



The Catholic University of America
School of Engineering
Department of Electrical Engineering & Computer Science

CSC 123 – C++ Programming – Fall 2018

Instructor

Dr. Brad Taylor

Assignment 1: Expressions, Interactivity & Making Decisions

Reminder: Submission must be on time as discussed in class. Your grade in all the homework assignments and exams depends on the correctness and speed of your programming solutions. All code should be included, commented as you see fit, tested to demonstrate it works correctly for appropriate input and fails for incorrect input. Integrate your code and screen shots of operation (e.g., testing) into a single document for submission where the orientation remains the same (e.g., vertical, top to bottom). Note course, assignment number, due date, the names of all team members and their roles on your cover page.

Assigned: 9/14/18 Due: 10/3/18

0. (2 points) In class exercise.

Submit screenshots from each member of your team demonstrating proficiency in setting up and using Visual Studio.

1. (2 points) Nationals Stadium Seating. (Gaddis, 9th Ed., p. 144, Problem 2)

There are three seating categories at Nationals Stadium. For a special baseball game, Class A seats are \$15, Class B cost \$12, and Class C \$9. Write a program that asks how many tickets for each class of seats were sold, then displays the amount of income generated from ticket sales. Format your dollar amount in fixed-point notation, with two decimal places of precision, and be sure the decimal point is always displayed.

2. (2 points) Average Rainfall. (Gaddis, 9th Ed., p. 144, Problem 4)

**Tropical storms are again approaching! Write a program that calculates the average rainfall for three months. The program should ask the user to enter a location (city and state), the name of each month, such as June or July, and the amount of rain (in inches) that fell each month. The program should display a message like the following:
The average rainfall for June, July and August was 3.72 inches in Washington, DC.**

3. (2 points) Magic Dates. (Gaddis, 9th Ed., p. 222, Problem 3)

The date May 14, 1970 is special because when written in the following format, the month times the day equals the year:

5/14/70

Write a program that asks the user to enter a month (in numeric form), a day, and a two-digit year. The program should then determine whether the month times the day is equal to the year. If so, it should display a message saying the date is magic. Otherwise, it should display a message saying the date is not magic.

4. (2 points) Change for a Dollar Game. (Gaddis, 9th Ed., p. 223, Problem 9)

Create a change counting game that gets the user to enter the number of coins required to make exactly one dollar. The program should ask the user to enter the number of pennies, nickels, dimes, quarters and half dollars. (No Susan B. Anthony's, Sacagawea's, or American Eagles.) If the total value of the coins entered is equal to one dollar, the program should congratulate the user for winning the game. Otherwise, it should display a message indicating whether the amount entered was more than or less than one dollar – and by how much it differs.

Assignments: Each group submits 1 set of solutions by due date via Blackboard