Getting Started with C++

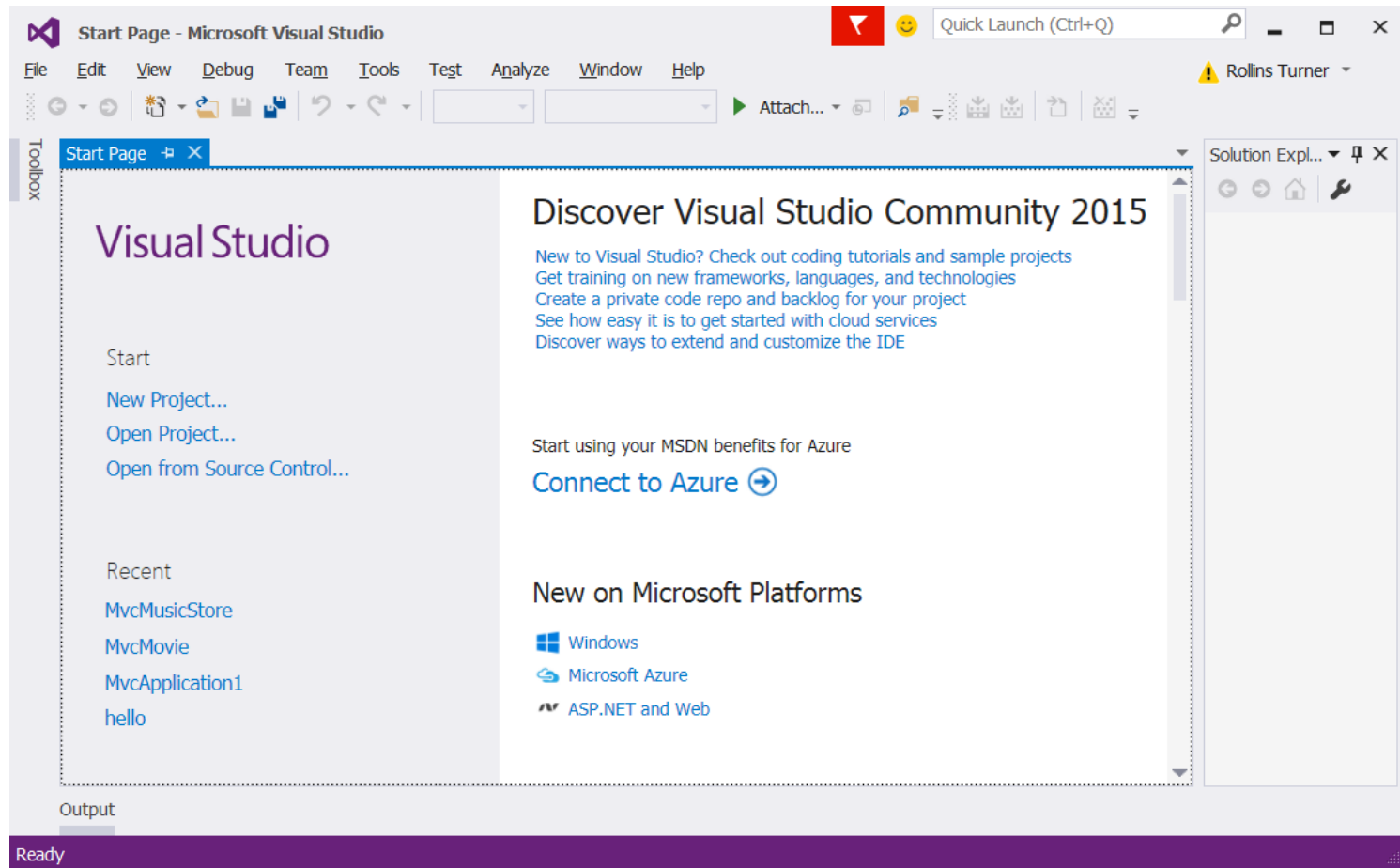## Part 1
Windows

Objective

- You will be able to create, compile, and run a very simple C++ program on Windows, using Microsoft Visual Studio.

Getting Visual Studio

- You can download Visual Studio 2015 Community Edition for free from the Microsoft web site.

- See the class web site for details:

  http://www.cse.usf.edu/~turnerr/Object_Oriented_Design/

Start Up Visual Studio

Visual Studio Projects

- A *project* in Visual Studio is a container for all of the files needed to compile, execute, and debug a program.

- A *solution* is a collection of one or more projects.

- Our solutions will only have a single project.
  - So a solution and a project will be essentially equivalent in this course.
  - Each will hold a single program.

Start Up Visual Studio
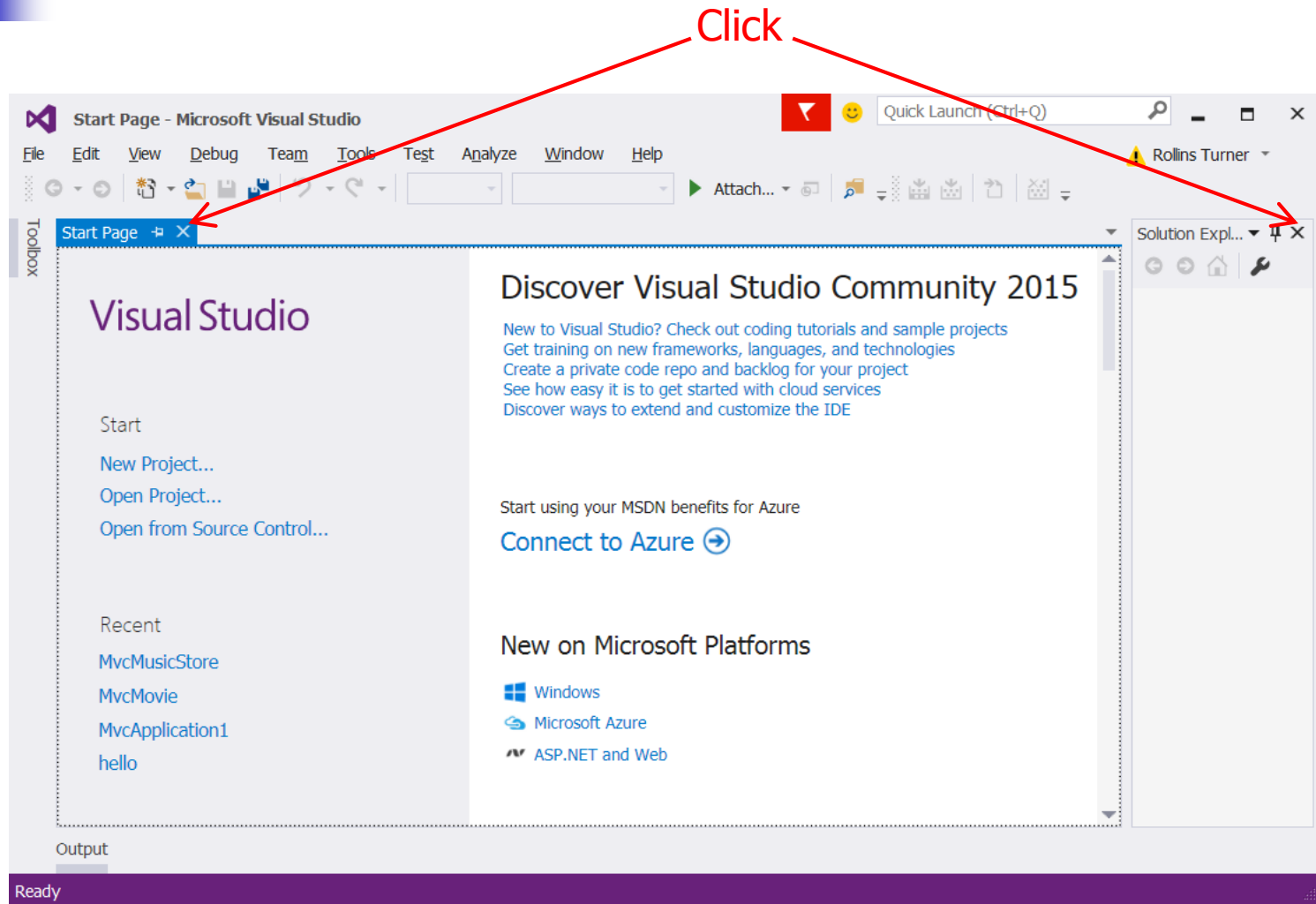
Ready to Create a Project
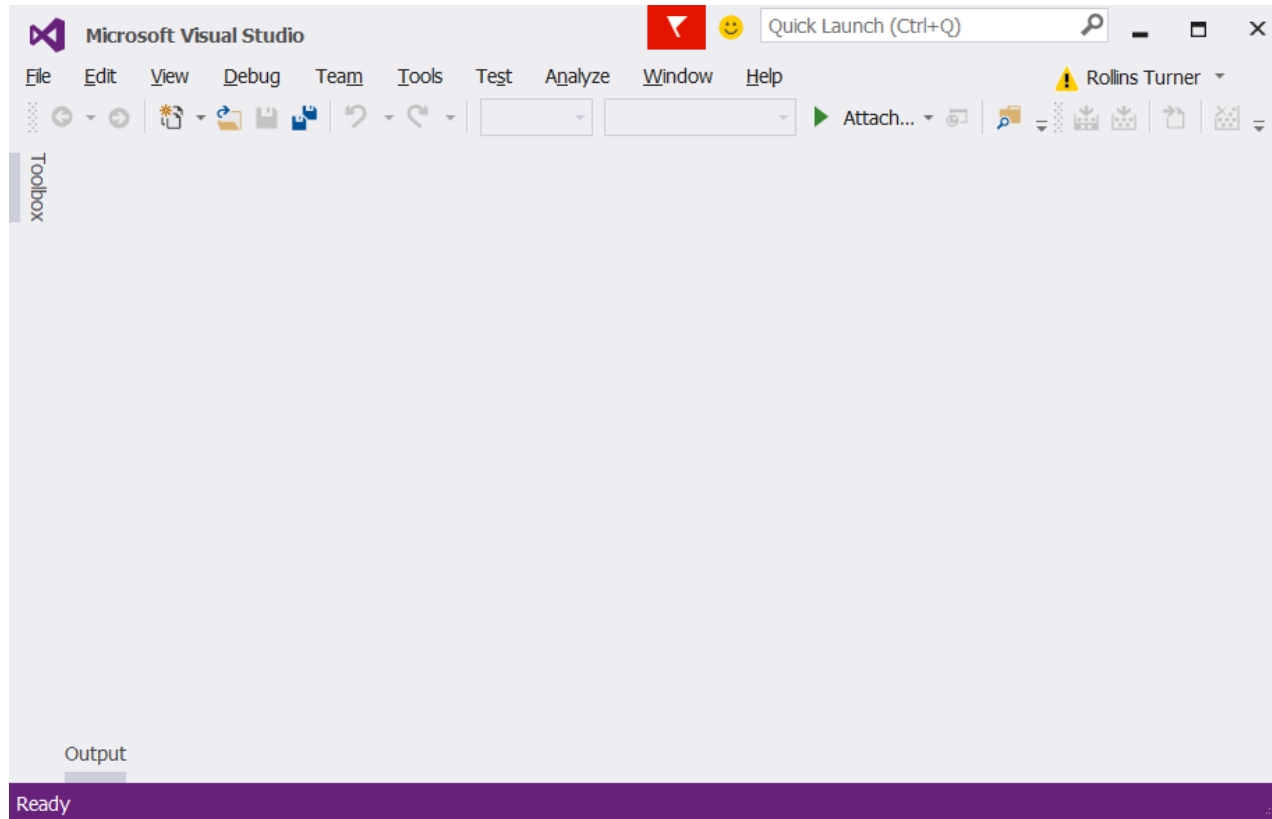
Click on the File menu and select New, then Project

Creating Your First C++ Project in Visual Studio

- When you create your first C++ project after installing Visual Studio, Visual Studio will do some extensive updates.
    - Can take 5 or 10 minutes (maybe more)

- Click on the File menu and select New, then Project
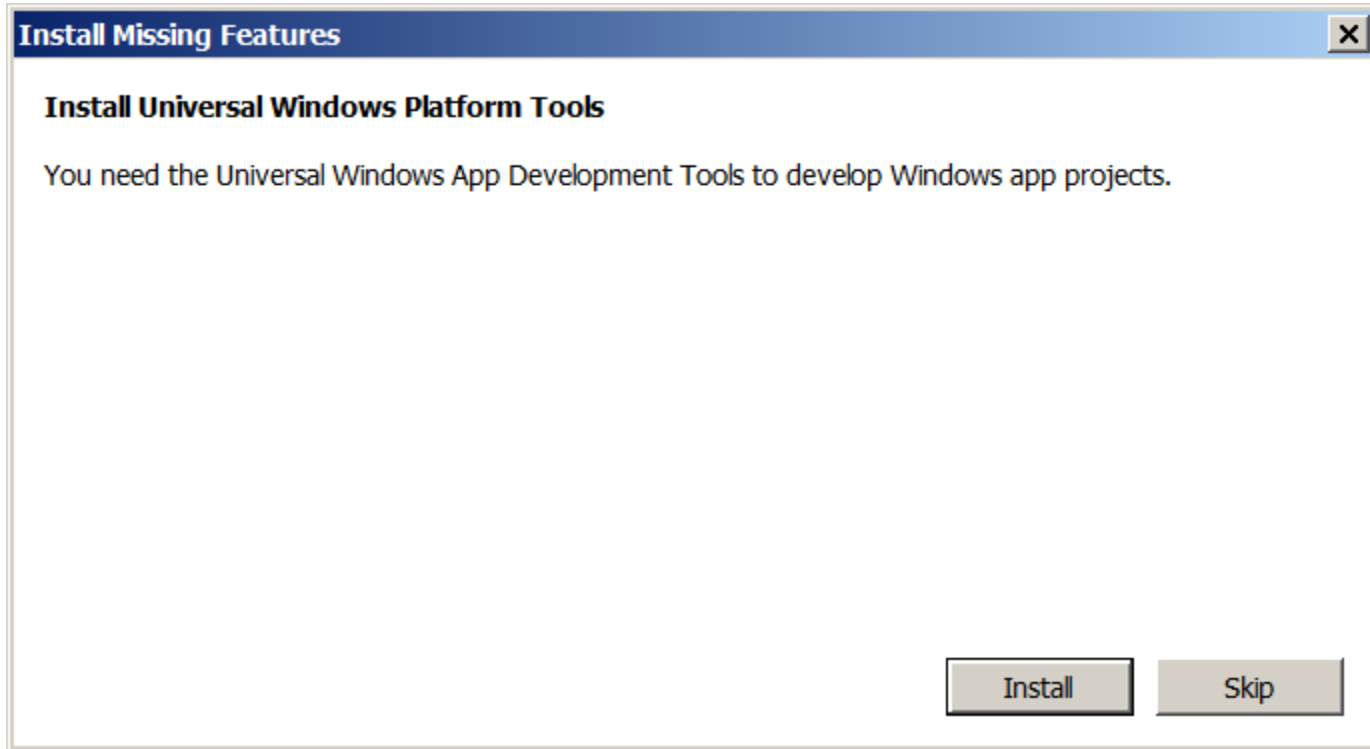
Creating Your First C++ Project in Visual Studio
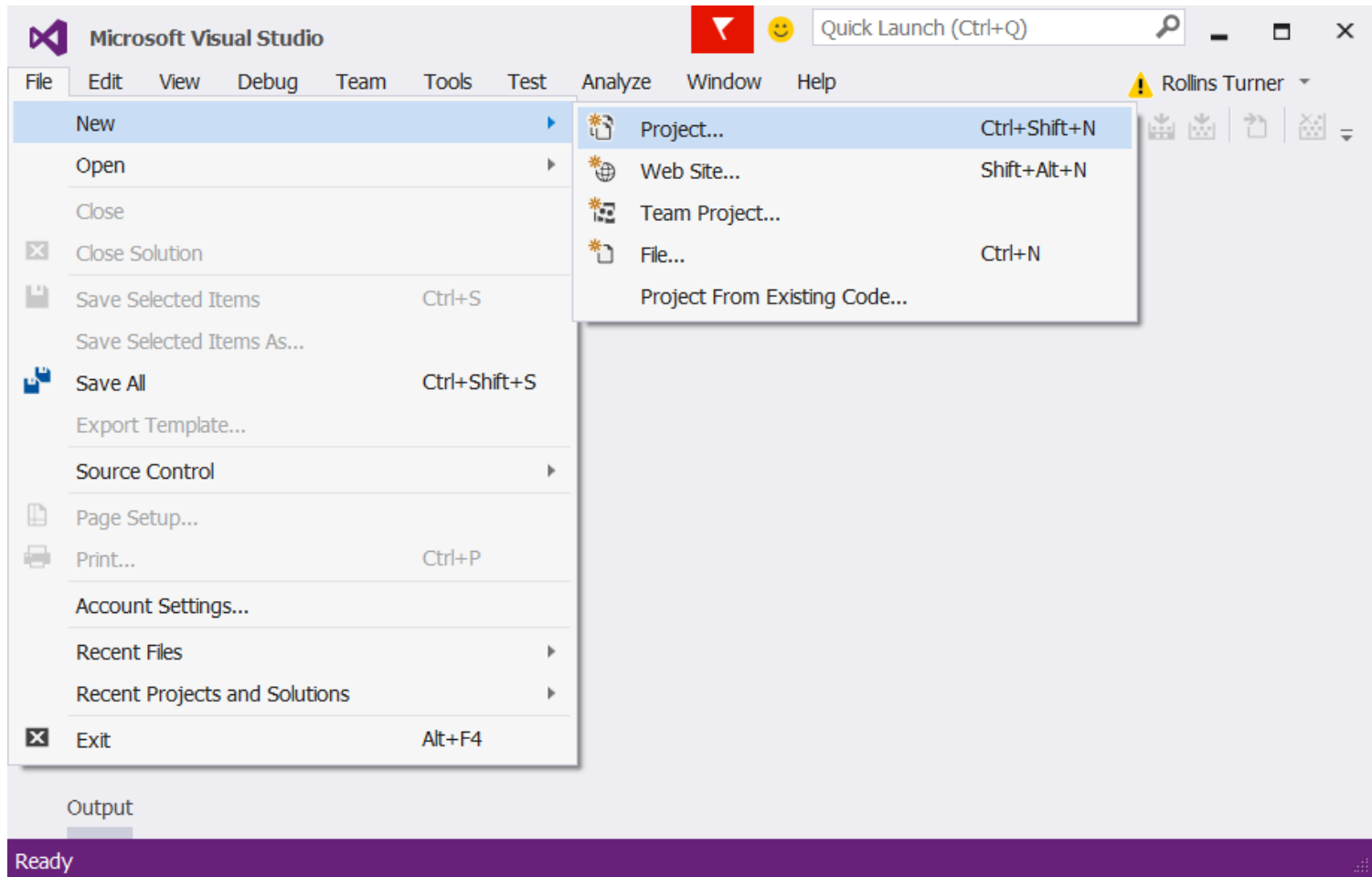
Creating Your First C++ Project in Visual Studio
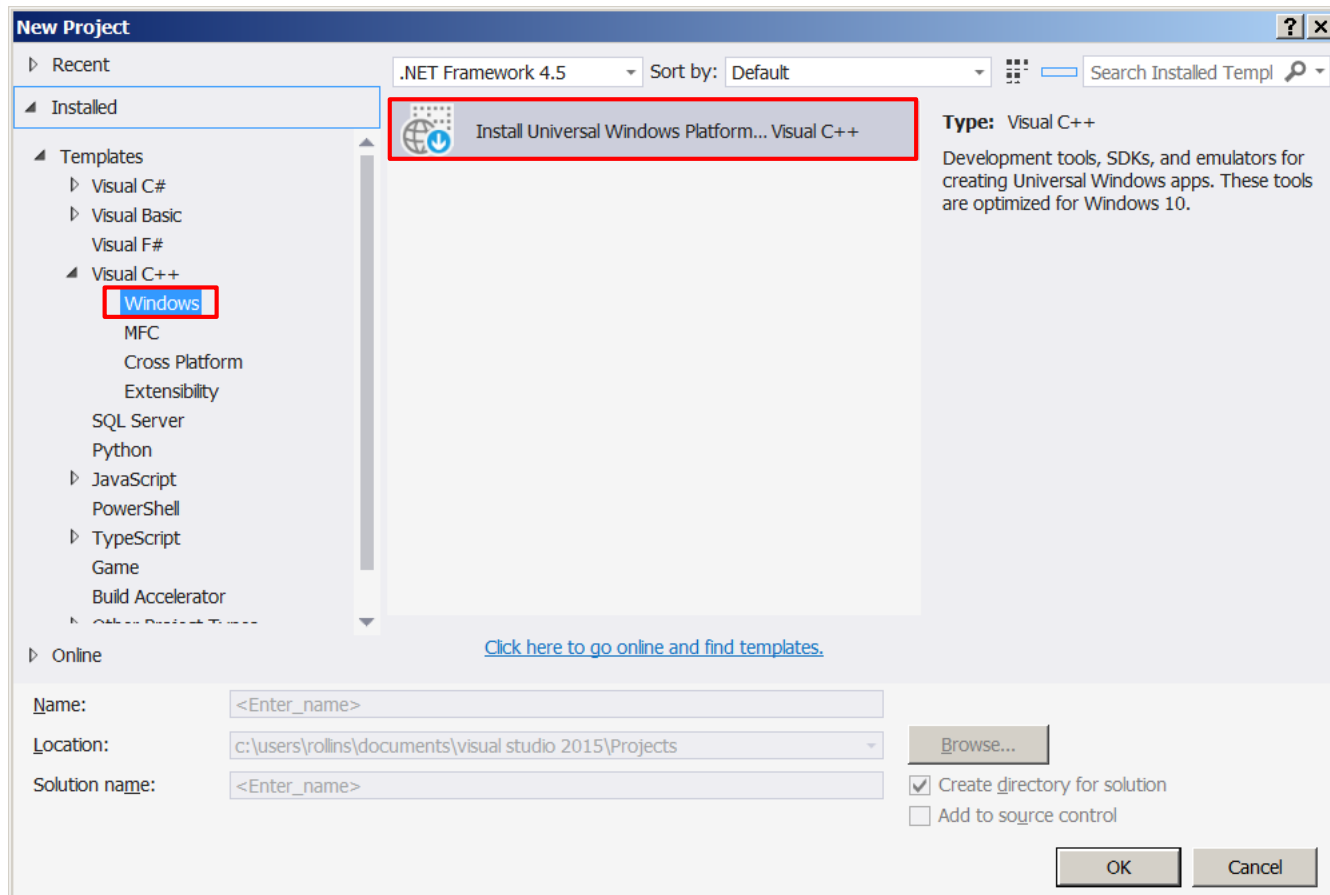
Expand the Visual C++ node in the left panel.
Then click on Windows.
Then select Install Universal Windows Platform …
And click OK.

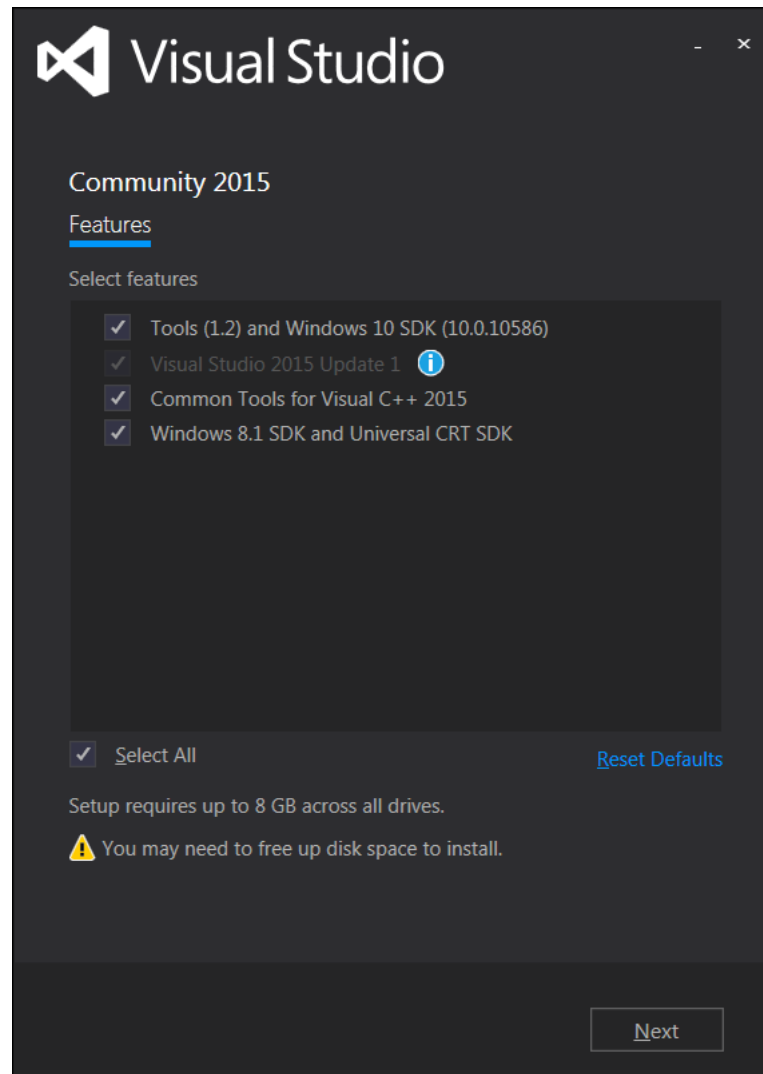# Creating Your First C++ Project in Visual Studio

Install Missing Features

Install Universal Windows Platform Tools

You need the Universal Windows App Development Tools to develop Windows app projects.

Install   Skip

Click Install

You will only need to do this once.

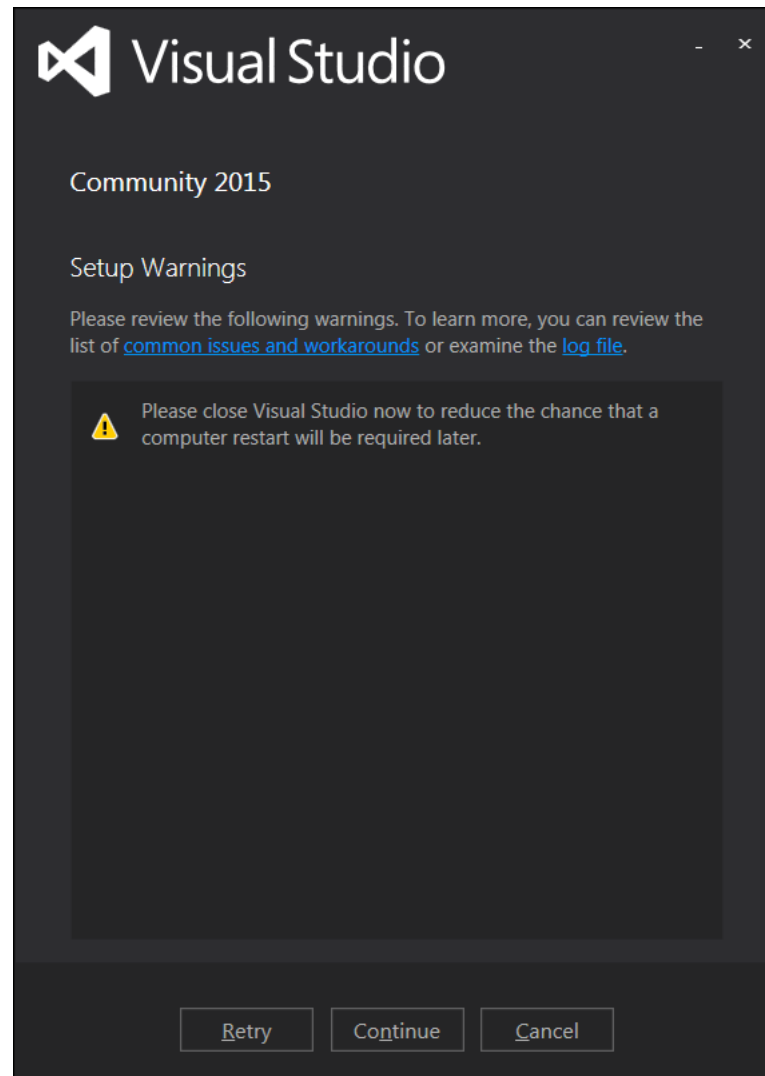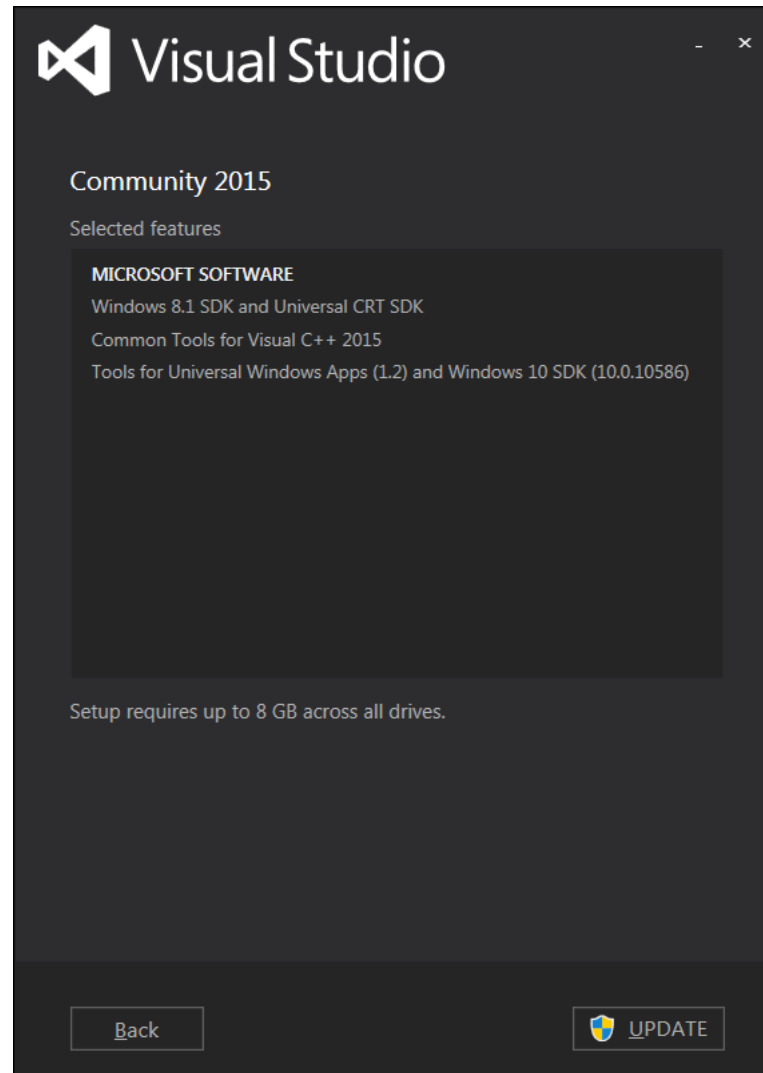# Creating Your First C++ Project in Visual Studio
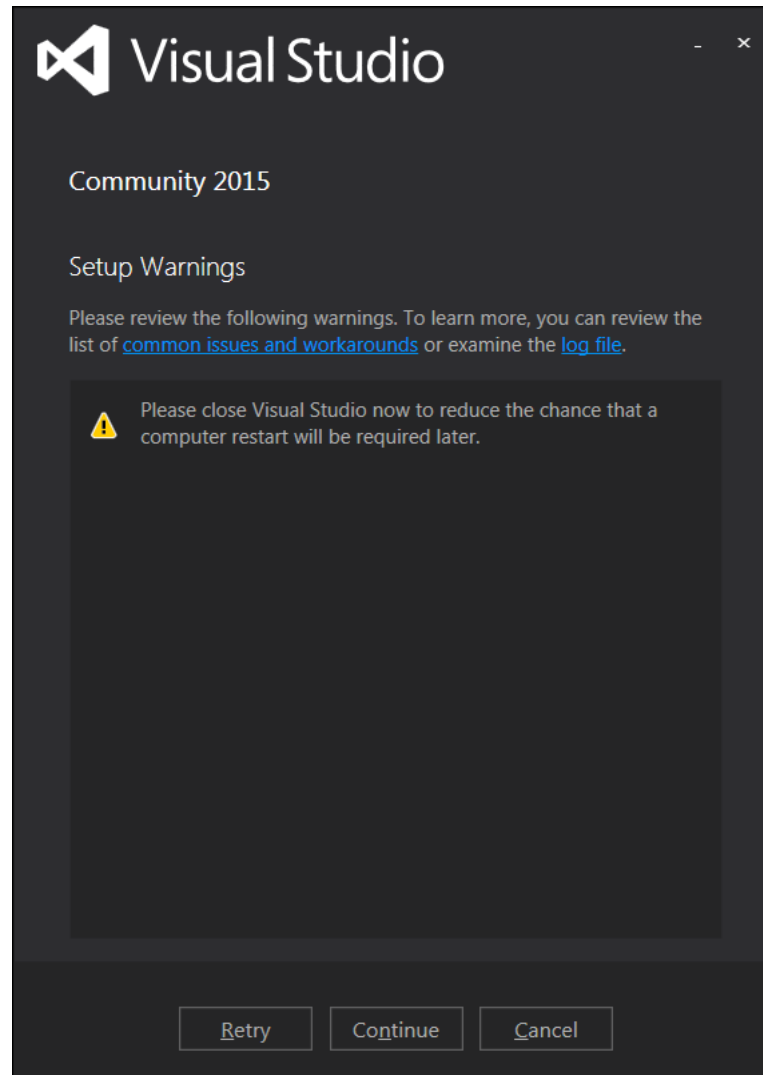
Click Continue

Free up disk space if necessary

Creating Your First C++ Project in Visual Studio
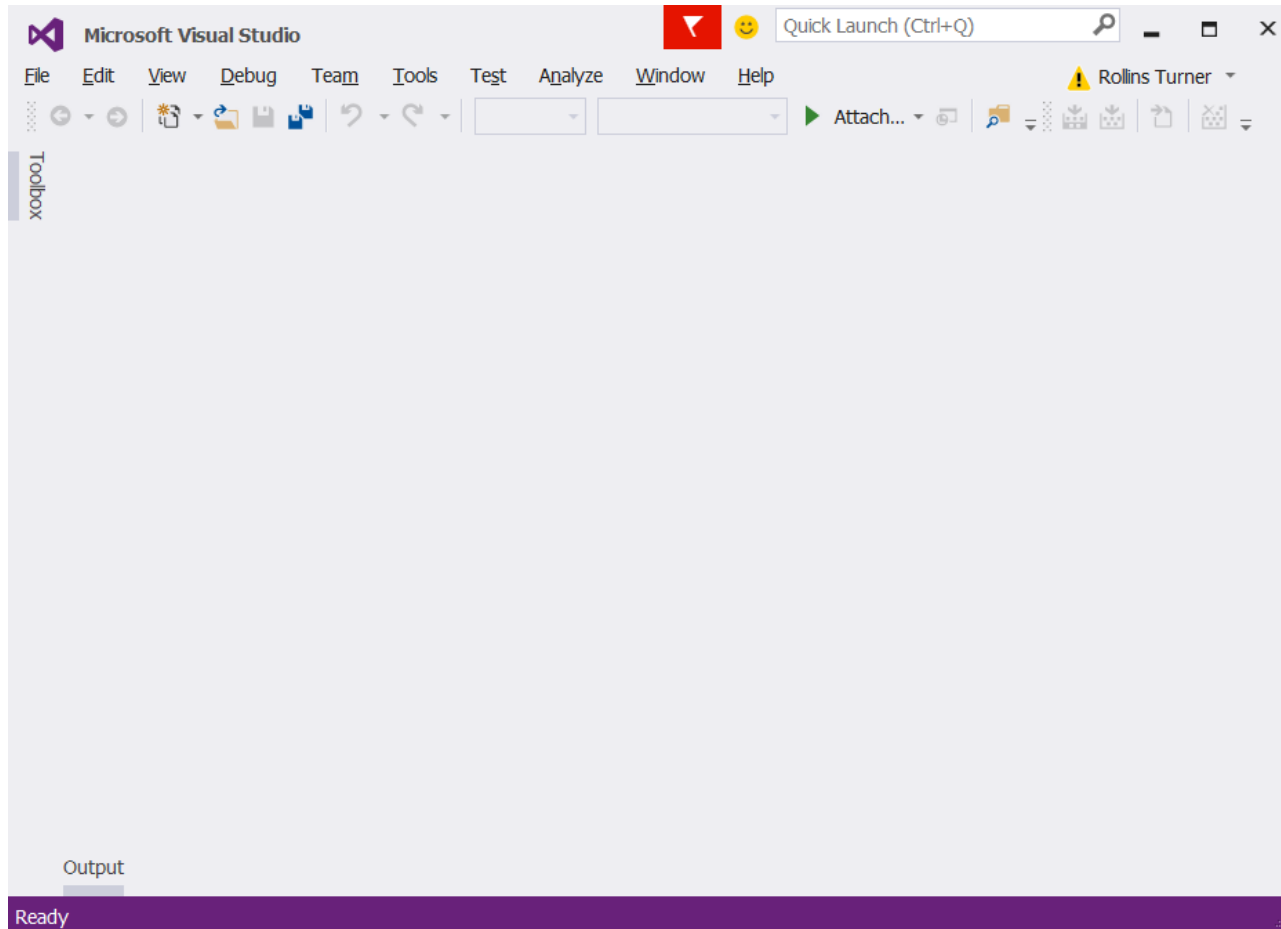
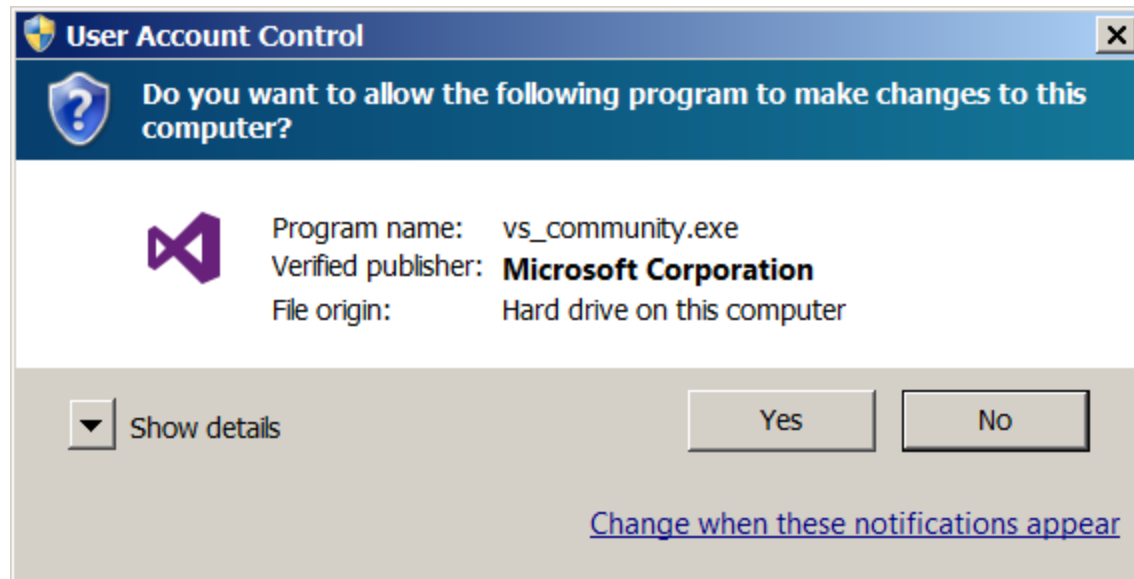# Creating Your First C++ Project in Visual Studio
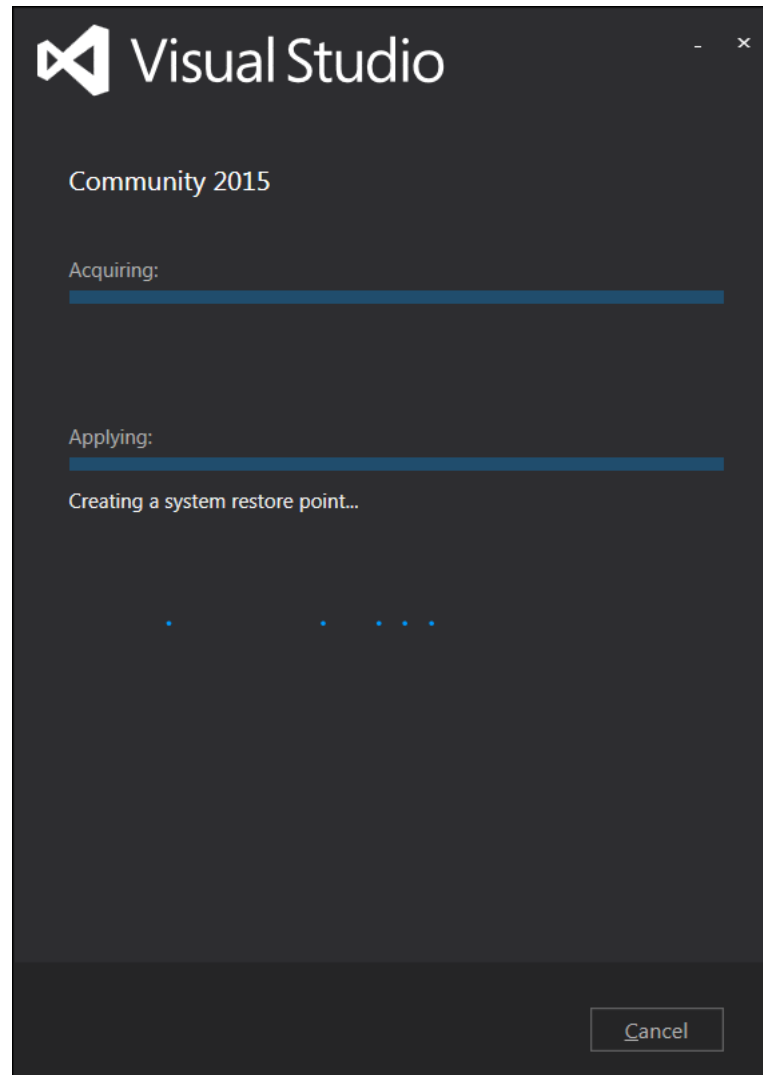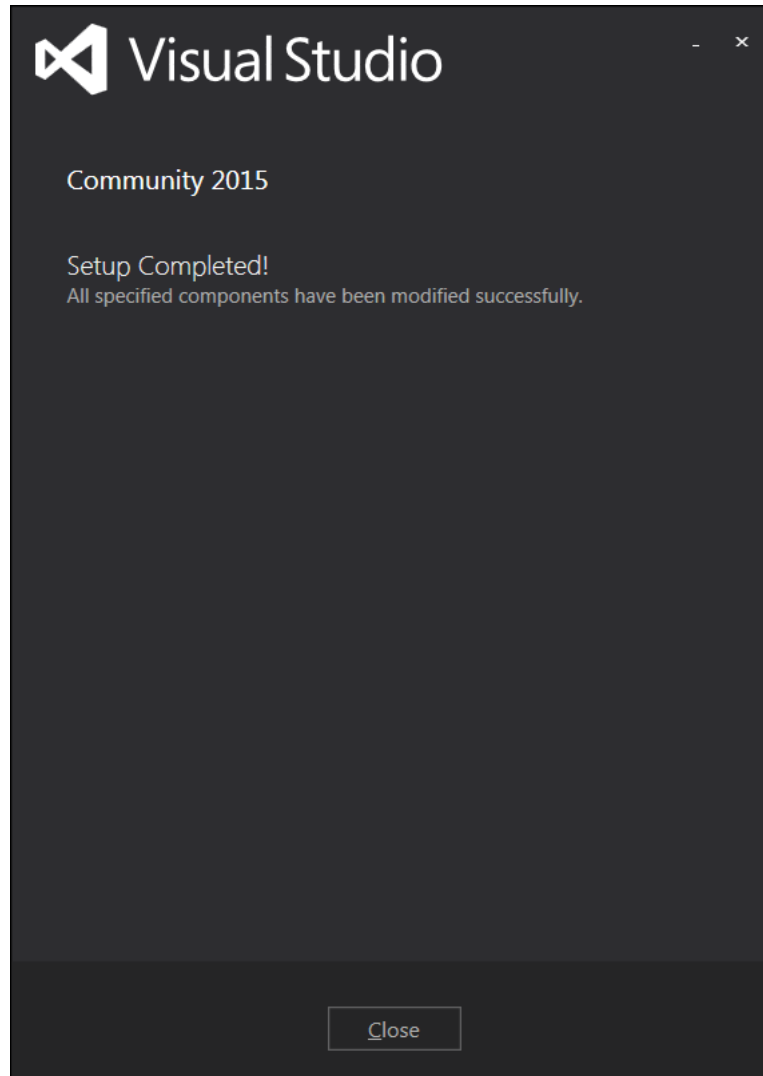

Retry

Creating Your First C++ Project in Visual Studio

Creating Your First C++ Project in Visual Studio

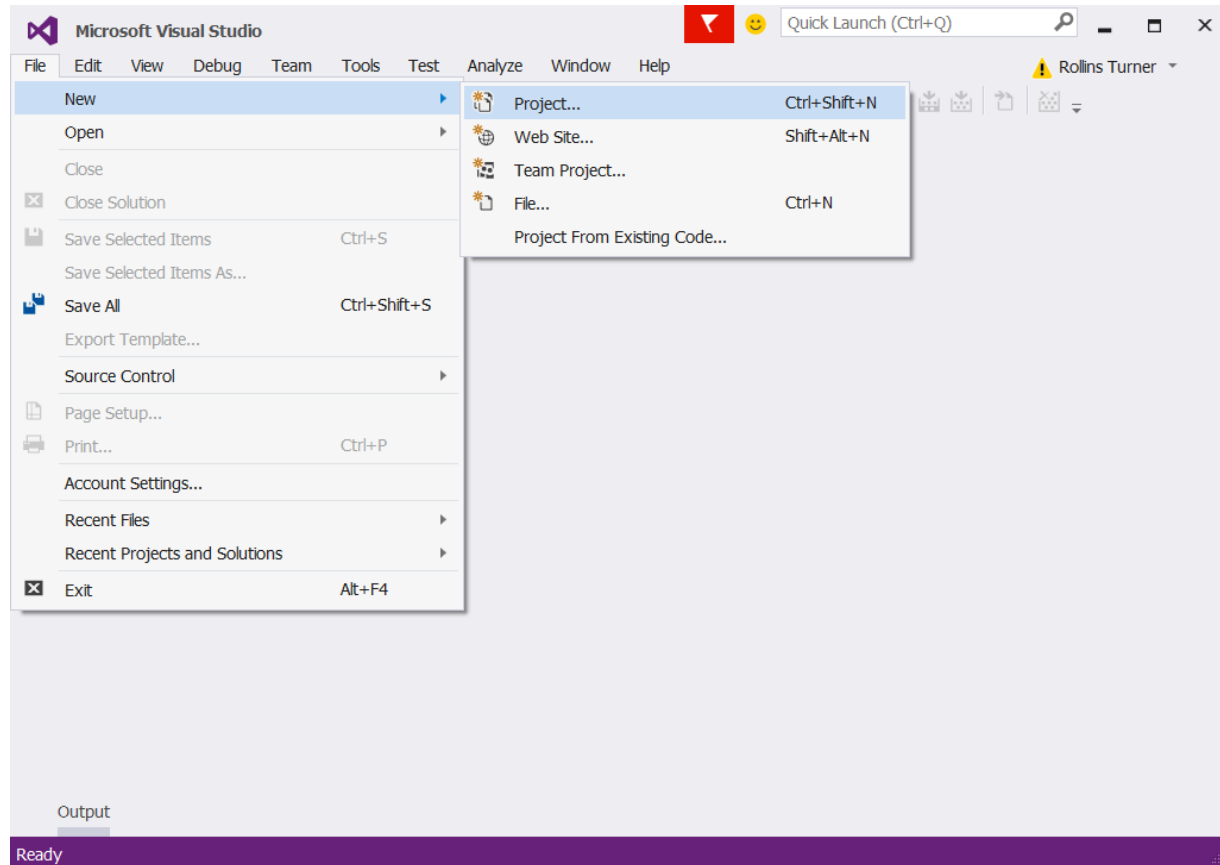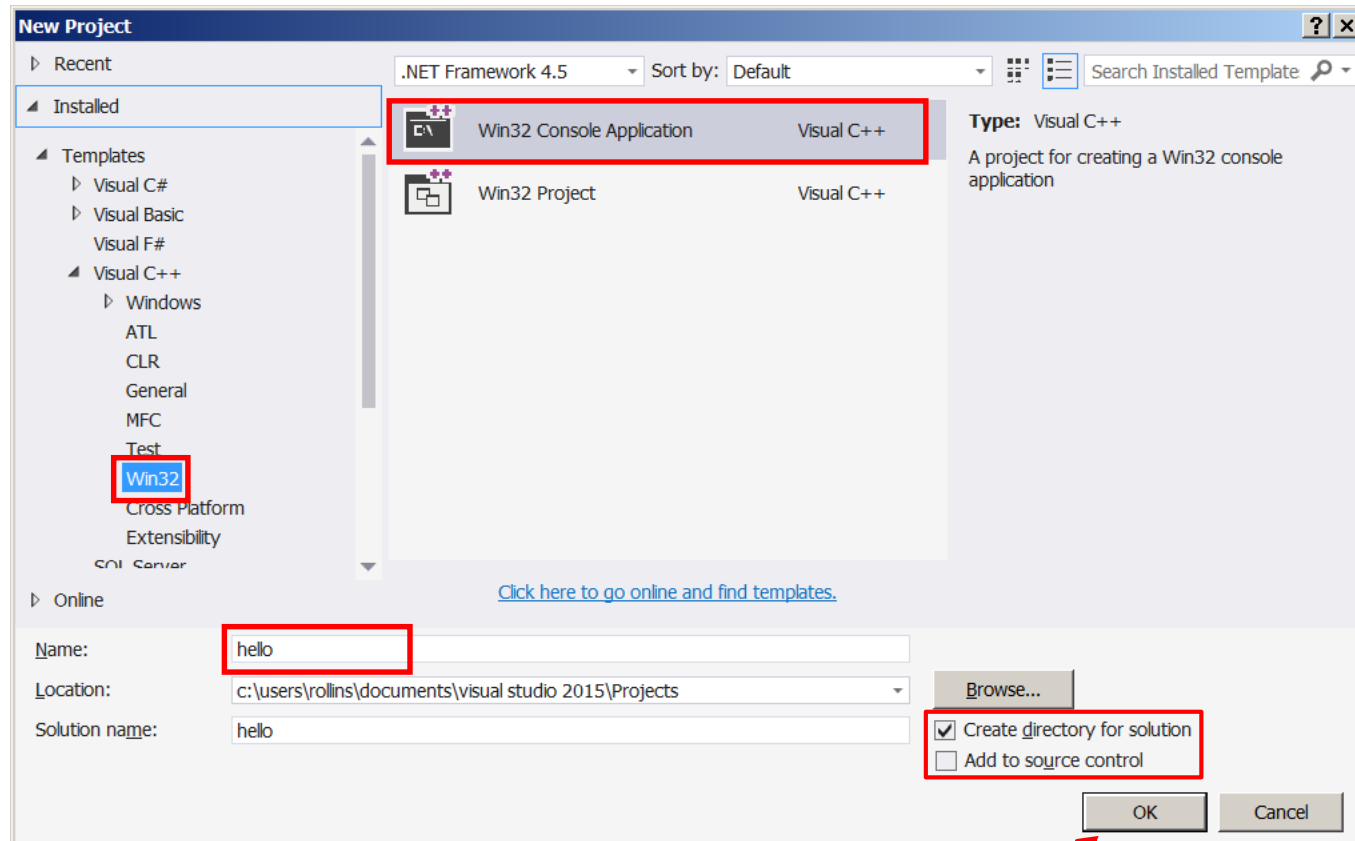# Creating Your First C++ Project in Visual Studio

Creating Your First C++ Project in Visual Studio

Click Close

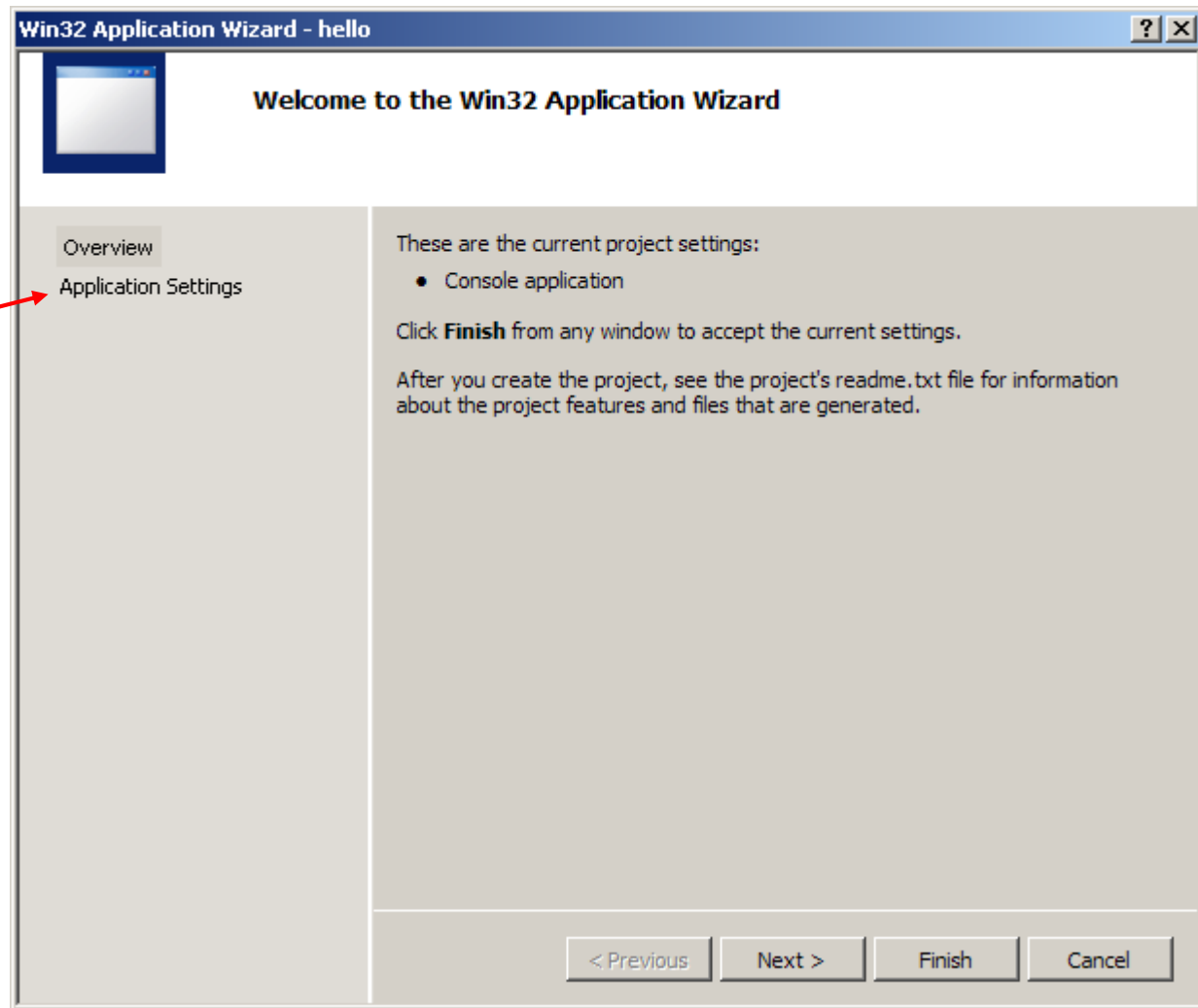# Try Again

Restart Visual Studio if necessary

Creating a C++ Project in Visual Studio

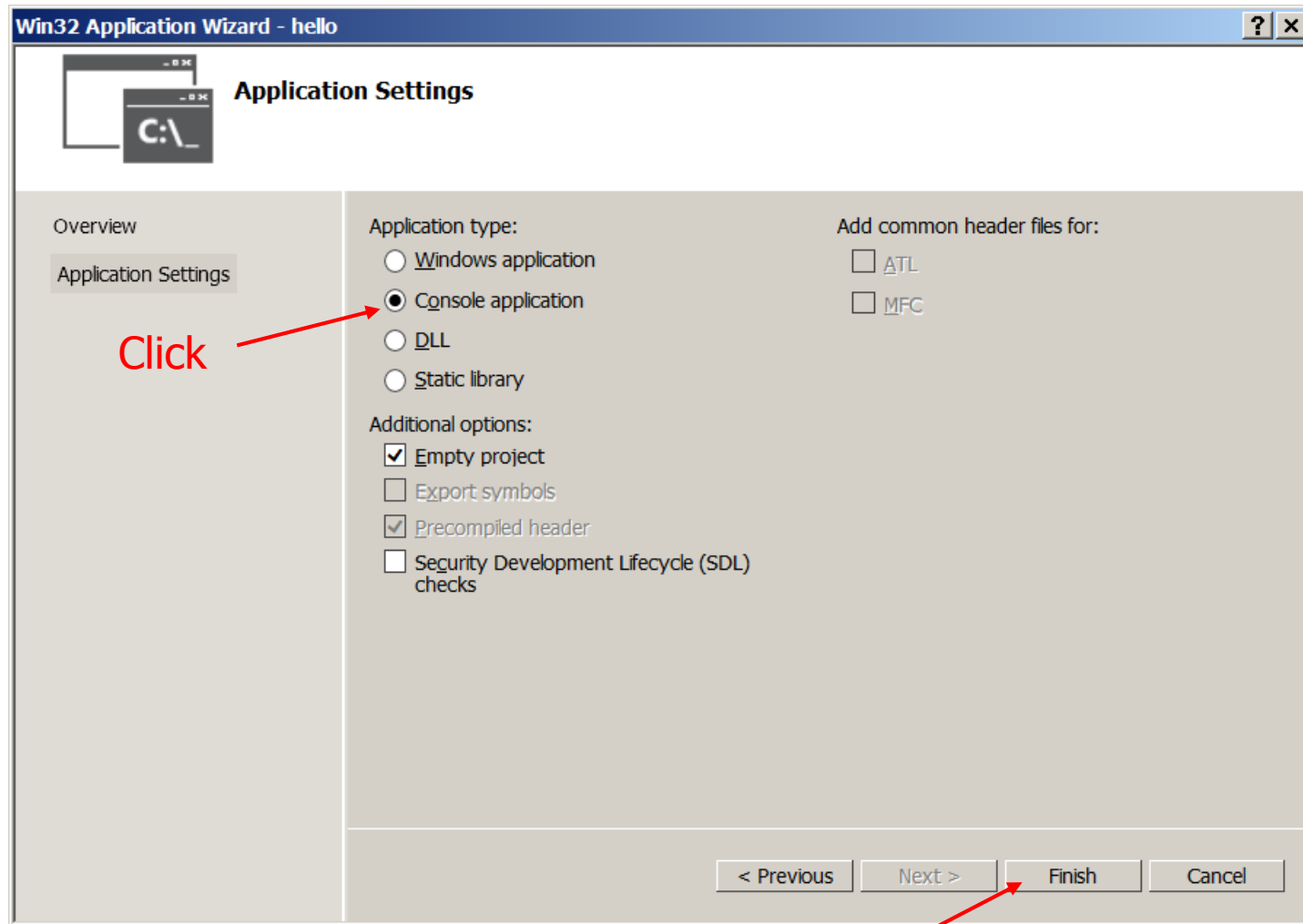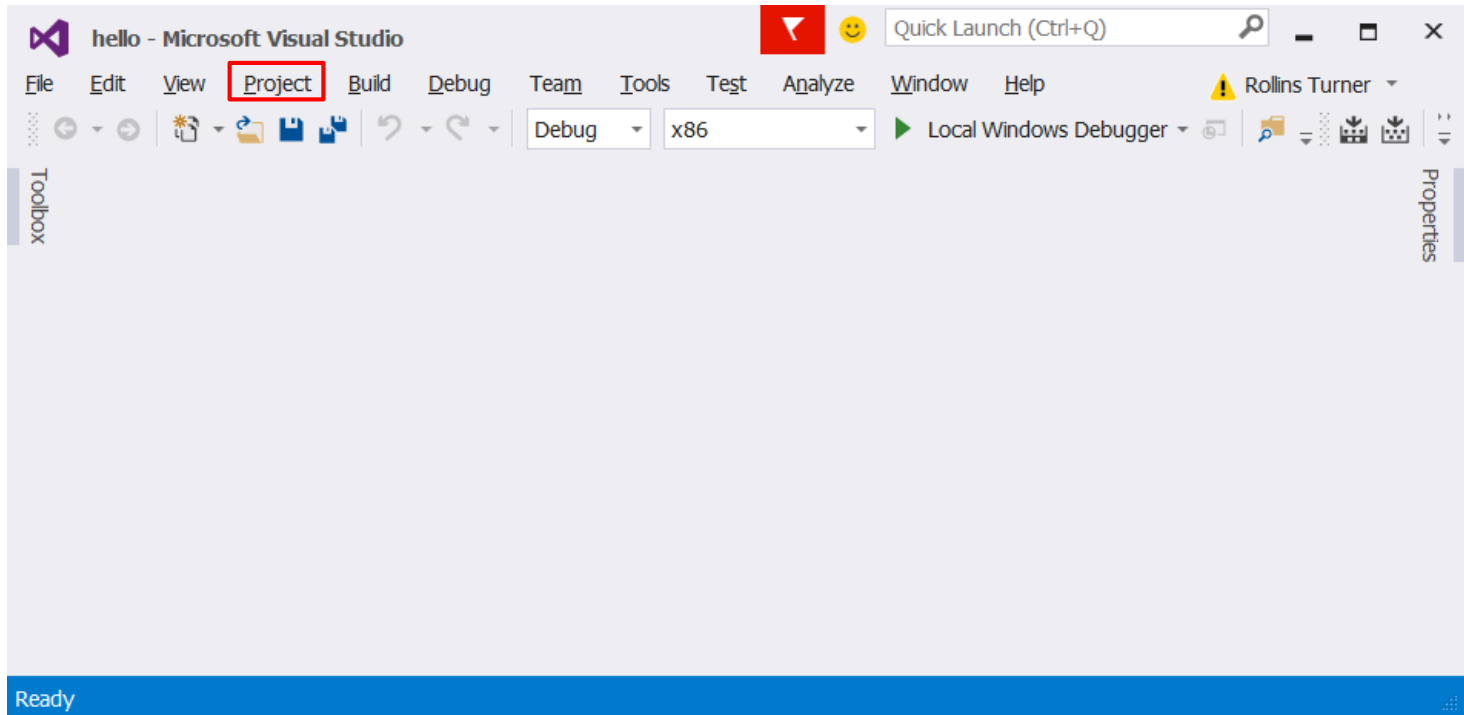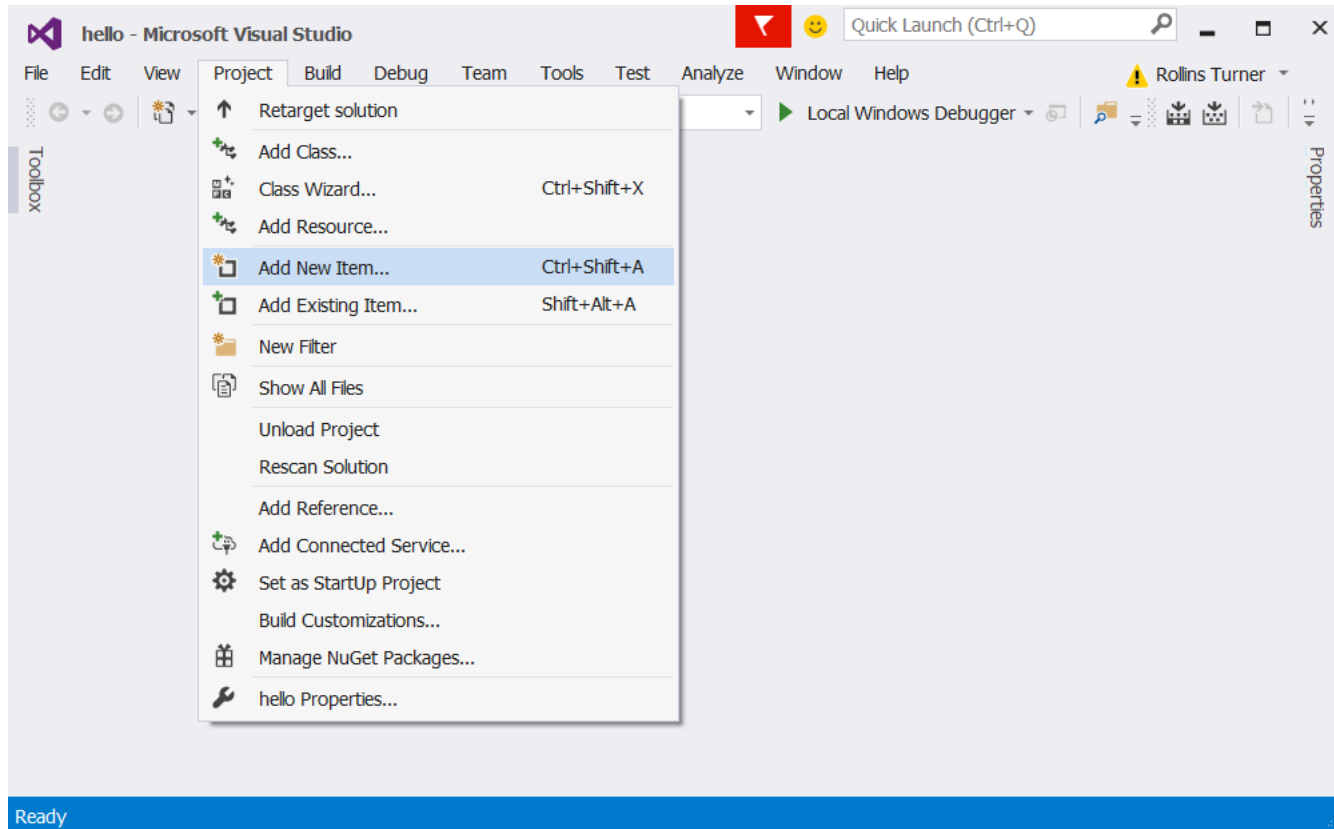# Creating a C++ Project in Visual Studio
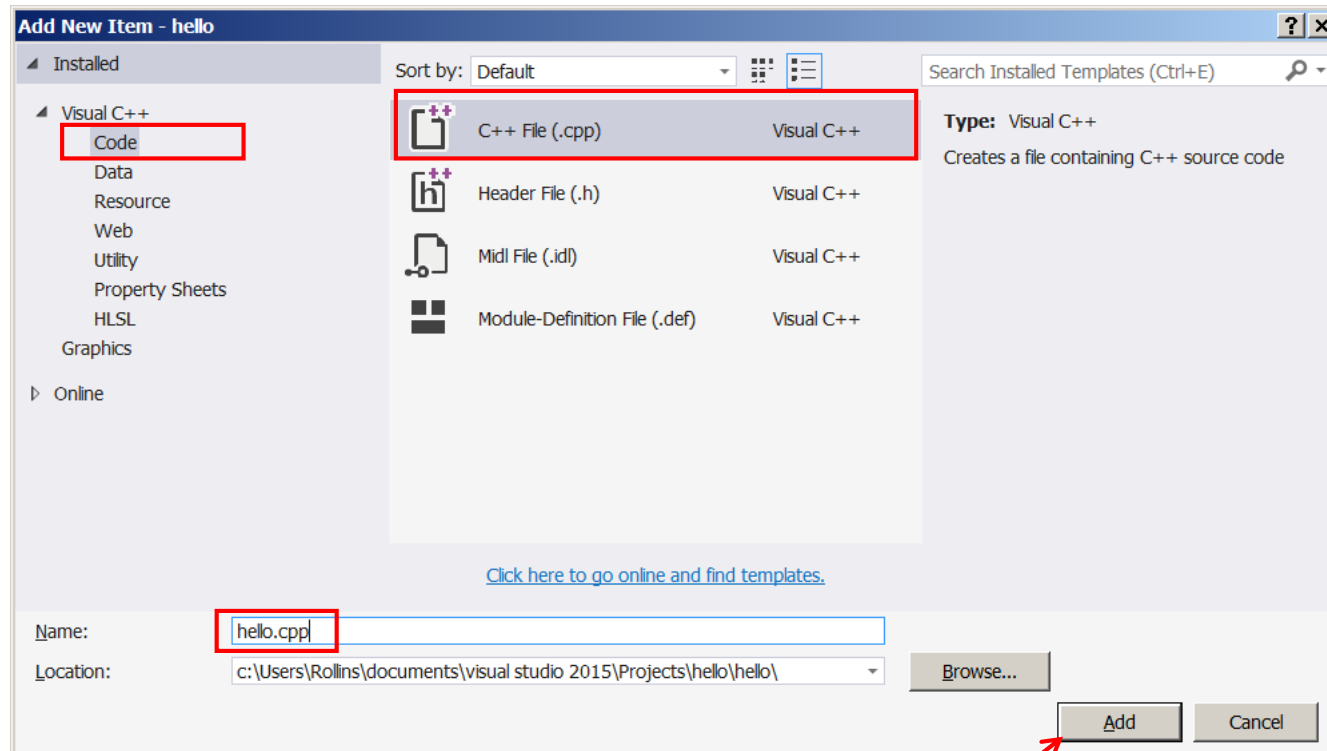
Start with an Empty Project
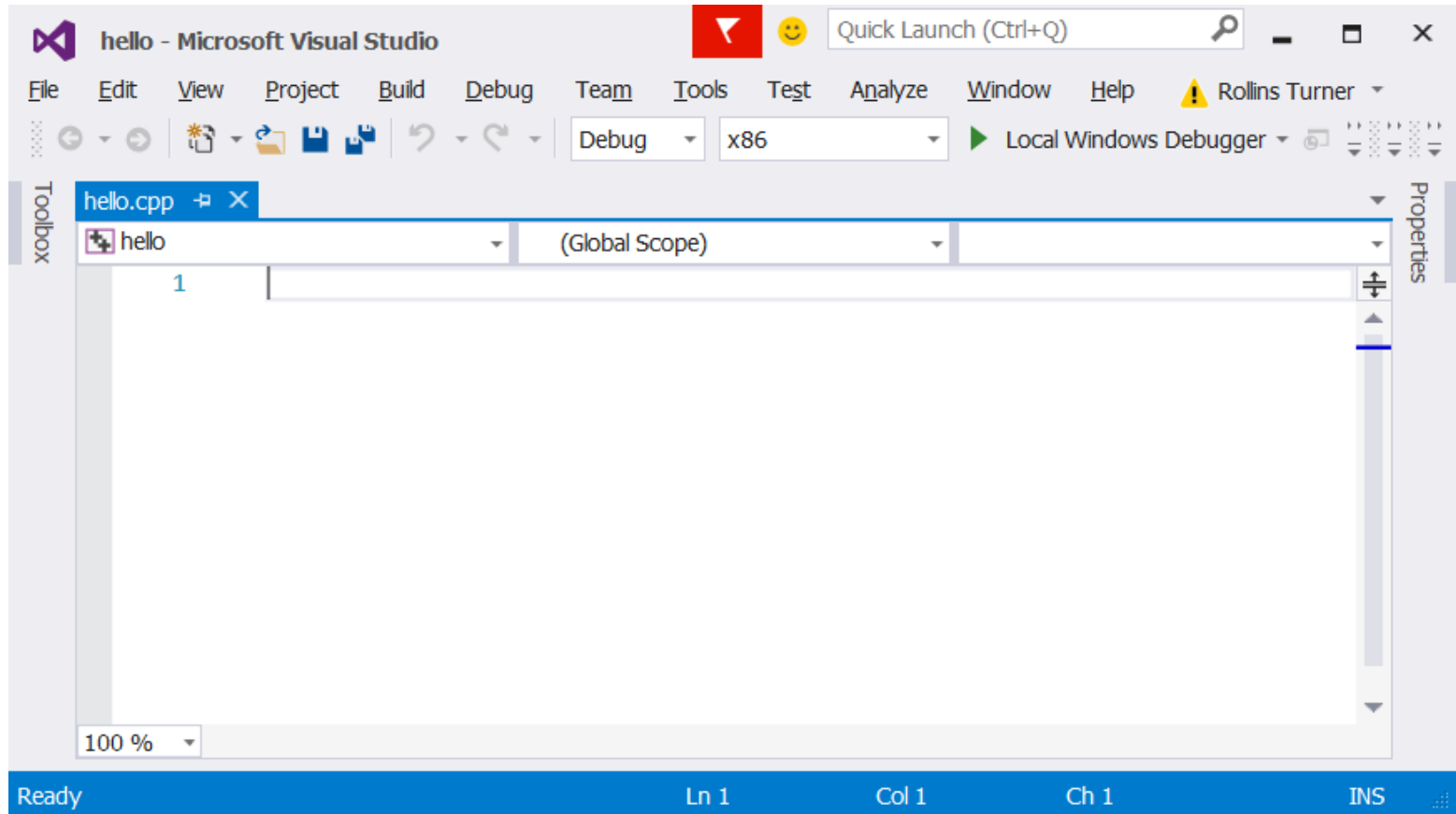
We Have a Project

Adding a Source File to the Project

Adding a Source File to the Project

It's Open in the Editor
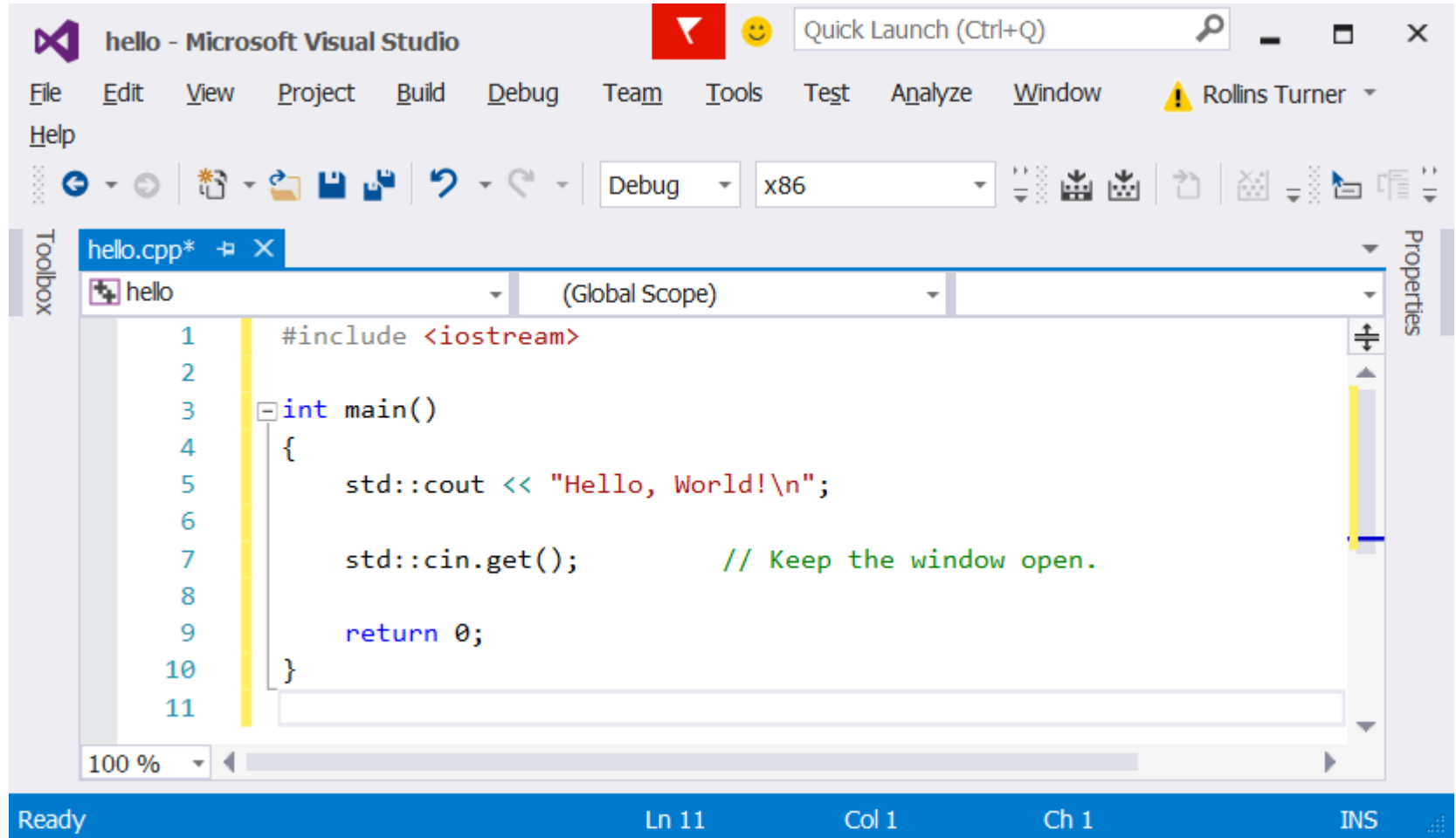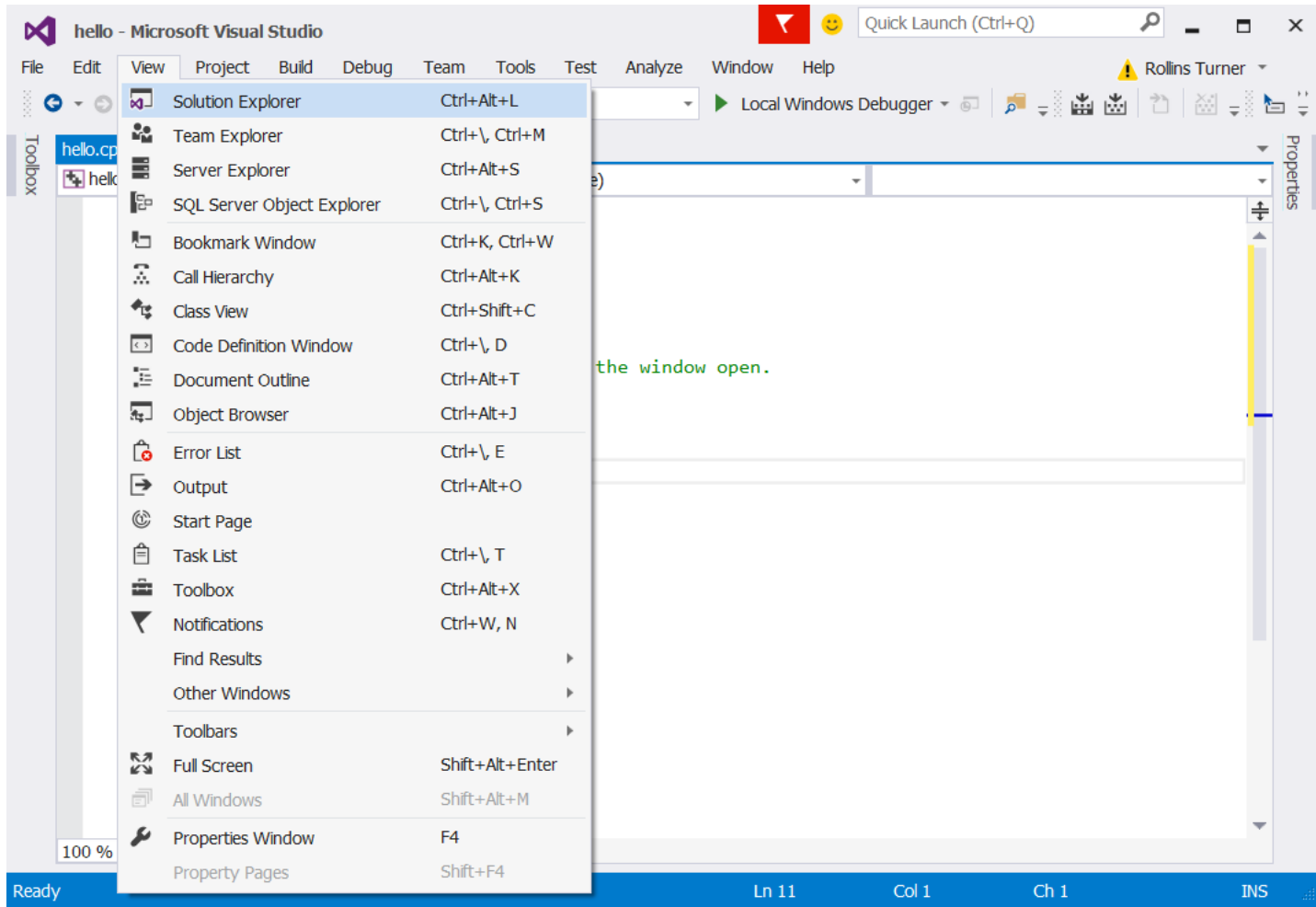
Add the Program Code


```cpp
#include <iostream>

int main()
{
    std::cout << "Hello, World!\n";

    std::cin.get();          // Keep the window open.

    return 0;
}
```
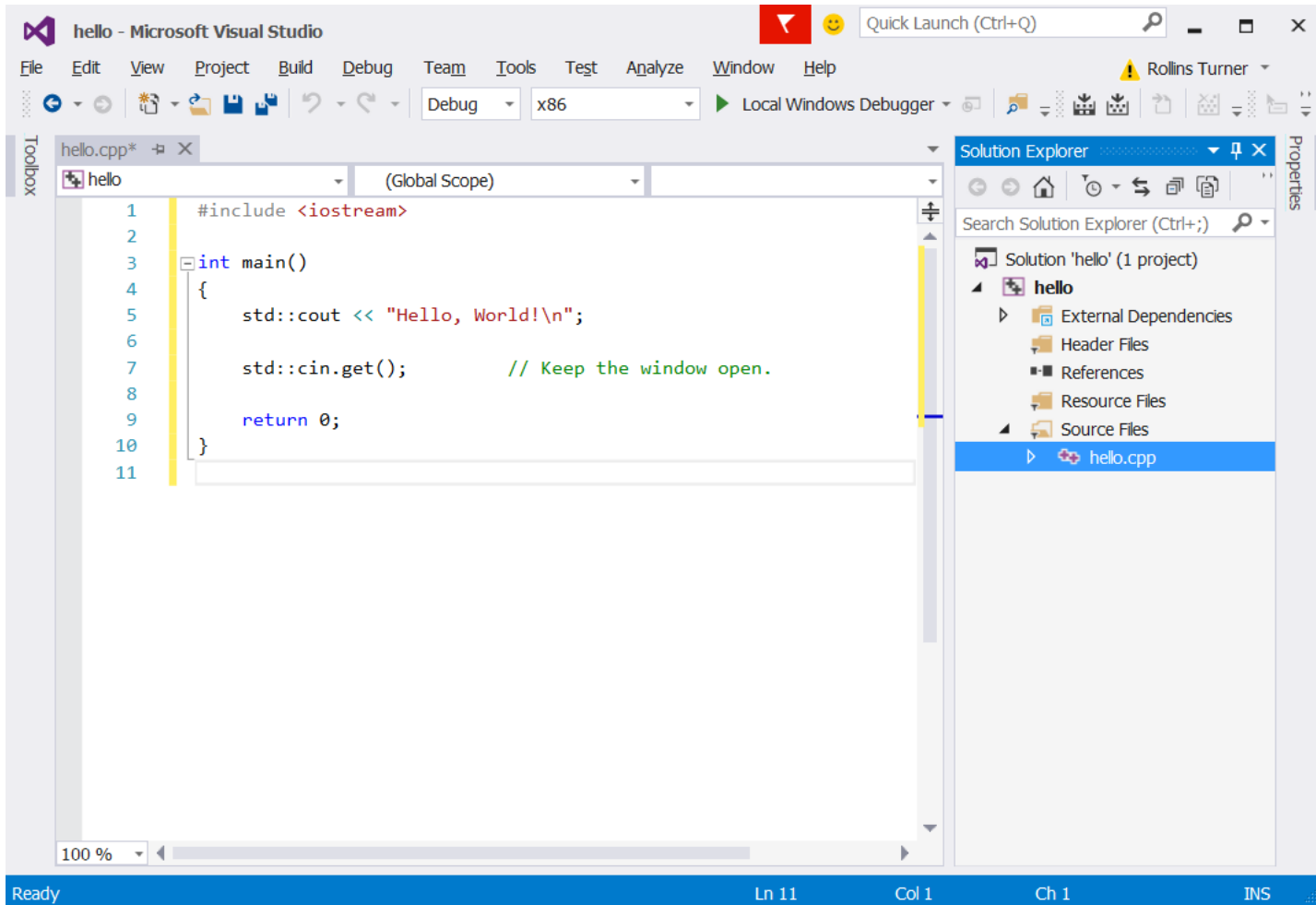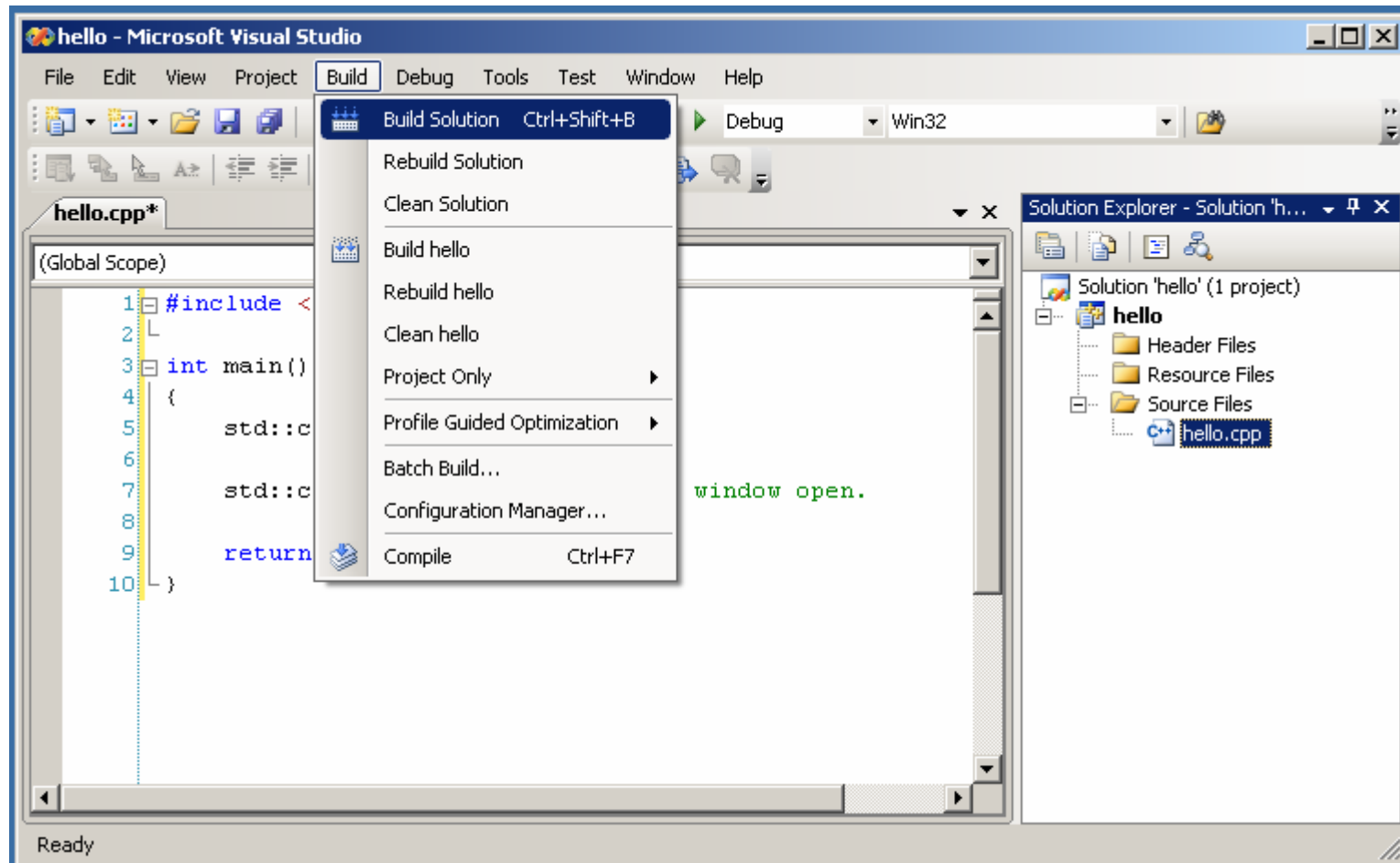
Save the file.

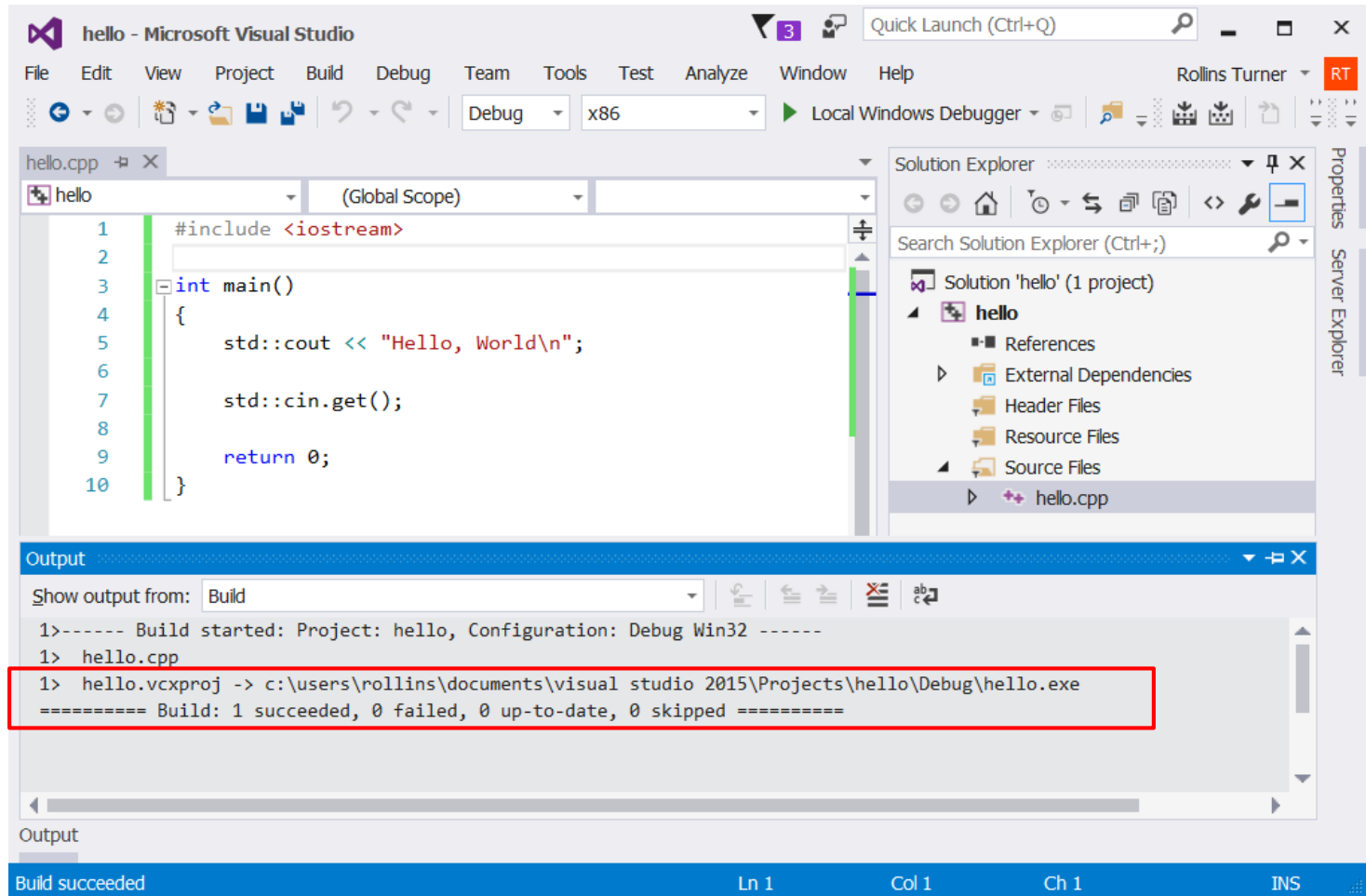# View the Solution Explorer

Solution Explorer Window

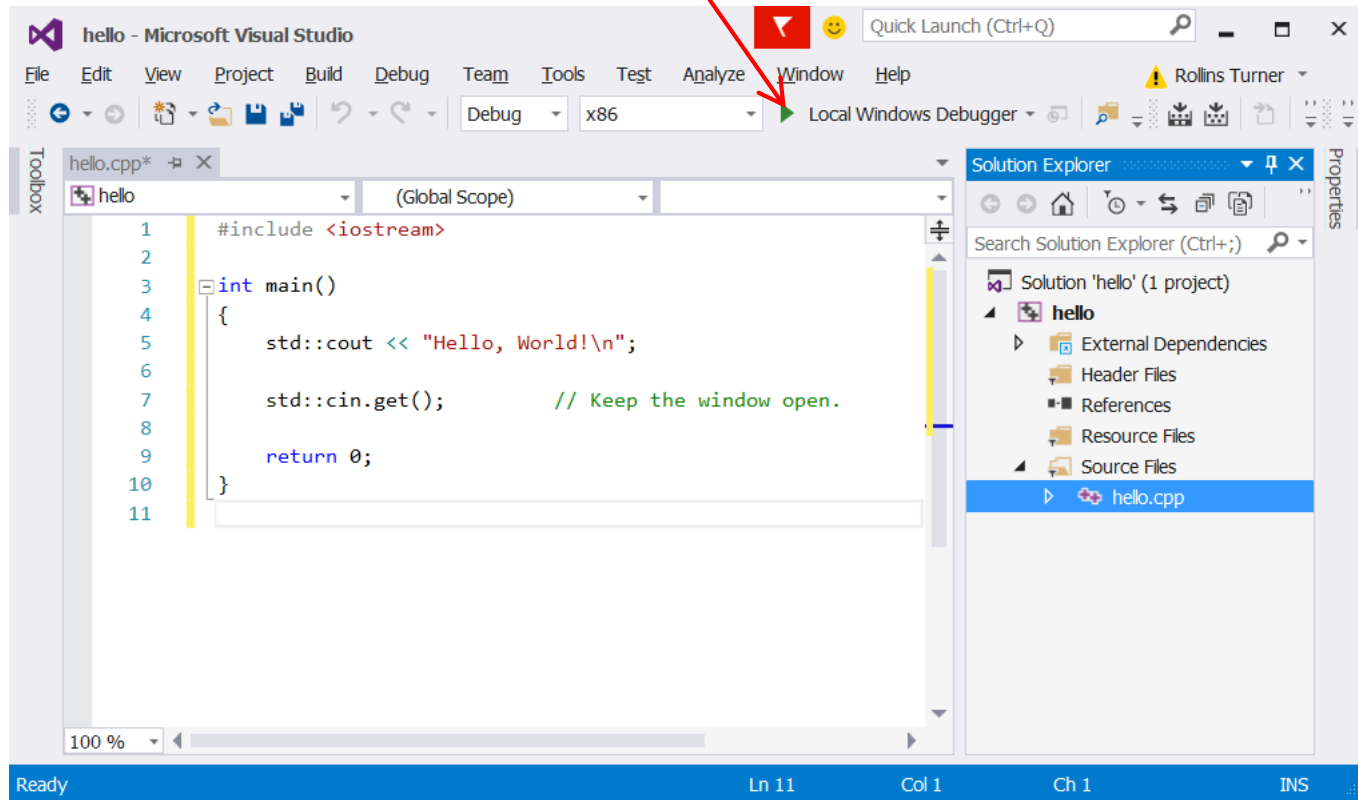# Compile and Link the Program

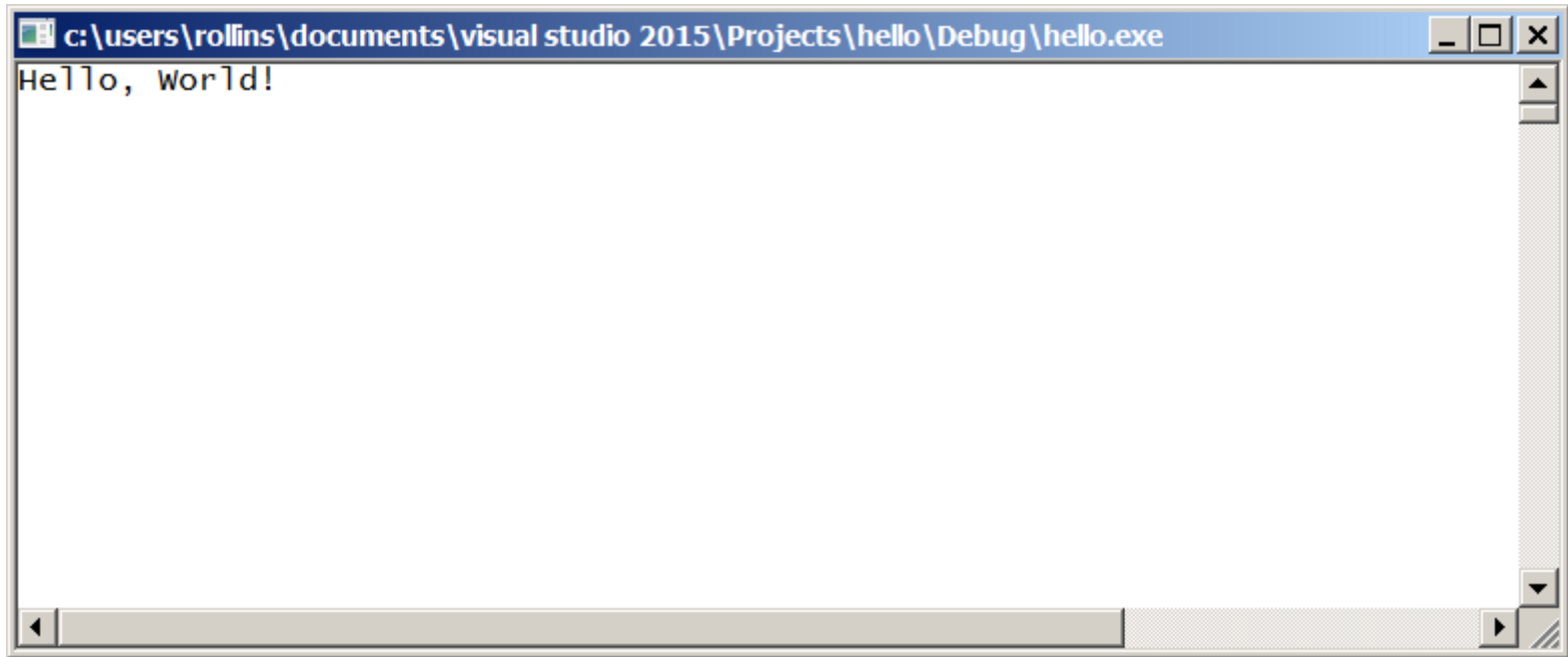# The Build was Successful

Run the Program
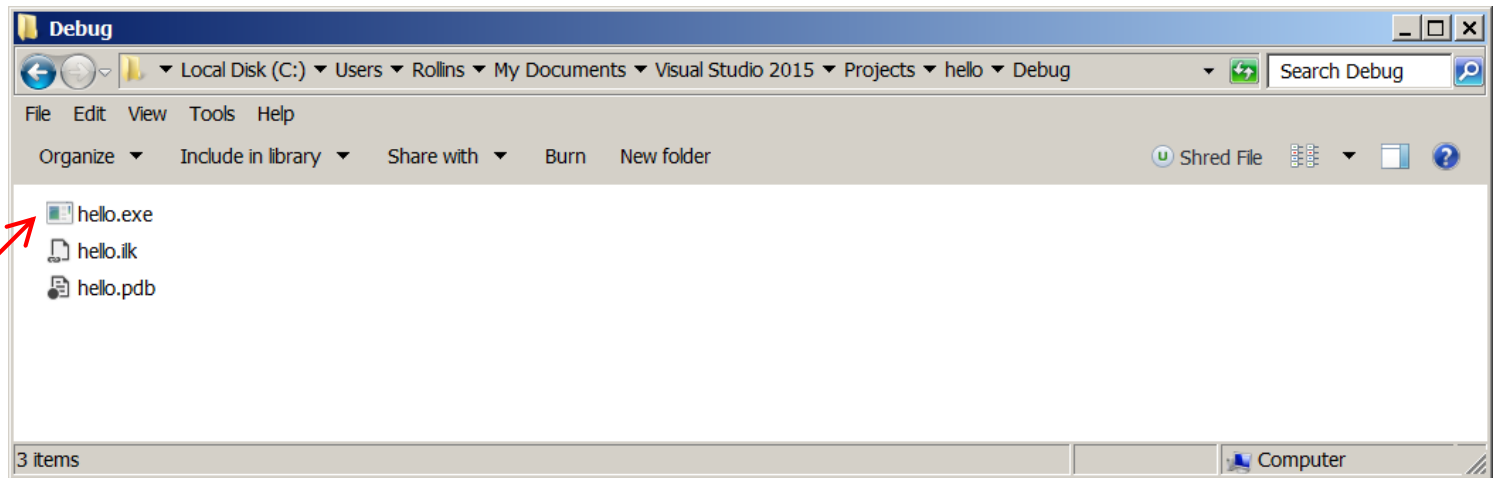

Click here to build and run

Program "hello.cpp" in Action

Press "Enter" to end program and close window.

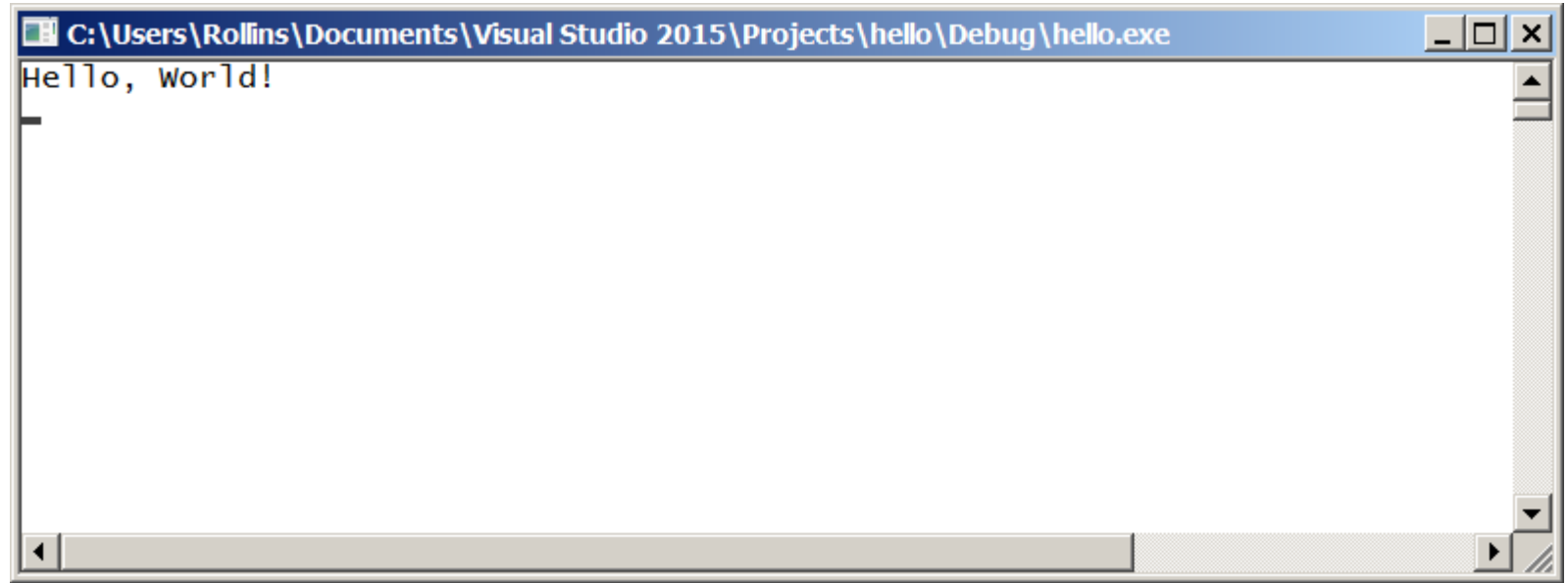# Running Without the IDE

Here is the exe file.

We can double click here to run the program independently of the IDE.

Running Without the IDE

```
C:\Users\Rollins\Documents\Visual Studio 2015\Projects\hello\Debug\hello.exe
Hello, World!
```
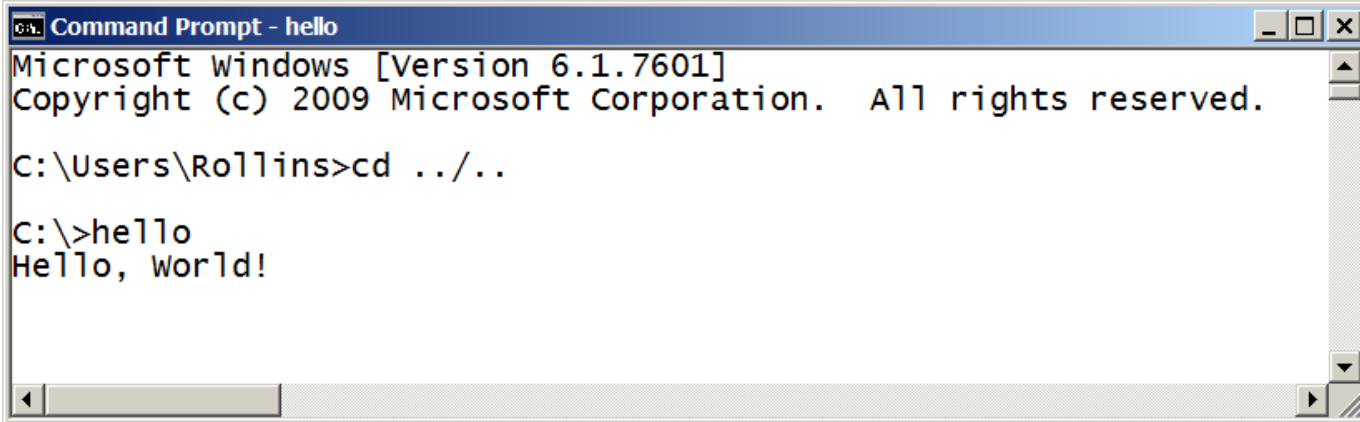
Running from the Desktop

- Drag the hello.exe icon to the desktop.

- Double click the icon to run the program from the desktop.

Running Without the IDE

- We can also run the program from the DOS command line.

- Copy the exe file into a convenient directory (e.g. C)

- Open a command window
  - Click Start and search for cmd

- cd to the directory

- Type the command: hello
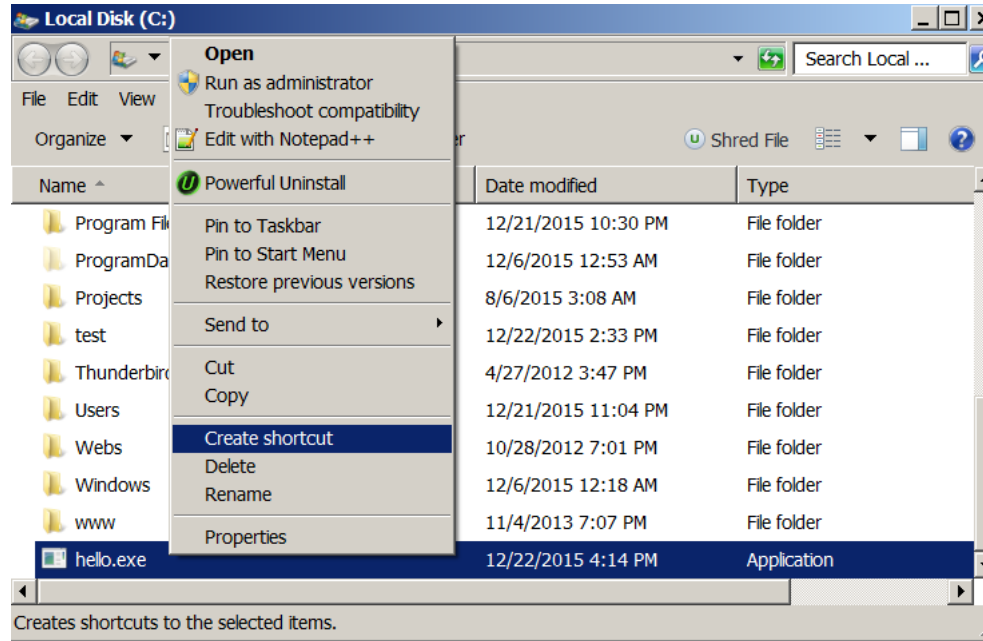
Running from the Command Line

```
Command Prompt - hello                                    _ □ ×
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Rollins>cd ../..

C:\>hello
Hello, World!
```
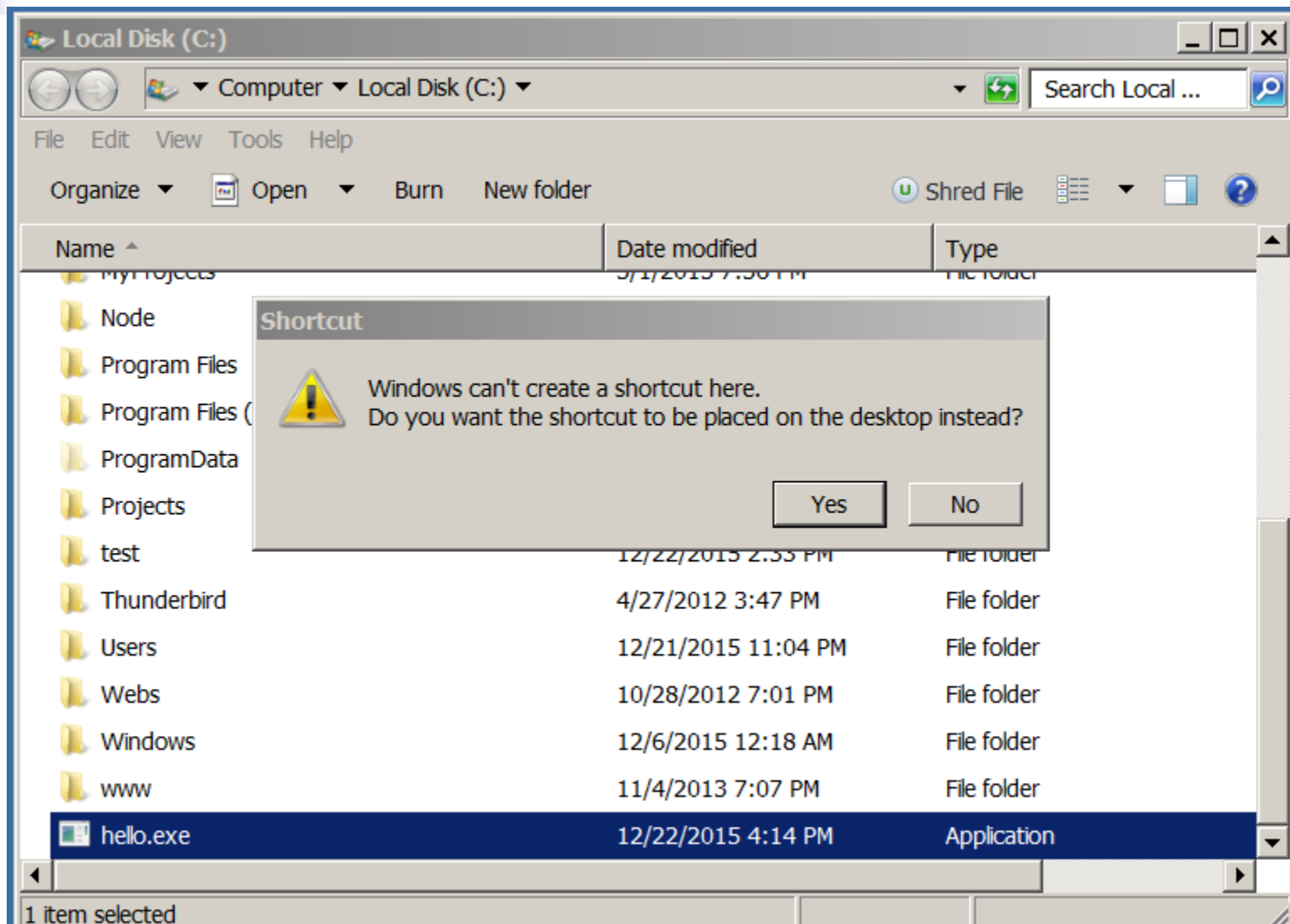
Creating a Shortcut

Put the shortcut on the desktop

Running by Double Clicking

Now you can run the program by double clicking the icon on the desktop.