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Dependency graph of Visual Studio projects

Asked 10 years, 8 months ago Active 25 days ago Viewed 73k times



I'm currently migrating a big solution (~70 projects) from VS 2005 + .NET 2.0 to VS 2008 + .NET 3.5. Currently I have VS 2008 + .NET 2.0.

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The problem is that I need to move projects one by one to new .NET framework ensuring that no .NET 2.0 project references .NET 3.5 project. Is there any tool that would give me a nice graph of project dependencies?



[.net](#) [visual-studio](#) [migration](#) [graph](#) [dependencies](#)

53

edited Feb 28 '09 at 15:21



[GregD](#)

5,804 5 28 59

asked Feb 28 '09 at 15:08



[Migol](#)

4,695 8 40 66

13 Answers



Have you tried NDepend? It'll shows you the dependencies and you can also analyze the usability of your classes and methods.

39

Their website:



<http://ndepend.com>



answered Feb 28 '09 at 15:12



[Eriawan
Kusumawardhono](#)

3,179 3 32 40

3 For those downvoted my answer, please tell me why. – [Eriawan Kusumawardhono](#) Nov 10 '15 at 14:18

3 I didnt't down vote, but it is a trial – [Arun Prasad E S](#) Jan 27 '17 at 18:05

1 original poster didn't say ndepend was free and it solves the problem. – [krystan honour](#) Jun 2 '17 at 11:02



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I needed something similar, but didn't want to pay for (or install) a tool to do it. I [created a quick PowerShell script that goes through the project references](#) and spits them out in a [yuml.me](#) friendly-format instead:

```
Function Get-ProjectReferences ($rootFolder)
{
    $projectFiles = Get-ChildItem $rootFolder -Filter *.csproj -Recurse
    $ns = @{ defaultNamespace = "http://schemas.microsoft.com/developer/msbuild/2003" }

    $projectFiles | ForEach-Object {
        $projectFile = $_ | Select-Object -ExpandProperty FullName
        $projectName = $_ | Select-Object -ExpandProperty BaseName
        $projectXml = [xml](Get-Content $projectFile)

        $projectReferences = $projectXml | Select-Xml
        '//defaultNamespace:ProjectReference/defaultNamespace:Name' -Namespace $ns | Select-
        Object -ExpandProperty Node | Select-Object -ExpandProperty "#text"

        $projectReferences | ForEach-Object {
            "[" + $projectName + "]" -> "[" + $_ + "]"
        }
    }
}

Get-ProjectReferences "C:\Users\DanTup\Documents\MyProject" | Out-File
"C:\Users\DanTup\Documents\MyProject\References.txt"
```

edited Jul 18 at 14:19



[Uwe Keim](#)

28.6k 34 143 232

answered May 6 '12 at 16:52



[Danny Tuppeny](#)

21.6k 16 102 218

4 awesome. I took this and extended it to go through all sub projects, then extended it again to take a sln file instead to map the whole project. Thanks – [Jon](#) Mar 27 '13 at 17:03

1 It was written against a 2010 project for C#, but you could probably tweak it really easily by looking at the XML inside a C++ project and adjusting the code :-). – [Danny Tuppeny](#) May 11 '13 at 10:24

5 @ssc There's slightly updated code posted on my blog that might be easier to tweak: [blog.dantup.com/2012/05/...](#) – [Danny Tuppeny](#) May 11 '13 at 10:25

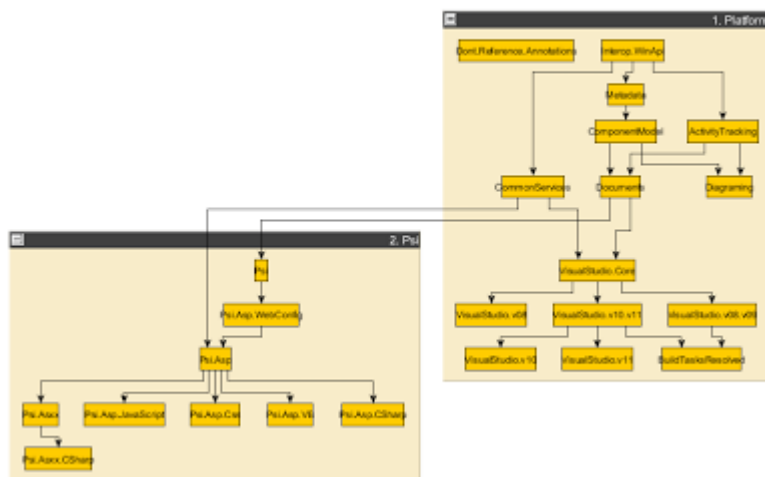
6 +1 because [yuml.me](#) is free (not trial) to use. – [Alfredo Cavalcanti](#) Jun 26 '13 at 21:56

4 If you're using Powershell 2.0 you will need to append `=$true` to the `Mandatory` and `ValueFromPipeline` parameters – MoMo Mar 18 '14 at 18:00

Update: ReSharper since version 8 has built-in '[View Project Dependencies](#)' feature.

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ReSharper version < 8 has [Internal feature](#) to show dependency graphs in using yFiles viewer. See quick manual in the bottom of the post.



Howto

1. Install yEd tool from [here](#).
2. Run VS with `/resharper.internal` command line argument.
3. Go to ReSharper/Internal/Show Dependencies.
4. Specify projects that you want to include to the 'big picture'.
5. Uncheck 'Exclude terminal nodes...' unless you need it.
6. Press 'Show'.
7. Use hierarchical layout in yEd (Alt+Shift+H)
8. Provide feedback =)

edited Jan 13 '15 at 9:29



Eugene Beresovsky
11.8k 7 65 112

answered Mar 13 '13 at 12:34



Shkredov S.
1,779 14 8

- 2 Also Resharper > Inspect > Project Hierarchy to get list of the projects referencing on current – Lu55 Nov 9 '15 at 13:41 ✎
- 5 Resharper > Architecture > 'Show Project Dependency Diagram' – Dr Blowhard Aug 4 '16 at 8:17



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You can get a project dependency graph easily using Visual Studio 2010 Ultimate, scan to 5 minutes into this video to see how:
<http://www.lovetsoftware.com/blogengine.net/post/2010/05/27/Architecture-Explorer.aspx>

In Visual Studio 2010 Ultimate: Architecture | Generate Dependency Graph | By Assembly.

edited Sep 6 '10 at 15:14



Richard
93.8k 20 170 233

answered Jul 30 '10 at 20:53



Chris Lovett
235 3 2

Only works for managed assemblies. :(– C Johnson Aug 14 '12 at 5:14

@CJohnson You can do this for C and C++ code if you have [Visual Studio 2010 Feature Pack 2](#). See also [How to: Generate Dependency Graphs for C and C++ Code](#) – Esther Fan - MSFT Mar 18 '13 at 20:04 ✎

- 1 Tried it, threw an exception. Apparently MS never tested it with anything beyond a few projects. Absolutely worthless in my opinion. – C Johnson Jun 3 '13 at 9:15
- 1 Not only that, it's horribly slow too. I'd make this -10 if I could. I wrote my own project dependency walker (For our own build system) and it was lightning fast compared to the one in visual studio. – C Johnson Jun 3 '13 at 9:20

@CJohnson I agree that it's slow and prone to throwing exceptions for large solutions, but it's still better than nothing. I got it to work by closing all applications, stopping some services and restarting Visual Studio. – WynandB Aug 21 '13 at 7:59 ✎



18

I wrote a tool that might help you. [VS Solution Dependency Visualizer](#) analyzes project dependencies within a solution and create a dependency chart from this information, as well as a text report.

answered Mar 25 '11 at 7:35



devio
33.5k 5 68 131

This is great. Thanks! – [Dennis G](#) Jul 15 '12 at 17:06

What versions of Visual Studio and what kind of projects does this work with ? VS 2005 / C++ over here and the tool doesn't seem to do anything... – [ssc](#) May 10 '13 at 14:42

it definitely works with vs 2008/2010 and .csproj/.vbproj. didn't test with vs2005, but currently .vcproj files are not recognized – [devio](#) May 10 '13 at 17:14

This tool is wonderful – [Alex](#) Sep 12 '14 at 16:40

works very well, thank you! was up and running in a few seconds... – [thalm](#) Oct 16 '15 at 16:20

I had a similar issue, but it was further complicated because several projects were referencing different versions of the same assembly.

To get an output that includes version information and checks for possible runtime assembly loading issues, I made this tool:

<https://github.com/smpickett/DependencyViewer>

(direct link to github release: <https://github.com/smpickett/DependencyViewer/releases>)

edited Aug 11 '16 at 2:10

answered Feb 13 '15 at 2:42



[Pickett](#)

91 1 3

1 Nice tool! Simple and efficient. Thanks for that! +1 from me. – [Buka](#) Dec 28 '16 at 15:39

Really great tool! I dreamed for something like that for years. Thank you very much for sharing it! – [alehro](#) Oct 17 '18 at 8:19

You can create a dependency graph of your projects in VS 2010 Ultimate. Architecture Explorer lets you browse your solution, select projects and the relationships that you want to visualize, and then create a dependency graph from your selection.

For more info, see the following topics:

How to: Generate Graph Documents from Code: <http://msdn.microsoft.com/en-us/library/dd409453%28VS.100%29.aspx#SeeSpecificSource>

How to: Find Code Using Architecture Explorer: <http://msdn.microsoft.com/en-us/library/dd409431%28VS.100%29.aspx>

RC download: <http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=457bab91-5eb2-4b36-b0f4-d6f34683c62a>.

Visual Studio 2010 Architectural Discovery & Modeling Tools forum: <http://social.msdn.microsoft.com/Forums/en-US/vsarch/threads>

edited Feb 20 '10 at 1:02

answered Feb 18 '10 at 23:51



Esther Fan - MSFT

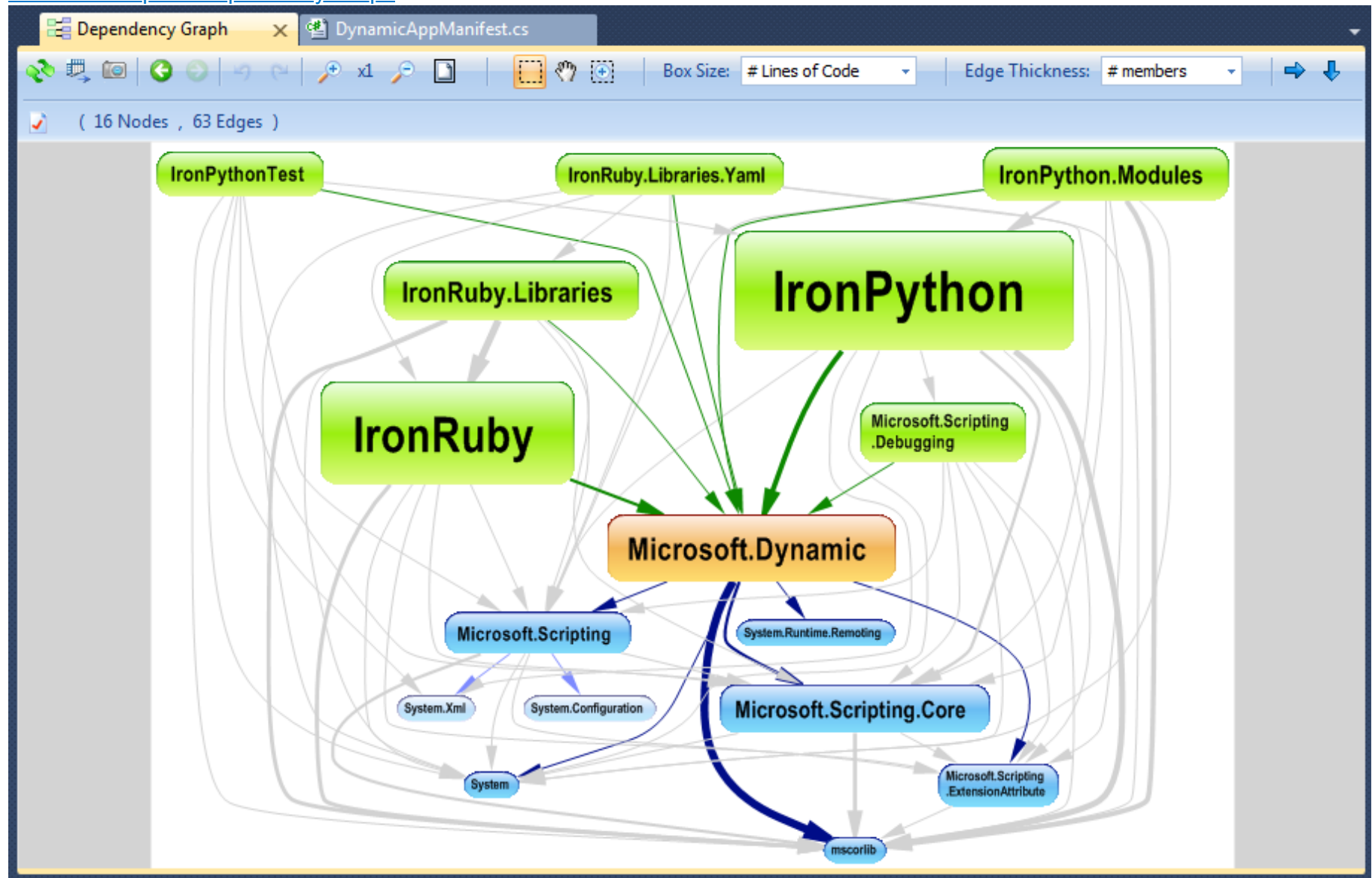
7,248 4 22 23

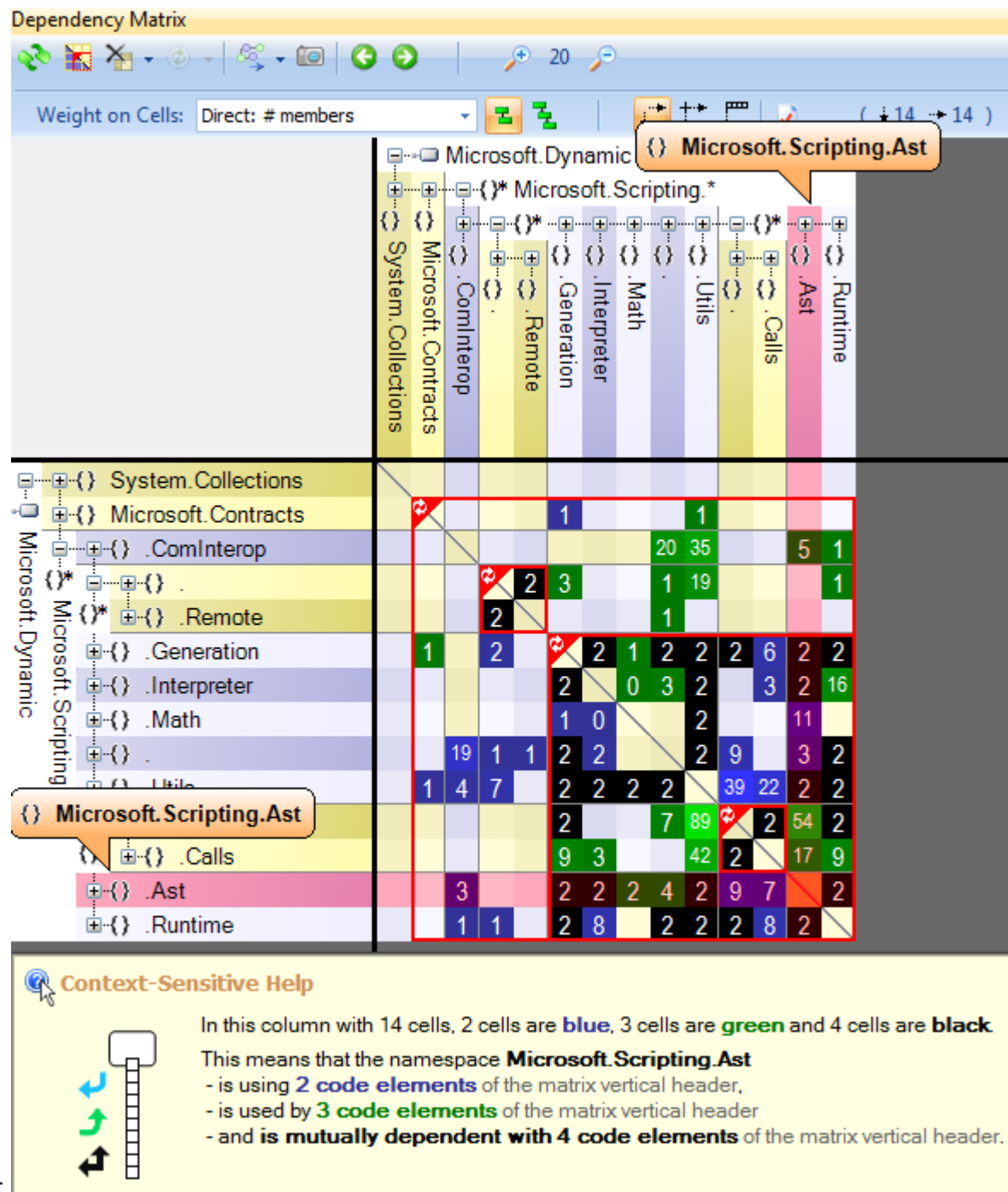
VS 2012 Professional too ? Or only VS 2012 Ultimate? – [Kiquenet](#) Mar 7 '13 at 8:27

@Kiquenet You can create dependency graphs in VS 2012 Ultimate. You can open and make limited changes in Premium and Pro. – [Esther Fan - MSFT](#) Mar 18 '13 at 20:06

To complete the erawan answer on graphs generated by NDepend see screenshots below. You can [download and use the free trial edition](#) of NDepend for a while.

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[More on NDepend Dependency Graph](#)



[More on NDepend Dependency Matrix:](https://stackoverflow.com/questions/598129/dependency-graph-of-visual-studio-projects)

Disclaimer: I am part of the tool team

edited Sep 27 '11 at 12:48

answered Sep 6 '10 at 13:55

Patrick from NDepend
team

10.9k 3 47 62

But does it work on native .vcxproj files? – C Johnson Jun 3 '13 at 9:17

NDepend is for .NET, its clone CppDepend is for C++ and works with .vcxproj files – Patrick from NDepend team Jun 12 '17 at 13:22

If you simply want a dependency graph I've found this is one of the cleanest ways to get one:

3

[Dependency Analyser](#)

answered Oct 12 '09 at 11:00



Kieran Benton

4,188 11 48 71

The [Powershell solution](#) is the best. I adapted it into a bash script that works on my machine (TM):

3

```
#!/bin/bash

for i in `find . -type f -iname "*.csproj"`; do
    # get only filename
    project=`basename $i`

    # remove csproj extension
    project=${project%.csproj}

    references=`cat $i | grep '<ProjectReference' | cut -d "\"" -f 2`
    for ref in $references; do
        # keep only filename (assume Windows paths)
        ref=${ref##*\\}

        # remove csproj extension
        ref=${ref%.csproj}

        echo "[ $project ] -> [ $ref ]"
    done
done
```

done

edited May 23 '17 at 12:10



answered May 30 '15 at 5:36



3 You can create a nice graph of the references in your projects. I've described the way I did it on my blog
<http://www.mellekoning.nl/index.php/2010/03/11/project-references-in-ddd/>

answered Mar 11 '10 at 21:33



All you need to do is change the output to DGML for display inside VS: blogs.msdn.com/b/camerons/archive/2008/12/16/... – Richard Sep 6 '10 at 15:10

1 VS 2019 has renamed dependency graph module to Code Map

here is official documentation : <https://docs.microsoft.com/en-us/visualstudio/modeling/map-dependencies-across-your-solutions?view=vs-2019>

answered Oct 16 at 9:33



-1 I've checked all the answers but none of the options were satisfying to me so I wrote my own tool to preview project-project dependencies.

<https://github.com/Audionysos/VSPProjectReferencesViewer>

It's early stage but it worked for my needs :)

answered Jan 15 at 21:06



protected by [CharithJ](#) Oct 26 '15 at 4:03

Thank you for your interest in this question. Because it has attracted low-quality or spam answers that had to be removed, posting an answer now requires 10 [reputation](#) on this site (the [association bonus does not count](#)).

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