Chapter 1 Lab Assignments

Go to WebStudy and download the C++ files attached to Lab Assignment 1. Follow the instructions for working with each as outlined below in steps 1 through 4. When you complete these four, do problem 5, writing your first program from scratch.

1. **Compiling and running a working program**
   Download and open the file **firstprog.cpp** in your IDE (see assignment in WebStudy). Add you name in a comment, compile and run the program. The program runs and shows an output display window. What is printed on the screen? Hit any key and the message disappears.

2. **Compiling a Program with a Syntax Error**
   Download and open the file **semiprob.cpp** in your IDE Add your name in a comment and compile the program. Here we have our first example of the many syntax errors that you no doubt will encounter in this course. The error message you receive may be different depending on the system you are using, but the compiler insists that a semicolon is missing somewhere.

   Unfortunately, where the message indicates that the problem exists, and where the problem actually occurs may be two different places. Find the error and correct it. Most syntax errors are not as easy to spot and correct as this one.

   Re-compile the program and when you have no syntax errors, run the program and input 9 when asked. Record the output. Run the program again using different numbers. Record your output. Do you feel you are getting valid output?

3. **Running a Program with a Runtime Error**
   Download and open the file **runprob.cpp** in your IDE. Add your name in a comment and compile the program. You should get no syntax errors. Run the program.

   You should now see the first of several run time errors. There was no syntax or grammatical error in the program; however, just like commanding someone to break a law of nature, the program is asking the computer to break a law of math by dividing by zero. It cannot be done. On some installations, you may see this as output that looks very strange. Correct this program to match its description.

   Re-compile and run the program. Type 9 when asked for input. Record what is printed. Run the program using different values. Record the output. Do you feel that you are getting valid output?

4. Working with Logic Errors

Download and open the file **logicprob.cpp** in your IDE. Add your name in a comment and compile this program. You should get no syntax errors. Run the program. What is printed?

This program has no syntax or run time errors, but it certainly has a logic error. This logic error may not be easy to find. Most logic errors create a challenge for the programmer. Find the error and fix it.

5. Kilometer Converter

Develop a program that will read in a number that represents the number of kilometers traveled. The output will convert this number to miles. 1 kilometer = 0.621 miles. Call this program **kilotomiles.cpp**.

Add your name in a comment and compile the program. If you get compile errors, try to fix them and re-compile until your program is free of syntax errors. Run the program. Is your output what you expect from the input you gave? If not, try to find and correct the logic error and run the program again. Continue this process until you have a program that produces the correct result.

Submit all 5 programs for grading by attaching them to the Chapter 1 Lab assignment. The remaining labs for this course will be completed in MyProgrammingLab.