ECE 71/191T – Data Structures and Algorithms

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C++ Homework Assignment: Chapter 1

Code Due By: Midnight on Tuesday, January 17, 2016
NOTE: Print a copy of your working code and bring it to class Thursday, January 19, 2016

HOMEWORK #1 – Your First C++ Program

Consider the following C++ program:

```
// Homework 1

#include <iostream>

using namespace std;

int main(void)
{
     cout << "My first C++ program." << endl;

     return(0);
}
```

Specifications:
Use Netbeans to setup a new **C/C++ Build Host** to `ezekiel.engr.csufresno.edu` with your account name (see HOWTO Configure NetBeans to Compile Code on the Linux Server). Then create a new project in Netbeans called **`HW01`** (see HOWTO Create Projects in NetBeans, and Compile & Execute Code), but **do not** allow NetBeans to create the `main.cpp` file automatically. To do this, ensure that the **`Create Main File`** checkmark box is **not** selected during project creation.

Once the project has been created, in the **`Projects`** window, right click on **`Source Files`**, and click on **`New -> C++ Source File`**. Under File **`Name:`** type in **`main`**, and make sure **`Extension:`** is **`cpp`** to appropriately create a C++ source file.

Type to program listed above into the source file. Be sure to include the comment as the first line of code. In the future, replace "`1`" with the homework number that you are working on so that the Grader Program knows which homework you are submitting. Use Netbeans to compile (build your project) and execute the code.

Finally, submit your homework to the Grader Program (see HOWTO Submit Homework to the Grader Program using Netbeans). Be sure that you have correctly setup the mail client **`alpine`** first before submitting your homework (see HOWTO Setup the Mail Program alpine). Once you receive an e-mail from the Grader Program indicating that your homework assignment has been successfully submitted, compiled, and executed, move on to the next homework problem.

HOMEWORK #2 – Convert Measurements

Examine the example code from D. S. Malik's "C++ Programming" book on pages 98-99, which converts measurements in feet and inches into centimeters.

Specifications:
Create a new project called **HW02** (this time allow Netbeans to automatically create your **main.cpp** file), and copy the code into your source file. The first line of your program should be a comment stating the homework number:

```
// Homework 2
```

Since Netbeans automatically includes the C Standard Library **<cstdlib>** when creating the **main.cpp** source file, we can use the **exit(EXIT_SUCCESS)** function to properly terminate the program. Modify your source code by removing:

```
return 0;
```

Replace it with:

```
exit(EXIT_SUCCESS);
```

Use the **exit()** function to exit the main function for all future programs, since it can also be used to allow a program to fail gracefully via **exit(EXIT_FAILURE)**, if necessary.

Use Netbeans to build, debug, and test your program. When you execute the program, the following information should be displayed:

```
Enter two integers, one for feet, one for inches: 15 7

The numbers you entered are 15 for feet and 7 for inches.
The total number of inches = 187
The number of centimeters = 474.98
```

In this case, the bold underline data "**15 7**" represents user input into the program via the keyboard. Test your program using several different inputs to verify its operation.

Once you have verified that your program is working correctly, submit your source code to the Grader Program.