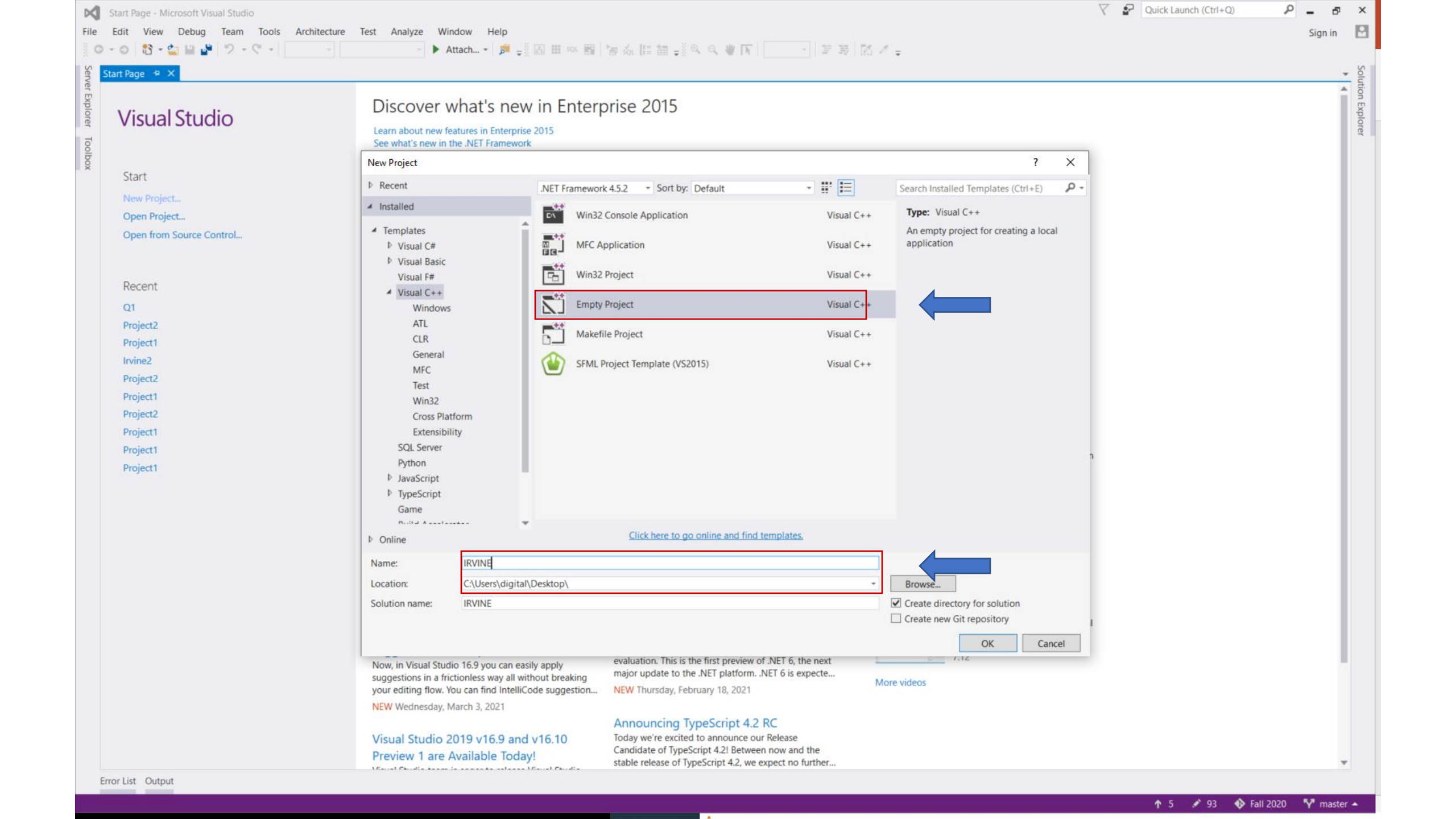
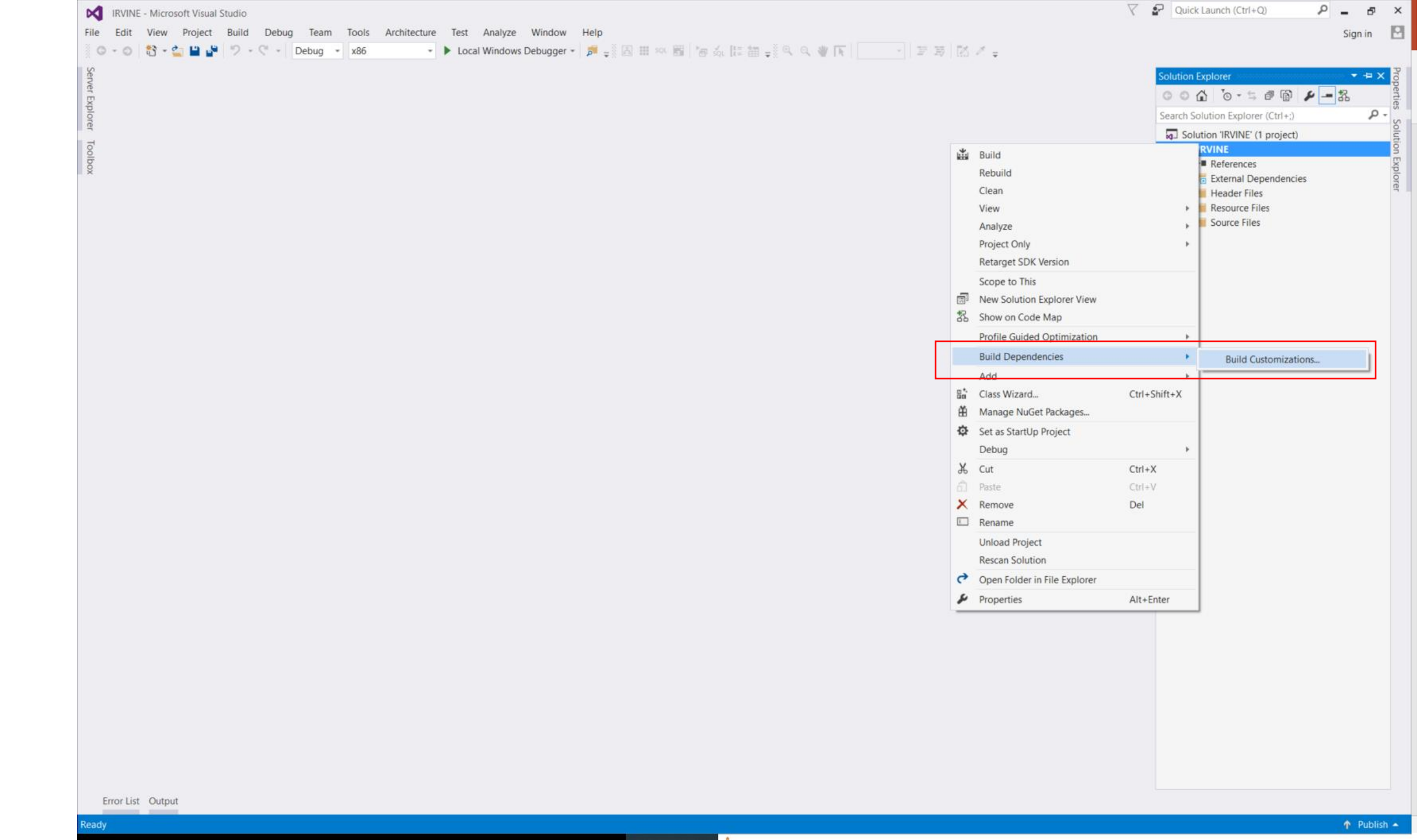
Computer Organization and Assembly Language (EL 229)

Lab 2

Outline

- MASM installation in Visual Studio


Start Page - Microsoft Visual Studio
File Edit View Debug Team Tools Architecture Test Analyze Window Help
Quick Launch (Ctrl+Q)
Sign in
Attach...
Start Page
Server Explorer
Toolbox
Solution Explorer
Visual Studio
Start
New Project...
Open Project...
Open from Source Control...
Recent
Q1
Project2
Project1
Irvine2
Project2
Project1
Project2
Project1
Project1
Project1
Discover what's new in Enterprise 2015
Learn about new features in Enterprise 2015
See what's new in the .NET Framework
New Project
Recent
Installed
Templates
Visual C#
Visual Basic
Visual F#
Visual C++
Windows
ATL
CLR
General
MFC
Test
Win32
Cross Platform
Extensibility
SQL Server
Python
JavaScript
TypeScript
Game
Online
.NET Framework 4.5.2
Sort by: Default
Search Installed Templates (Ctrl+E)
Win32 Console Application Visual C++
MFC Application Visual C++
Win32 Project Visual C++
Empty Project Visual C++
Makefile Project Visual C++
SFML Project Template (VS2015) Visual C++
Type: Visual C++
An empty project for creating a local application
Click here to go online and find templates.
Name: IRVINE
Location: C:\Users\digital\Desktop\
Solution name: IRVINE
Browse...
Create directory for solution
Create new Git repository
OK
Cancel
Now, in Visual Studio 16.9 you can easily apply suggestions in a frictionless way all without breaking your editing flow. You can find IntelliCode suggestion...
NEW Wednesday, March 3, 2021
Visual Studio 2019 v16.9 and v16.10 Preview 1 are Available Today!
evaluation. This is the first preview of .NET 6, the next major update to the .NET platform. .NET 6 is expecte...
NEW Thursday, February 18, 2021
Announcing TypeScript 4.2 RC
Today we're excited to announce our Release Candidate of TypeScript 4.2! Between now and the stable release of TypeScript 4.2, we expect no further...
More videos
Error List Output
5 93 Fall 2020 master


IRVINE - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Architecture Test Analyze Window Help
Debug x86 Local Windows Debugger
Quick Launch (Ctrl+Q)
Sign in
Server Explorer
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Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'IRVINE' (1 project)
IRVINE
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External Dependencies
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Solution Explorer
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Rebuild
Clean
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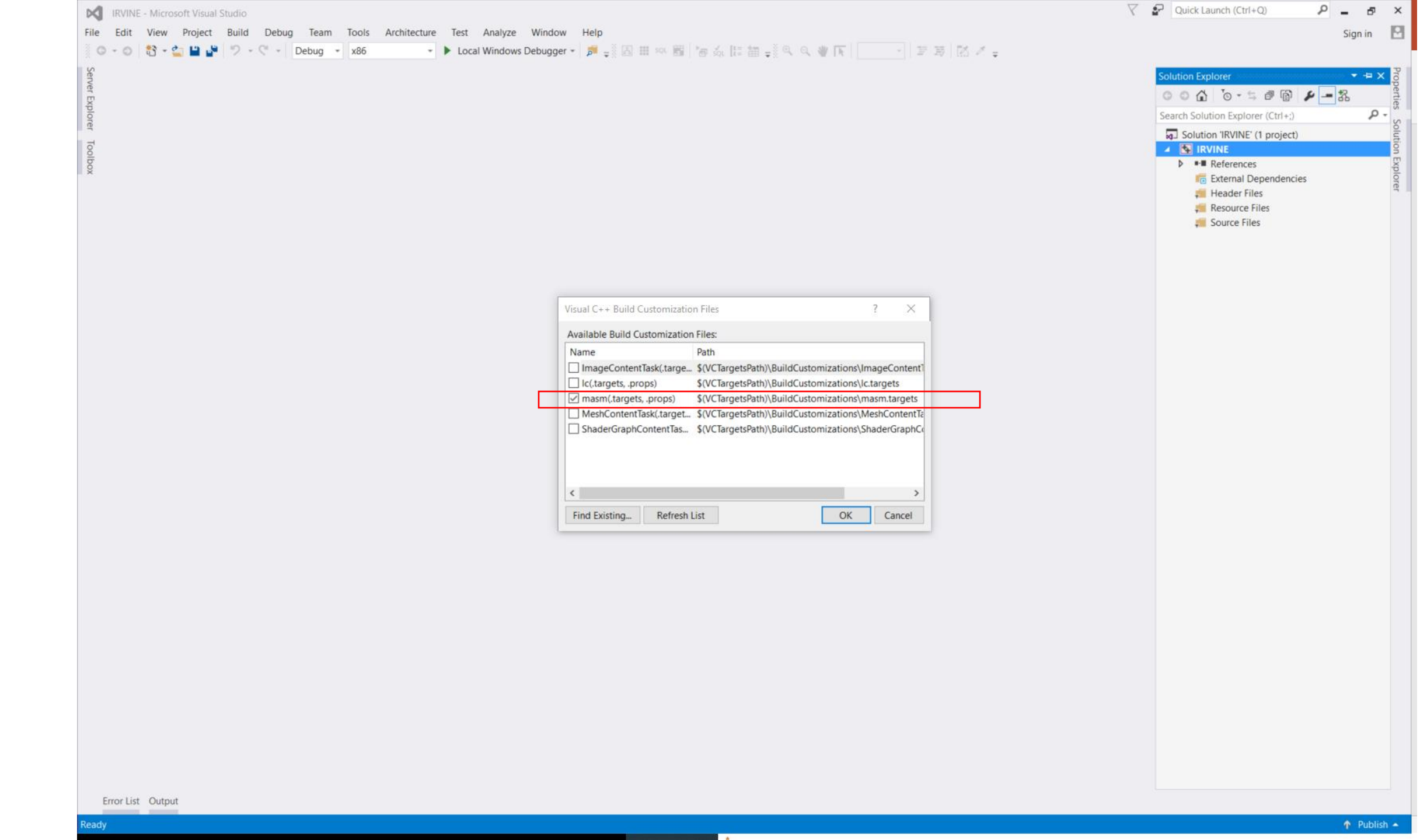
Analyze
Project Only
Retarget SDK Version
Scope to This
New Solution Explorer View
Show on Code Map
Profile Guided Optimization
Build Dependencies
Add
Class Wizard... Ctrl+Shift+X
Manage NuGet Packages...
Set as StartUp Project
Debug
Cut Ctrl+X
Paste Ctrl+V
Remove Del
Rename
Unload Project
Rescan Solution
Open Folder in File Explorer
Properties Alt+Enter
Build Customizations...
Error List
Output
Ready
Publish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Solution 'IRVINE' (1 project)
IRVINE
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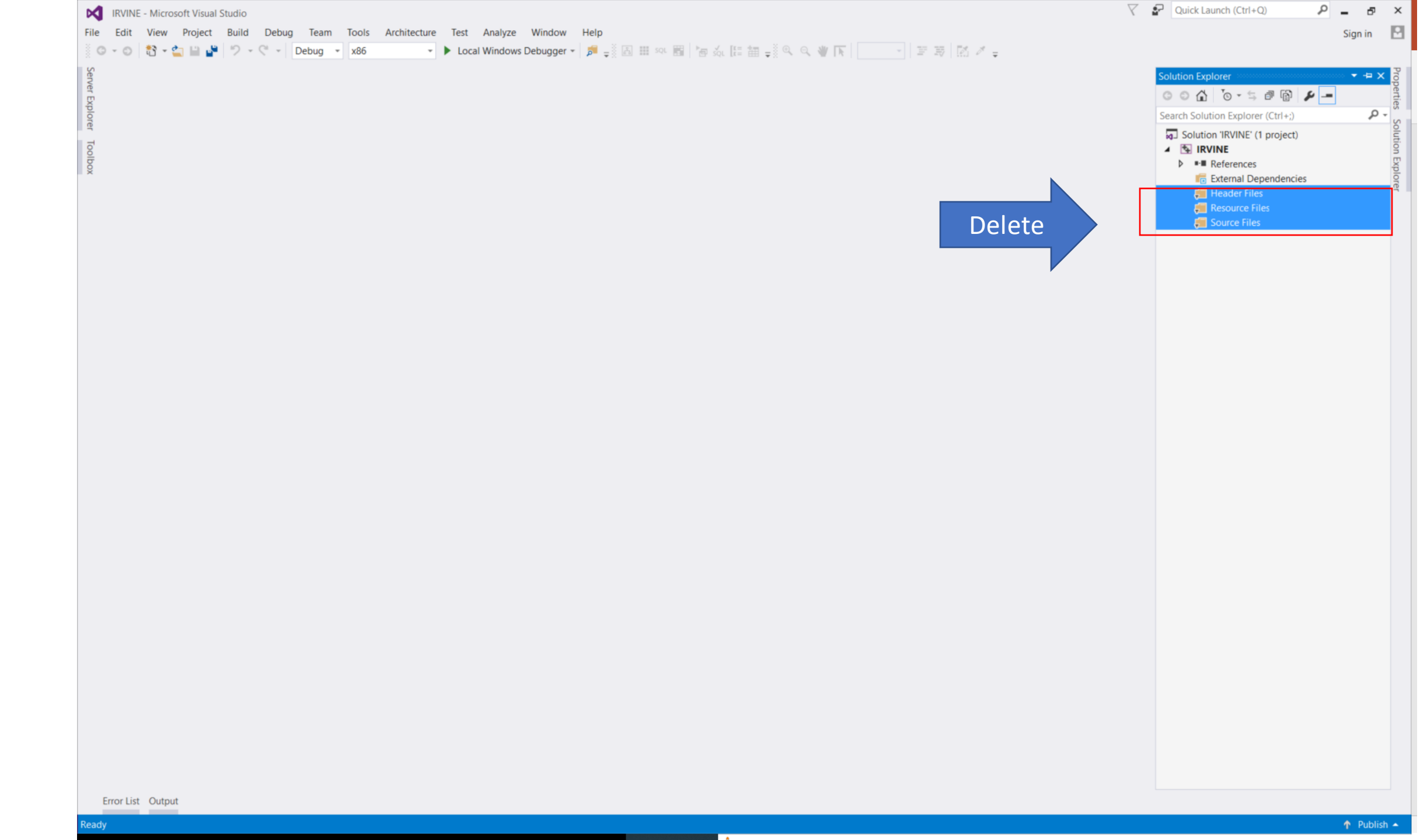
Properties
Solution Explorer
Visual C++ Build Customization Files
Available Build Customization Files:
Name
Path
ImageContentTask(.targe...
$(VCTargetsPath)\BuildCustomizations\ImageContent
lc(.targets, .props)
$(VCTargetsPath)\BuildCustomizations\lc.targets
masm(.targets, .props)
$(VCTargetsPath)\BuildCustomizations\masm.targets
MeshContentTask(.target...
$(VCTargetsPath)\BuildCustomizations\MeshContentTa
ShaderGraphContentTas...
$(VCTargetsPath)\BuildCustomizations\ShaderGraphC
Find Existing...
Refresh List
OK
Cancel
Error List
Output
Ready
Publish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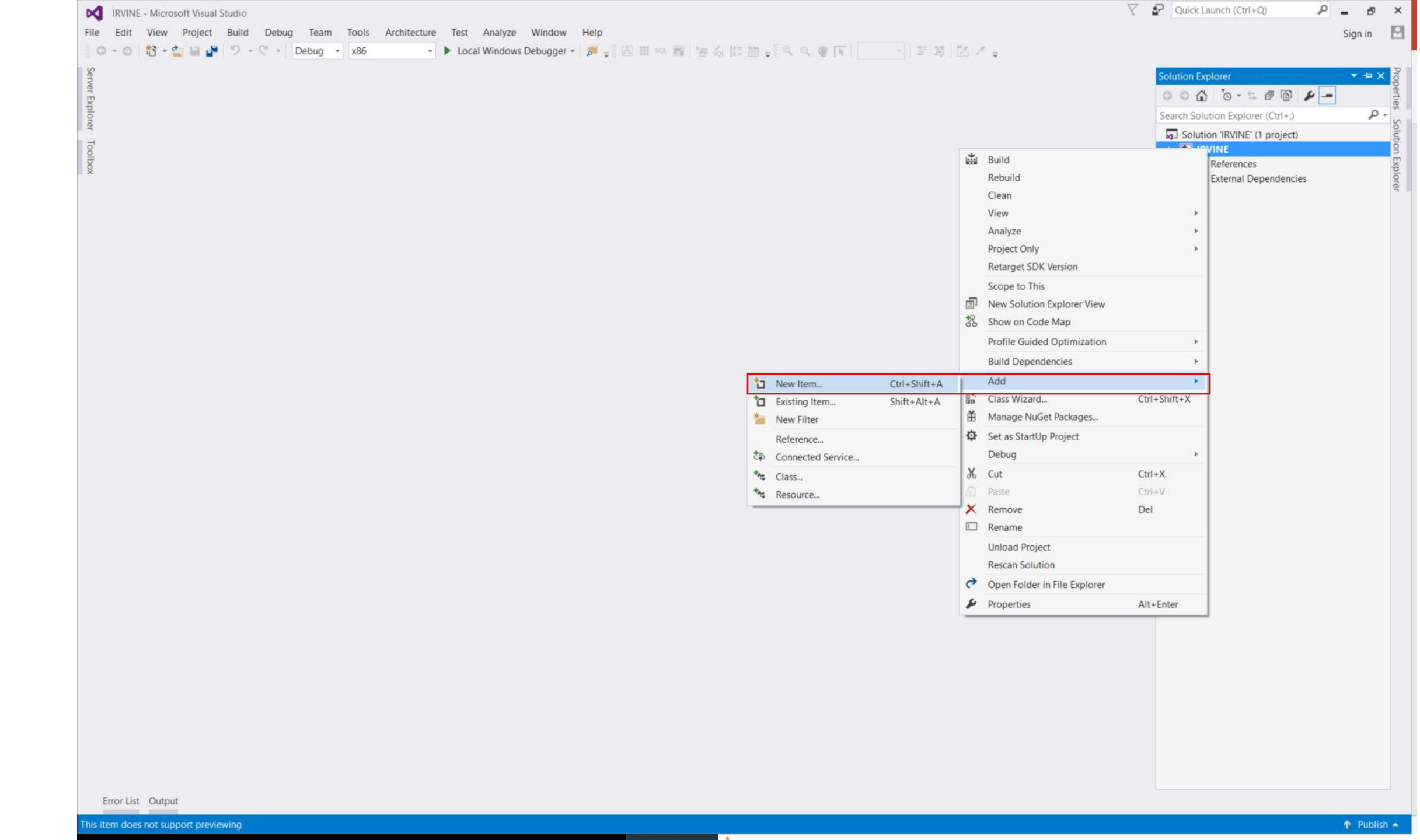
Properties
Solution Explorer
Delete
Error List
Output
Ready
Publish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Rebuild
Clean
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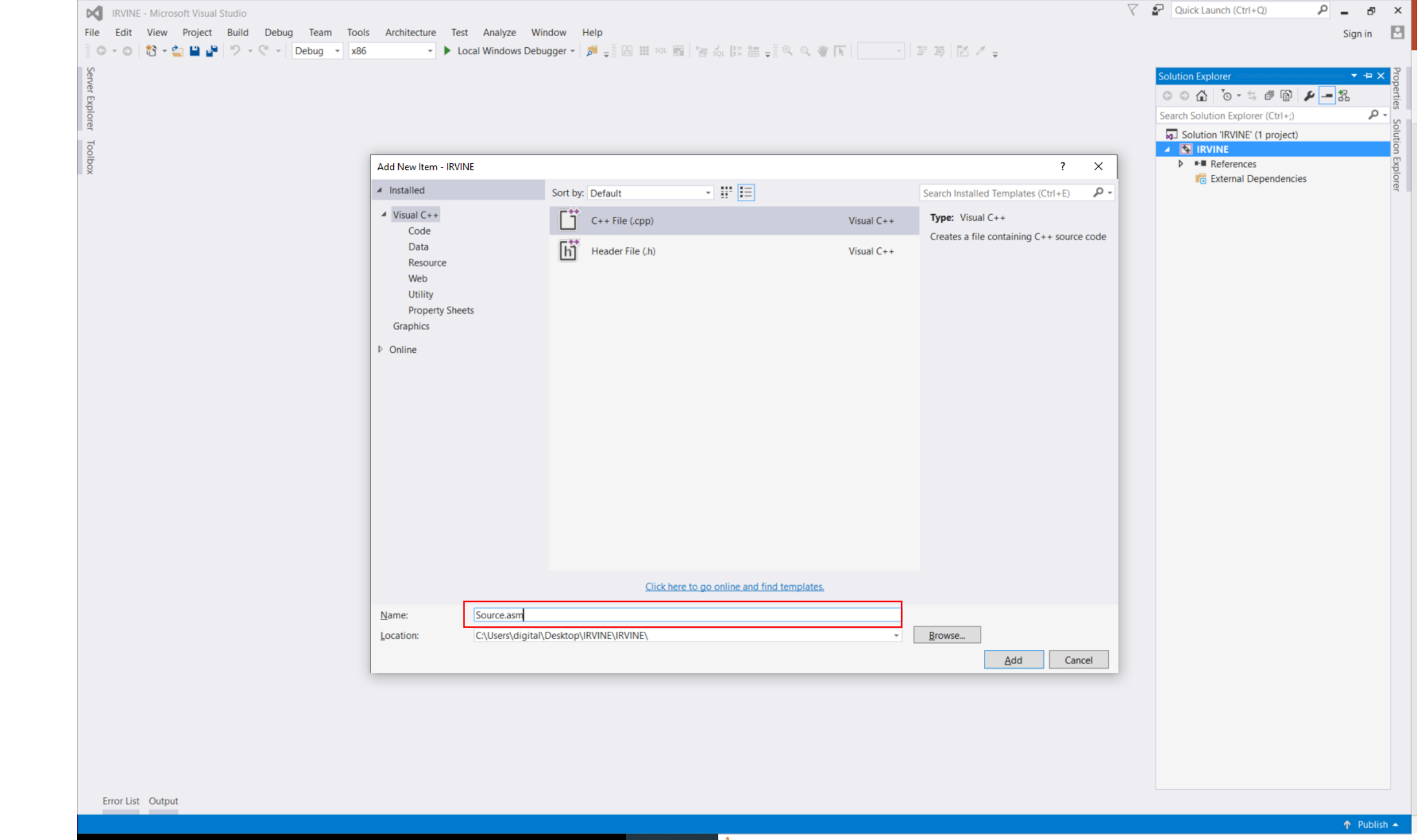
Analyze
Project Only
Retarget SDK Version
Scope to This
New Solution Explorer View
Show on Code Map
Profile Guided Optimization
Build Dependencies
Add
Class Wizard... Ctrl+Shift+X
Manage NuGet Packages...
Set as StartUp Project
Debug
Cut Ctrl+X
Paste Ctrl+V
Remove Del
Rename
Unload Project
Rescan Solution
Open Folder in File Explorer
Properties Alt+Enter
New Item... Ctrl+Shift+A
Existing Item... Shift+Alt+A
New Filter
Reference...
Connected Service...
Class...
Resource...
Error List
Output
This item does not support previewing
Publish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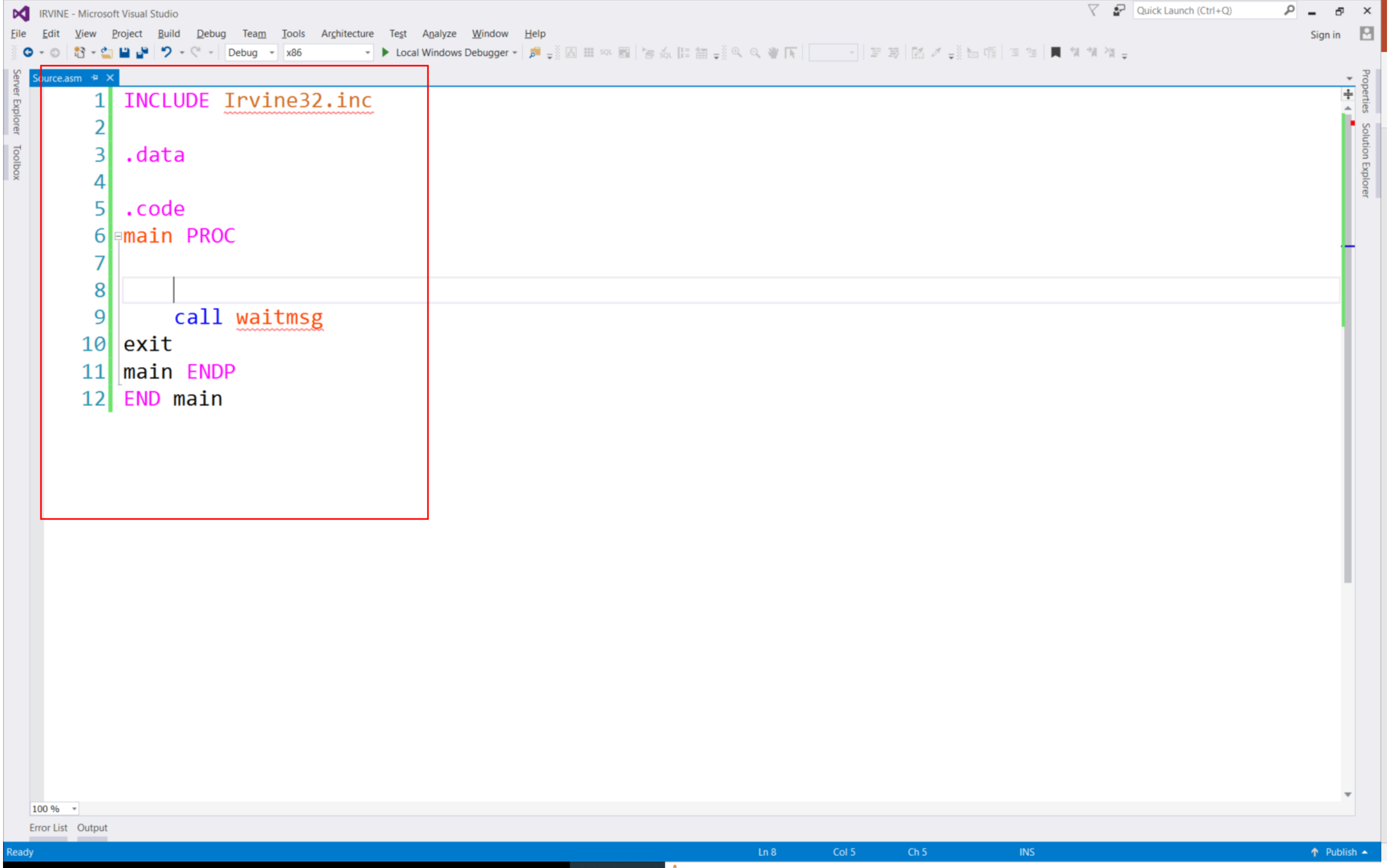
Server Explorer
Toolbox
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'IRVINE' (1 project)
IRVINE
References
External Dependencies
Properties
Solution Explorer
Add New Item - IRVINE
Installed
Visual C++
Code
Data
Resource
Web
Utility
Property Sheets
Graphics
Online
Sort by: Default
Search Installed Templates (Ctrl+E)
C++ File (.cpp) Visual C++
Header File (.h) Visual C++
Type: Visual C++
Creates a file containing C++ source code
Click here to go online and find templates.
Name: Source.asm
Location: C:\Users\digital\Desktop\IRVINE\IRVINE\
Browse...
Add
Cancel
Error List
Output
Publish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File Edit View Project Build Debug Team Tools Architecture Test Analyze Window Help
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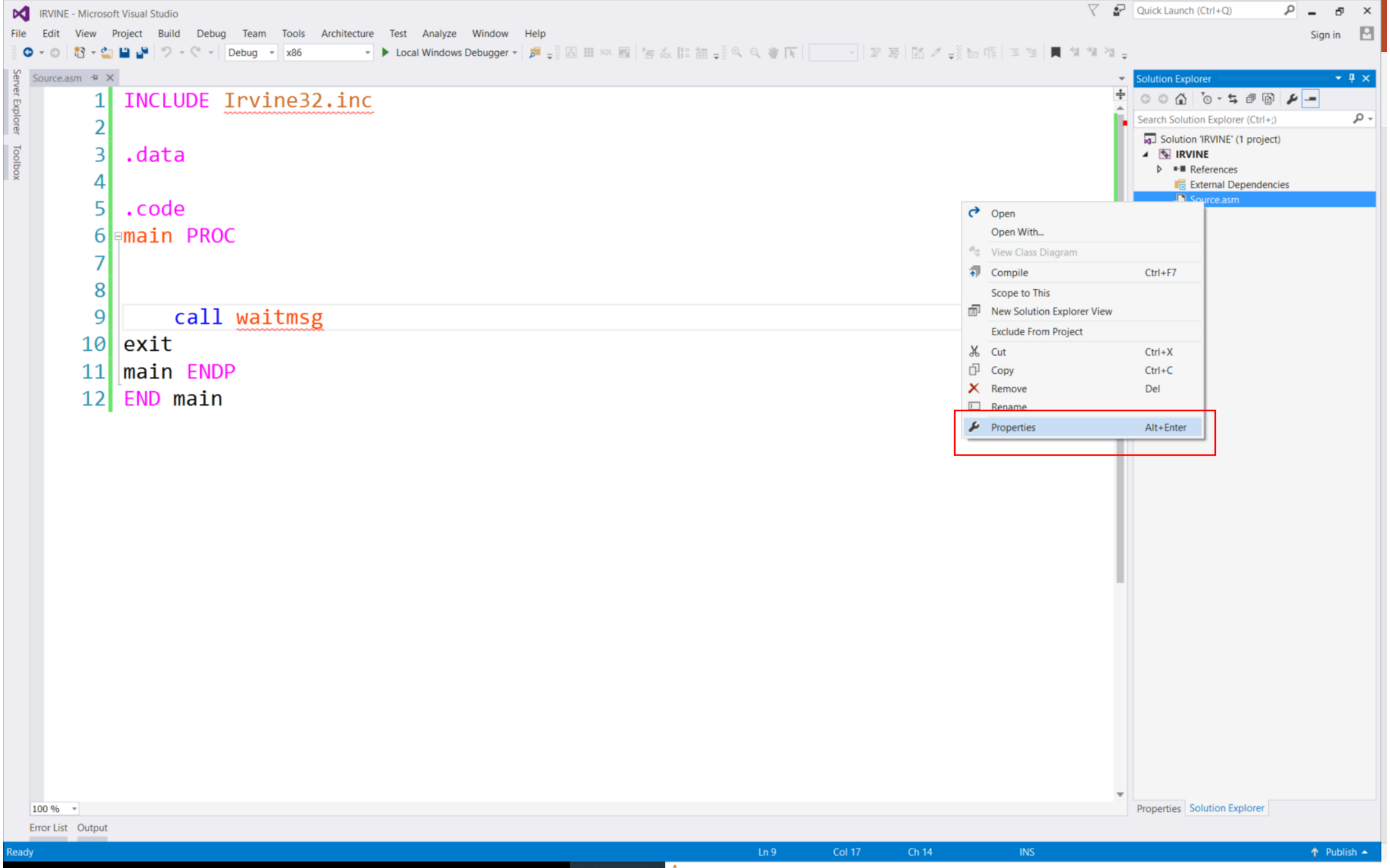
Local Windows Debugger
Server Explorer
Toolbox
Source.asm
1 INCLUDE Irvine32.inc
2
3 .data
4
5 .code
6 main PROC
7
8
9 call waitmsg
10 exit
11 main ENDP
12 END main
Properties
Solution Explorer
100 %
Error List
Output
Ready
Ln 8
Col 5
Ch 5
INS
Publish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Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'IRVINE' (1 project)
IRVINE
References
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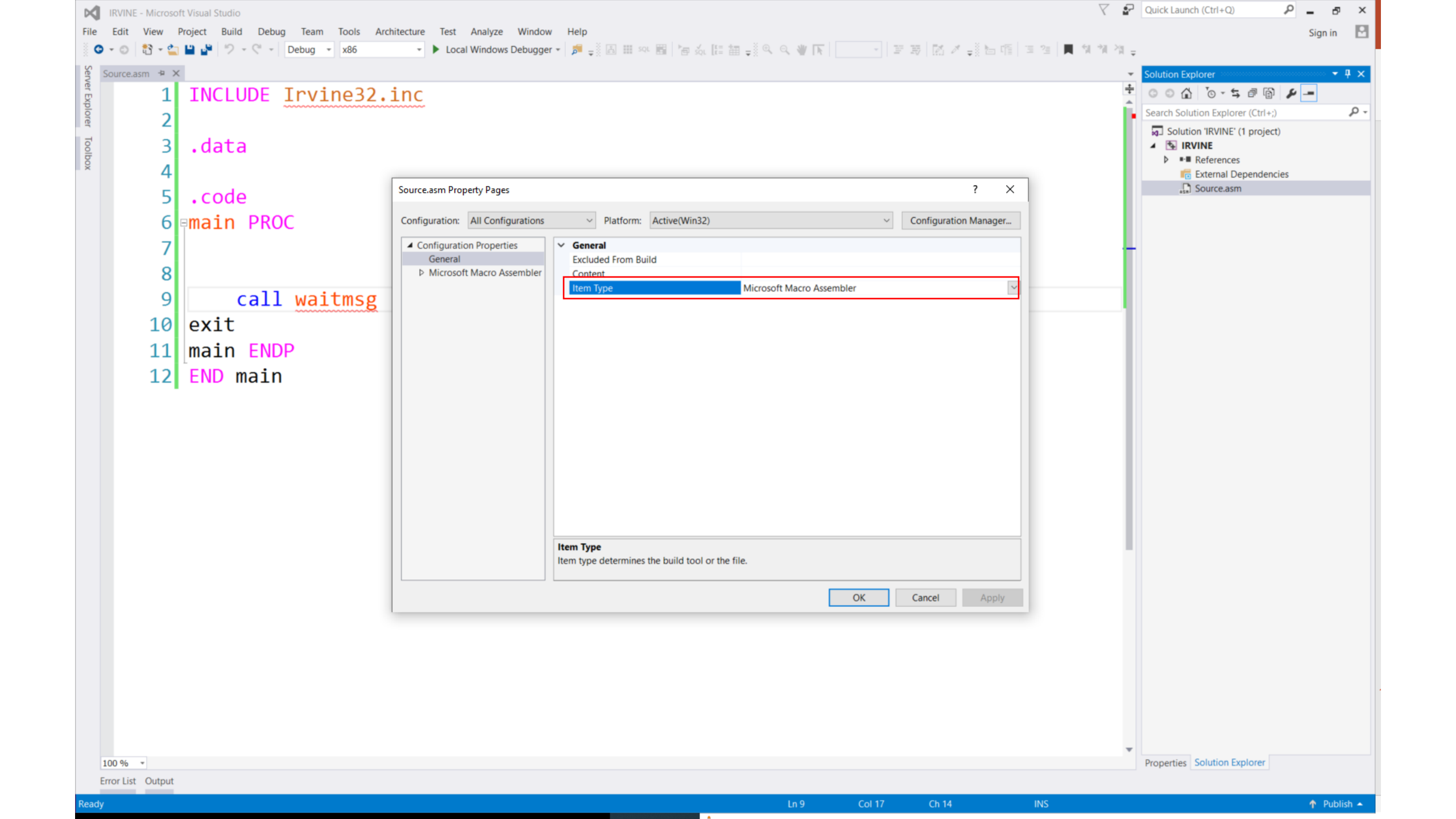
Source.asm
Open
Open With...
View Class Diagram
Compile Ctrl+F7
Scope to This
New Solution Explorer View
Exclude From Project
Cut Ctrl+X
Copy Ctrl+C
Remove Del
Rename
Properties Alt+Enter
100 %
Error List
Output
Properties
Solution Explorer
Ready
Ln 9
Col 17
Ch 14
INS
Publish


IRVINE - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Architecture Test Analyze Window Help
Debug x86 Local Windows Debugger
Source.asm
1 INCLUDE Irvine32.inc
2
3 .data
4
5 .code
6 main PROC
7
8
9 call waitmsg
10 exit
11 main ENDP
12 END main
Source.asm Property Pages
Configuration: All Configurations
Platform: Active(Win32)
Configuration Manager...
Configuration Properties
General
Microsoft Macro Assembler
General
Excluded From Build
Content
Item Type
Microsoft Macro Assembler
Item Type
Item type determines the build tool or the file.
OK
Cancel
Apply
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'IRVINE' (1 project)
IRVINE
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Source.asm
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Solution Explorer
Error List
Output
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Ln 9
Col 17
Ch 14
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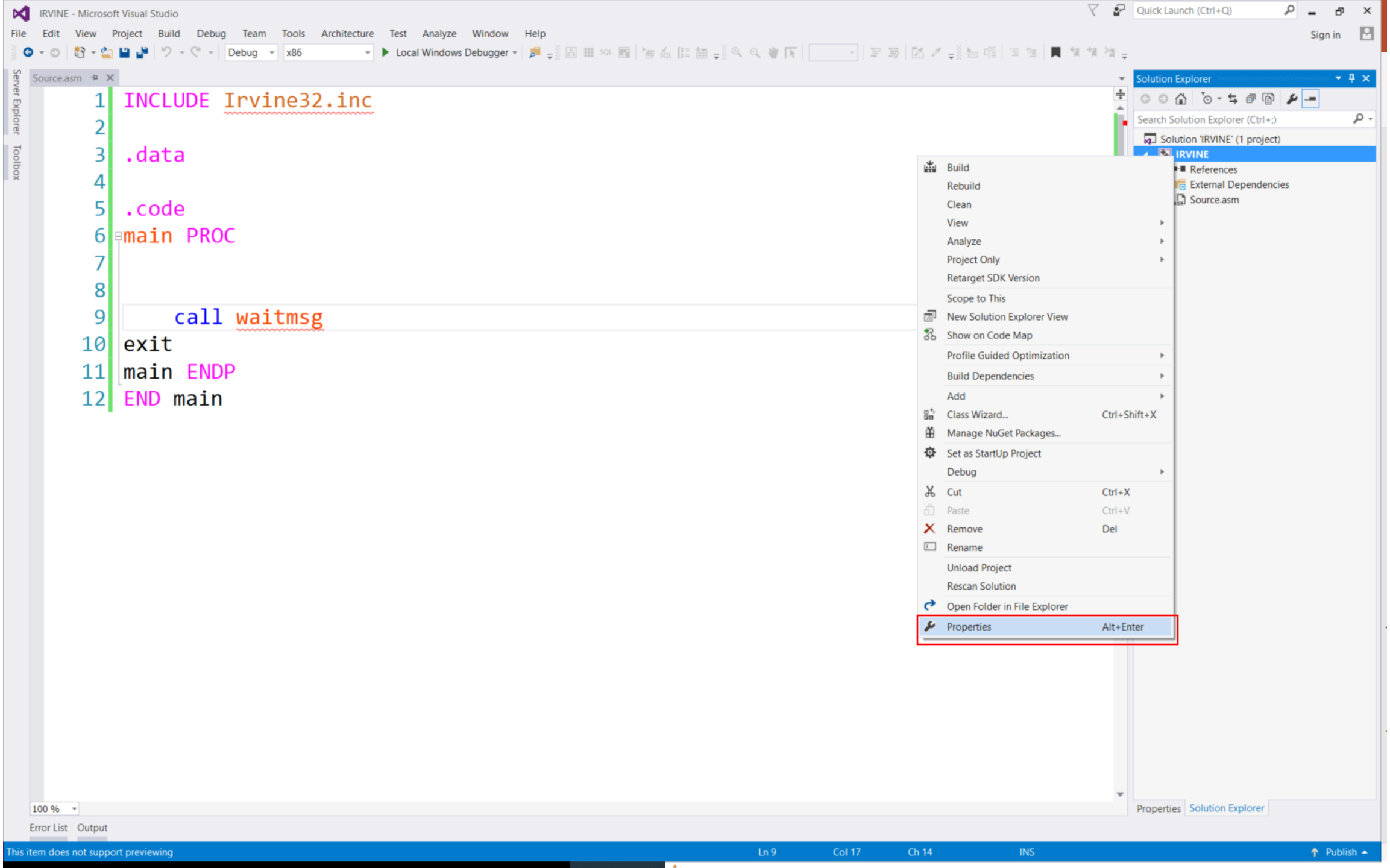
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Scope to This
New Solution Explorer View
Show on Code Map
Profile Guided Optimization
Build Dependencies
Add
Class Wizard... Ctrl+Shift+X
Manage NuGet Packages...
Set as StartUp Project
Debug
Cut Ctrl+X
Paste Ctrl+V
Remove Del
Rename
Unload Project
Rescan Solution
Open Folder in File Explorer
Properties Alt+Enter
100 %
Error List
Output
Properties
Solution Explorer
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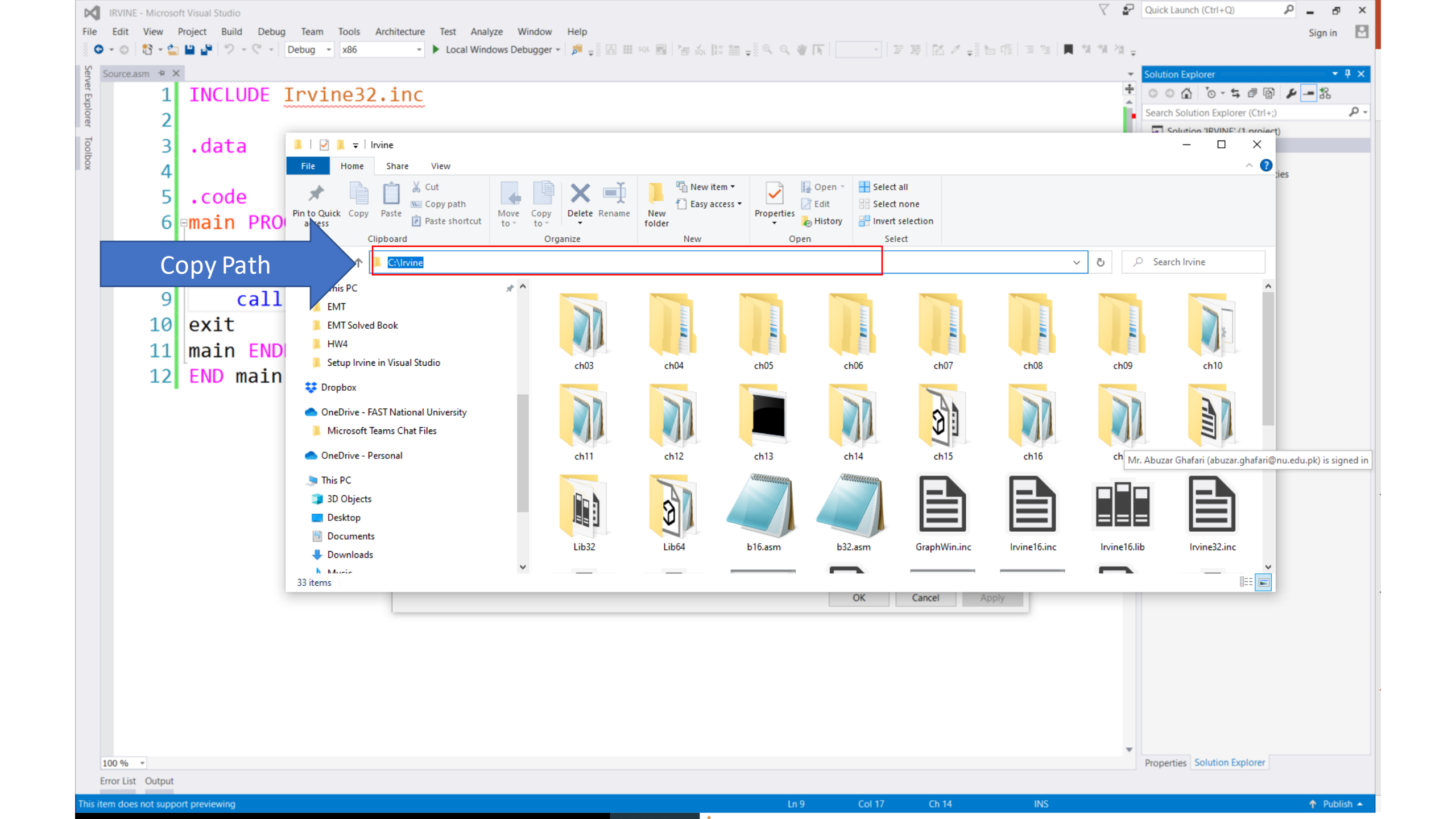
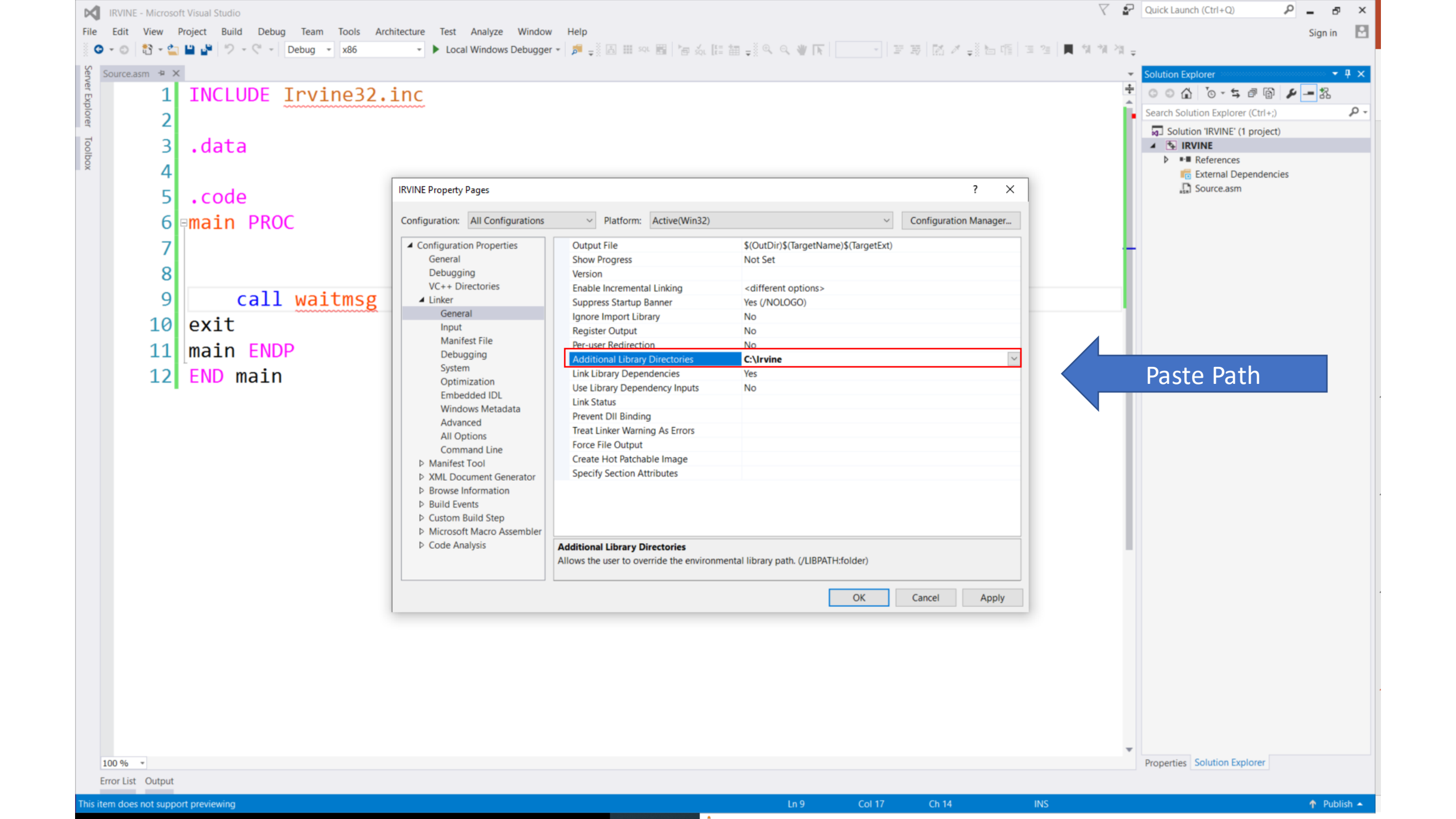
Ln 9
Col 17
Ch 14
INS
Publish


IRVINE - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Architecture Test Analyze Window Help
Debug x86 Local Windows Debugger
Source.asm
1 INCLUDE Irvine32.inc
2
3 .data
4
5 .code
6 main PRO
9 call
10 exit
11 main END
12 END main
Copy Path
Irvine
File Home Share View
Pin to Quick access Copy Paste Cut Copy path Paste shortcut
Clipboard
Move to Copy to Delete Rename
Organize
New folder New item Easy access
New
Properties Open Edit History
Open
Select all Select none Invert selection
Select
C:\Irvine
Search Irvine
This PC
EMT
EMT Solved Book
HW4
Setup Irvine in Visual Studio
Dropbox
OneDrive - FAST National University
Microsoft Teams Chat Files
OneDrive - Personal
This PC
3D Objects
Desktop
Documents
Downloads
ch03 ch04 ch05 ch06 ch07 ch08 ch09 ch10
ch11 ch12 ch13 ch14 ch15 ch16
Lib32 Lib64 b16.asm b32.asm GraphWin.inc Irvine16.inc Irvine16.lib Irvine32.inc
33 items
Mr. Abuzar Ghafari (abuzar.ghafari@nu.edu.pk) is signed in
OK Cancel Apply
Solution Explorer
Search Solution Explorer (Ctrl+;)
Properties Solution Explorer
Error List Output
This item does not support previewing
Ln 9 Col 17 Ch 14 INS
Publish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Debug x86 Local Windows Debugger
Source.asm
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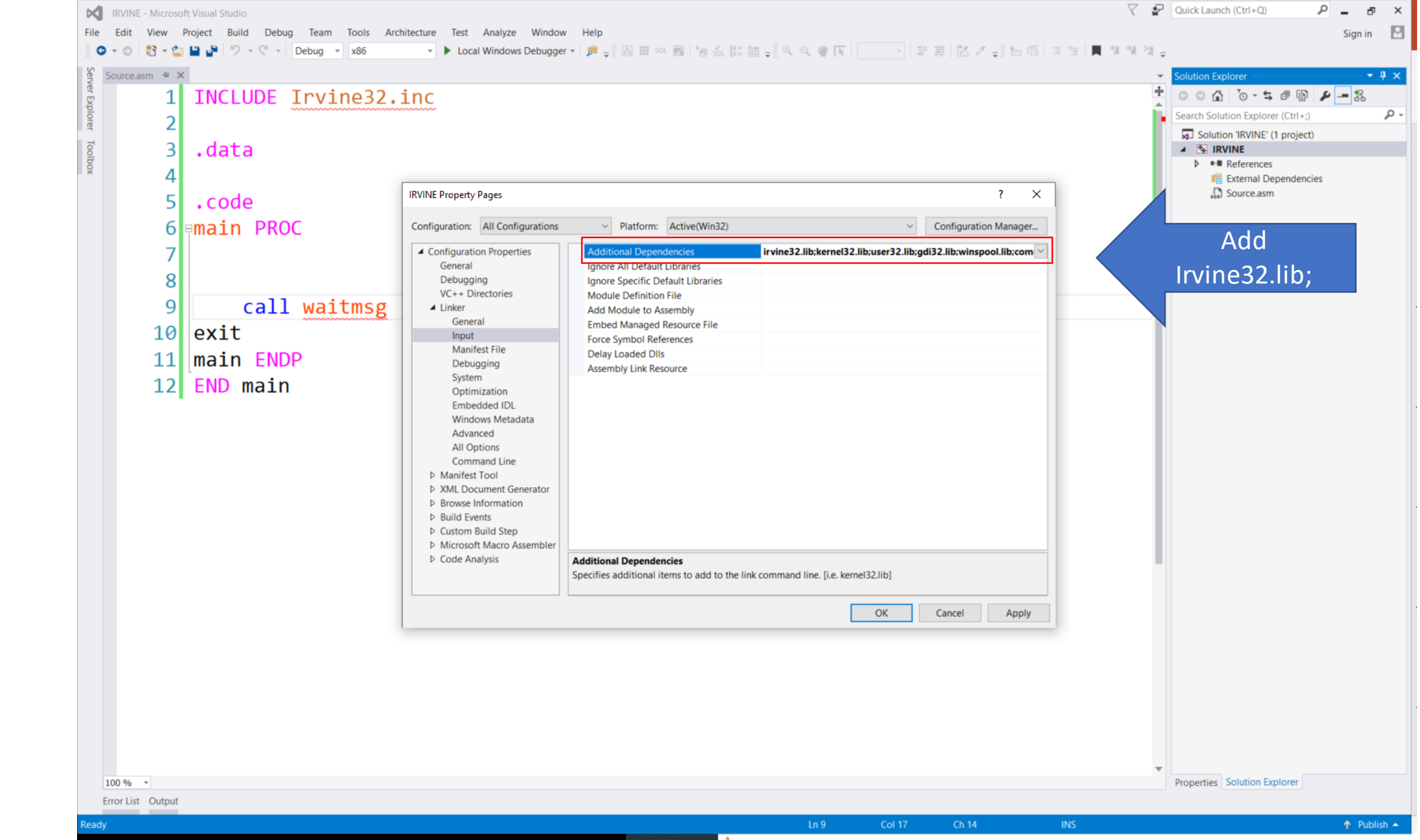
12 END main
IRVINE Property Pages
Configuration: All Configurations
Platform: Active(Win32)
Configuration Manager...
Configuration Properties
General
Debugging
VC++ Directories
Linker
General
Input
Manifest File
Debugging
System
Optimization
Embedded IDL
Windows Metadata
Advanced
All Options
Command Line
Manifest Tool
XML Document Generator
Browse Information
Build Events
Custom Build Step
Microsoft Macro Assembler
Code Analysis
Output File $(OutDir)$(TargetName)$(TargetExt)
Show Progress Not Set
Version
Enable Incremental Linking <different options>
Suppress Startup Banner Yes (/NOLOGO)
Ignore Import Library No
Register Output No
Per-user Redirection No
Additional Library Directories C:\Irvine
Link Library Dependencies Yes
Use Library Dependency Inputs No
Link Status
Prevent Dll Binding
Treat Linker Warning As Errors
Force File Output
Create Hot Patchable Image
Specify Section Attributes
Additional Library Directories
Allows the user to override the environmental library path. (/LIBPATH:folder)
OK
Cancel
Apply
Paste Path
Solution Explorer
Solution 'IRVINE' (1 project)
IRVINE
References
External Dependencies
Source.asm
Error List Output
This item does not support previewing
Ln 9 Col 17 Ch 14 INS
Publish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Manifest Tool
XML Document Generator
Browse Information
Build Events
Custom Build Step
Microsoft Macro Assembler
Code Analysis
Additional Dependencies
irvine32.lib;kernel32.lib;user32.lib;gdi32.lib;winspool.lib;com
Ignore All Default Libraries
Ignore Specific Default Libraries
Module Definition File
Add Module to Assembly
Embed Managed Resource File
Force Symbol References
Delay Loaded Dlls
Assembly Link Resource
Additional Dependencies
Specifies additional items to add to the link command line. [i.e. kernel32.lib]
OK
Cancel
Apply
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'IRVINE' (1 project)
IRVINE
References
External Dependencies
Source.asm
Add Irvine32.lib;
Error List
Output
Properties
Solution Explorer
Ready
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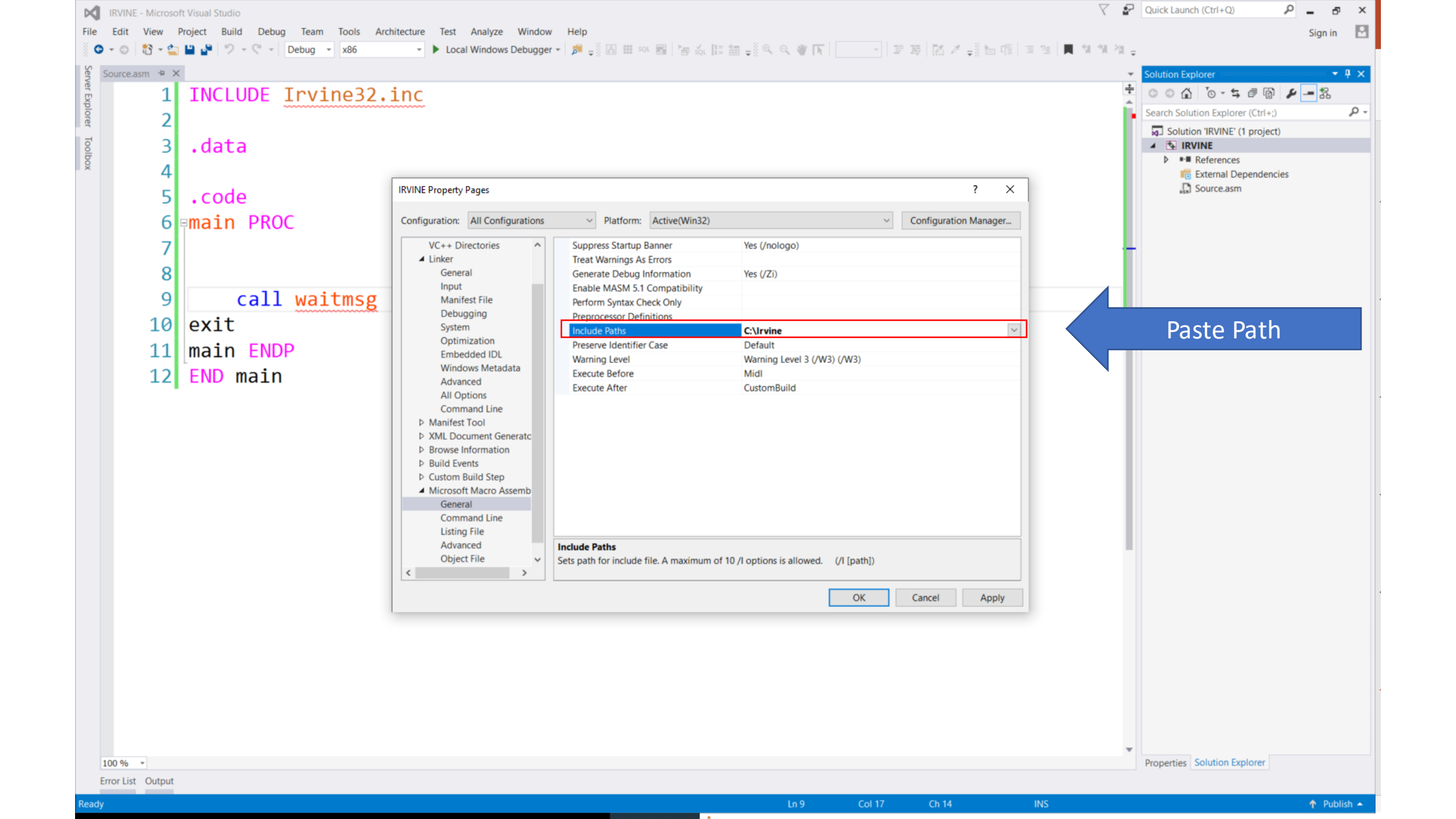
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XML Document Generatc
Browse Information
Build Events
Custom Build Step
Microsoft Macro Assemb
General
Command Line
Listing File
Advanced
Object File
Suppress Startup Banner Yes (/nologo)
Treat Warnings As Errors
Generate Debug Information Yes (/Zi)
Enable MASM 5.1 Compatibility
Perform Syntax Check Only
Preprocessor Definitions
Include Paths C:\Irvine
Preserve Identifier Case Default
Warning Level Warning Level 3 (/W3) (/W3)
Execute Before MidI
Execute After CustomBuild
Include Paths
Sets path for include file. A maximum of 10 /I options is allowed. (/I [path])
OK
Cancel
Apply
Paste Path
Solution Explorer
Search Solution Explorer (Ctrl+;)
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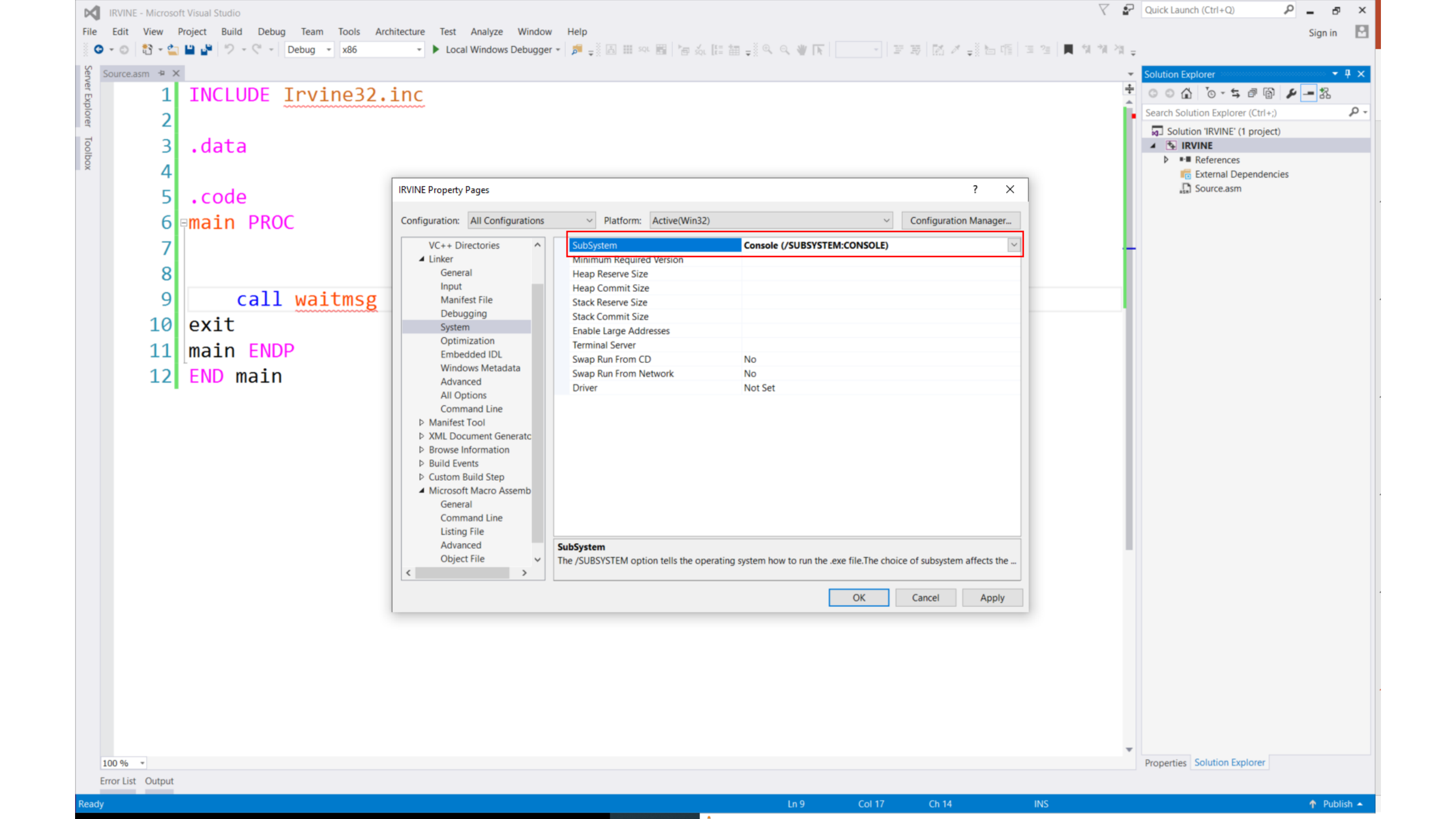
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Manifest Tool
XML Document Generatc
Browse Information
Build Events
Custom Build Step
Microsoft Macro Assemb
General
Command Line
Listing File
Advanced
Object File
SubSystem
Console (/SUBSYSTEM:CONSOLE)
Minimum Required Version
Heap Reserve Size
Heap 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 ...
OK
Cancel
Apply
Solution Explorer
Search Solution Explorer (Ctrl+;)
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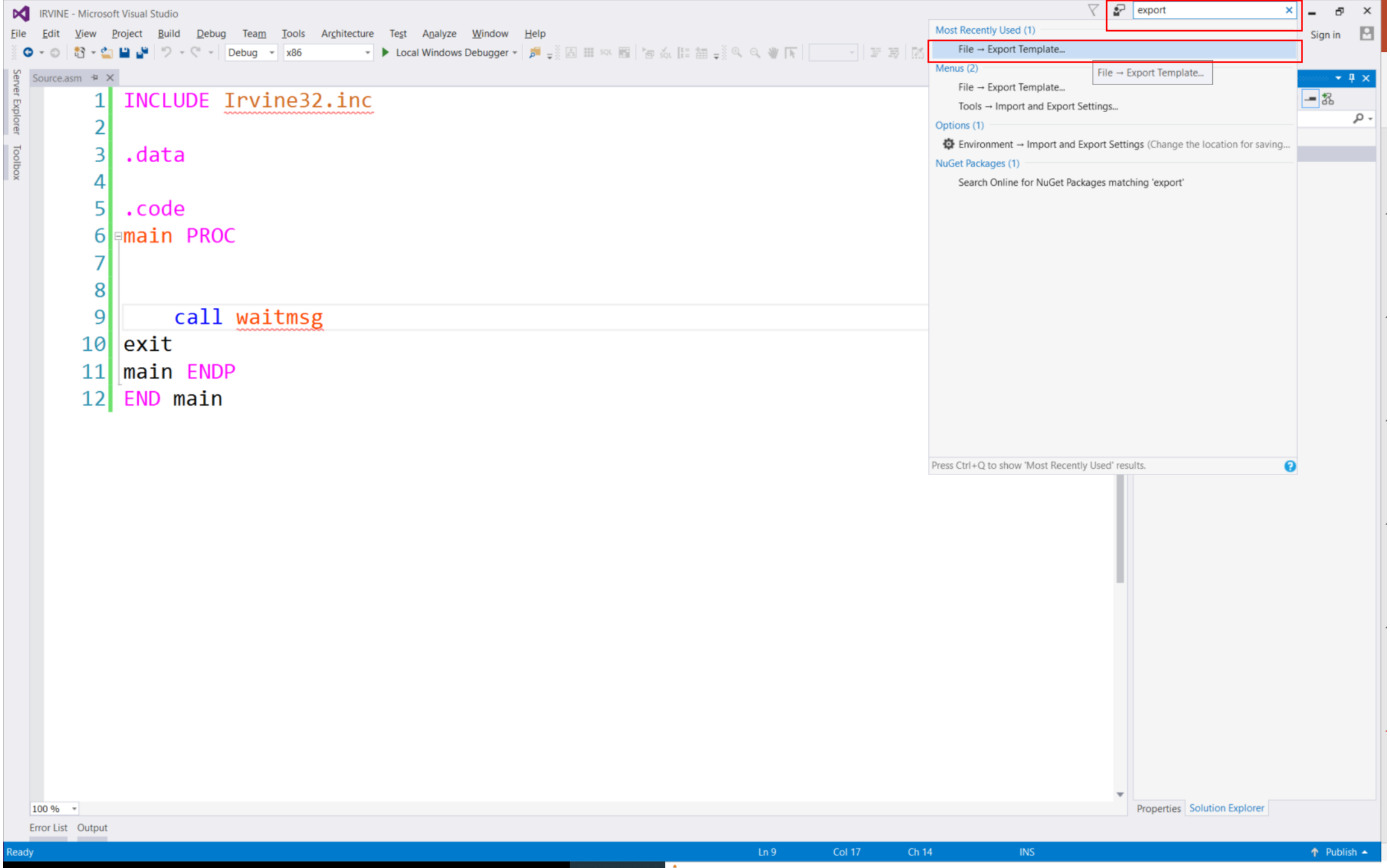
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3 .data
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7
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10 exit
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12 END main
export
Most Recently Used (1)
File → Export Template...
Menus (2)
File → Export Template...
Tools → Import and Export Settings...
Options (1)
Environment → Import and Export Settings (Change the location for saving...
NuGet Packages (1)
Search Online for NuGet Packages matching 'export'
Press Ctrl+Q to show 'Most Recently Used' results.
Sign in
Server Explorer
Toolbox
100 %
Error List
Output
Properties
Solution Explorer
Ready
Ln 9
Col 17
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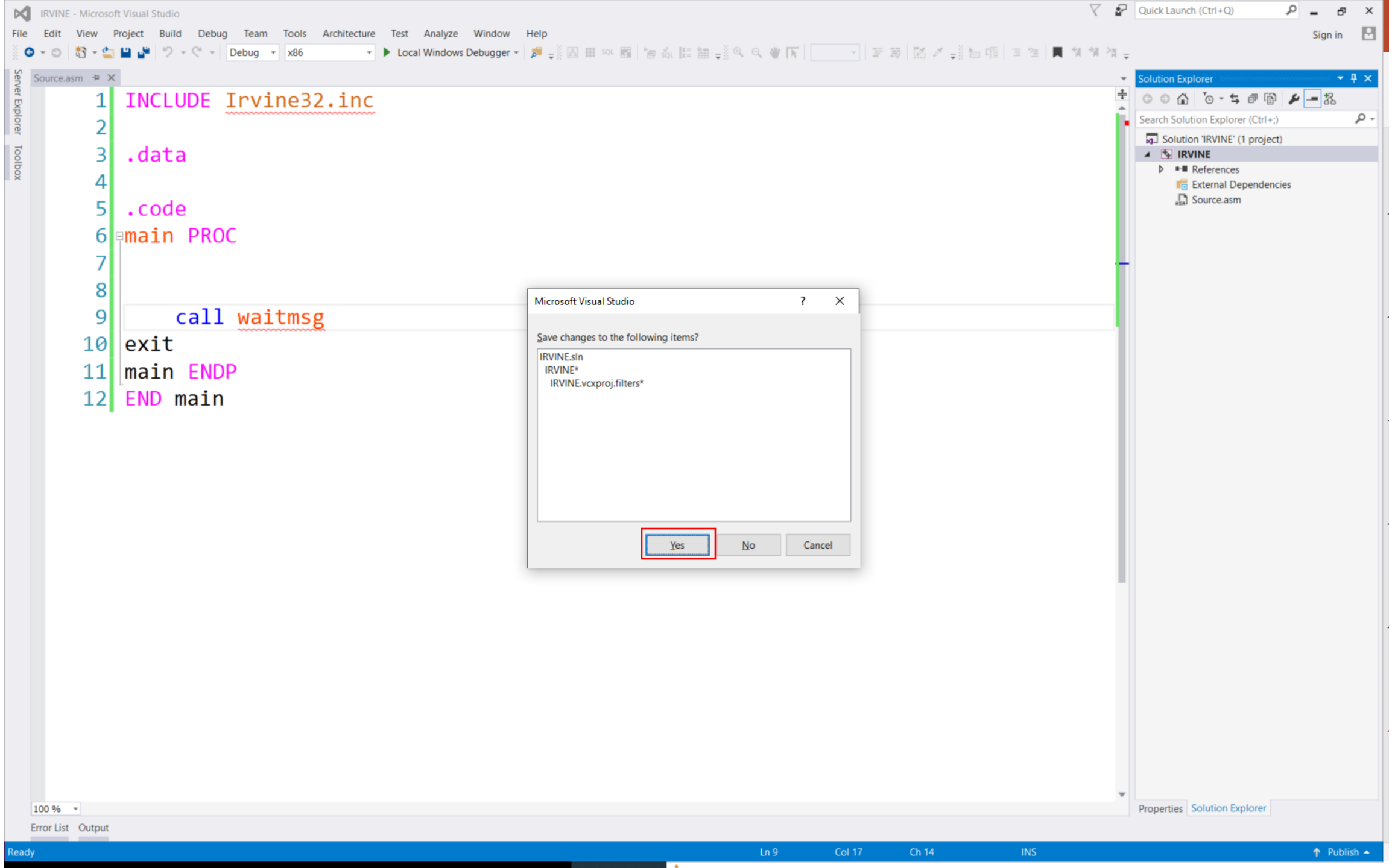
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12 END main
Microsoft Visual Studio
Save changes to the following items?
IRVINE.sln
IRVINE*
IRVINE.vcxproj.filters*
Yes
No
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
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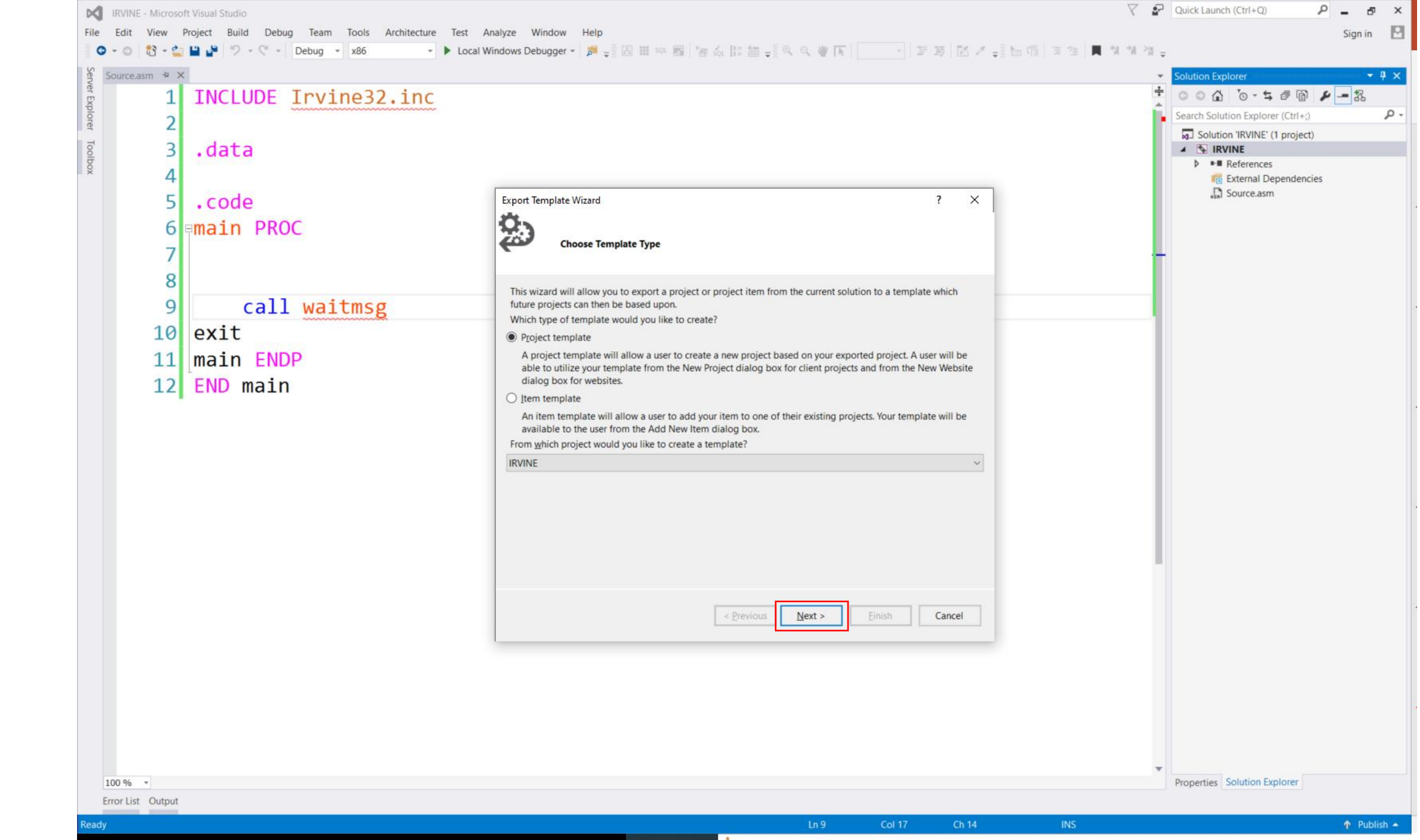
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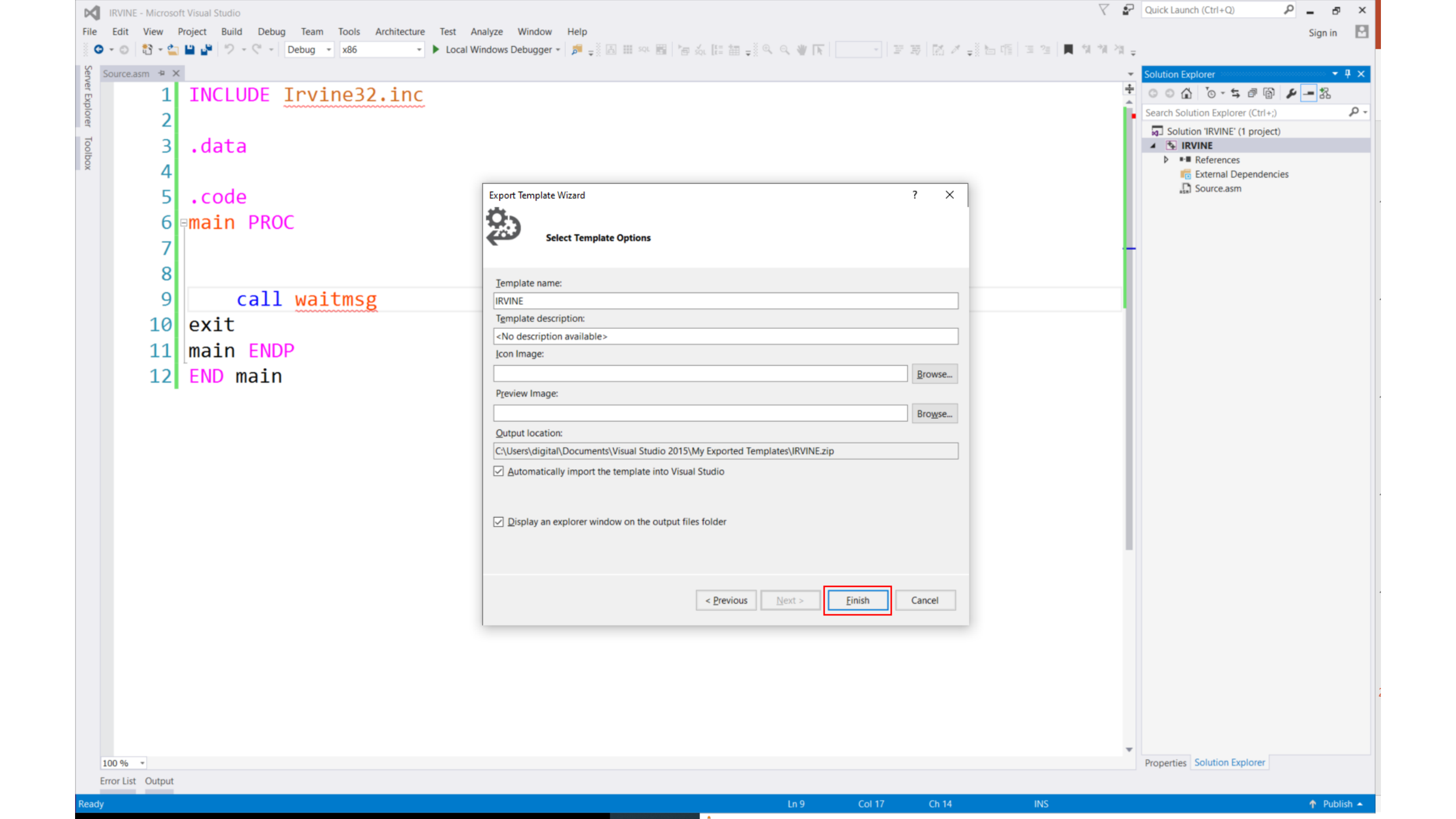
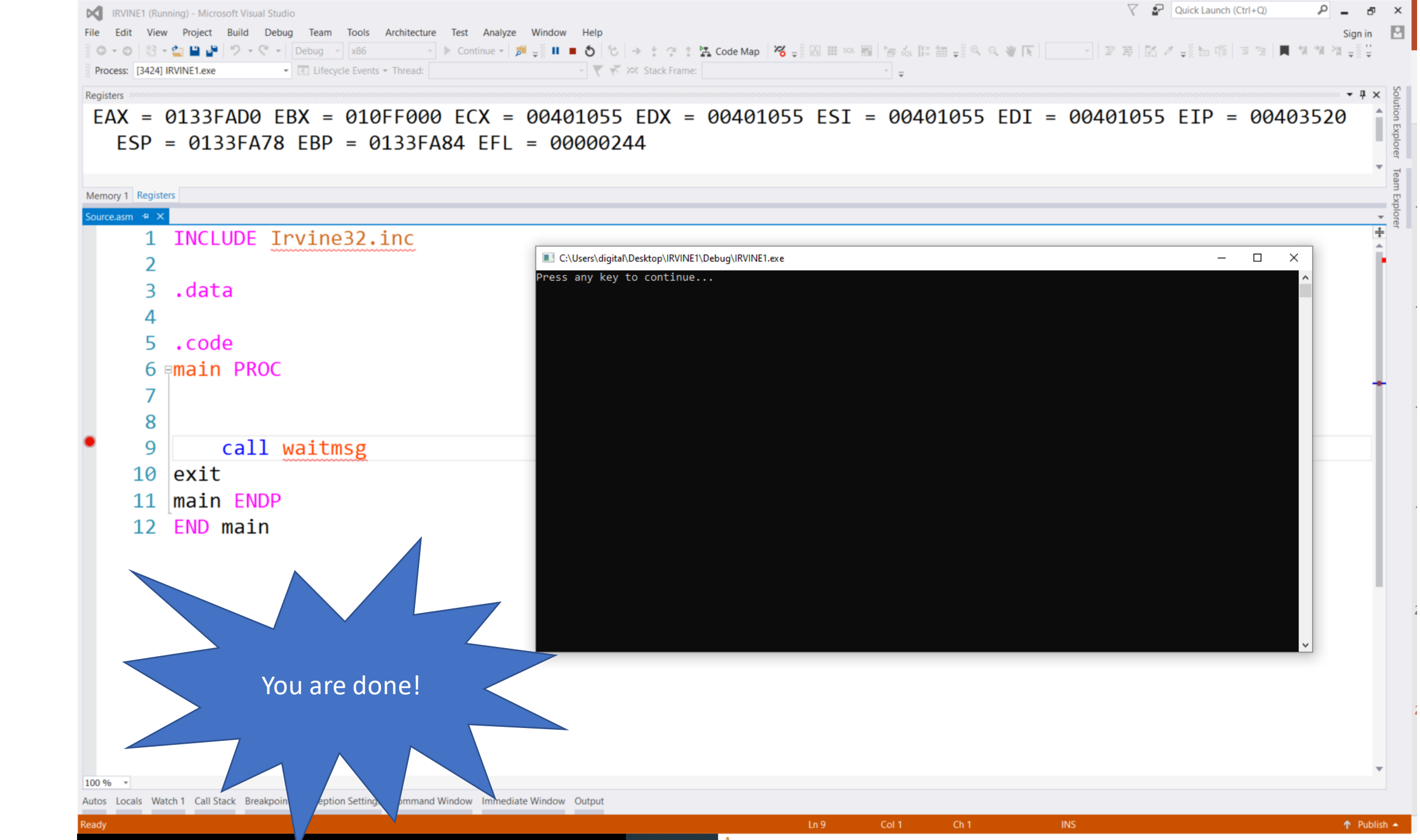
12 END main
Export Template Wizard
Choose Template Type
This wizard will allow you to export a project or project item from the current solution to a template which future projects can then be based upon.
Which type of template would you like to create?
Project template
A project template will allow a user to create a new project based on your exported project. A user will be able to utilize your template from the New Project dialog box for client projects and from the New Website dialog box for websites.
Item template
An item template will allow a user to add your item to one of their existing projects. Your template will be available to the user from the Add New Item dialog box.
From which project would you like to create a template?
IRVINE
< Previous
Next >
Finish
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'IRVINE' (1 project)
IRVINE
References
External Dependencies
Source.asm
Ready
Ln 9
Col 17
Ch 14
INS
Publish


IRVINE - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Architecture Test Analyze Window Help
Debug x86 Local Windows Debugger
Source.asm
1 INCLUDE Irvine32.inc
2
3 .data
4
5 .code
6 main PROC
7
8
9 call waitmsg
10 exit
11 main ENDP
12 END main
Export Template Wizard
Select Template Options
Template name:
IRVINE
Template description:
<No description available>
Icon Image:
Browse...
Preview Image:
Browse...
Output location:
C:\Users\digital\Documents\Visual Studio 2015\My Exported Templates\IRVINE.zip
Automatically import the template into Visual Studio
Display an explorer window on the output files folder
< Previous
Next >
Finish
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'IRVINE' (1 project)
IRVINE
References
External Dependencies
Source.asm
Properties
Solution Explorer
Error List
Output
Ready
Ln 9
Col 17
Ch 14
INS
Publish


IRVINE1 (Running) - Microsoft Visual Studio
Registers
EAX = 0133FAD0 EBX = 010FF000 ECX = 00401055 EDX = 00401055 ESI = 00401055 EDI = 00401055 EIP = 00403520
ESP = 0133FA78 EBP = 0133FA84 EFL = 00000244
Source.asm
1 INCLUDE Irvine32.inc
2
3 .data
4
5 .code
6 main PROC
7
8
9 call waitmsg
10 exit
11 main ENDP
12 END main
C:\Users\digital\Desktop\IRVINE1\Debug\IRVINE1.exe
Press any key to continue...
You are done!