Using Visual Studio 2010: Part 1

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Objectives

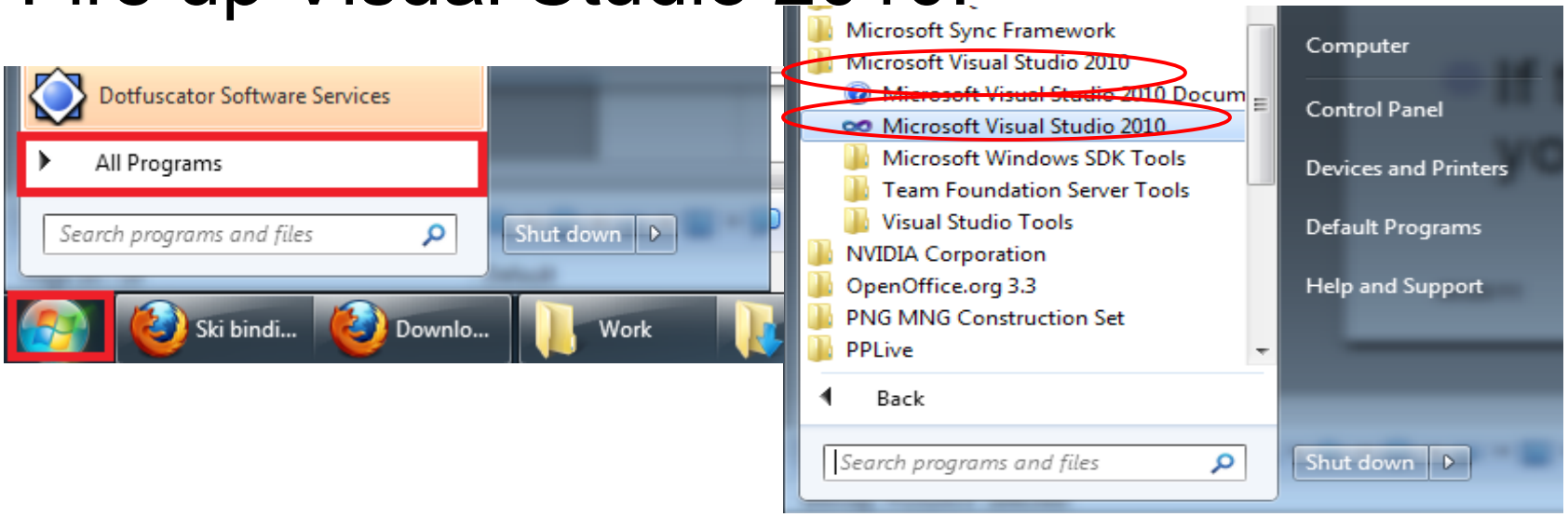
- Installation advice
- Start Microsoft Visual Studio 2010
- Create project
- Add C++ file
- Compile and run a program
- Disable MS Language Extensions
- Miscellaneous

“I can’t install Microsoft Studio 2010”

- If the software CD is corrupted, ask the instructor for another set.
- If you were getting the software from dreamspark, read the tutorial again and make sure you to follow properly.
- Make sure you update your Windows.
- Seek help with other CS people.

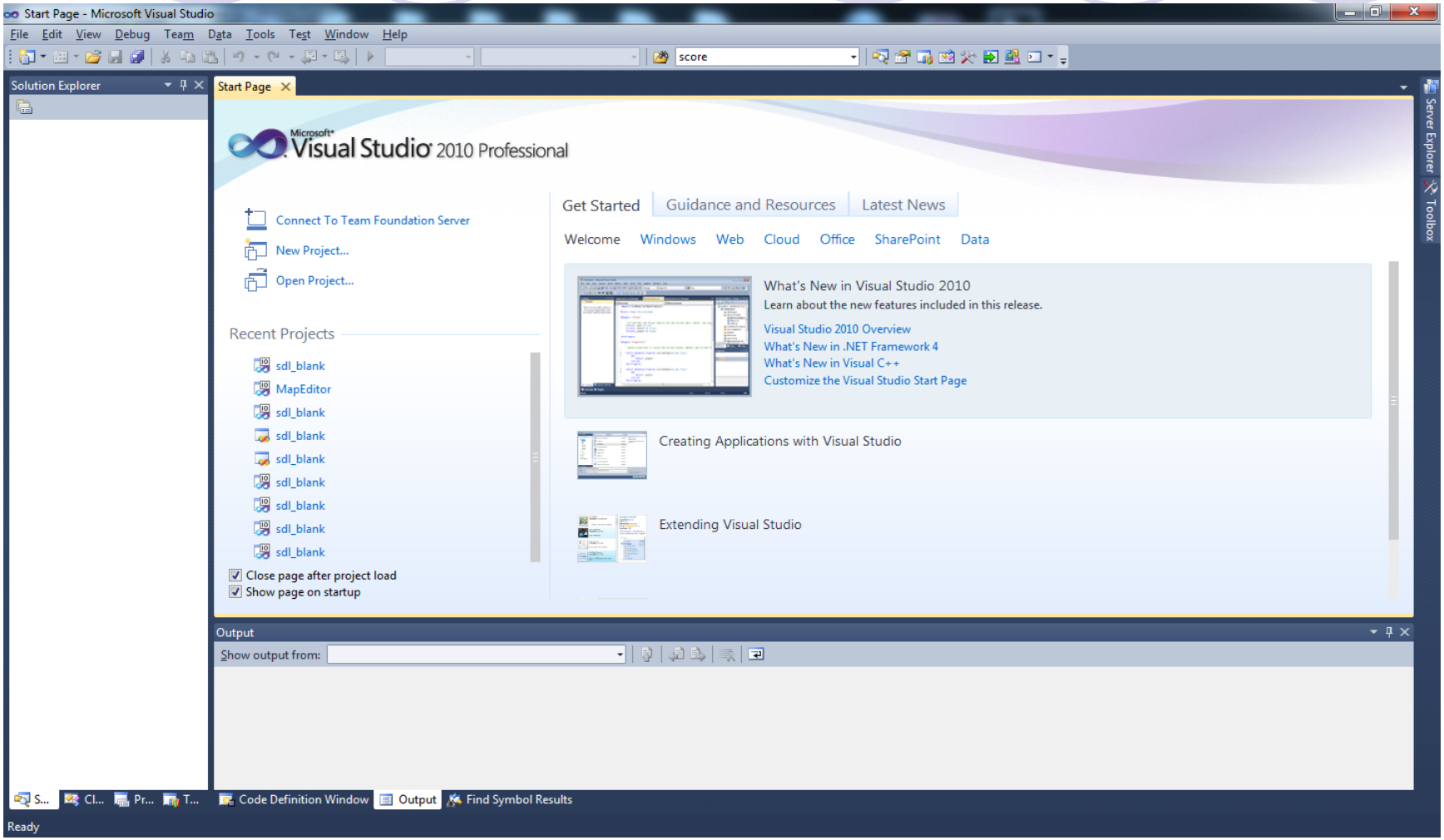
Start Studio 2010

- Fire up Visual Studio 2010:

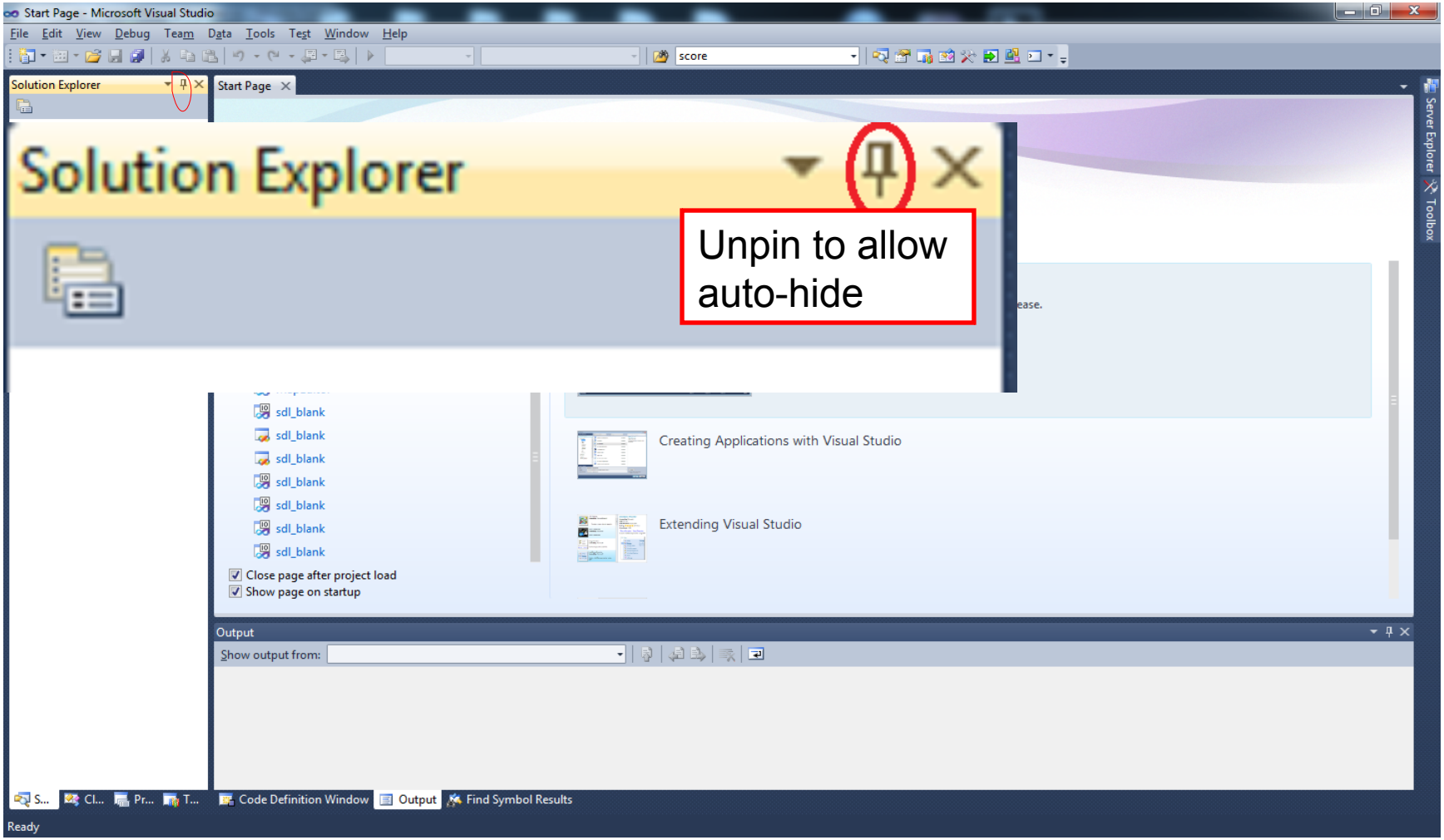


- You should get the following screen …

Start Studio 2010

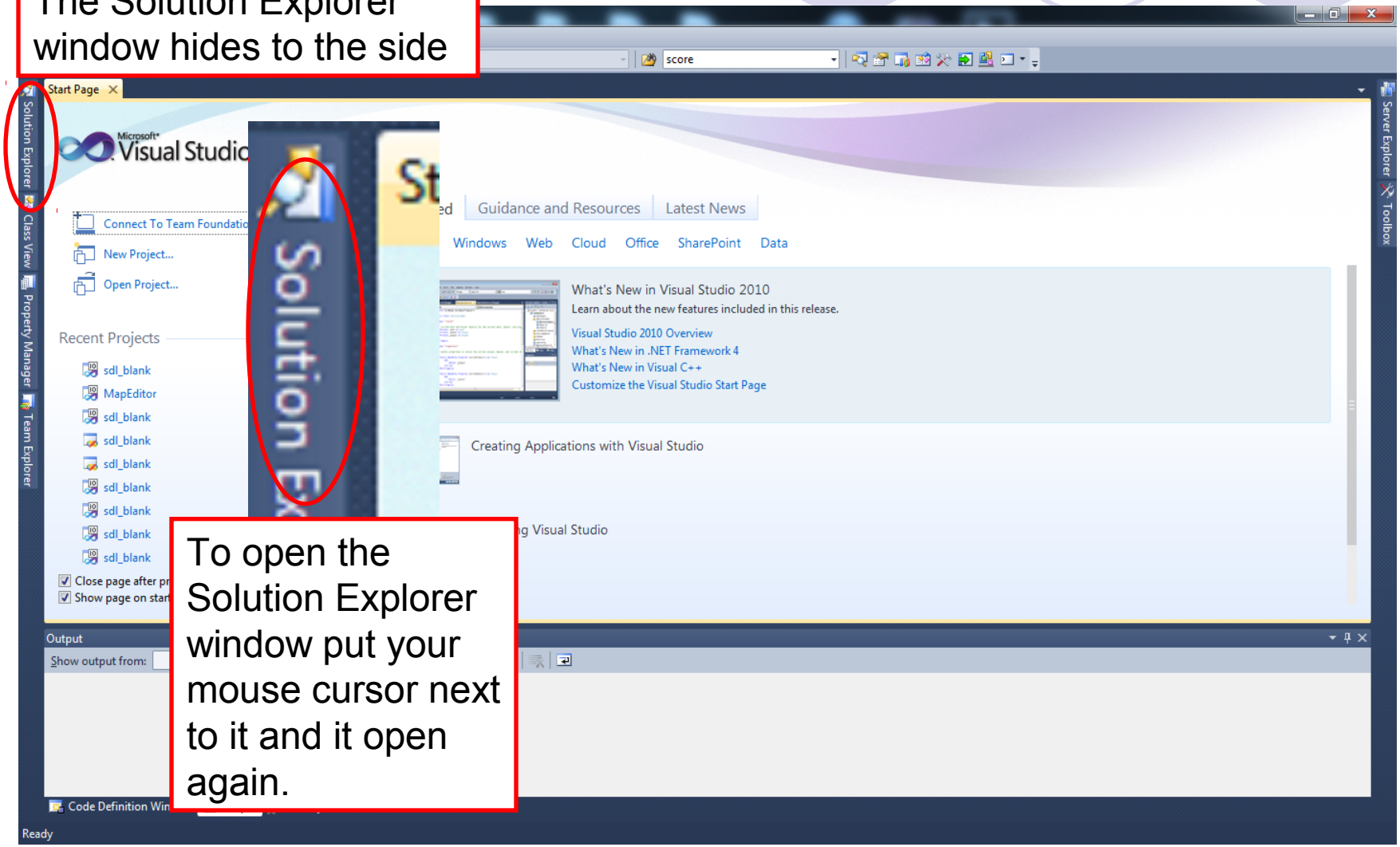


Auto-Hide Windows



Auto-Hide Windows

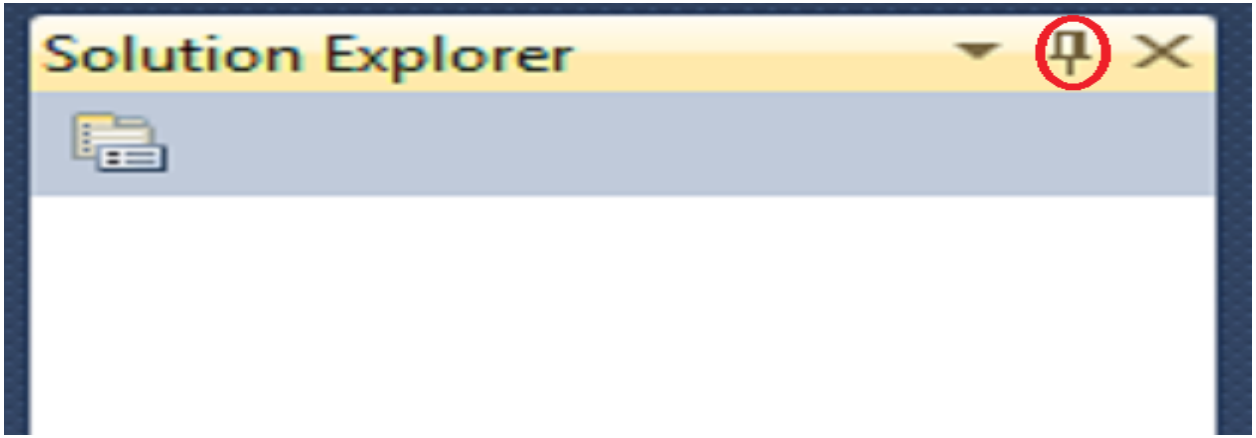
The Solution Explorer window hides to the side



To open the Solution Explorer window put your mouse cursor next to it and it open again.

Auto-Hide Windows

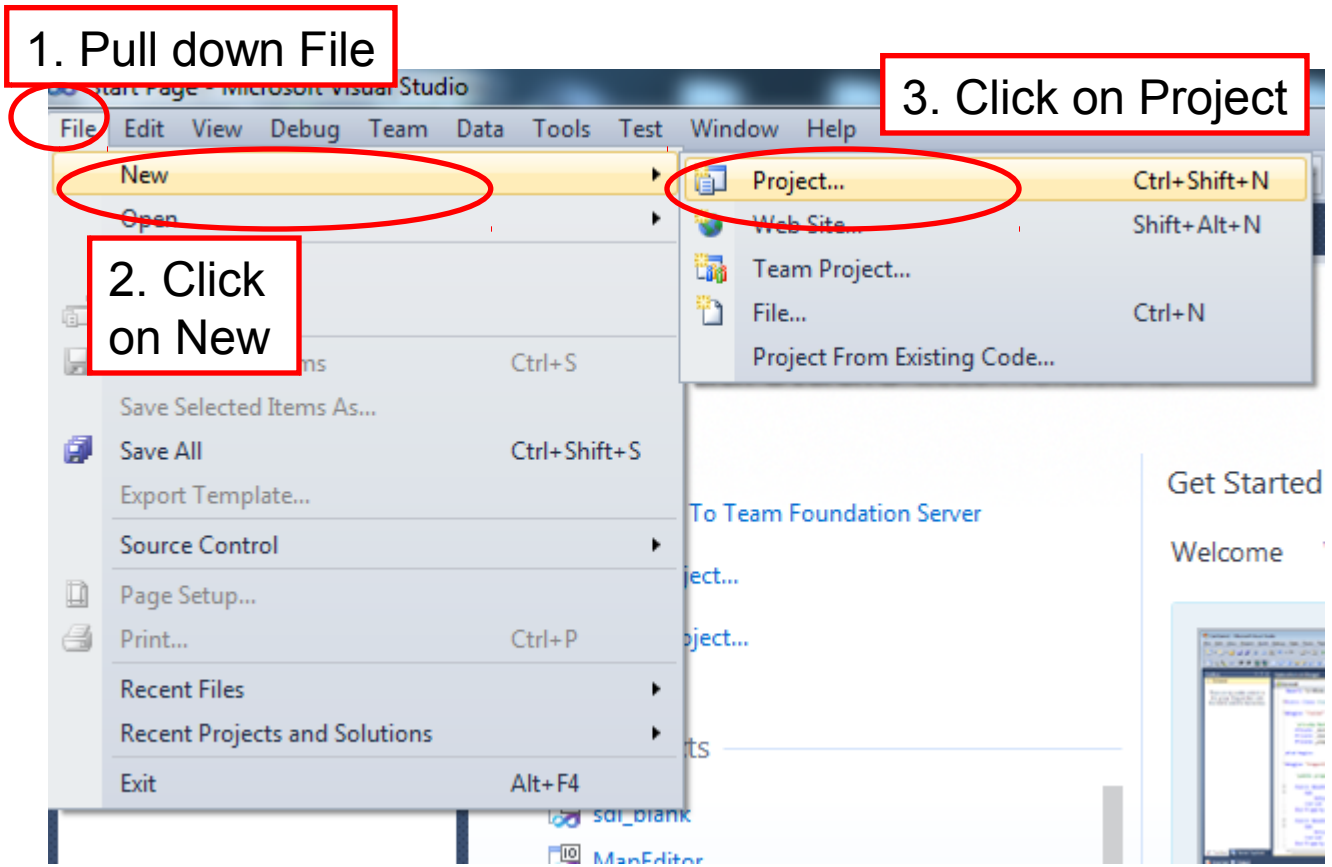
- Why auto-hide? You need to unclutter your workspace to write programs.
- If you want the Solution Explorer to stay open at all time, pin it



Creating New Project

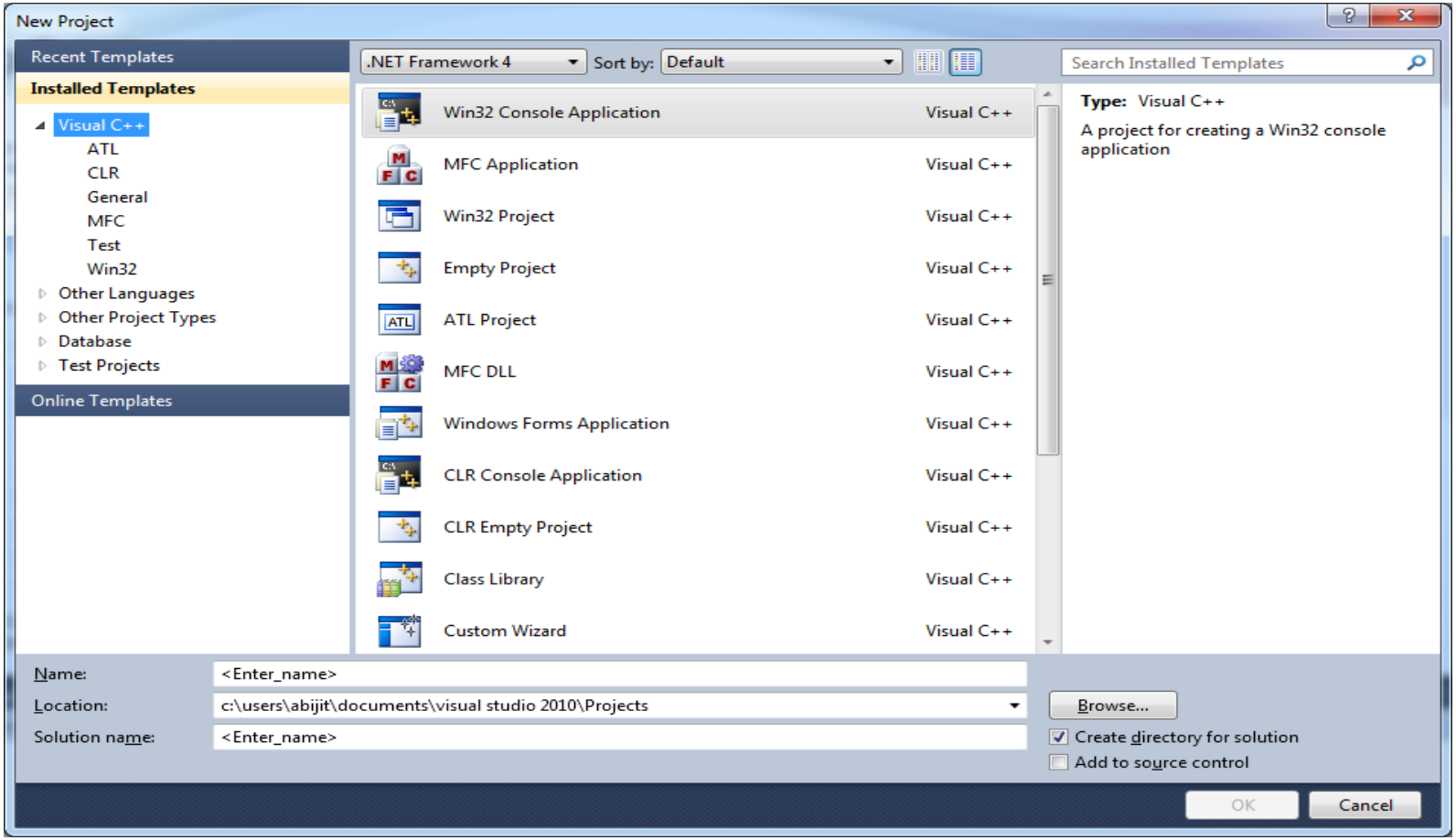
- To write a program in Studio 2010, you need to
  - create a project
  - put your program (C++ source file) to the project.
- ***Each program requires a new project.***
- Let's begin …

Creating New Project



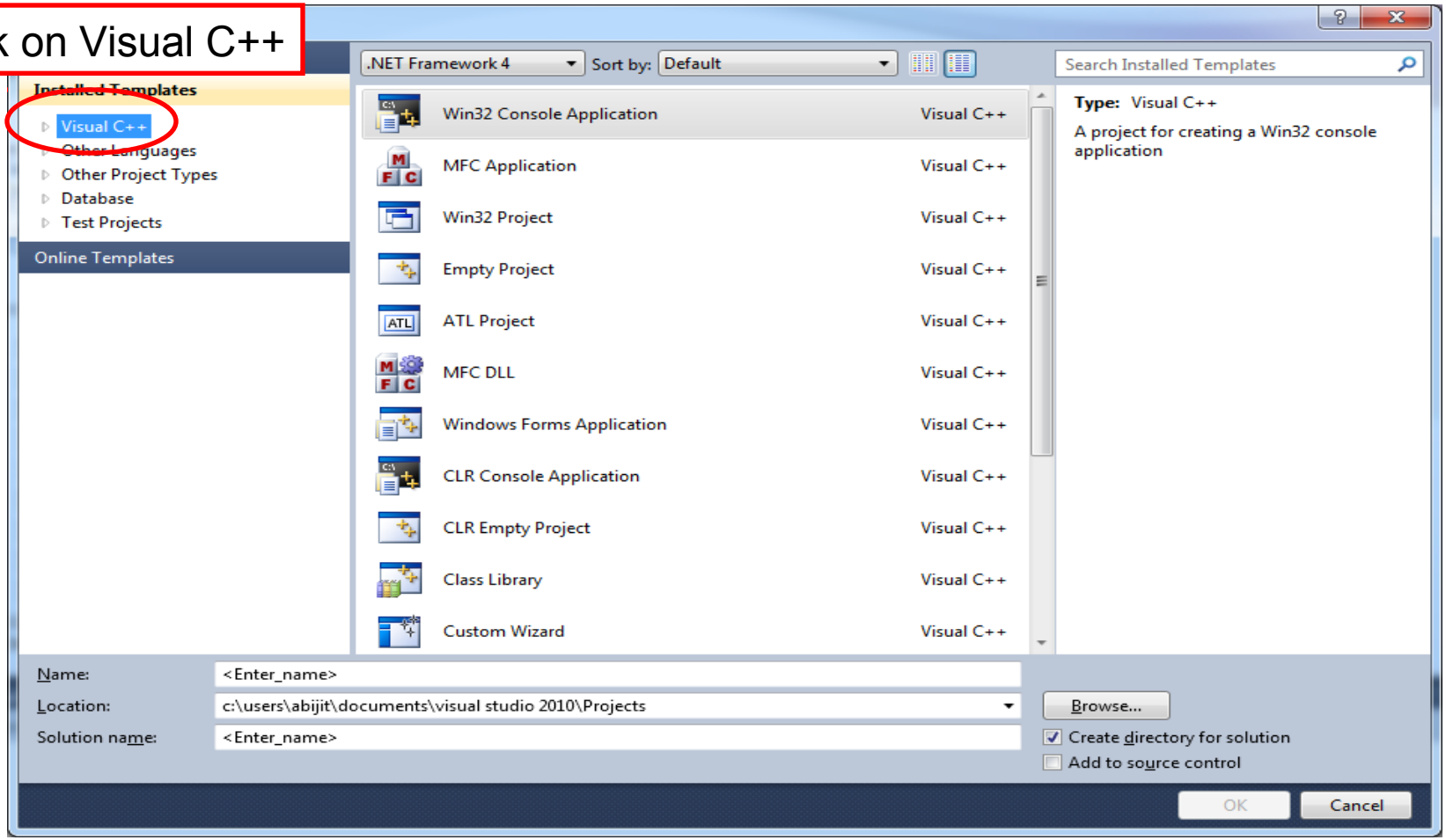
Creating New Project

You should see this:

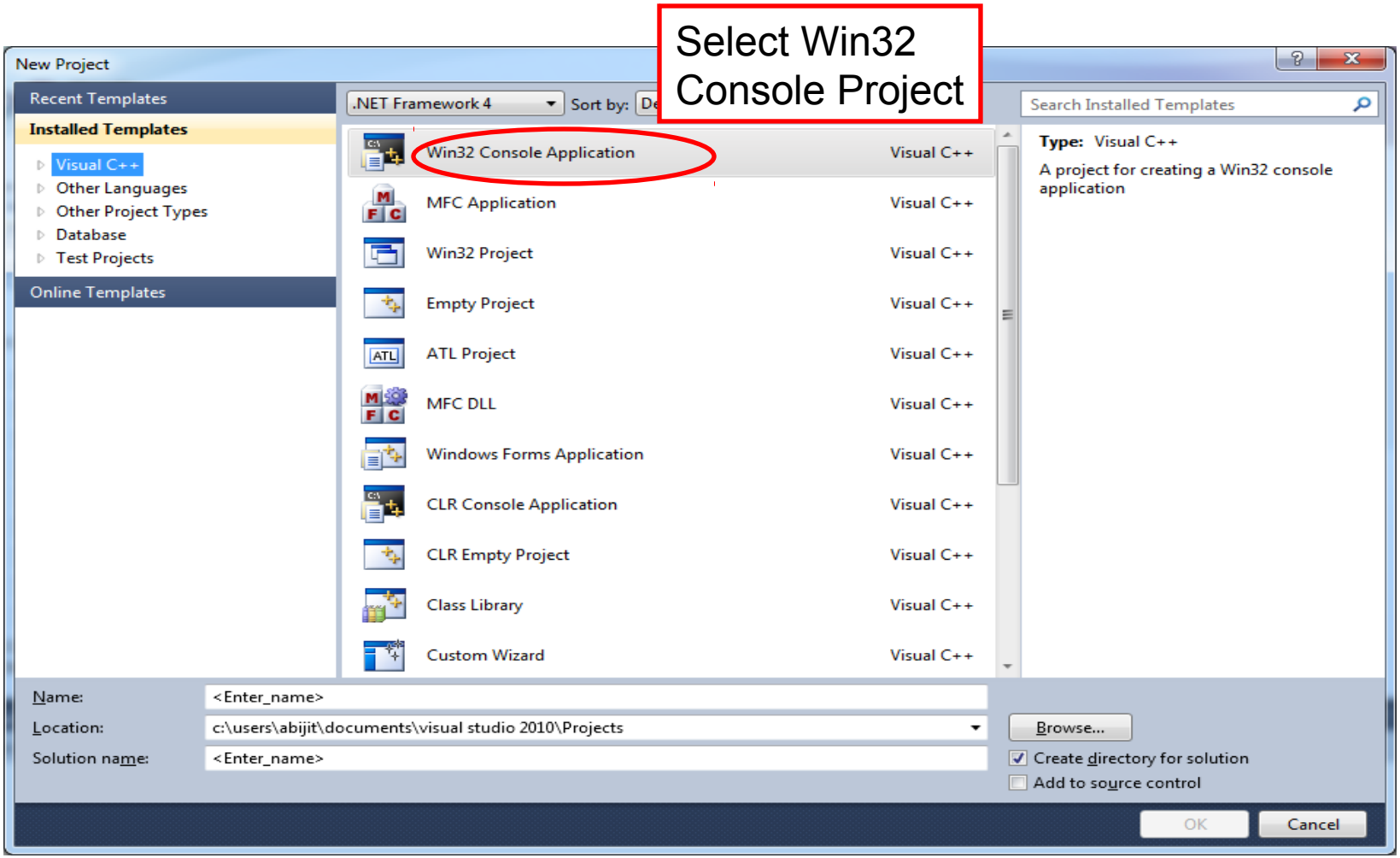


Creating New Project

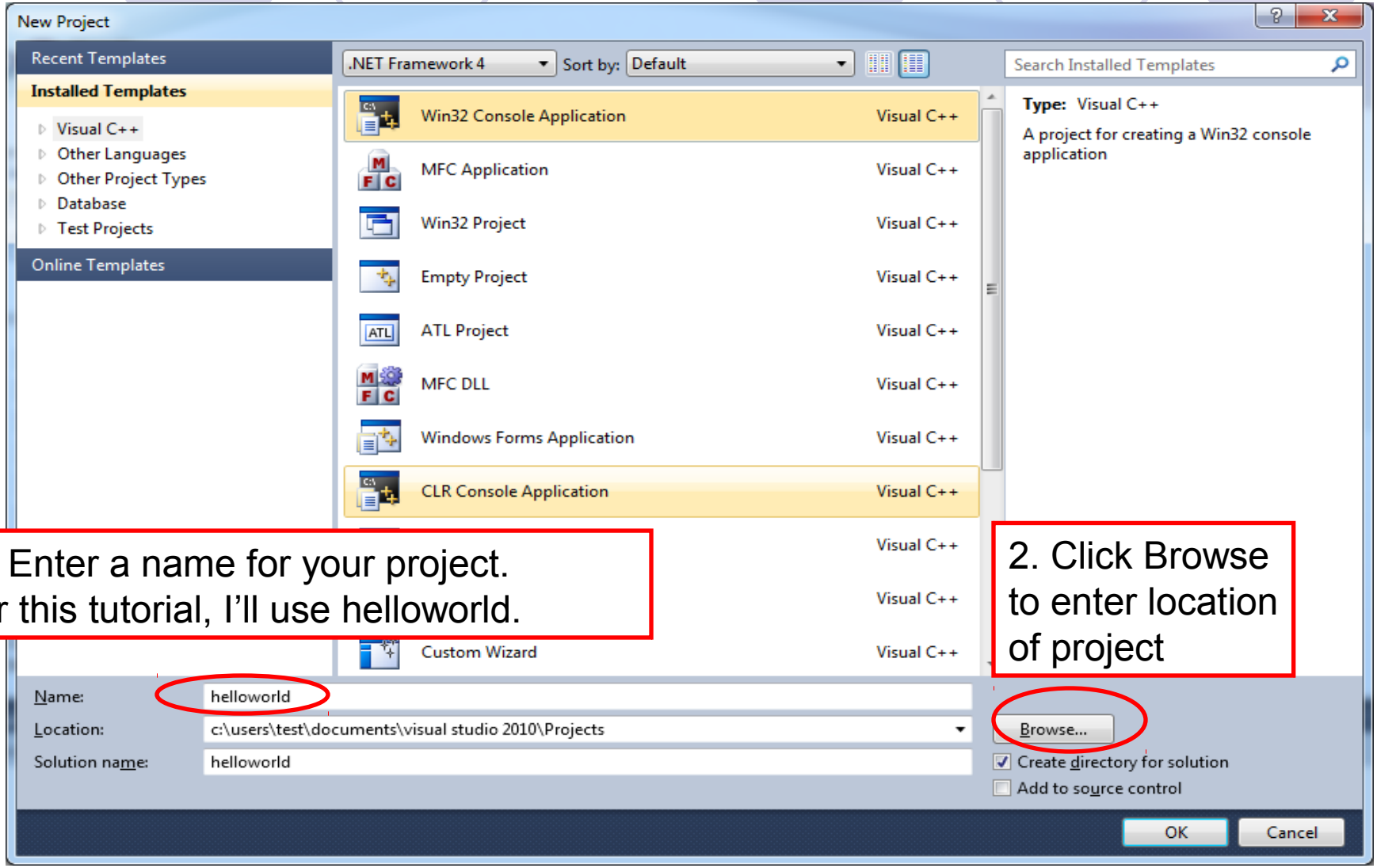
Click on Visual C++



Creating New Project



Creating New Project

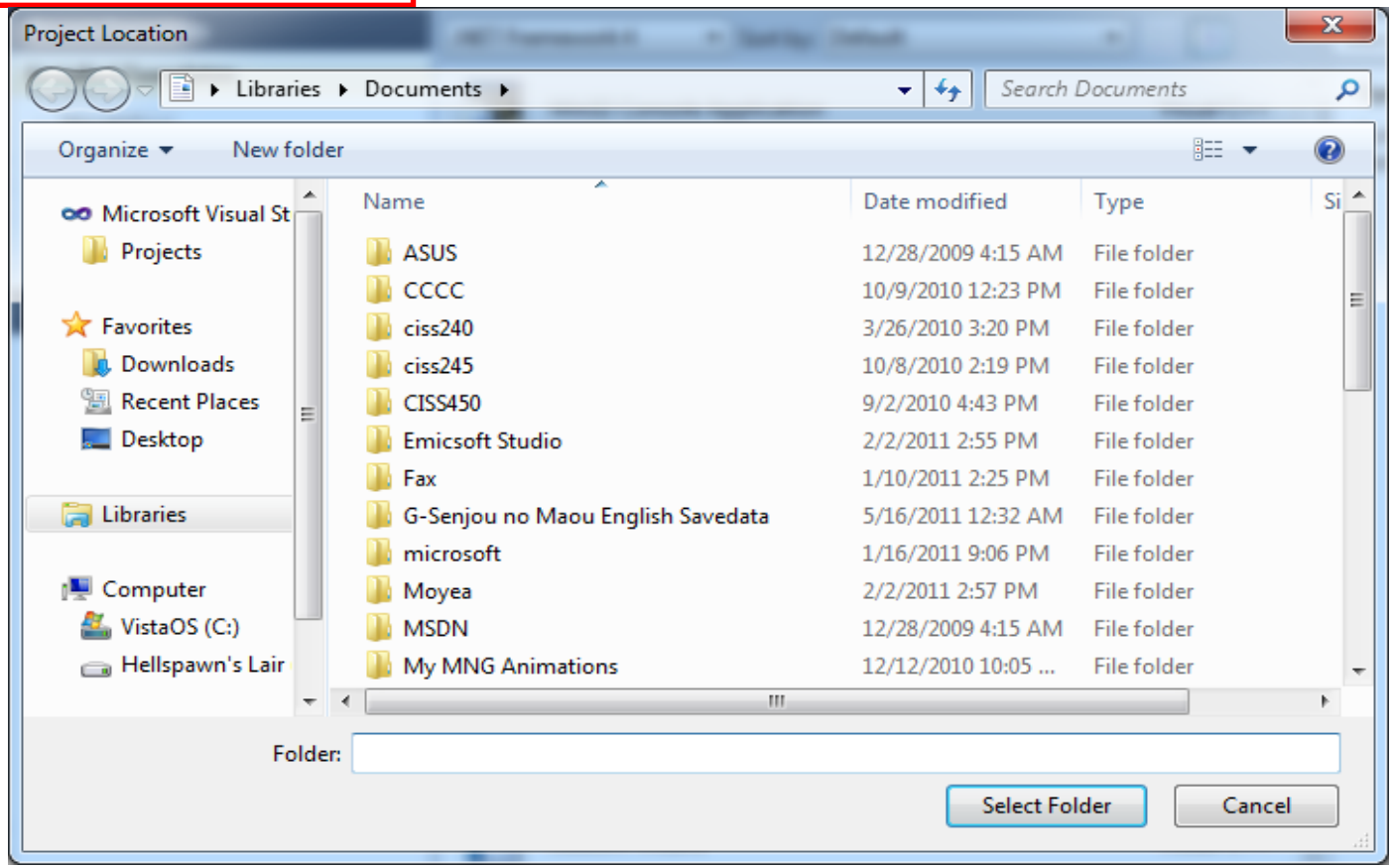


1. Enter a name for your project.
For this tutorial, I'll use helloworld.

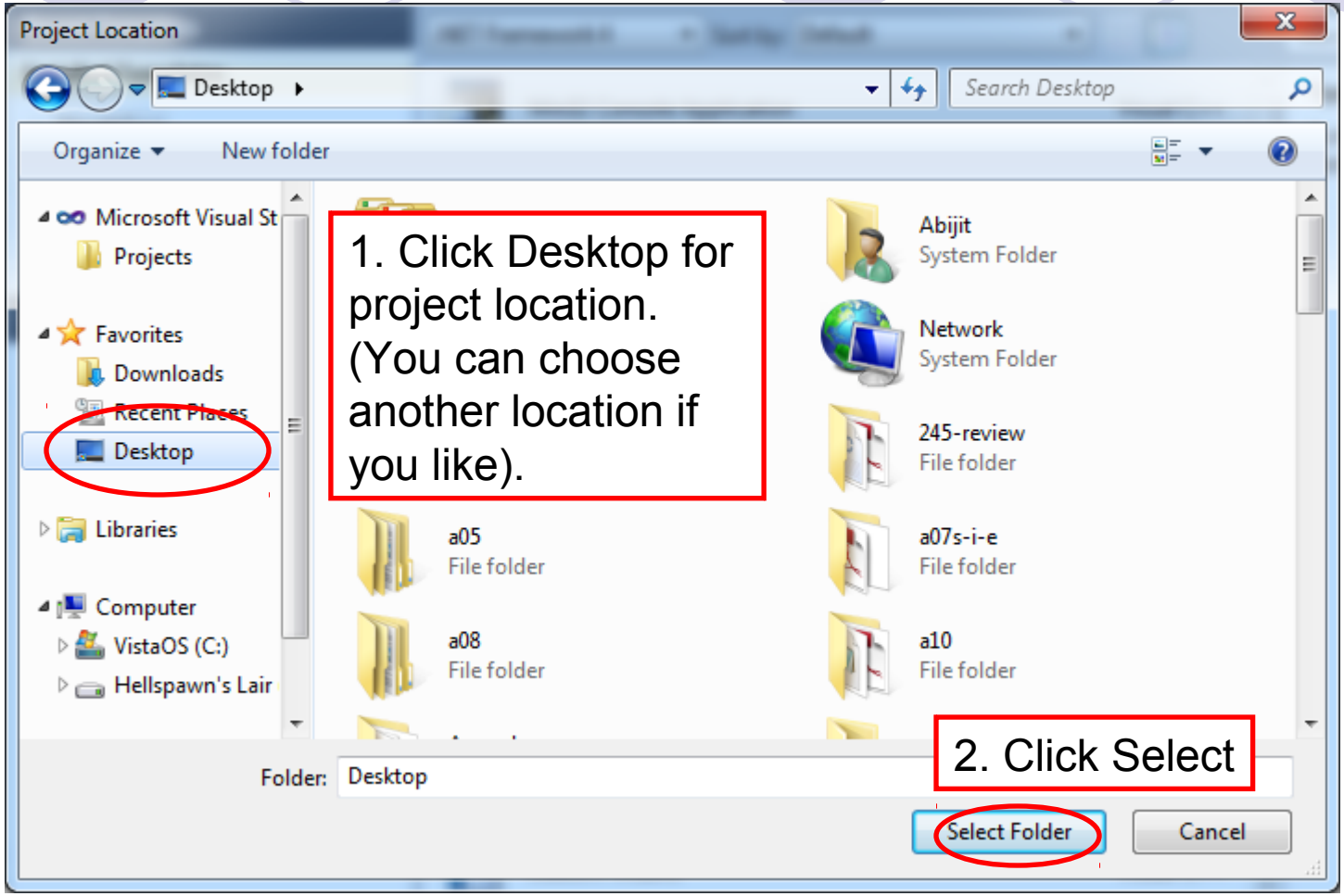
2. Click Browse to enter location of project

Creating New Project

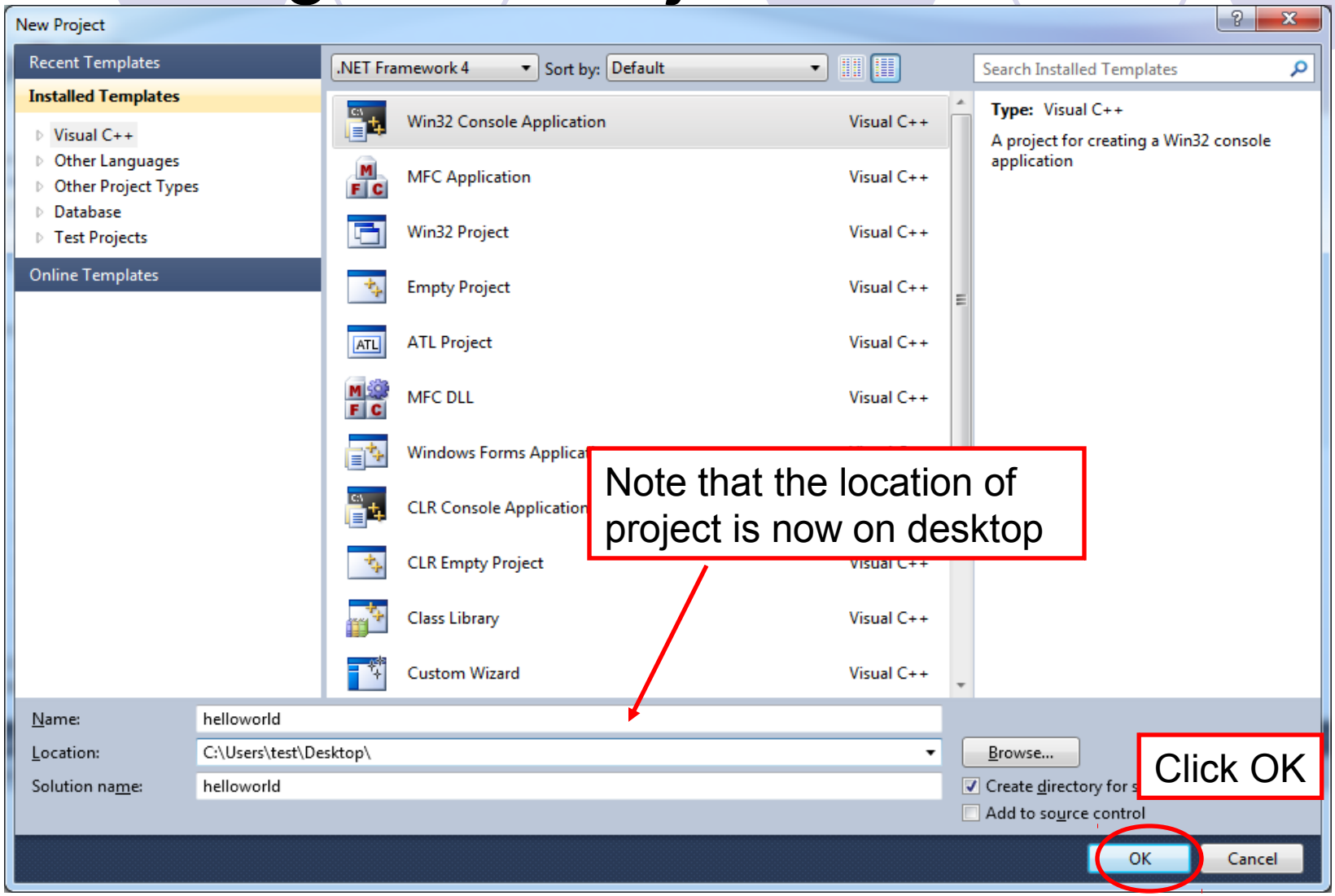
You should see this:



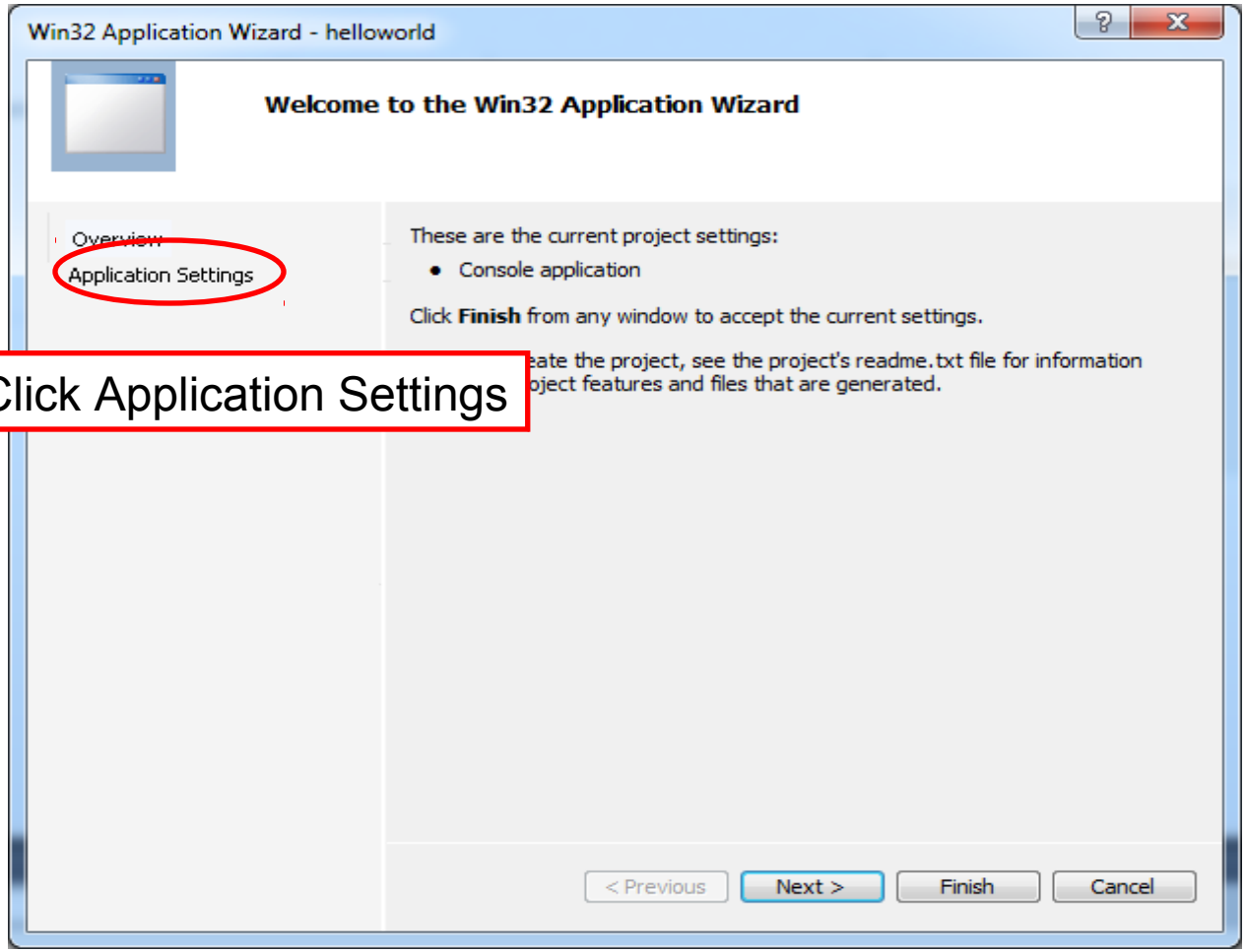
Creating New Project



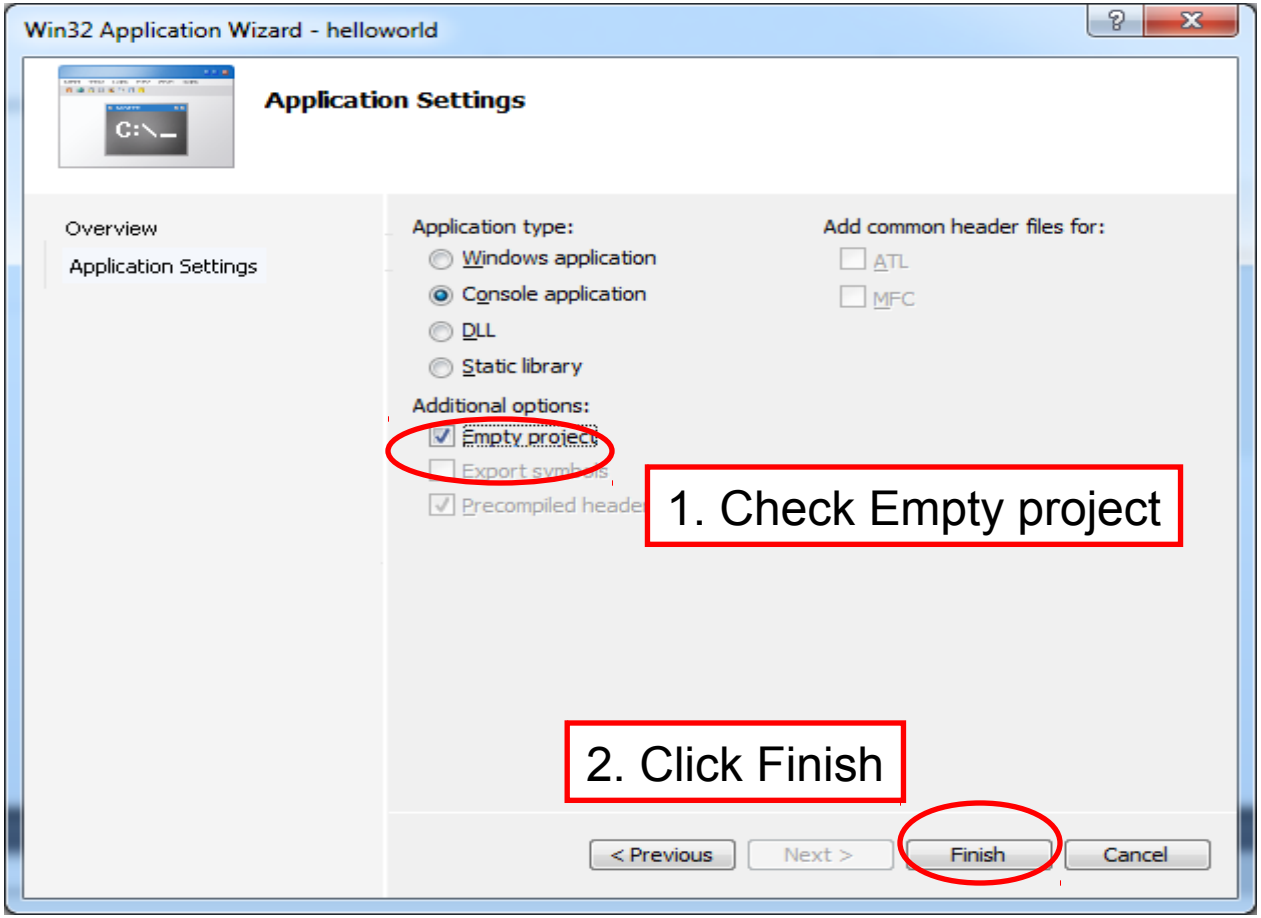
Creating New Project



Creating New Project



Creating New Project

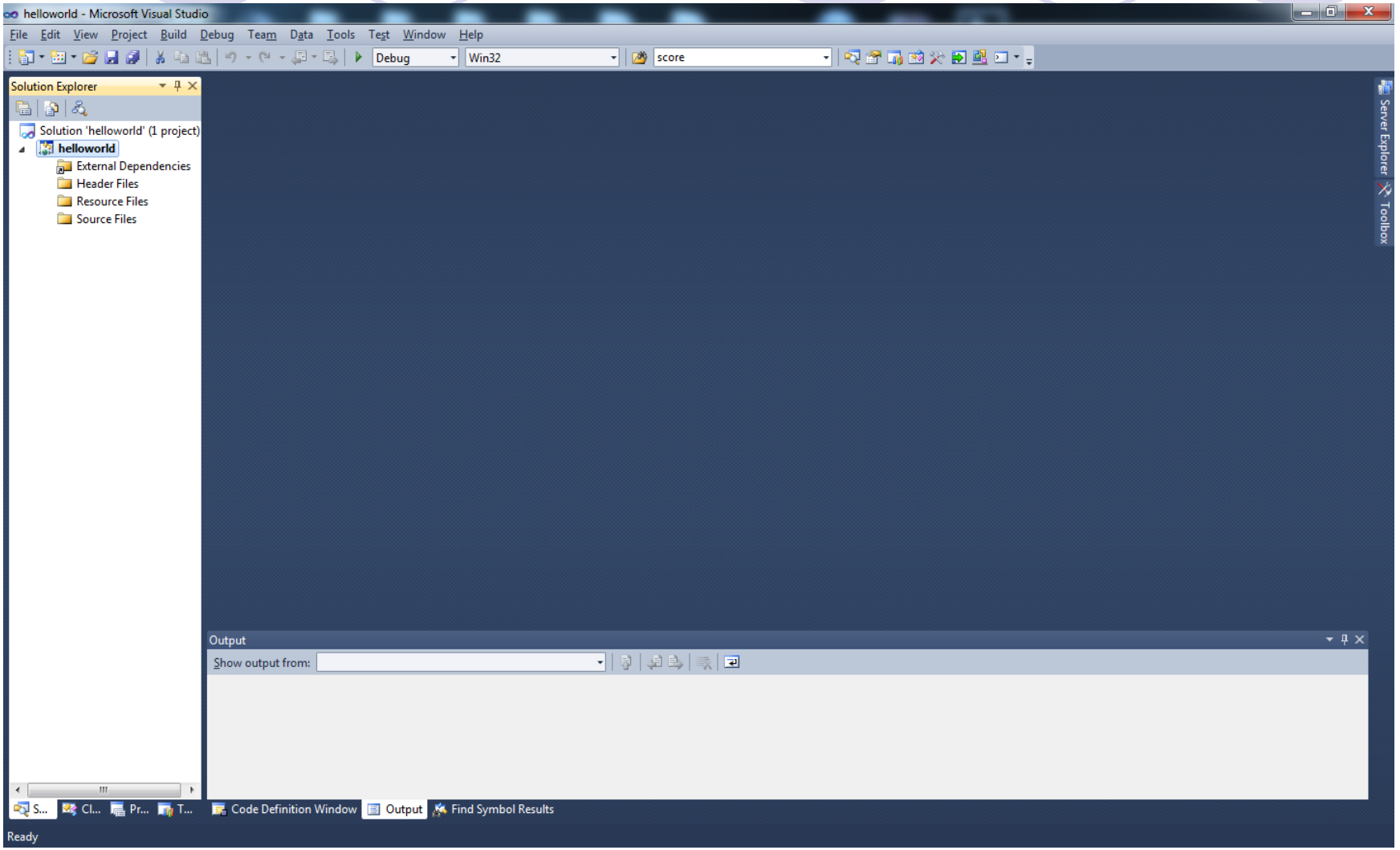


Creating New Project

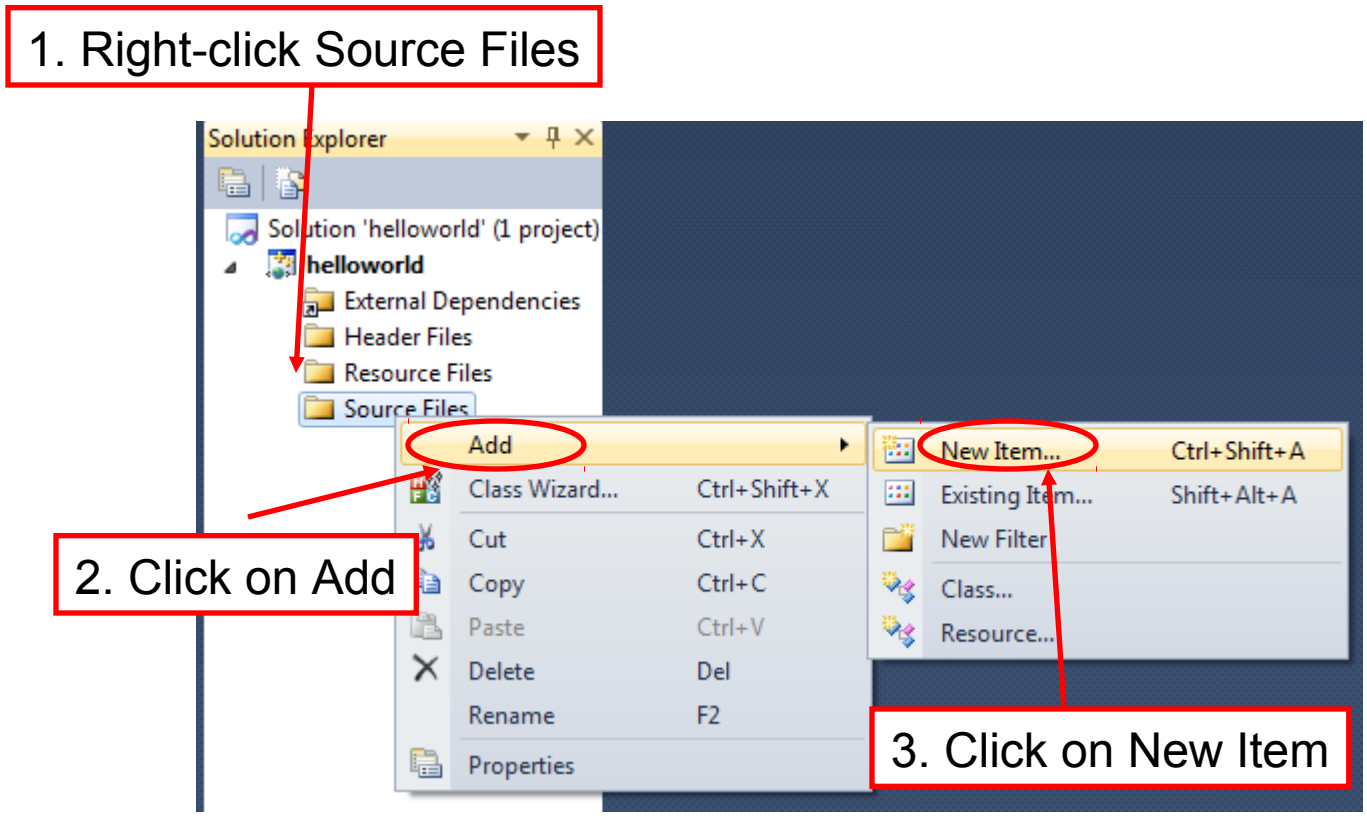
- Go to your Desktop and verify that there is a folder on your Desktop:

- The program you write will be in this folder.

Creating New Project

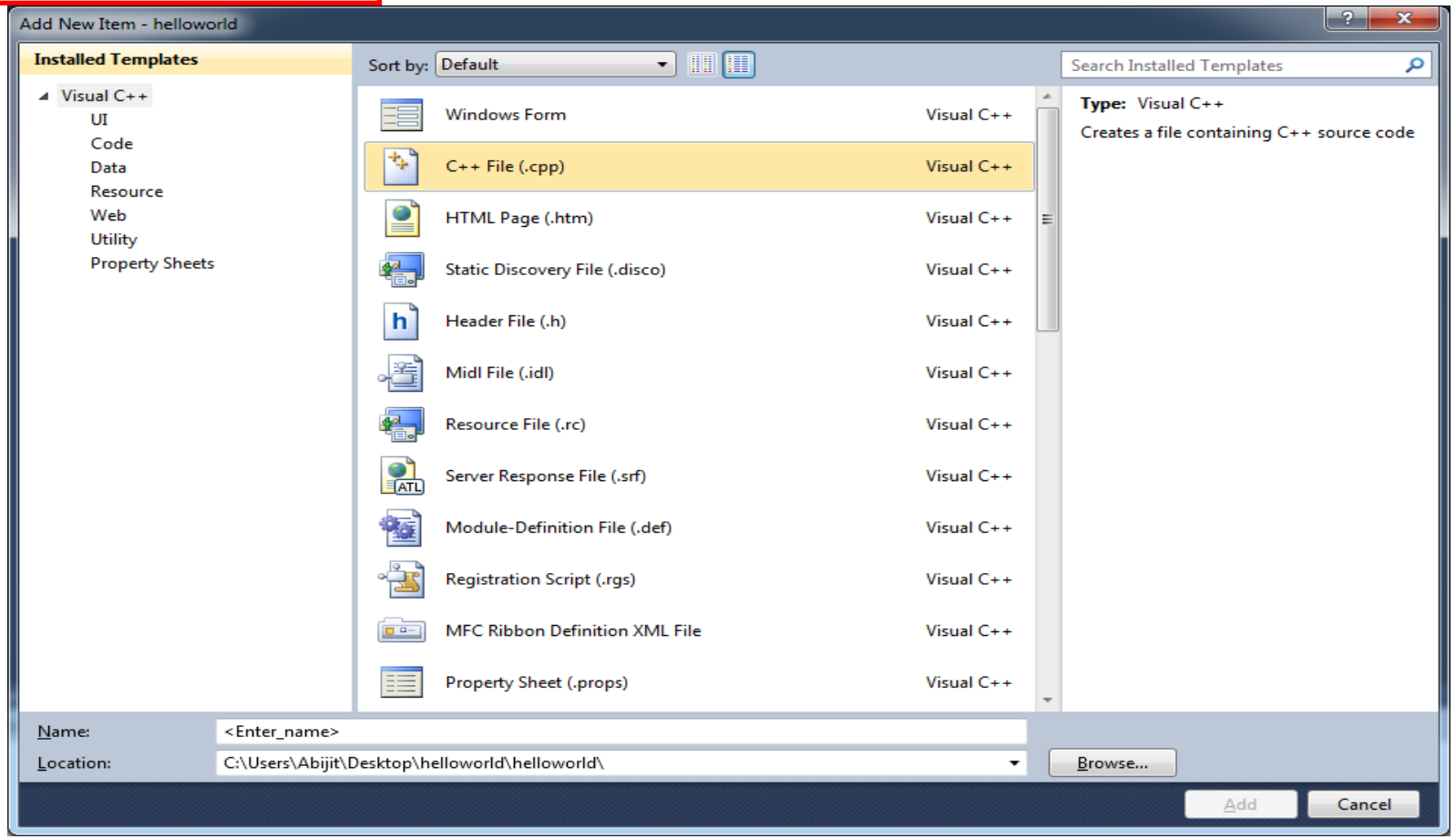


Add C++ Source File to Project



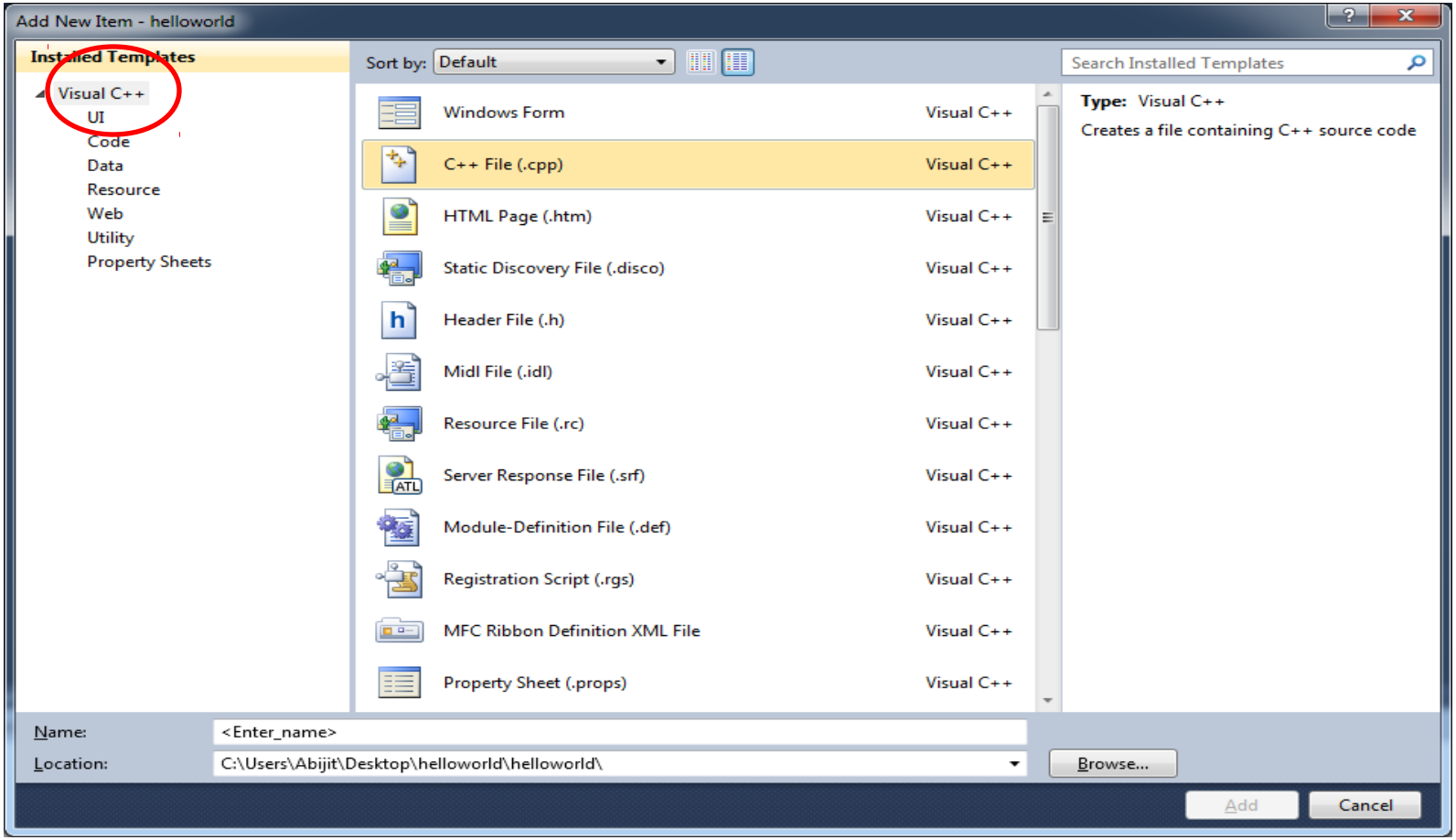
Add C++ Source File to Project

You should see this:

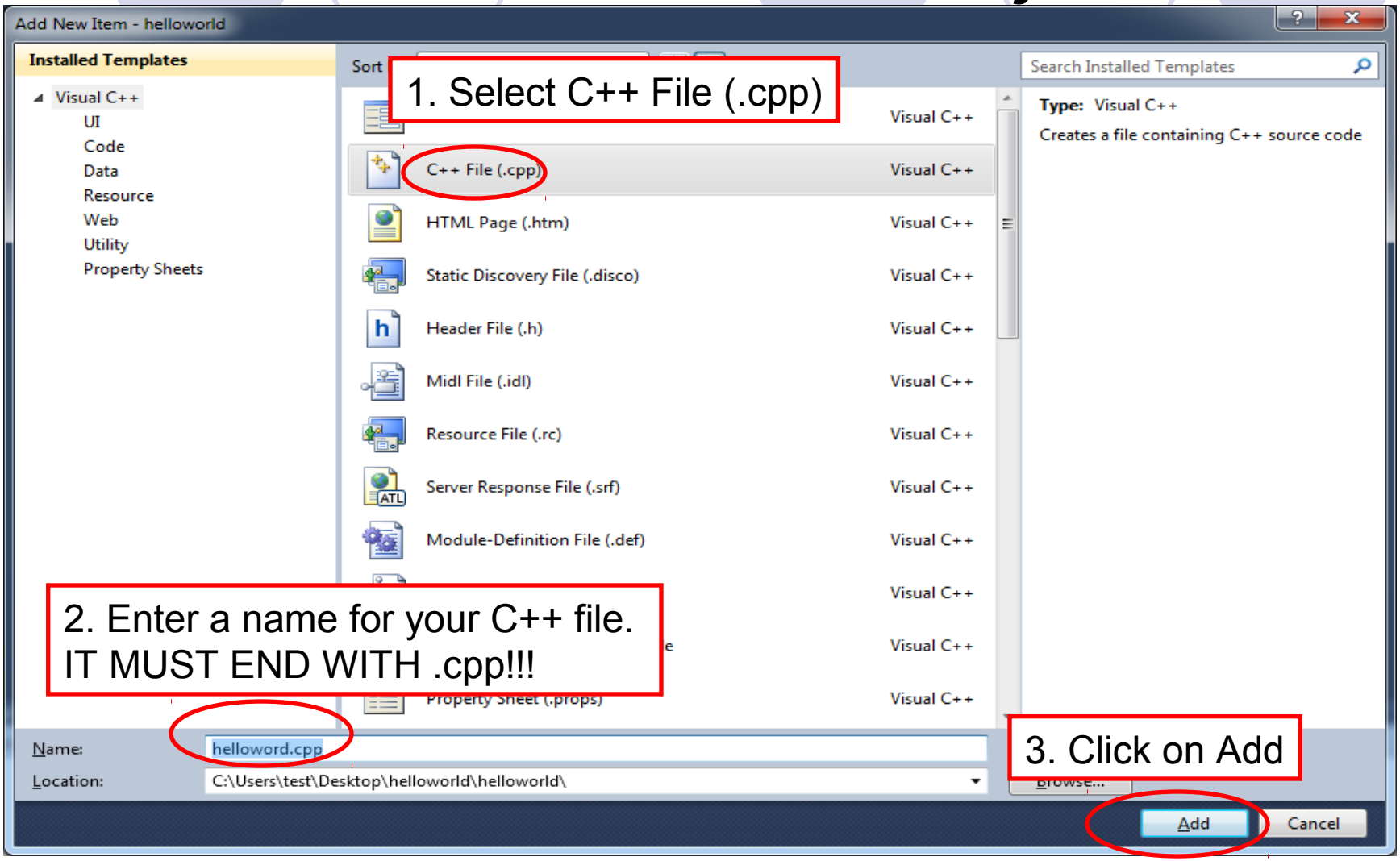


Add C++ Source File to Project

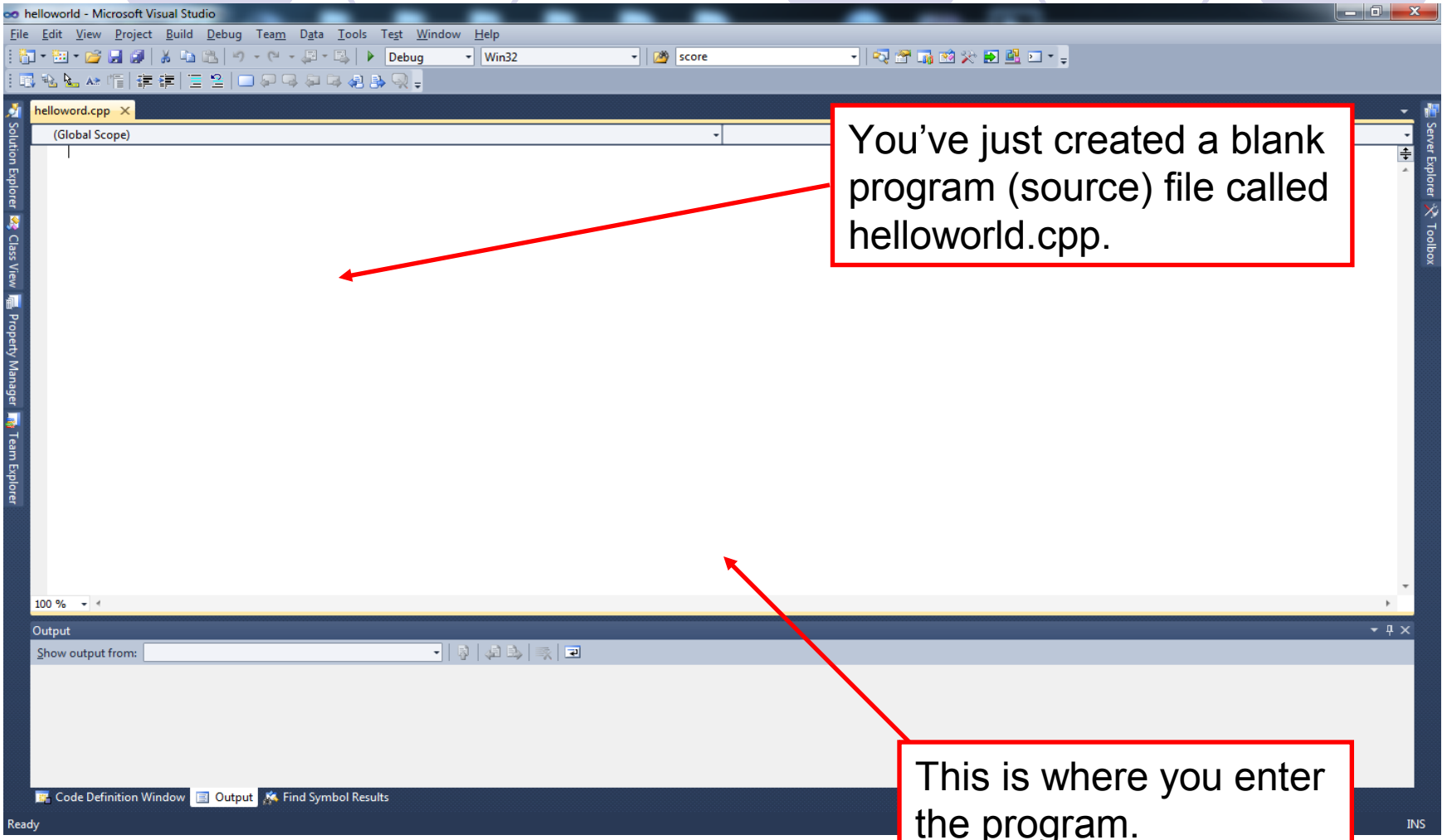
Click on Visual C++



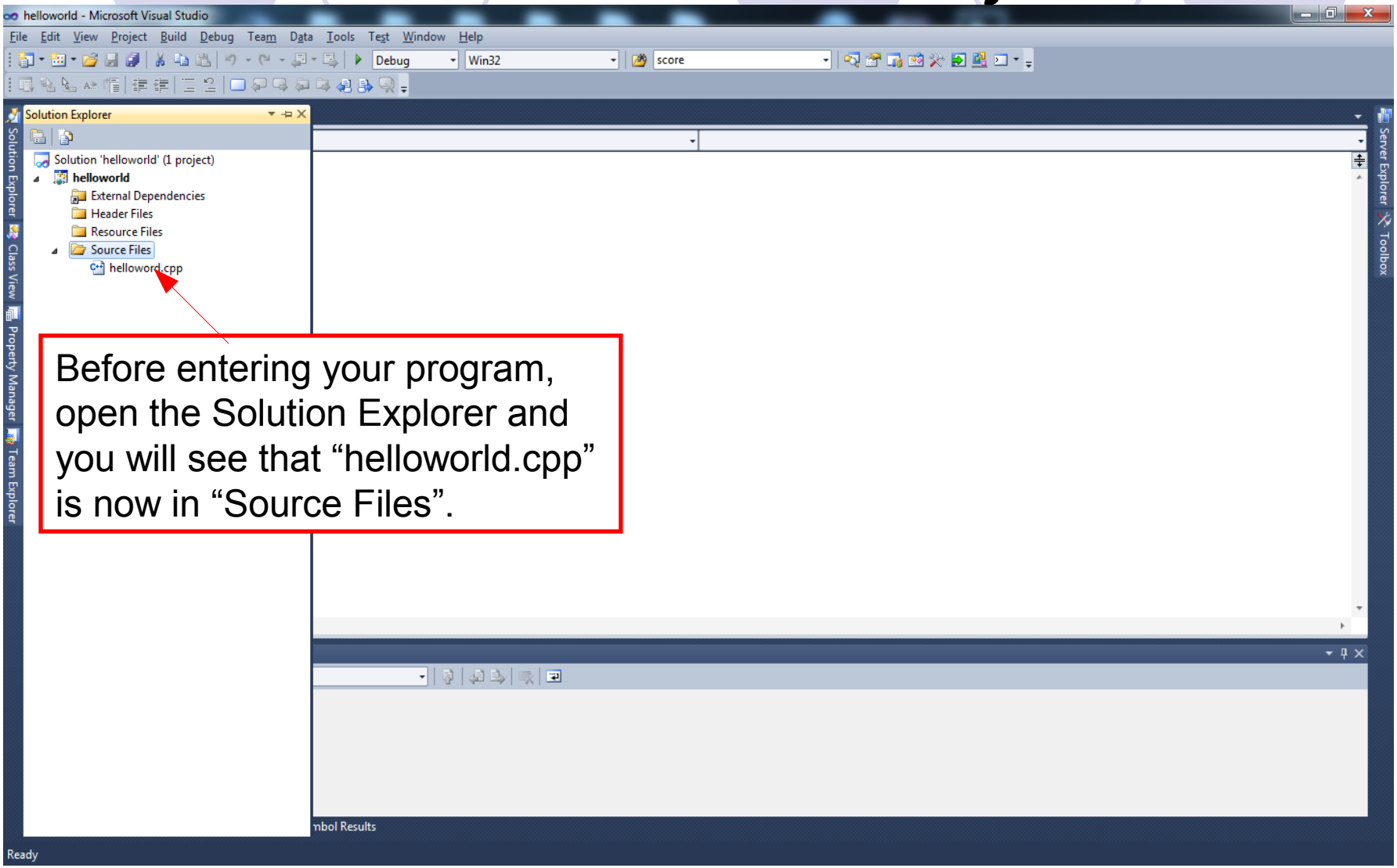
Add C++ Source File to Project



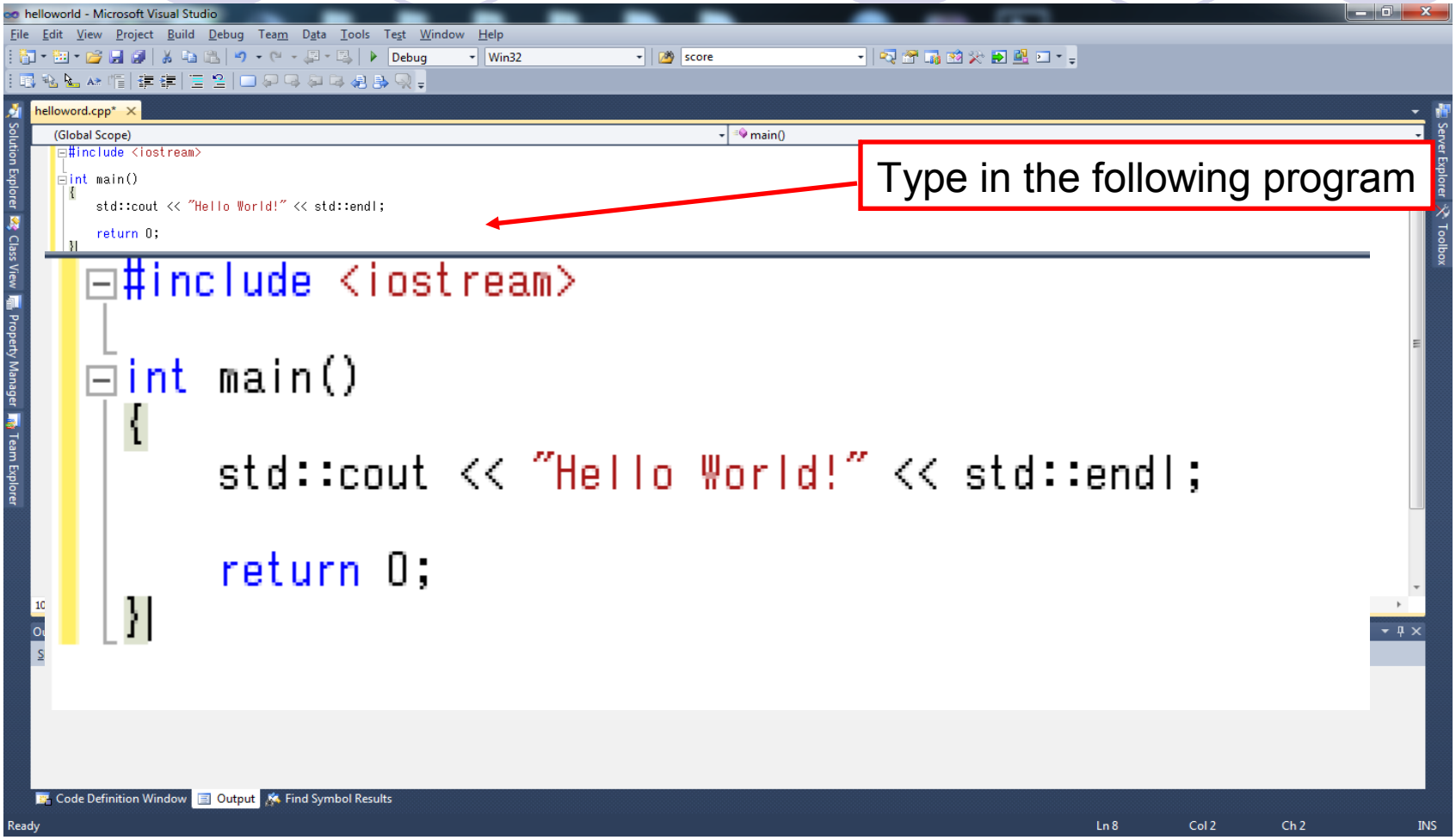
Add C++ Source File to Project



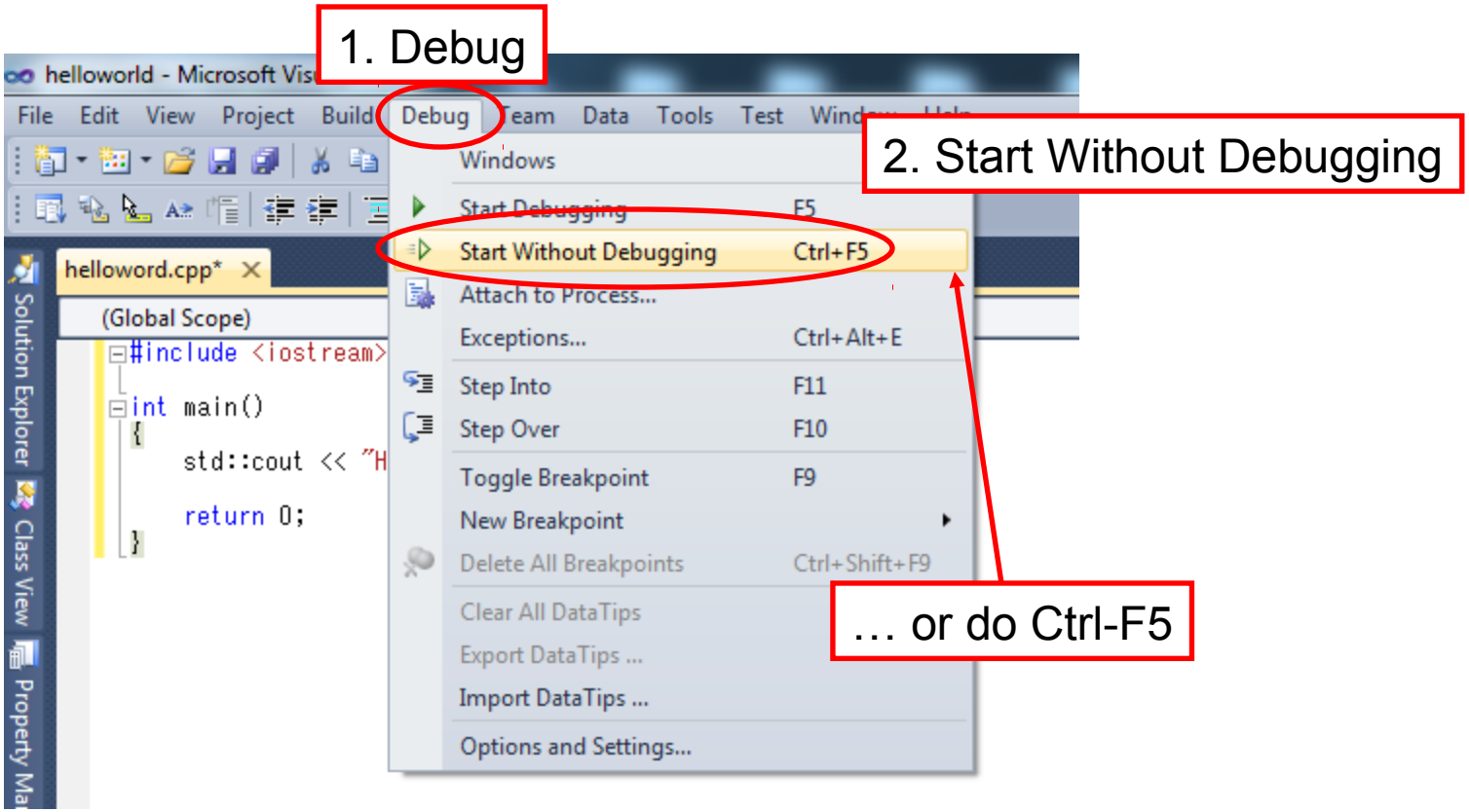
Add C++ Source File to Project



Entering Program



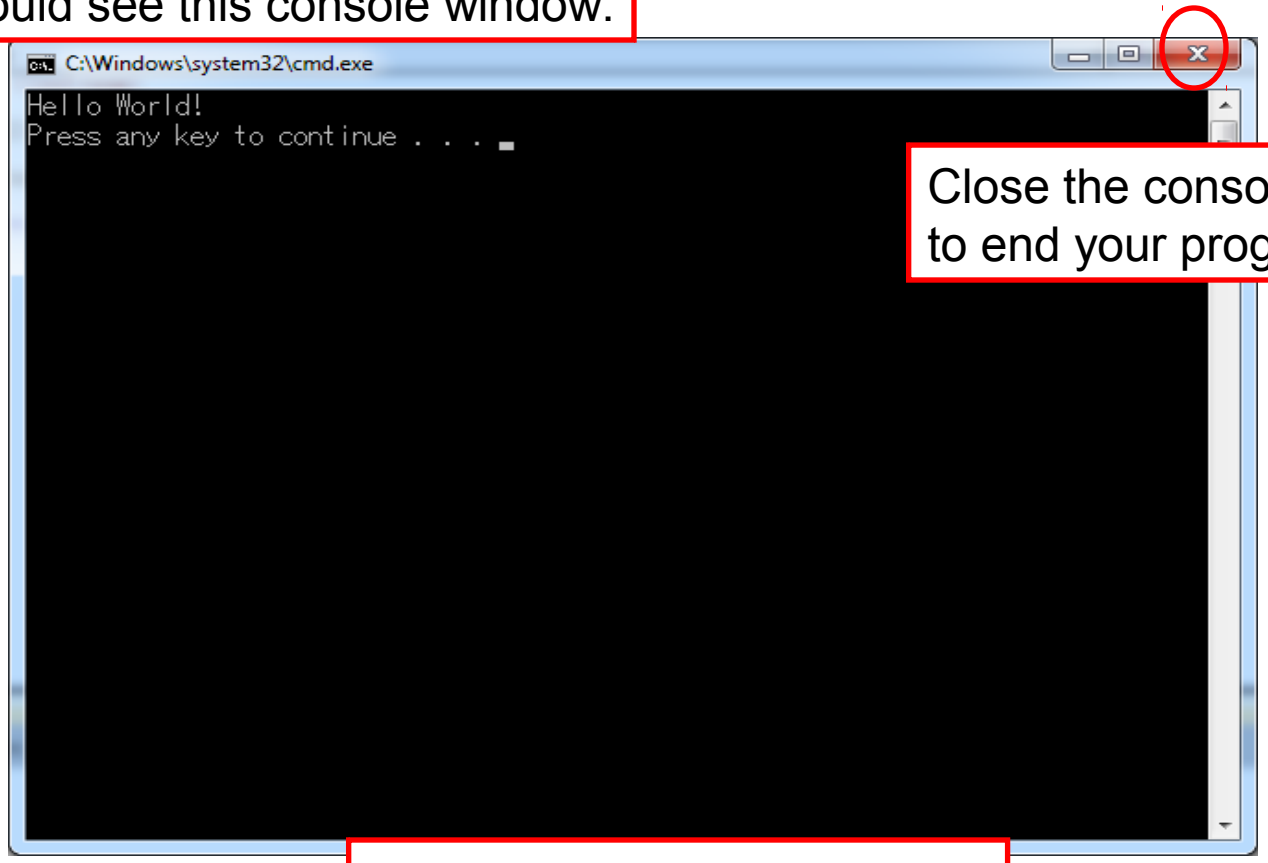
Compiling and Running the Program



Learn to use Ctrl-F5! Don't let the mouse slow you down!

Compiling and Running the Program

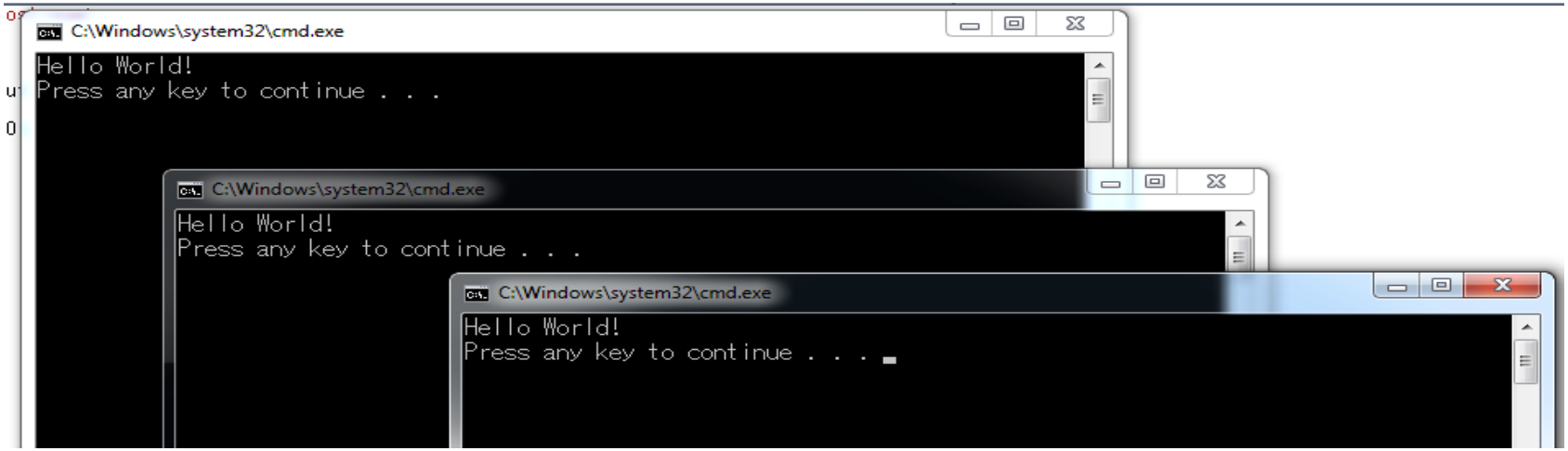
You should see this console window:



Close the console window to end your program.

Congratulations!

WARNING to the Trigger Happy



When you have too many console windows you might run into an error. SO … close useless console windows!!!

“Press any key to continue”

- Extra line printed: Press any key to continue.
- When you press any key, the window closes.
- **Listen very carefully**: The two effects
  - Printing “Press any key to continue” to the console window
  - Waiting for keypress to close the console window

  are commands added by Studio 2010.

“Press any key to continue”

- Without these extra commands, the program would print Hello, World!, the program ends, and the console window closes.
- Studio 2010 gives you an opportunity to see the output.
- But remember: These two things were not due to your program.

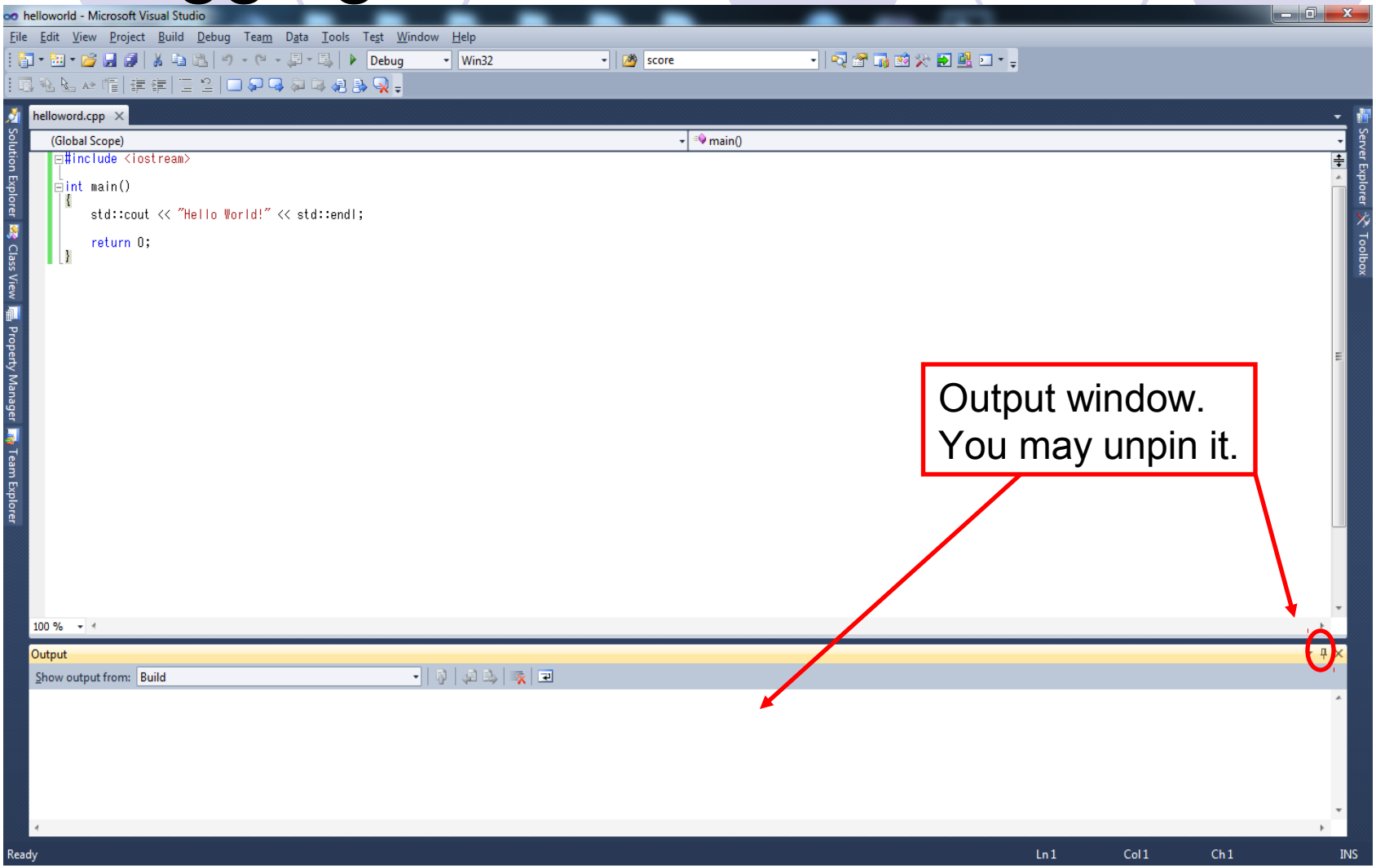
Project Name and cpp Name

- Project name can be different from cpp source file name

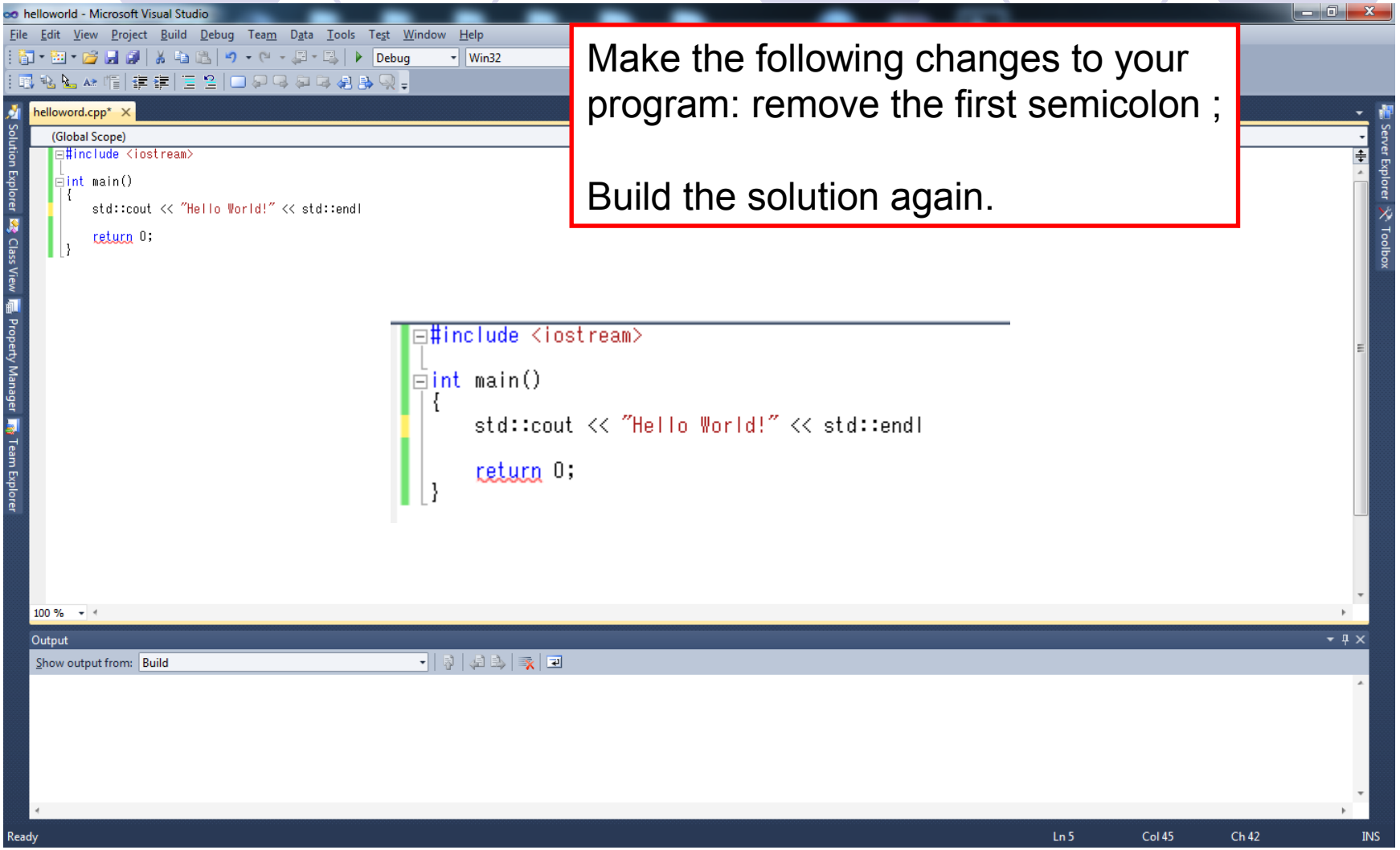
Debugging

- Debugging = getting rid of “bugs” (i.e. errors) in your program
- Studio 2010 can help you find some errors in your program

Debugging


helloworld - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Tools Test Window Help
Debug
Win32
score
helloword.cpp
(Global Scope)
main()
#include <iostream>
int main()
{
std::cout << "Hello World!" << std::endl;
return 0;
}
Solution Explorer
Class View
Property Manager
Team Explorer
Server Explorer
Toolbox
100 %
Output
Show output from: Build
Ready
Ln 1
Col 1
Ch 1
INS
Output window.
You may unpin it.

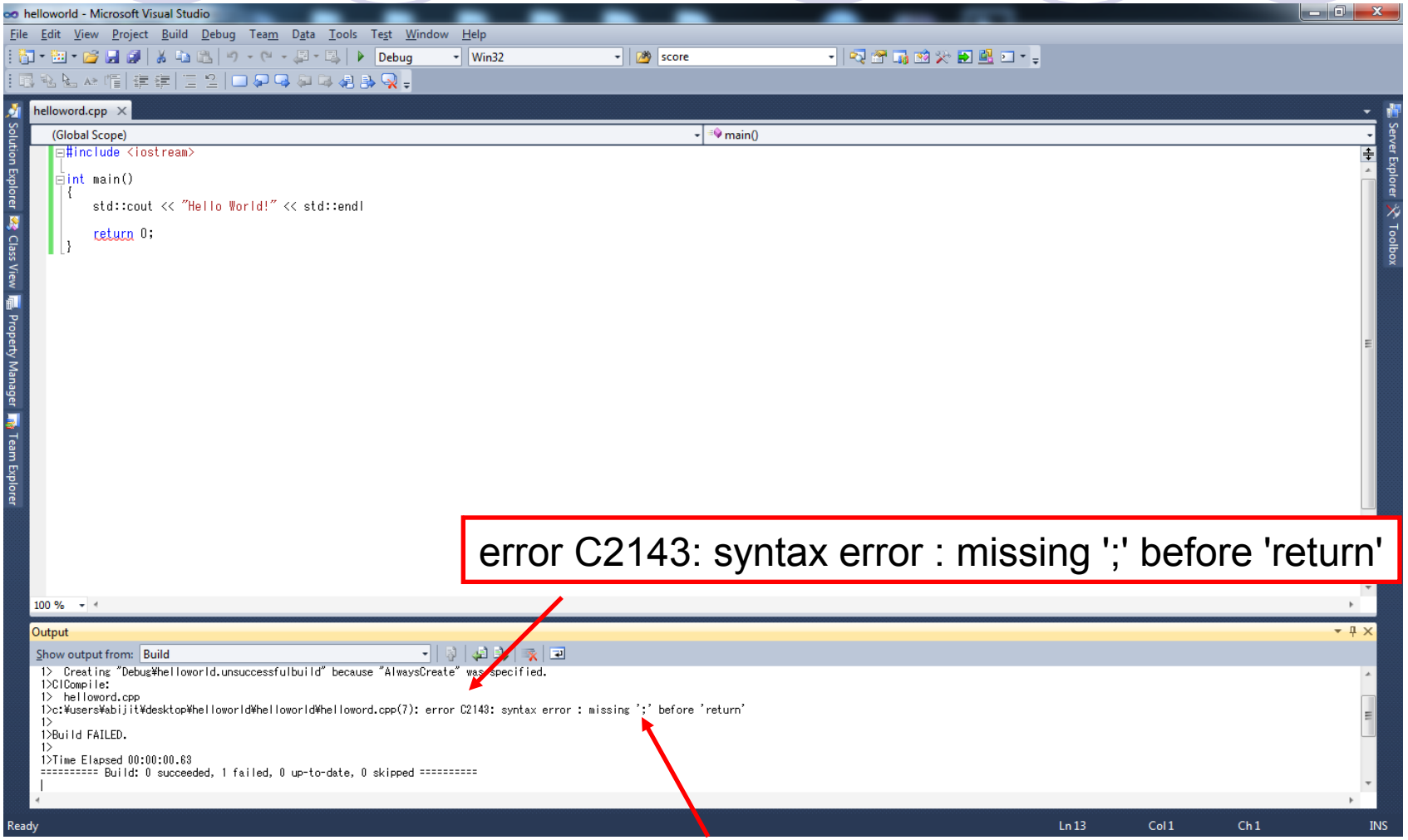
Debugging


helloworld - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Tools Test Window Help
Debug
Win32
helloword.cpp*
(Global Scope)
#include <iostream>
int main()
{
std::cout << "Hello World!" << std::endl
return 0;
}
Make the following changes to your program: remove the first semicolon ;
Build the solution again.
#include <iostream>
int main()
{
std::cout << "Hello World!" << std::endl
return 0;
}
100 %
Output
Show output from: Build
Ready
Ln 5
Col 45
Ch 42
INS
Solution Explorer
Class View
Property Manager
Team Explorer
Server Explorer
Toolbox

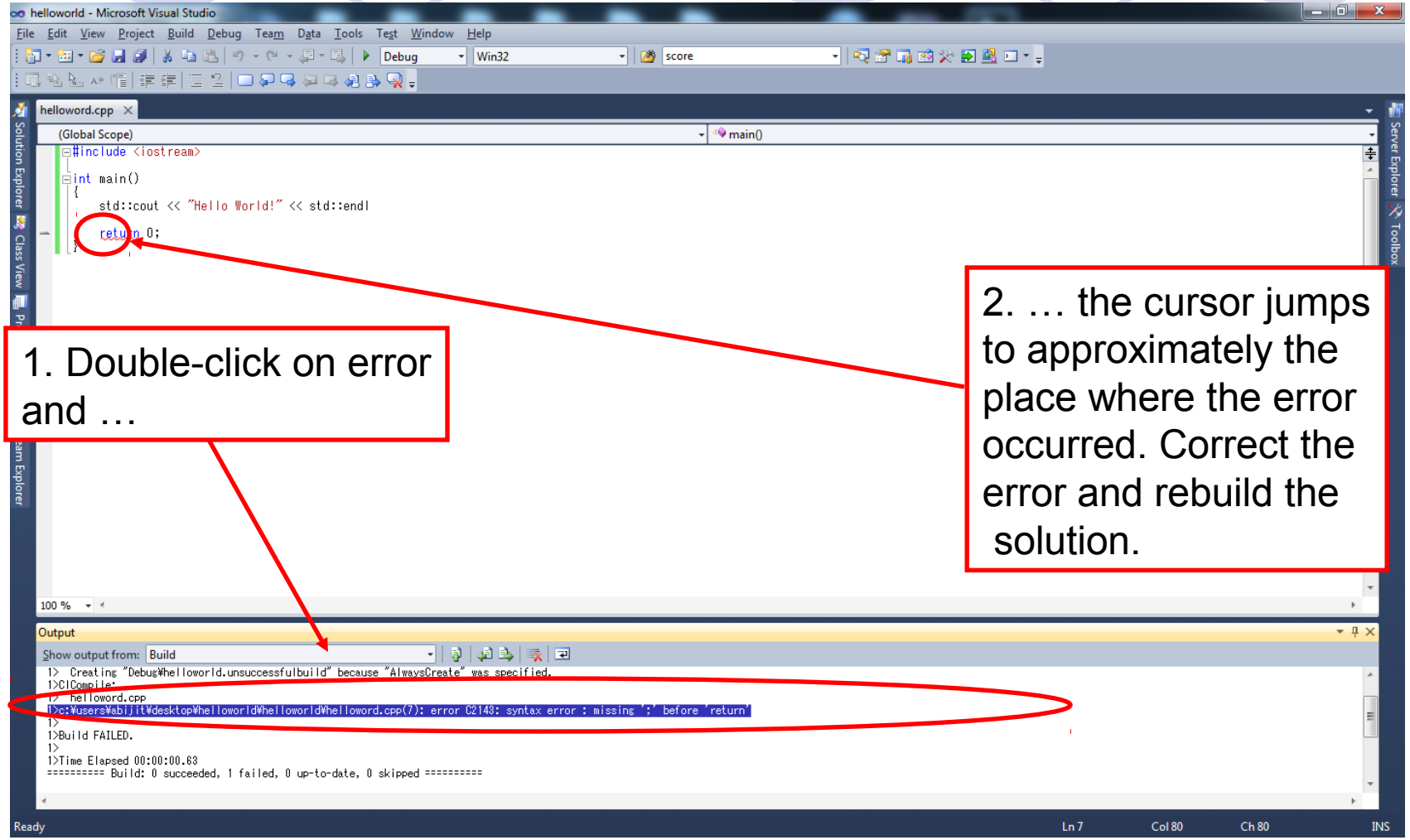
Debugging


Microsoft Visual Studio
There were build errors. Would you like to continue and run the last successful build?
Yes
No
Do not show this dialog again

Debugging


helloworld - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Tools Test Window Help
Debug
Win32
score
helloword.cpp
(Global Scope)
main()
#include <iostream>
int main()
{
std::cout << "Hello World!" << std::endl
return 0;
}
error C2143: syntax error : missing ';' before 'return'
Output
Show output from: Build
1> Creating "Debug¥helloworld.unsuccessfulbuild" because "AlwaysCreate" was specified.
1>ClCompile:
1> helloword.cpp
1>c:¥users¥abijit¥desktop¥helloworld¥helloworld¥helloword.cpp(7): error C2143: syntax error : missing ';' before 'return'
1>
1>Build FAILED.
1>
1>Time Elapsed 00:00:00.63
========== Build: 0 succeeded, 1 failed, 0 up-to-date, 0 skipped ==========
Ready
Ln 13
Col 1
Ch 1
INS

Debugging


helloworld - Microsoft Visual Studio
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Debug
Win32
score
helloword.cpp
(Global Scope)
main()
#include <iostream>
int main()
{
std::cout << "Hello World!" << std::endl
return 0;
}
1. Double-click on error and …
2. … the cursor jumps to approximately the place where the error occurred. Correct the error and rebuild the solution.
Output
Show output from: Build
1> Creating "Debug¥helloworld.unsuccessfulbuild" because "AlwaysCreate" was specified.
1>ClCompile:
1> helloword.cpp
1>c:¥users¥abijit¥desktop¥helloworld¥helloworld¥helloword.cpp(7): error C2143: syntax error : missing ';' before 'return'
1>
1>Build FAILED.
1>
1>Time Elapsed 00:00:00.63
========== Build: 0 succeeded, 1 failed, 0 up-to-date, 0 skipped ==========
Ready
Ln 7
Col 80
Ch 80
INS

Debugging

- The error message is sometimes helpful in finding the error.
- The error pointer points to (only) roughly the place when the error occurs. You usually have to analyze the code before the pointer.

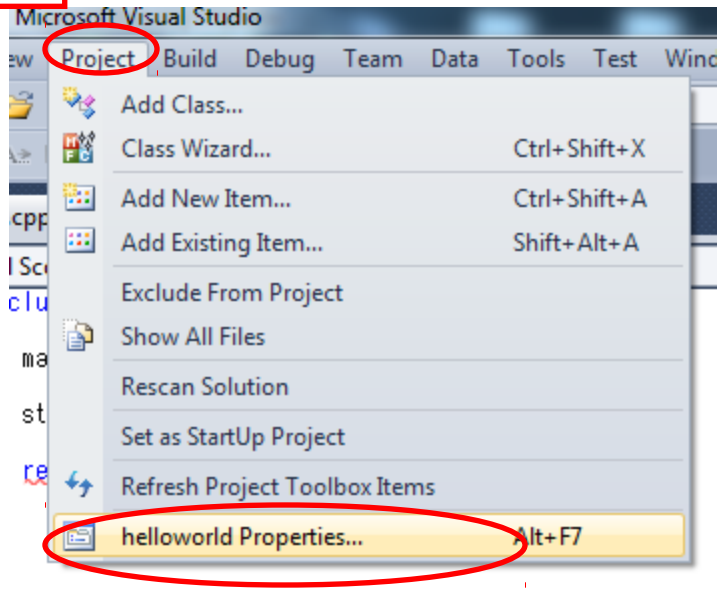
Disable Language Extensions

- The next step is ***very important!***
- You must modify your project property so that Studio 2010 works "correctly"
- Open your project's property. You can do this in *two* ways; see next slide. (The second method on the right is recommended.)

Disable Language Extension

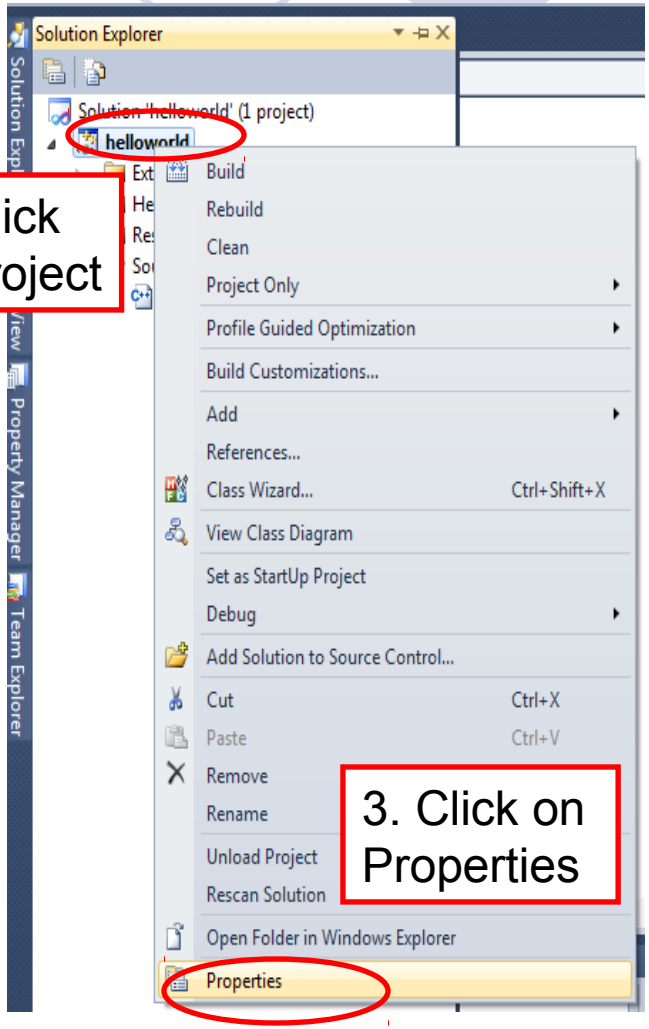
1. Open Solutions Explorer

1. Project



2. Click on project's properties

2. Right-click on your project

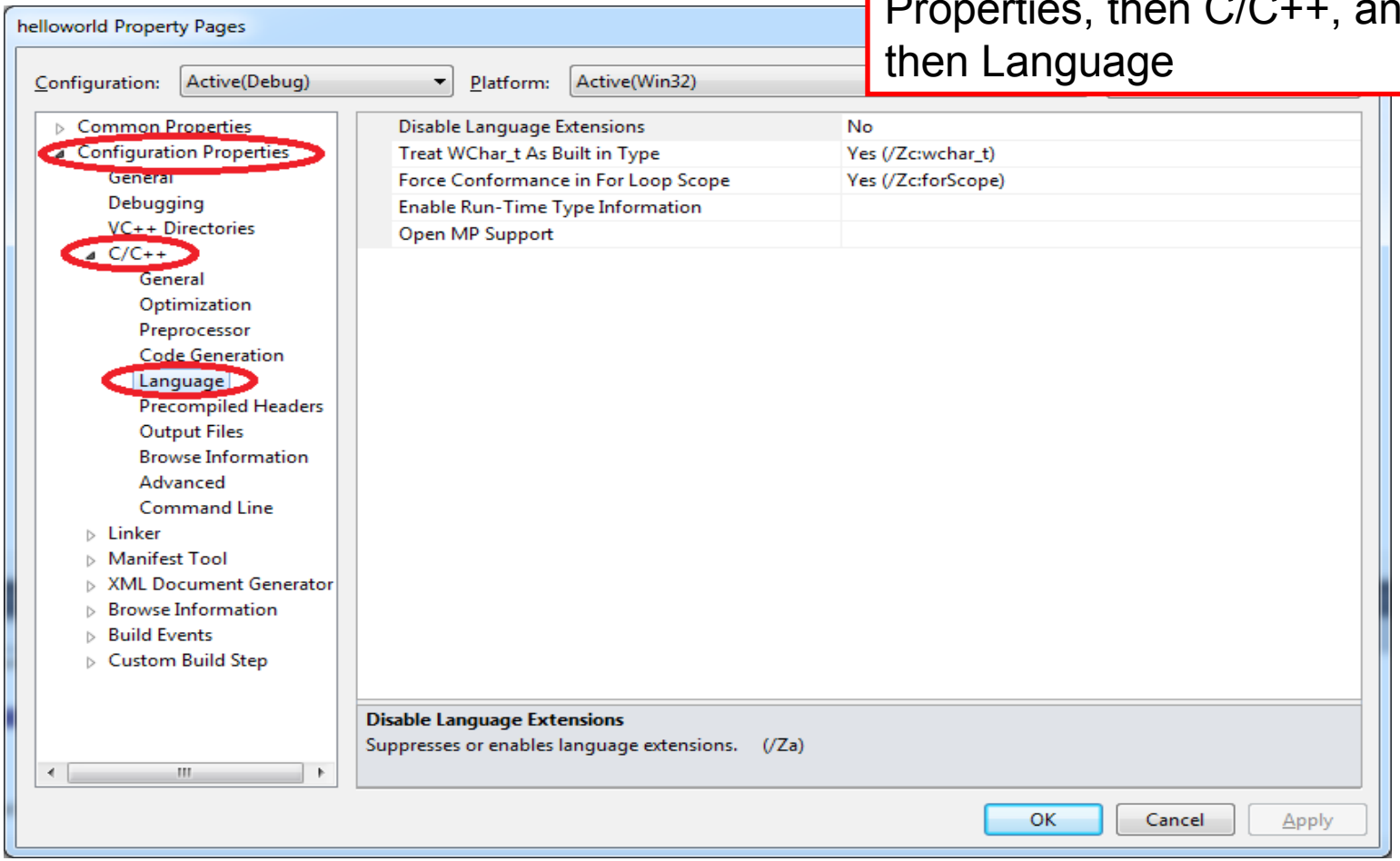


3. Click on Properties

NOTE: If you use the first method, make sure on the Solution Explorer, any part of the helloworld project has been selected.

Disable Language Extensions

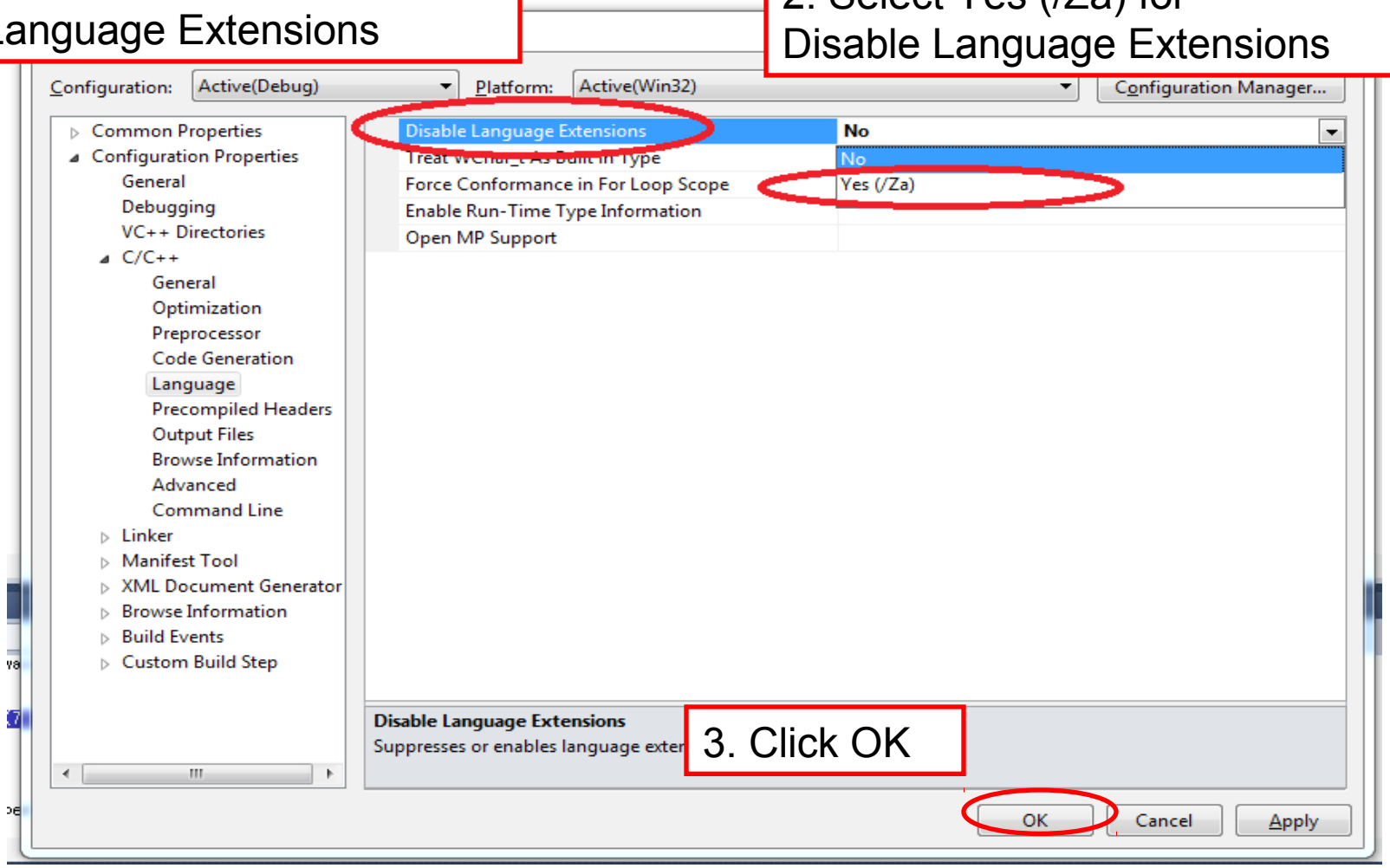
Open Configuration Properties, then C/C++, and then Language



Disable Language Extensions

1. Click on Disable Language Extensions

2. Select Yes (/Za) for Disable Language Extensions



Disable Language Extensions

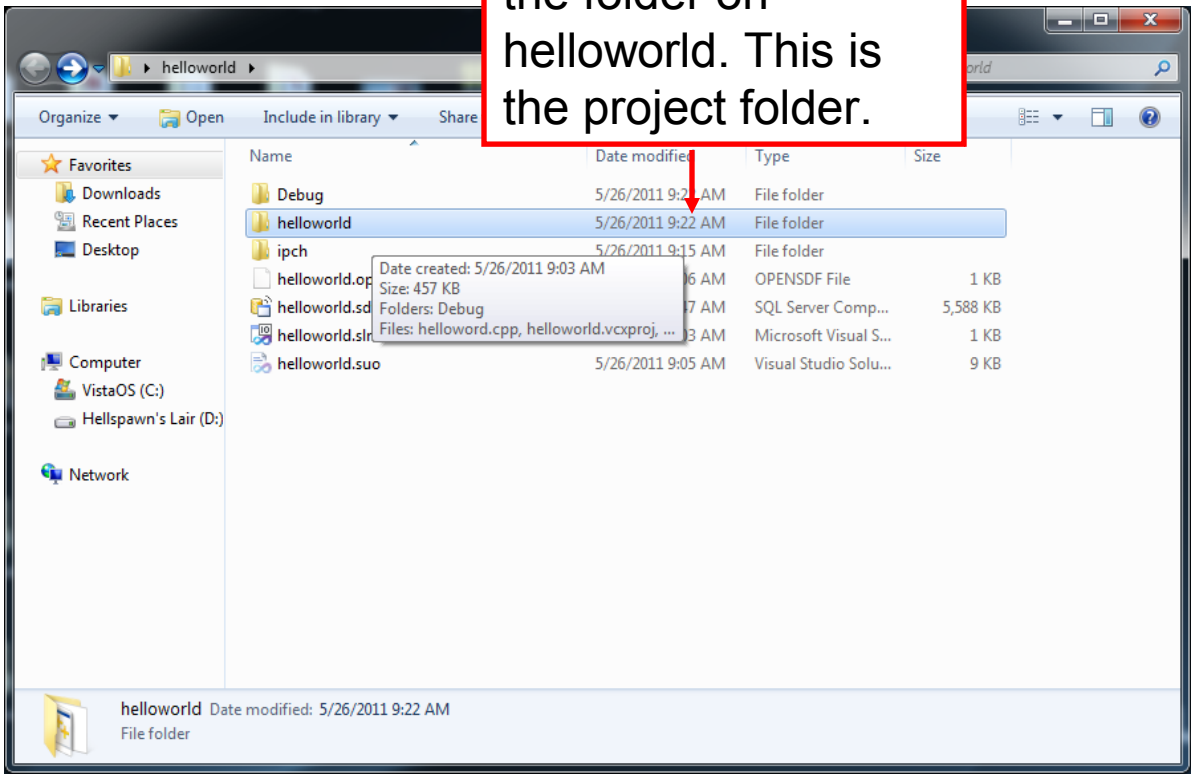
- This step (disabling language extensions) should be done ***after*** adding a cpp file.

“Where’s my cpp file???”

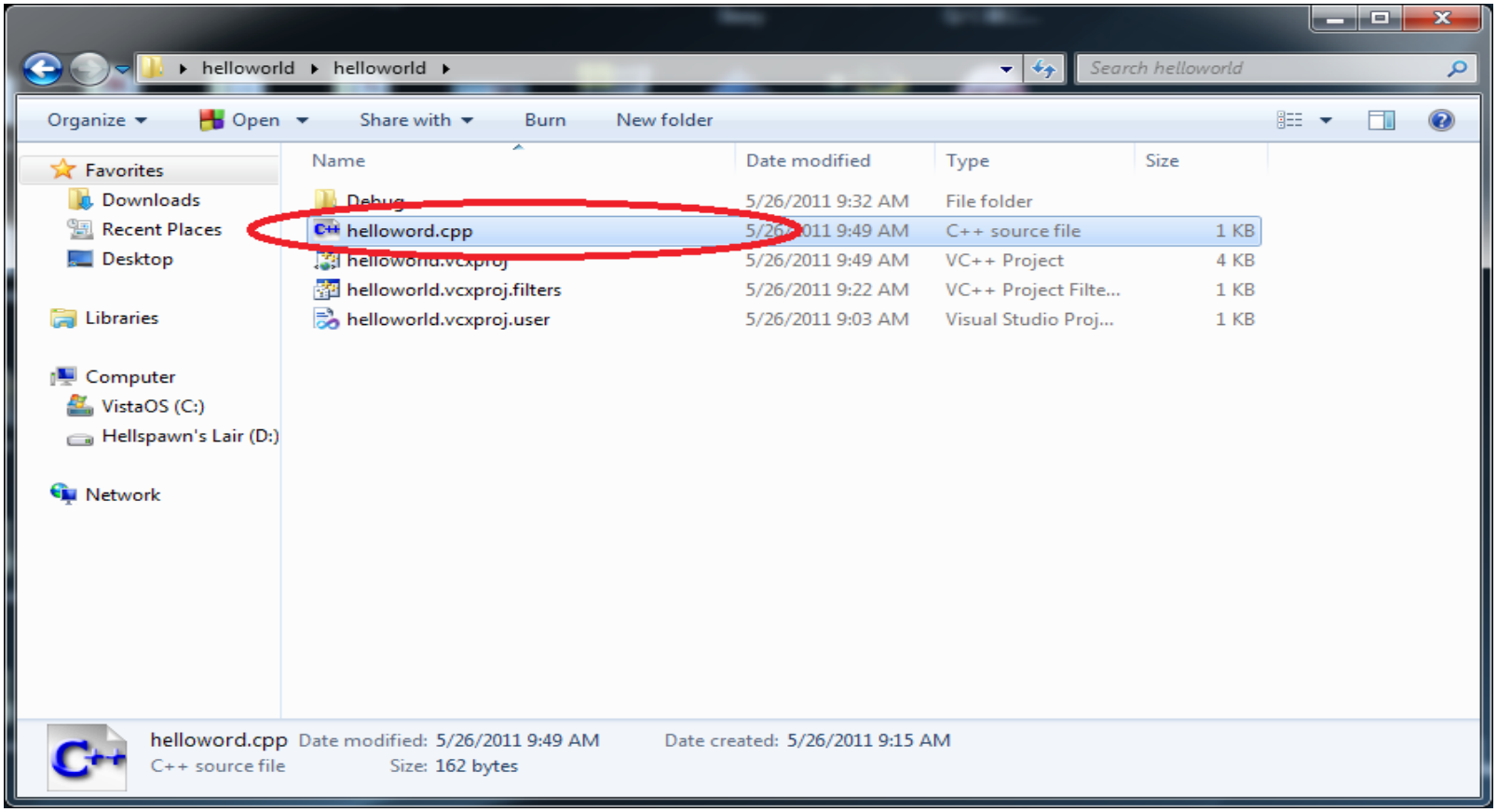
1. Double-click on the folder on your Desktop (if you choose Desktop as the location).

This is the solution folder.

2. Double-click on the folder on helloworld. This is the project folder.



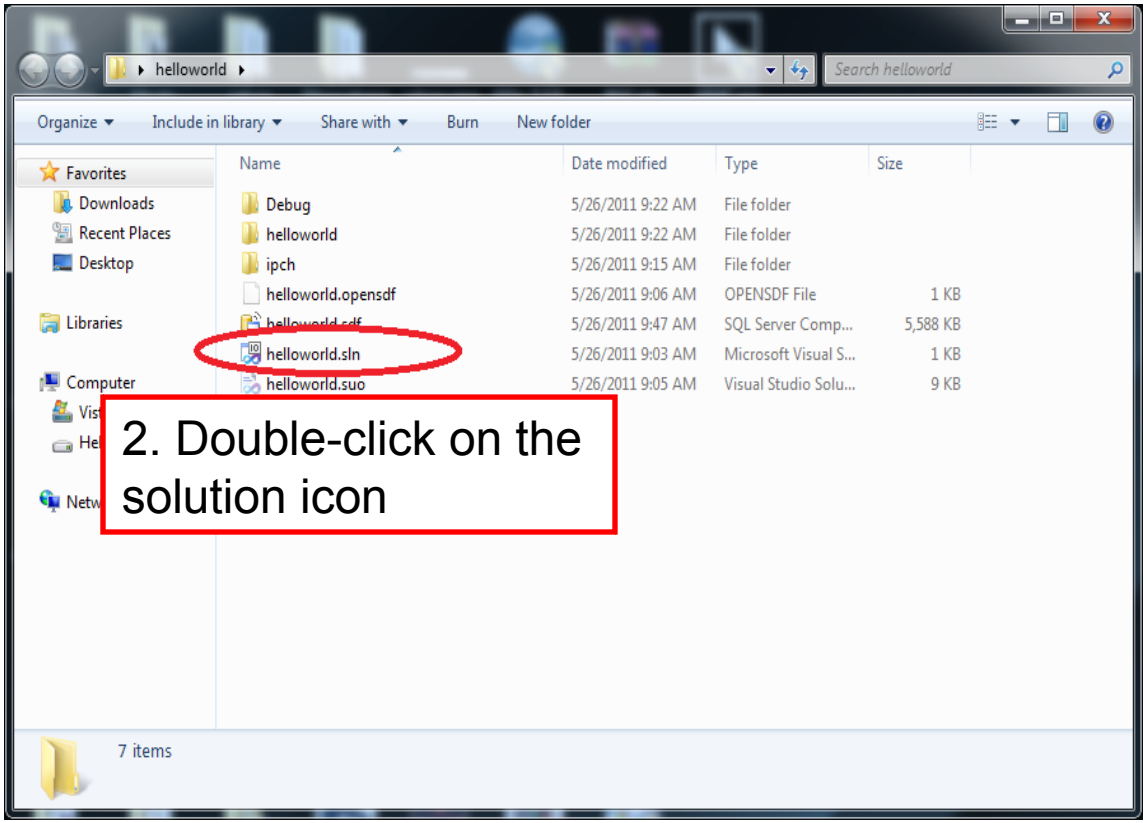
“Where’s my cpp file???”



“What about opening an *old* project?”

- If you know the location of your project:

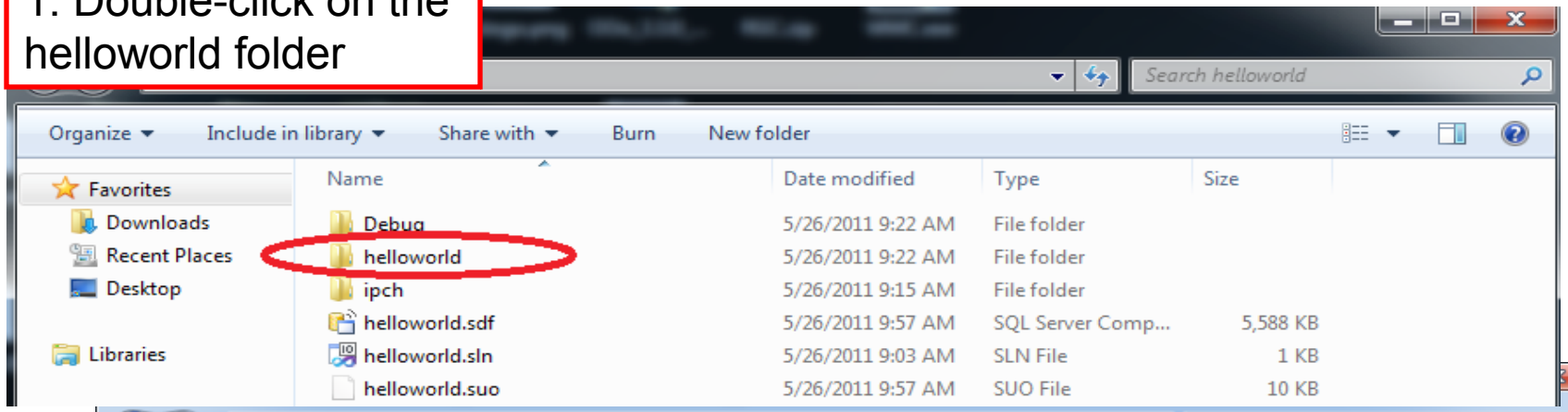
1. Double-click on the solution folder



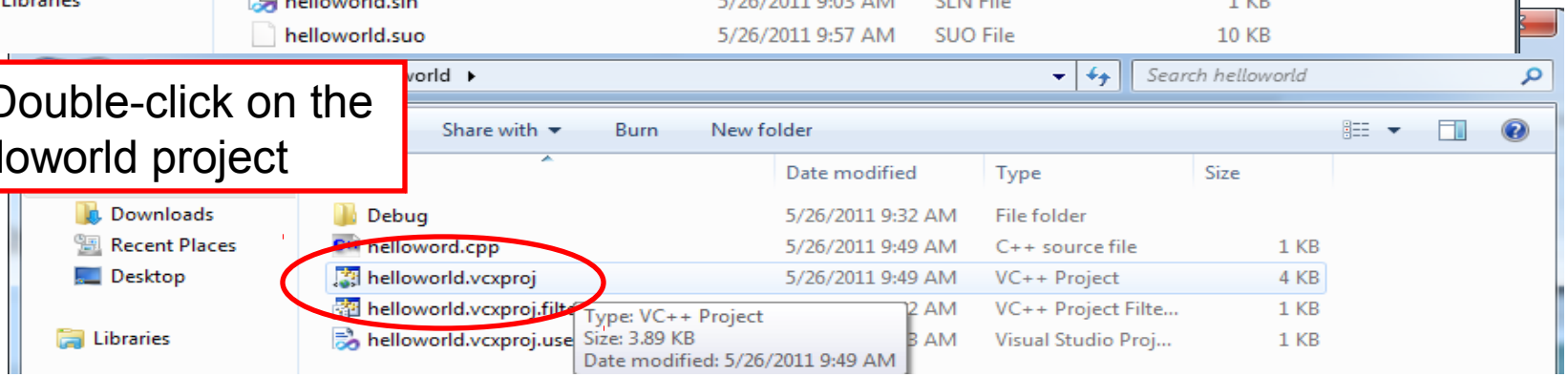
“What about opening an *old* project?”

- … or … you can go one step deeper:

1. Double-click on the helloworld folder

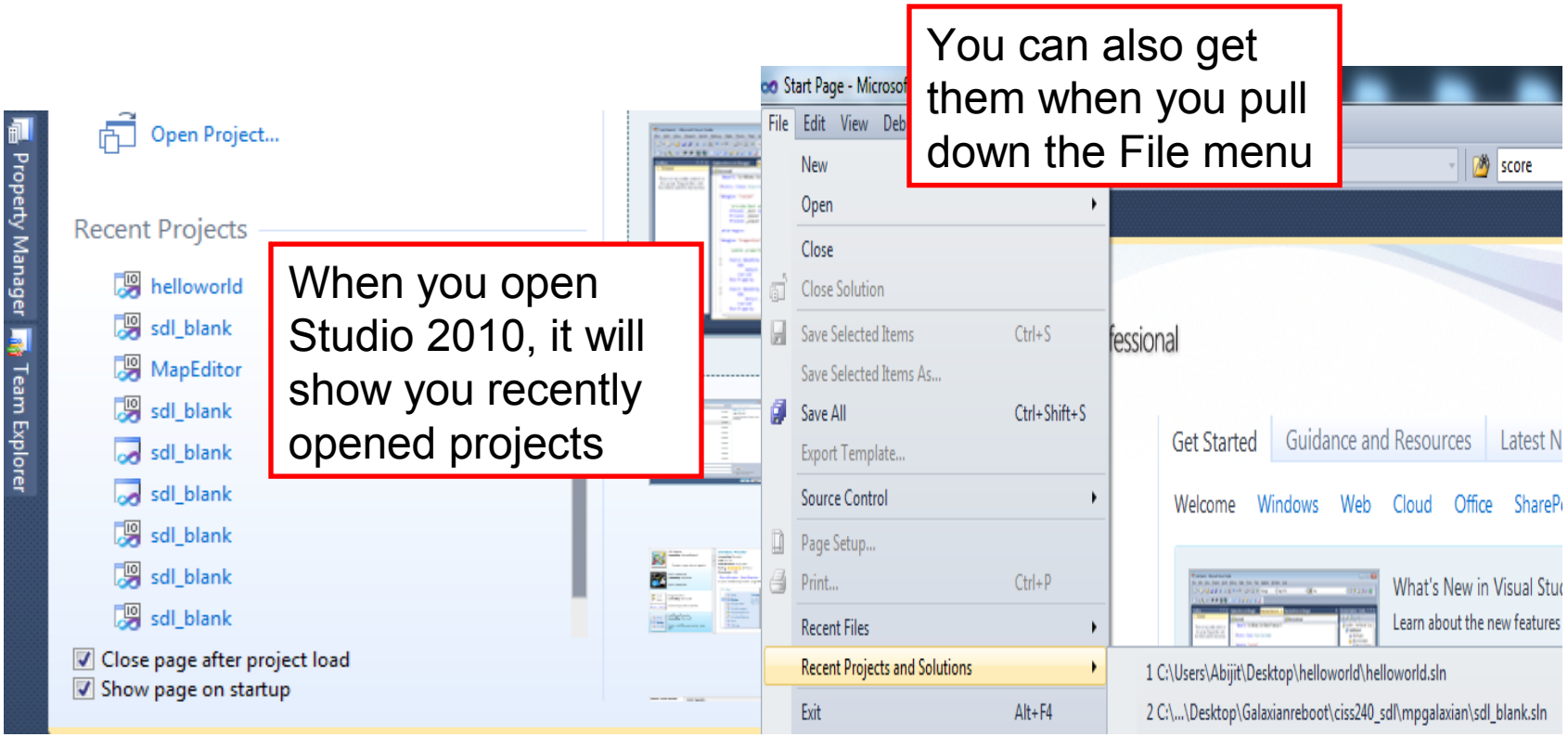


2. Double-click on the helloworld project



“What about opening an *old* project?”

- If you do not know the location:



“What about opening an *old* project?”

- We’ve created a “solution” which contains a “project” which contains the cpp file.
- It’s possible to have a solution containing ***multiple*** projects where ***each project*** contains a cpp file meant for a single program.
- We’ll stick to ***one solution, one project, one cpp file*** for each program – this is less confusing for beginners.

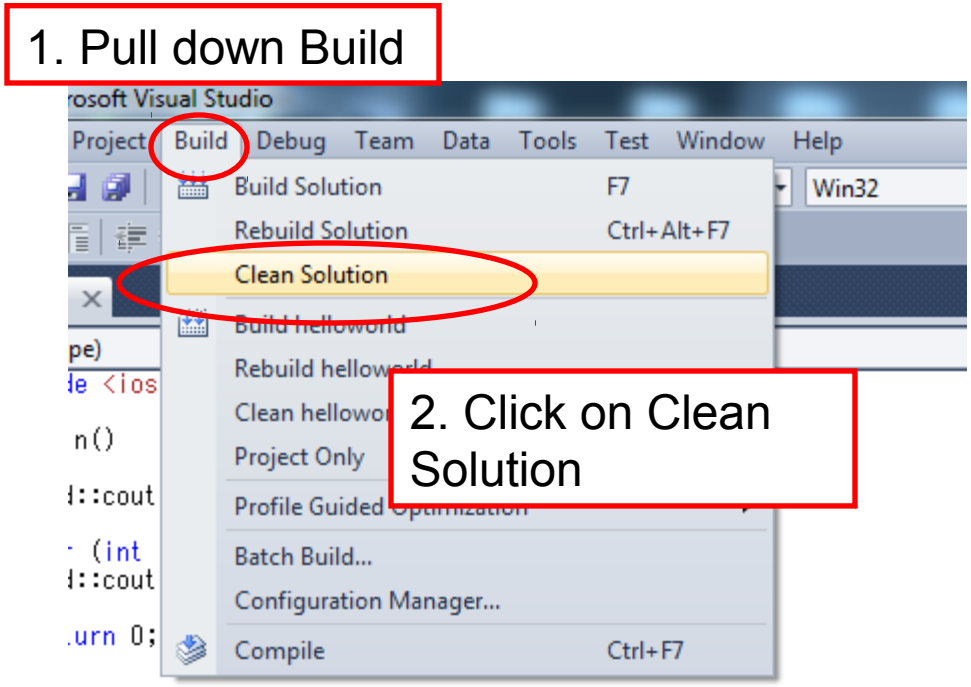
“What about opening an *old* project?”

- Last resort: Search your machine’s hard drive for the solution folder if you remember the name.

“I’m out of space!”

- Most of the files in your solution folder are created when you do Ctrl-F5 and so can be deleted if you don’t have enough space.
- The easiest way to remove these files is to do “Clean Solution” …

“I’m out of space!”



“How do I copy my work to my stick?”

1. Do “Clean Solution”
2. Copy the solution folder you’ve created

to your (USB) storage

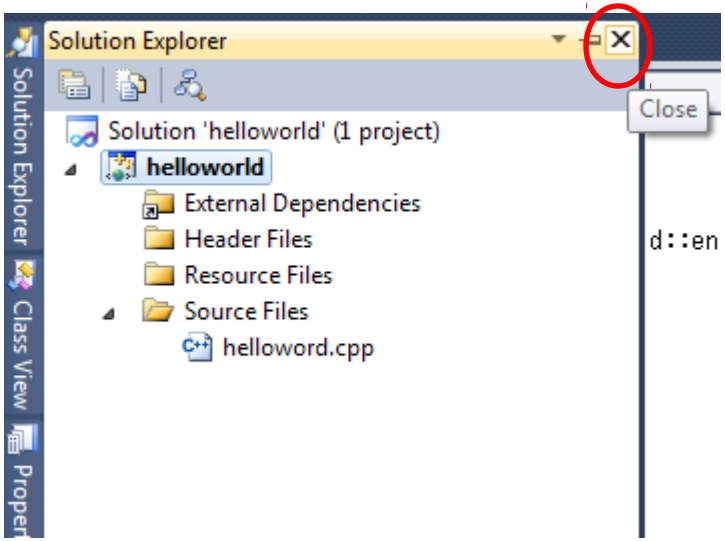
- To resume work on another machine: Copy the solution folder from your (USB) storage to the machine and work from there

“How do I copy my work to my stick?”

- Note: USB drives are slow. Use it only for backup.

“Where did Solutions Explorer go?”

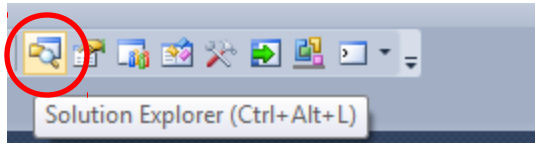
Oh no!!! I closed the Solution Explorer …



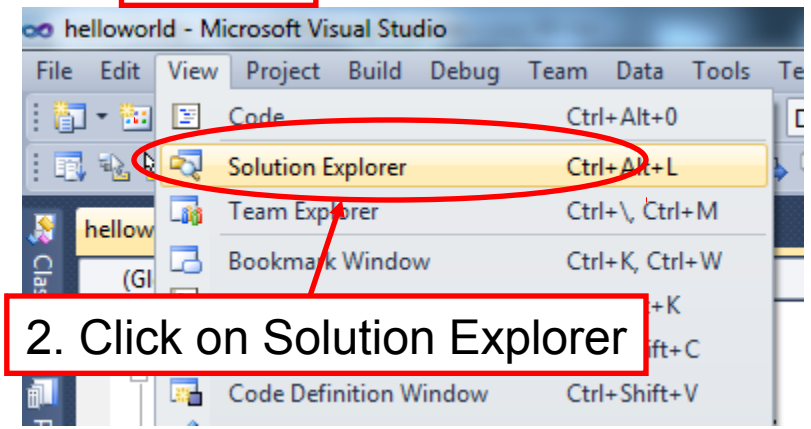
There are two ways to open the Solution Explorer …

“Where did Solutions Explorer go?”

Click on this icon near the top of Studio 2010



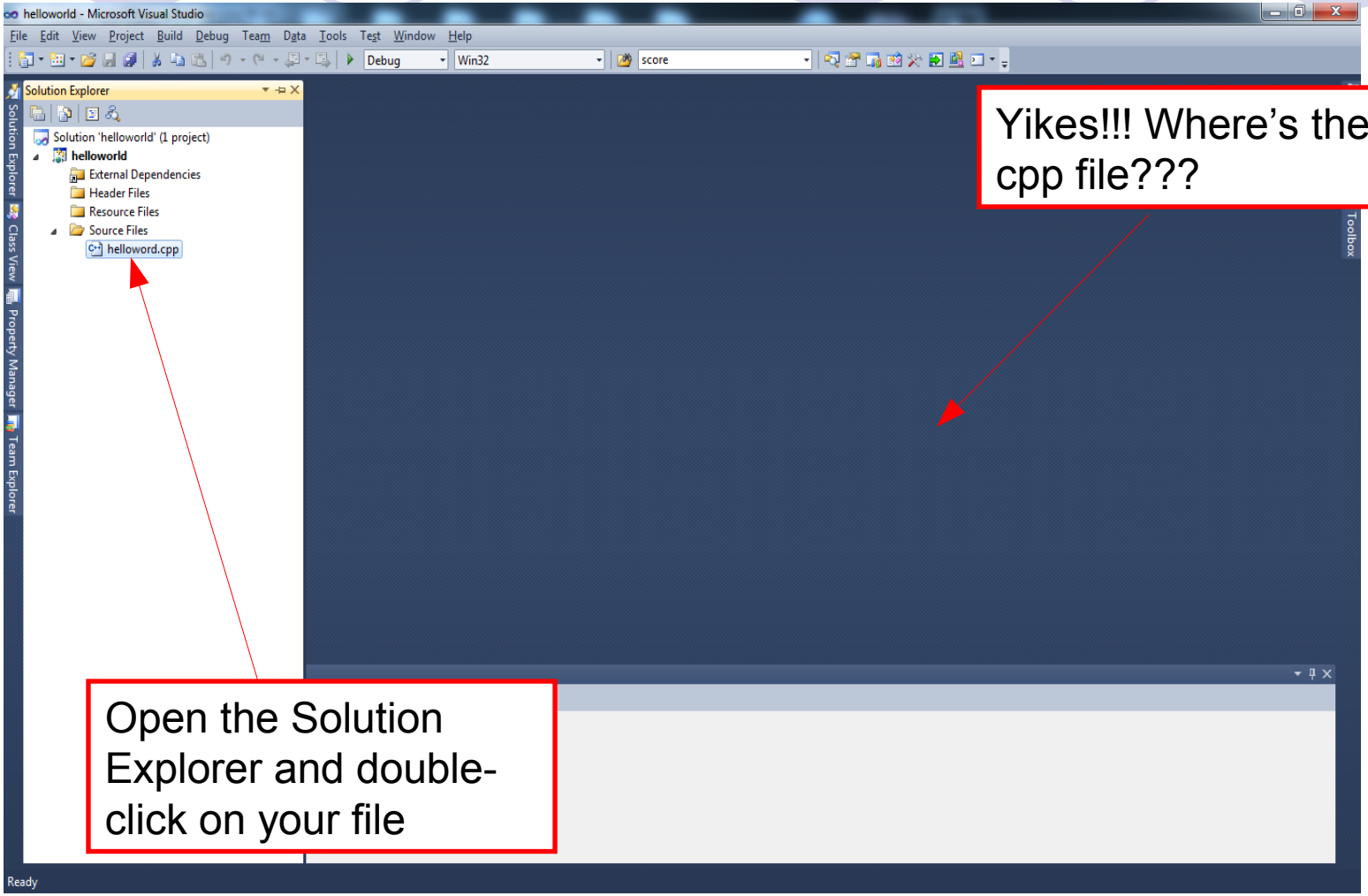
1. View



2. Click on Solution Explorer

You can find most of the windows this way

“Oops, I closed my source file!!!”



“Ctrl-F5 doesn’t do anything!” or “It runs the same after I changed the cpp file!”

- Do NOT double-click on a C++ file in your Windows environment – you should double-click on the solution icon.
- If in doubt, close MS Studio 2010, and then double-click on the solution icon for the right program.

“Ctrl-F5 doesn’t do anything!” or “It runs the same after I changed the cpp file!”

- The point: In order to build the executable, MS Studio 2010 needs more than just the cpp file. The information needed is associated with the solution (or project), not the cpp file.

“Can I use another C++ compiler?”

- Yes … as long as you’re writing standard C/C++ code.
- All work will be checked against the following two compilers:
  - g++
  - MS Studio 2010

Proficiency with Editor

- Knowing how to use a modern-day editor today is like knowing how to use a pen in 1900 – you'd better be proficient with it
- Learn to use hotkeys (shortcuts)
- Most hotkeys in MS Studio 2010 are the same for MS Word, Powerpoint, etc.
- Force yourself to use them

Proficiency with Editor

- Short list of common hotkeys:
  - Copy Ctrl-c
  - Paste Ctrl-v
  - Cut Ctrl-x
  - Undo Ctrl-z
  - Alt-Tab Switch between windows
  - Etc. (google for more)
- For building and running your program:
  - Ctrl-F5