **getLength() – This function should ask the user to enter the rectangle's length, and the return the value as a double.**
   - **getWidth() – This function should ask the user to enter the rectangle's width, and the return the value as a double.**
   - **calcArea() – This function should accept the rectangle's length and width as arguments and return the rectangle's area, using the following formula:**

     area = length * width

   - **displayData() – This function should accept the rectangle's length, width, and area as arguments, and display them in an appropriate message on the screen.**

   rectangle.cpp

   Notes:

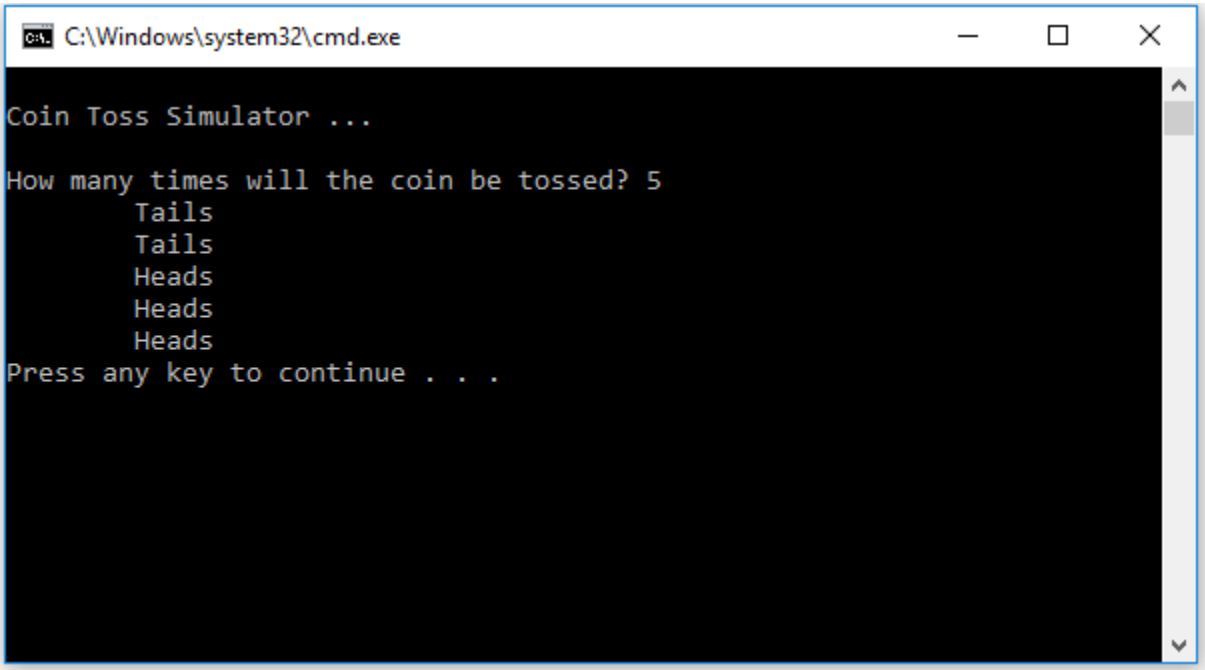
   Input Validation: Do not accept input values lower than 0.

2. **Coin Toss**

   Write a function named coinToss() that simulates the tossing of a coin. When you call the function, it should generate a random number in the range of 1 through 2. If the random number is 1, the function should display "heads". If the random number is 2, the function should display "tails". Demonstrate the function in a program that asks the user how many times the coin should be tossed, and then simulates the tossing of the coin that number of times.

   coin.cpp

Output Sample



3. **Winning Division**

   Write a program that determines which company's four divisions (Northeast, Southeast, Northwest, and Southwest) had the greatest sales for a quarter. It should include the following two functions, which are called by main.

   - **double getSales() is passed the name of a division. It asks the user for a division's quarterly sales figure, validates the input, then returns it. It should be called once for each division.**
   - **void findHighest() is passed the four sales totals. It determines which is the largest and prints the name of the high grossing division, along with its sales figure.**

   winDiv.cpp

   Notes:

   Input Validation: Do not accept dollar amounts less than $0.00

4. **Lowest Score Drop**

   Write a program that calculates the average of a group of five test scores, where the lowest score in the group is dropped. It should use the following functions:

   - **void getScore() should ask the user for a test score, store it in a reference parameter variable, and validate it. This function should be called by main once for each of the five scores entered.**

- **void calcAverage() should calculate and display the average of the four highest scores. This function should be called just once by main, and should be passed the five scores.**
- **int findLowest() should find and return the lowest of the five scores passed to it. It should be called by calcAverage(), which uses the function to determine which of the five scores to drop.**

lowestScore.cpp

Note: Input Validation: Do not accept test scores lower than 0 or higher than 100.

Output Sample