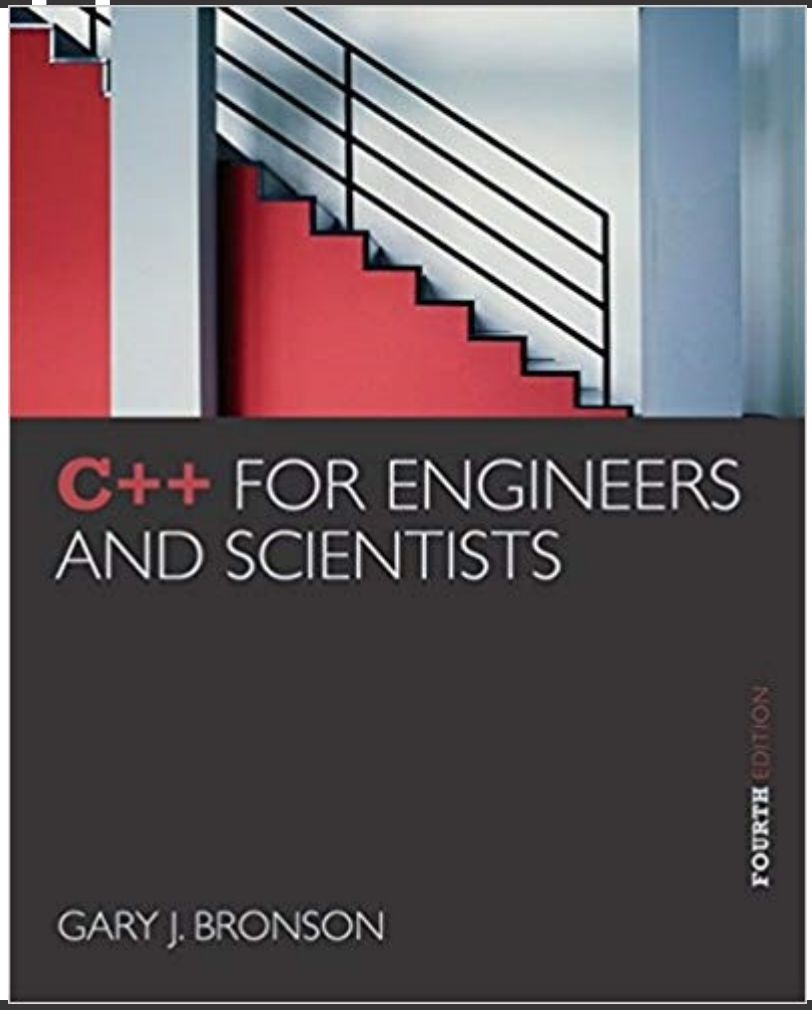
ELEG 1043
Computer Applications in Engineering



Homework Assignment 3

- EXERCISES 5.2 in the textbook

3. (**Desk check**) **a.** For the following program, determine the total number of items displayed as well as the first and last numbers printed:

```
#include <iostream>
using namespace std;

int main()
{
   int num = 0;
   while (num <= 20)
   {
      num++;
      cout << num << " ";
   }

   return 0;
}
```

Homework Assignment 3

- EXERCISES 5.6 in the textbook

1. **(Misc. application)** Four experiments are performed, and each experiment has six test results. The results for each experiment are given in the following list. Write a program using a nested loop to compute and display the average of the test results for each experiment.

1st experiment results: 3,4,5,6,7
2nd experiment results: 10,11,12,13,14
3rd experiment results: 54,55,56,57,58
4th experiment results: 99,100,101,102,103

Homework Assignment 3

- EXERCISES 6.2 in the textbook

3. **(Practice)** Write function headers for the following:
   - **a.** A function named `check()` that has three parameters. The first parameter should accept an integer number, and the second and third parameters should accept a double-precision number. The function returns no value.
   - **b.** A function named `findAbs()` that accepts a double-precision number passed to it and returns its absolute value.
   - **c.** A function named `mult()` that accepts two floating-point numbers as parameters, multiplies these two numbers, and returns the result.
   - **d.** A function named `sqrIt()` that computes and returns the square of the integer value passed to it.
   - **e.** A function named `powfun()` that raises an integer number passed to it (as an argument) to a positive integer power and returns the result as an integer.
   - **f.** A function that produces a table of the numbers from 1 to 10, their squares, and their cubes. No arguments are to be passed to the function, and the function returns no value.

Homework Assignment 3

- EXERCISES 6.2 in the textbook

6. (General math) a. The side surface area, S, of a cylinder is given by this formula:

$S = 2\pi rl$

r is the cylinder's radius, and l is its length. Using this formula, write a C++ function named `surfarea()` that accepts a cylinder's radius and length and returns its side surface area.

b. Include the function written in Exercise 6a in a working program. Make sure your function is called from `main()` and returns a value to `main()` correctly. Have `main()` use a `cout` statement to display the returned value. Test the function by passing various data to it.

Due: 10/16/2018