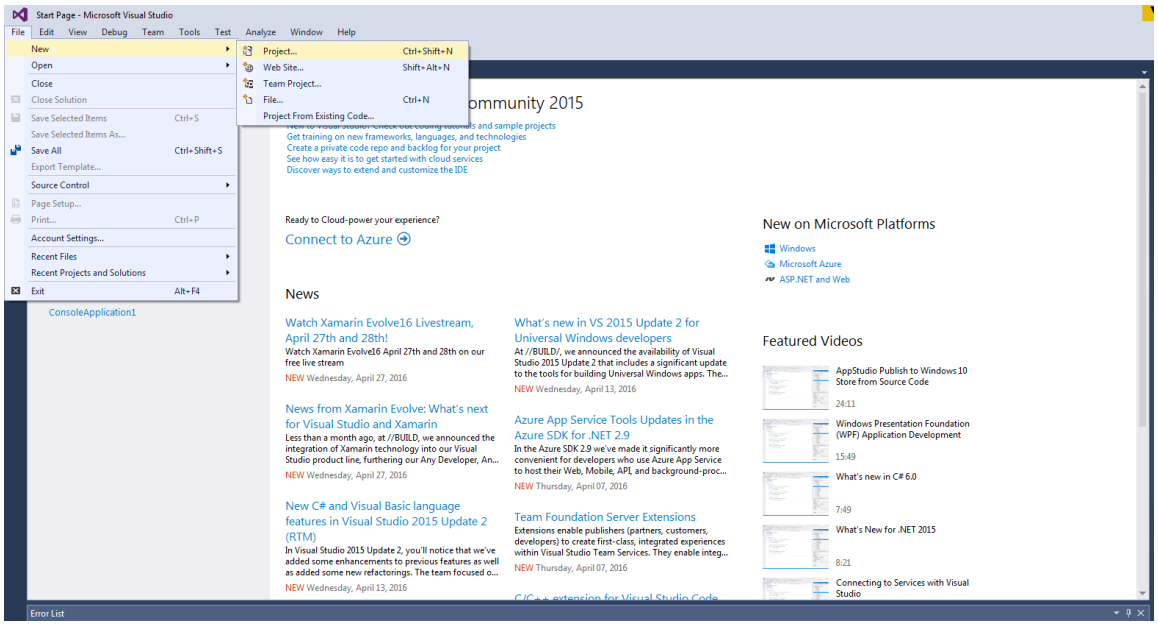
How to use Visual C++ Express to edit, compile, execute, and debug C/C++ programs

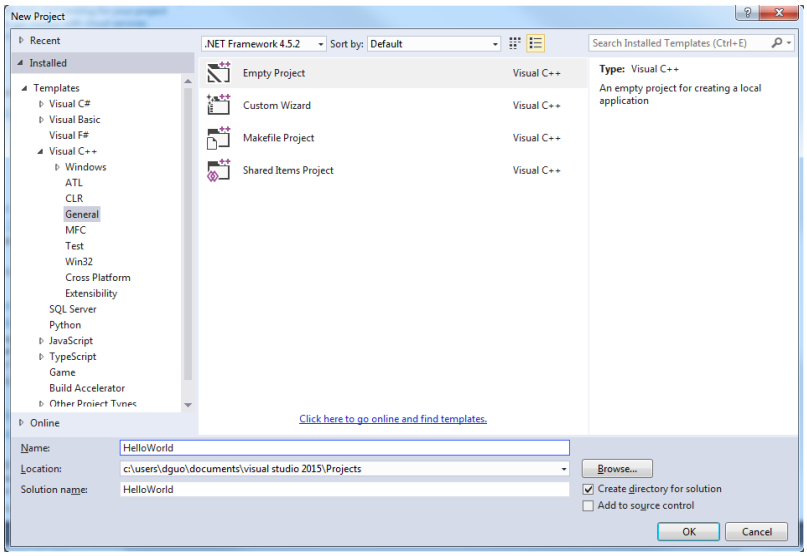
Notes:

1. Visual Studio Pro (including Visual C++) can be downloaded at https://www.dreamspark.com/ for free after registration. This software is only free to students, not to instructors. ☹
2. Visual Studio Community version is free to everybody at https://www.visualstudio.com/en-us/products/visual-studio-community-vs.aspx. Visual C++ Express is a subset of Visual Studio Pro. It is enough for this course. This manual tells you how to use Visual C++ Express. But the process for developing C/C++ programs in the express version is very similar to the one in Visual Studio Pro.

Step 1: Create a project (File→New→Project)

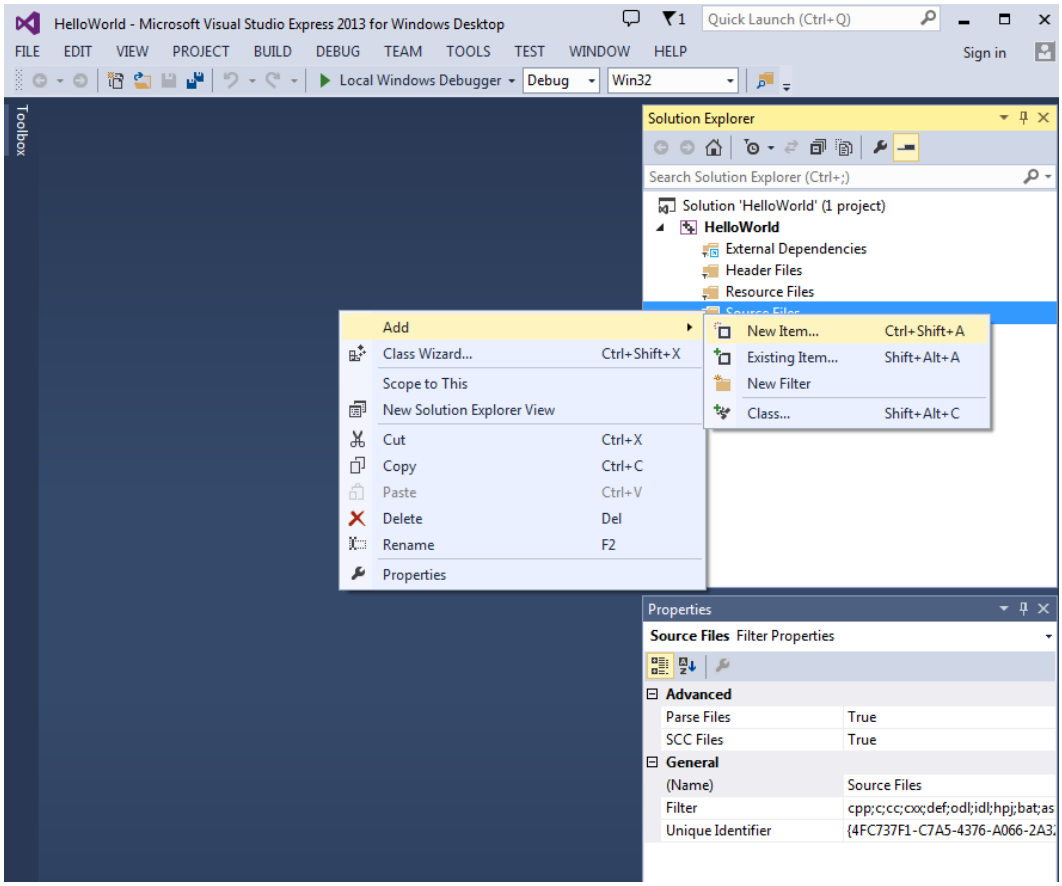


Choose “Empty Project” after selecting “General” under “Visual C++”. Choose the location and name for your project. Click OK to proceed.

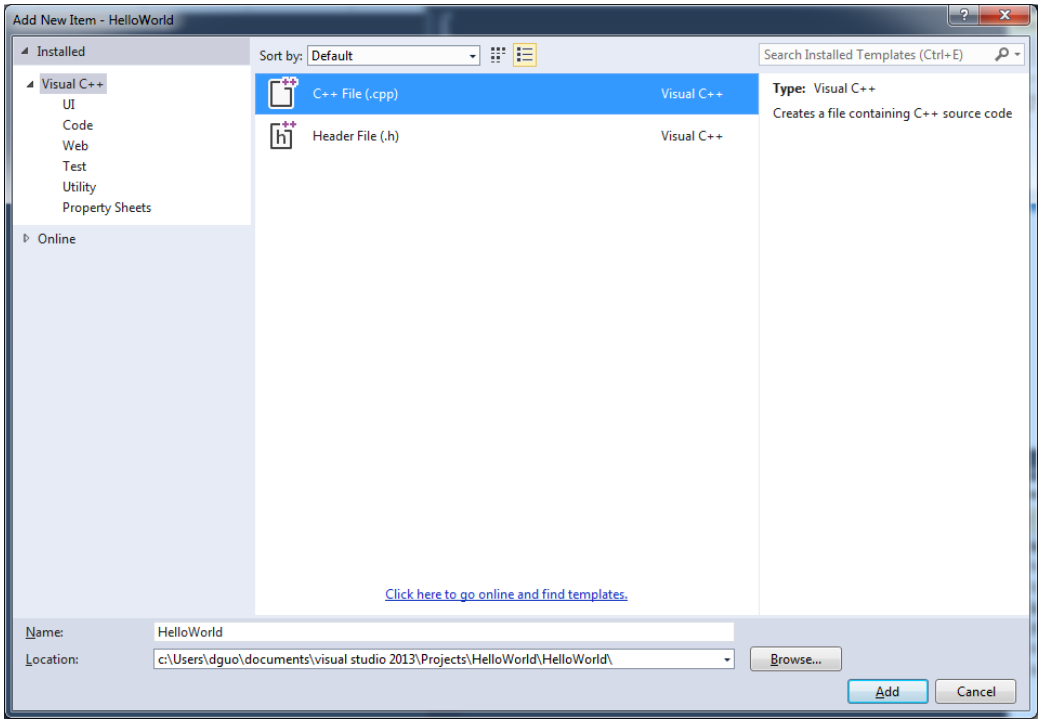


Step 2: Create a new program.

Right click on source→Add→New Item



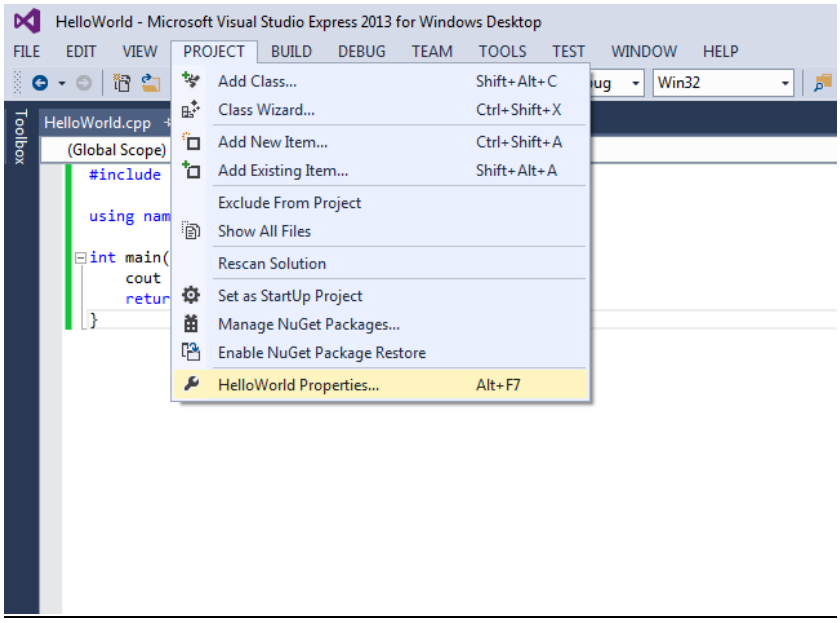
Choose and name your C++ program file.



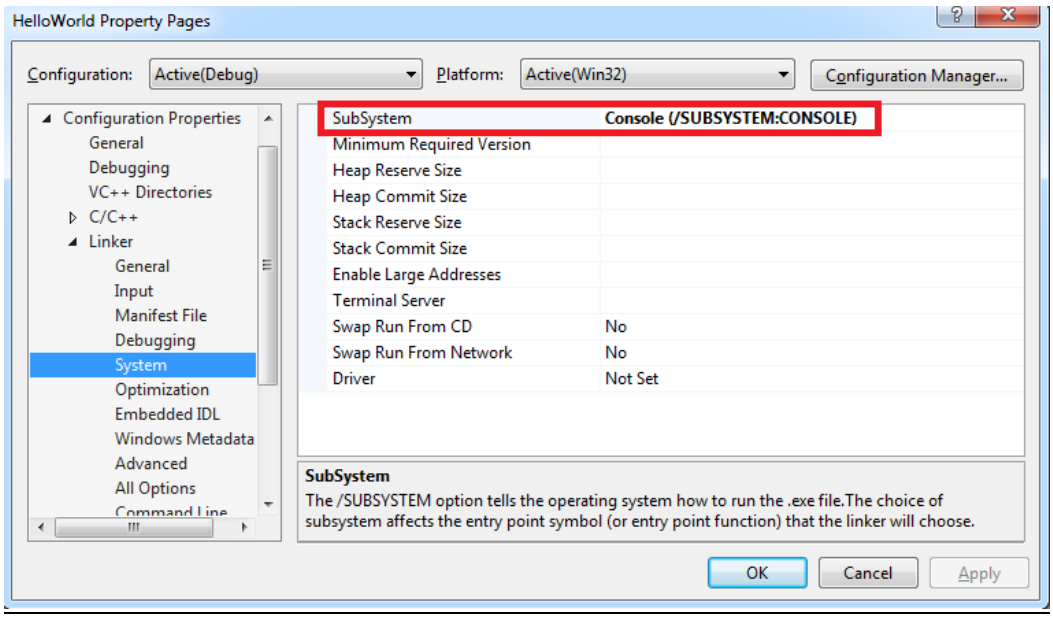
Click Add to continue.

Step 3: Configuration

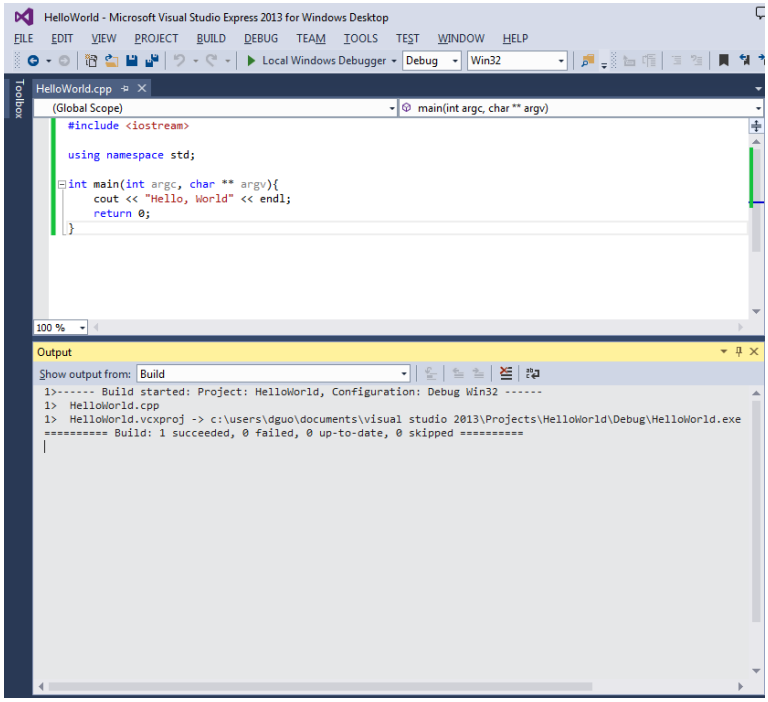
Click Project→[Your Project Name] Properties.



Configure your project shown as follows.

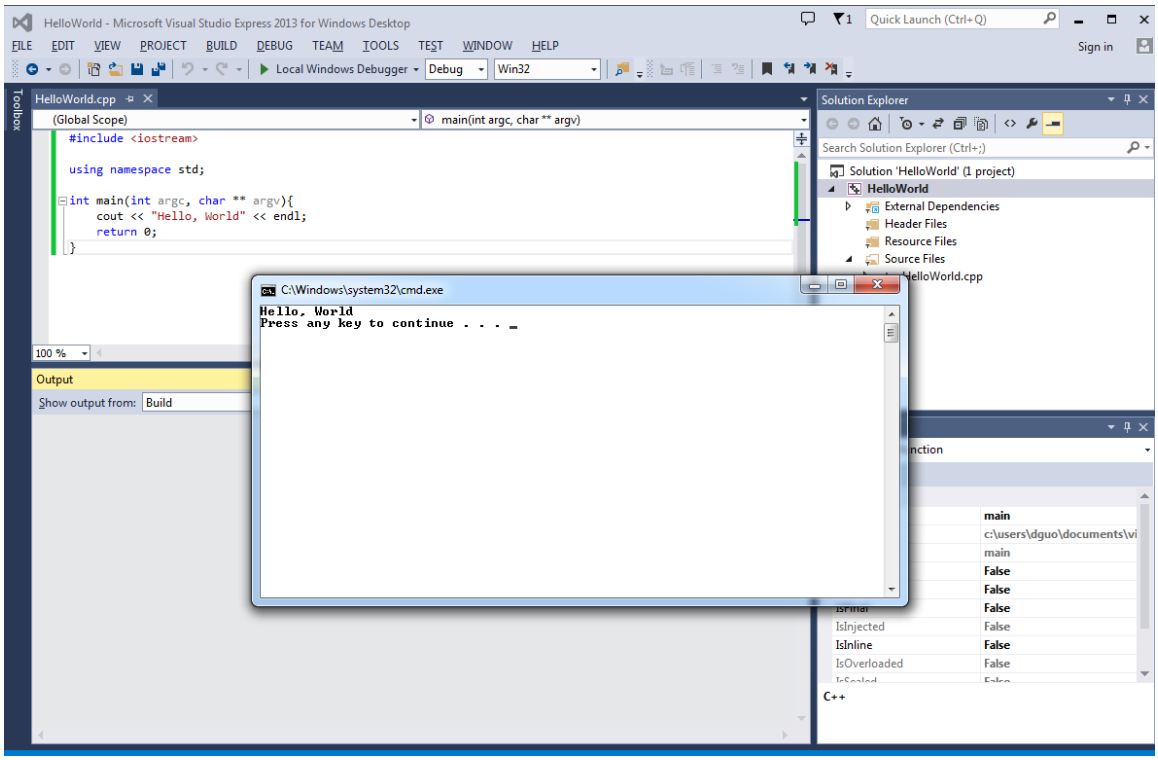

HelloWorld Property Pages
Configuration: Active(Debug)
Platform: Active(Win32)
Configuration Manager...
Configuration Properties
General
Debugging
VC++ Directories
C/C++
Linker
General
Input
Manifest File
Debugging
System
Optimization
Embedded IDL
Windows Metadata
Advanced
All Options
Command Line
SubSystem
Console (/SUBSYSTEM:CONSOLE)
Minimum Required Version
Heap Reserve Size
Heap Commit Size
Stack Reserve Size
Stack Commit Size
Enable Large Addresses
Terminal Server
Swap Run From CD
No
Swap Run From Network
No
Driver
Not Set
SubSystem
The /SUBSYSTEM option tells the operating system how to run the .exe file.The choice of subsystem affects the entry point symbol (or entry point function) that the linker will choose.
OK
Cancel
Apply

Step 4: Edit and Build your program. (Build->Build Solution)



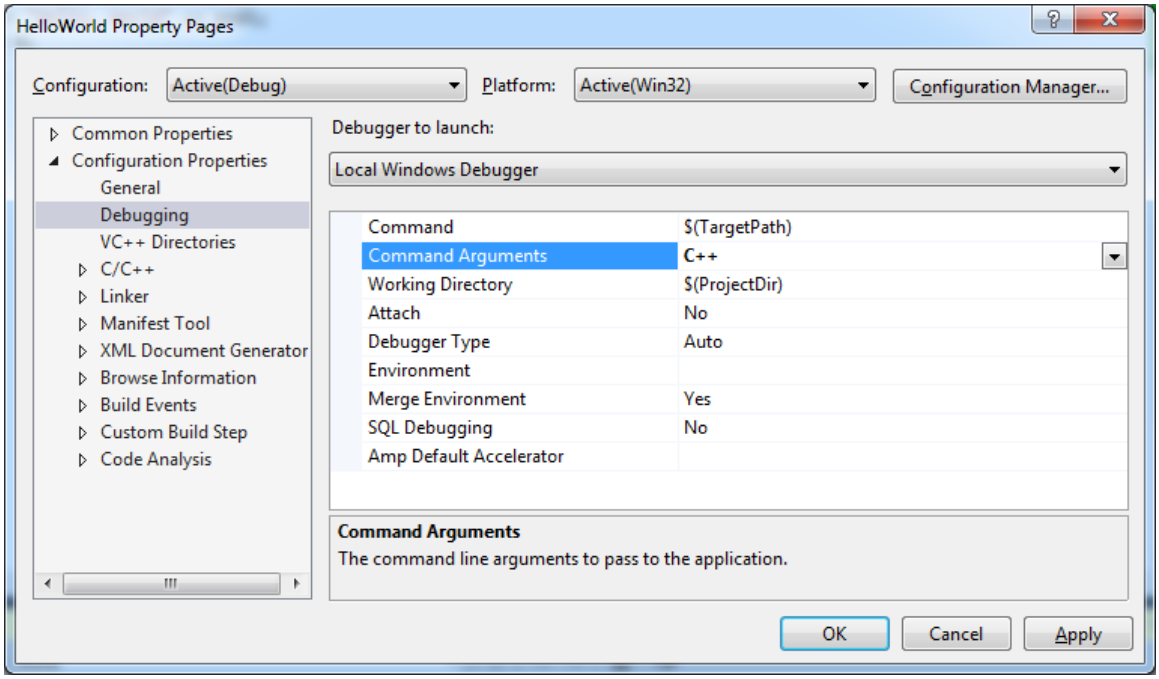
Step 5: Execute your program

Press Control+F5 to execute your program.

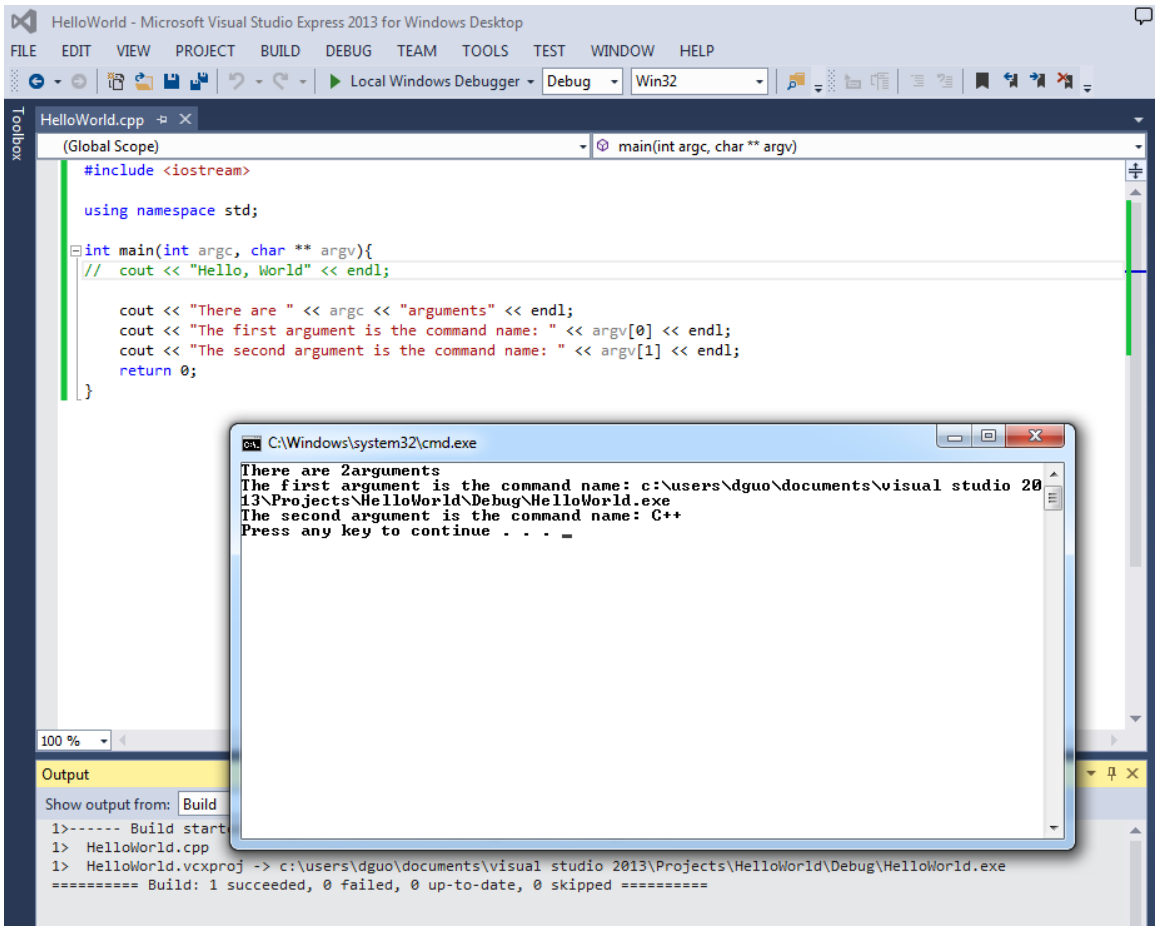


Step 6: Add arguments to your program

Click Project→[Your Project Name] Properties. See the highlighted items to figure out where to add argument(s).



Step 7: Rerun your program with some the changes shown in the following window:



Step 8: Use debugger to run your program step-by-step

There are several hot-keys in Visual Studio, using which you can run your program step-by-step, monitoring the changes of variables

1. F10: start running the program at the first line in the debugging mode
2. F9: set a break point at the line, marked by the cursor
3. F5: start running the program and stop at the first breakpoint
4. F11: step-into a function
5. Shift+F5: exit the debugger

In the debugging mode, you can look at variables' values. Below is an example: