

LAB 1.1 OPENING, COMPILING AND RUNNING YOUR FIRST PROGRAM

Exercise 1: Logon to your system based on your professor's instructions. Start up Visual Studio IDE.

Exercise 2: Copy and paste `firstprog.cpp` program shown below into Visual Studio IDE.

Exercise 3: Compile the program.

Exercise 4: Run the program.

Exercise 5: Print a copy of both the program and the screen output, and hand them in.

The code of `firstprog.cpp` is as follows:

```
// This is the first program that just writes out a simple message

#include <iostream>      // needed to perform C++ I/O
using namespace std;

int main ()
{
    cout << "Now is the time for all good men" << endl;
    cout << "To come to the aid of their party" << endl;
    return 0;
}
```

LAB 1.2 COMPILING A PROGRAM WITH A SYNTAX ERROR

Exercise 1: Copy and paste the program `semiprob.cpp` shown below.

Exercise 2: 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. To correct the problem place a semicolon after the following line in the program:

```
cout << "Today is a great day for Lab"
```

Most syntax errors are not as easy to spot and correct as this one.

Exercise 3: Re-compile the program and when you have no syntax errors, run the program and input 9 when asked.

Exercise 4: Print out the program and the running result, and hand them in.

Exercise 5: Try running it with different numbers. Do you feel you are getting valid output?

The code of `semiprob.cpp` is as follows:

```
// This program demonstrates a compile error.

#include <iostream>
using namespace std;

int main()
{
    int number;
    float total;

    cout << "Today is a great day for Lab"
    cout << endl << "Let's start off by typing a number of your choice"
        << endl;
    cin >> number;

    total = number * 2;
    cout << total << " is twice the number you typed" << endl;

    return 0;
}
```

LAB 1.3 RUNNING A PROGRAM WITH A RUN TIME ERROR

Exercise 1: Copy and paste program `runprob.cpp` listed below into Visual Studio IDE.

Exercise 2: Compile the program. You should get no syntax errors.

Exercise 3: 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 by having the code divide by 2 instead of 0. Change the line that reads `"divider = 0; "` to `"divider = 2; "`

Exercise 4: Re-compile and run the program. Type 9 when asked for input.

Exercise 5: Print out the program and the screen output, and hand them in.

Exercise 6: Run the program using different values. Record the output. Do you feel that you are getting valid output? The code of `runprob.cpp` is as follows:

```
// This program will take a number and divide it by 2.

#include <iostream>
using namespace std;

int main()
{
    float number;
    int divider;

    divider = 0;

    cout << "Hi there" << endl;
    cout << "Please input a number and then hit return" << endl;
    cin >> number;

    number = number / divider;

    cout << "Half of your number is " << number << endl;

    return 0;
}
```
