

Lab 1 - CMPS 1043, Computer Science I

Introduction to File Input/Output (I/O)

(Revised from <http://msdn.microsoft.com/en-us/library/bb384842.aspx>)

*** Keep this information to reference when completing your projects. ***

In Visual Studio, you organize your work in projects and solutions. A solution can contain more than one project. For more information, see [Introduction to Solutions, Projects, and Items](#).

Working with Projects and Solutions

The first step in writing a Visual C++ program with Visual Studio is to choose the type of project. For each project type, Visual Studio sets compiler settings and generates starter code for you.

To create a new project

1. From the **File** menu, point to **New**, and then click **Project....**
2. In the **Project Types** area, click **Visual C++**. Then, in the **Visual Studio installed templates** pane, click **Win32 Console Application**.
3. Type a name for the project. In this example, we'll use **HelloWorldYourName**.

When you create a new project, Visual Studio puts the project in a solution. Accept the default name for the solution, which is the same name as the project.

You can accept the default location, type a different location, or browse to a directory where you want to save the project.

Press **OK** to start the **Win32 Application Wizard**.

4. On the **Overview** page of the **Win32 Application Wizard** dialog box, click **Next**.
5. On the **Application Settings** page under **Application type**, select **Console Application**. Under **Additional options** select the **Empty Project** setting and click **Finish**.

You now have a project without source code files.

To add a new source file (program)

1. From the **Project** menu, click **Add New Item**.

Alternatively, to use Solution Explorer to add a new file to the project, right-click the **Source Files** folder in Solution Explorer and point to **Add**. Then click **New Item**.

In the **Visual C++** area, select **Code**. Then click **C++ File (.cpp)**.

2. Type the Name of the file to be added (for example, type **HelloWorldYourName**) and click **Add**. The source file **HelloWorldYourName.cpp** will be added to the project.
3. In the **HelloWorld.cpp** editing window, type the code below for the **HelloWorldYourName** program. In this example, **HelloWorldYourName.cpp** will be the main function. Note: Spacing and Indention are important!!

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

int main( )
{
    cout << "Hello YourName!!!" << endl;
    system ("pause");
    return 0;
}
```

4. To compile the program, on the **Build** menu, click **Build Solution**.

You should see output from the build in the **Output** window indicating that the project compiled without errors. If not, correct the errors indicated in the **Output** window.

To execute the program

CTRL + F5 will compile and execute your program and will display your results in the display window. The window remains open until you close it.

Alternatively - On the **Debug** menu, select **Start Without Debugging**.

To print the Output Window

In general, one does not print the contents of the Output Window. You will soon learn a better way to produce output for printing using an output file. However, sometimes you will need to print this window.

1. **CTRL + PrtScn** will capture an image of the entire screen.
2. Do a **PASTE** operation into a blank document in some editor (Word, Notepad, etc.)
3. So that the output will be large enough to read, set the page to landscape and stretch the image to fill the page. Print your document.

Printing your Program Code

With your program code displayed on the screen, click the **Windows icon** in the upper left corner of the screen, select **Print**. If you are using a color printer, your printout will be in color as on the screen. If not, it will be B/W. Color is NOT necessary for work turned in to your instructors. Lab printers are not color.

To add a text file

1. From the **Project** menu, click **Add New Item**.

Alternatively, to use Solution Explorer to add a new file to the project, right-click the **Source Files** folder in Solution Explorer and point to **Add**. Then click **New Item**.

In the **Visual C++** area, select **Utility**. Then click **Text File (.txt)**.

2. Type the Name of the file to be added (for example, type **input** if the file is to contain data to be read by the program or type **output** if the file will have execution results written to it) and click **Add**. The empty text file (**input.txt** or **output.txt**) will be added to the project.

Documentation

Good programming practice insists that all program files must contain documentation. That is, comments from the programmer providing basic information about the program. Documentation lines begin with the **//** symbols. All programs should have at least the following documentation at the beginning of EVERY program. Your instructor may require additional documentation be included.

```
// Your Last Name, Your First Name
// Computer Science 1 - Instructor name
// Project # - Project Name
// Date
// Additional information as required by your instructor
```

This is the documented sample program from above.

```
// Your Last Name, Your First Name
// Computer Science 1 – Instructor name (Halverson or Donovan)
// Project 1 - Lab 1
// DATE
#include <iostream>
using namespace std;
int main( )
{
    cout << "Hello Your Name!!!" << endl;
    system ("pause");
    return 0;
}
```

LAB 1 – Assignment

After the lab instructor has walked you through the above material, close Visual Studio and start over.

- Open Visual Studio and redo the program above ON YOUR OWN, but ask questions of the lab assistants as necessary.
- Complete the documented program above (with your name & current date).
- Compile and execute, correcting any errors.
- Save on your flash drive OFTEN!
- Print a copy of (1) the program code and (2) the output window to turn in to your course instructor by the first class meeting next week.

It is recommended that you try this exercise on your computer at home.