Homework 7

All the following assignments are selected from Gaddis edition 7. The purpose is that you practice with **overloading operators** and **static variables**. First do the reading assignment; Section 12.7 (pages 805- 810) and Section 11.2 (pages 681- 688). Run your code, submit the output and code too. Submit code in a separate, compliable file, do NOT include it in your pdf or text file.

IMPORTANT: Write a main function that tests your code, and provide data in your main function. Do NOT get the input from the user even if the question says so.

1. Programming challenges 11.3, Day of the Year Modification, page 768. [2 points]
2. Programming challenges 11.7, Corporate Sales, page 769. [2 points]

3. Day of the Year Modification

Modify the `DayOfYear` class, written in an earlier Programming Challenge, to add a constructor that takes two parameters: a string representing a month and an integer in the range 0 through 31 representing the day of the month. The constructor should then initialize the integer member of the class to represent the day specified by the month and day of month parameters. The constructor should terminate the program with an appropriate error message if the number entered for a day is outside the range of days for the month given.

Add the following overloaded operators:

++ prefix and postfix increment operators. These operators should modify the `DayOfYear` object so that it represents the next day. If the day is already the end of the year, the new value of the object will represent the first day of the year.

-- prefix and postfix decrement operators. These operators should modify the `DayOfYear` object so that it represents the previous day. If the day is already the first day of the year, the new value of the object will represent the last day of the year.

7. Corporate Sales

A corporation has six divisions, each responsible for sales to different geographic locations. Design a `DivSales` class that keeps sales data for a division, with the following members:

- An array with four elements for holding four quarters of sales figures for the division
- A private static variable for holding the total corporate sales for all divisions for the entire year.
- A member function that takes four arguments, each assumed to be the sales for a quarter. The value of the arguments should be copied into the array that holds the sales data. The total of the four arguments should be added to the static variable that holds the total yearly corporate sales.
- A function that takes an integer argument within the range of 0 to 3. The argument is to be used as a subscript into the division quarterly sales array. The function should return the value of the array element with that subscript.

Write a program that creates an array of six `DivSales` objects. The program should ask the user to enter the sales for four quarters for each division. After the data is entered, the program should display a table showing the division sales for each quarter. The program should then display the total corporate sales for the year.

Input Validation: Only accept positive values for quarterly sales figures.