



#77 PARMA 2025

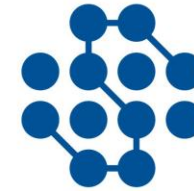
SQL Server developers' Toolbox

Riccardo Perico

BI Architect @ Lucient Italia | Microsoft Data Platform MVP



Sponsor & Org



DATA SKILLS
UNDERSTANDING THE WORLD

M D
massive dynamic holding H



dan|ela
ma|visi
COMMUNICATION

Lucient¹
ITALIA



Riccardo Perico

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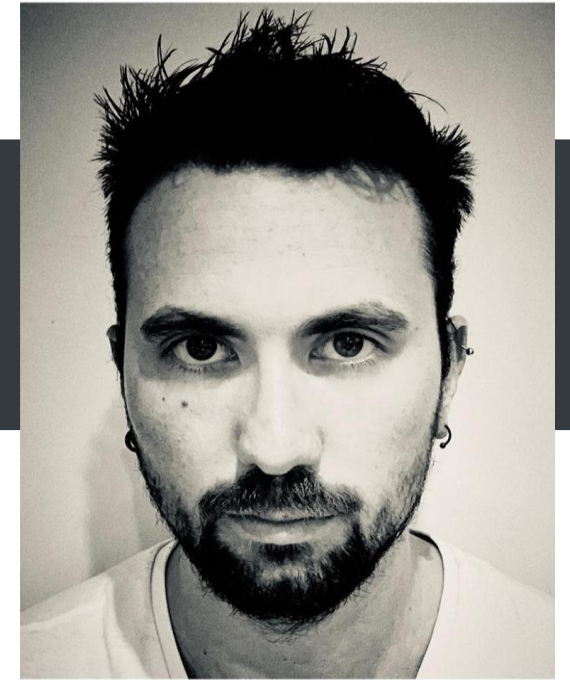
github.com/R1k91

[@r1k91.bsky.social](https://bsky.social/@r1k91)

[@R1k91](https://x.com/R1k91)

[linkedin.com/in/riccardo-perico](https://www.linkedin.com/in/riccardo-perico)

medium.com/riccardo-perico



BI Architect @ **Lucient**[®]
ITALIA
+15 years in Microsoft “Data Realm”

Giving my little contribution to the community

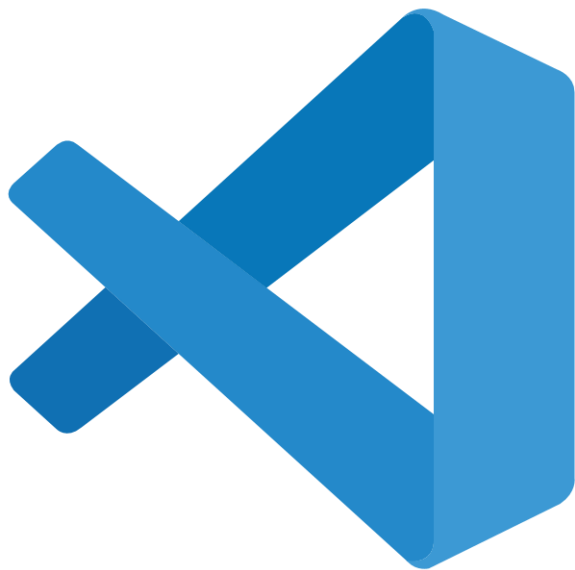


DATA SATURDAYS

Dev>Marche



Where is Microsoft investing?



SSMS is alive and well

2 major releases in 12 months

V21

- Based on new Visual Studio shell
- Leverage Visual Studio installer
- GitHub integration
- Vertical tabs layout
- Export from details
- Dark theme

V22

- AMD64 support in preview
- GitHub Copilot integration
- New connection dialog
- Details zoom decoupled



Is VSCode really ready?

Azure Data Studio is dead, and now?

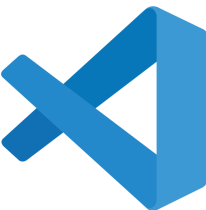
Is Visual Studio Code ready to rock?



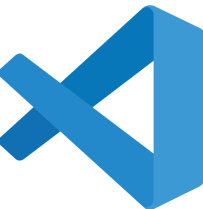
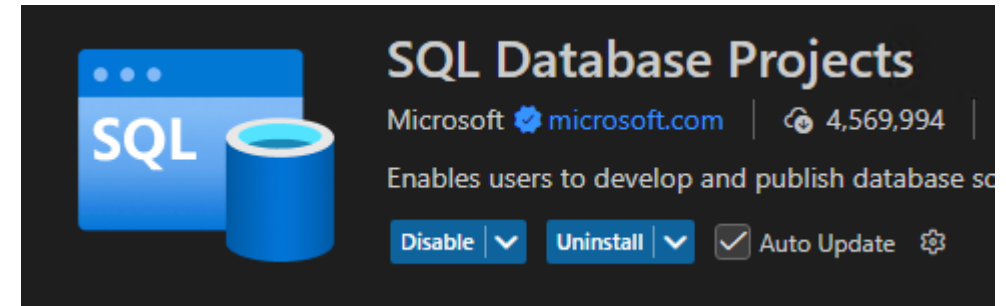
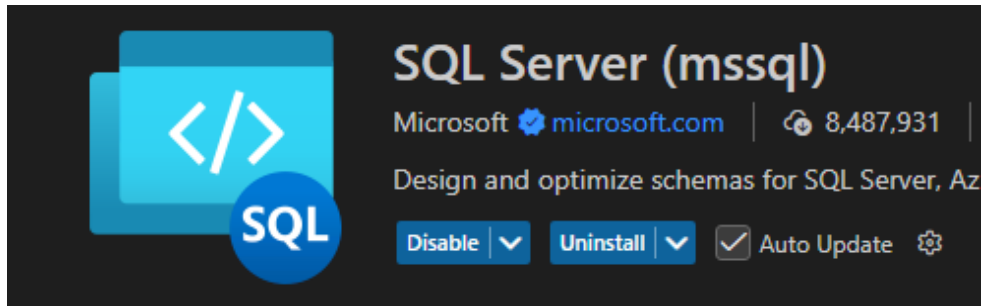
Riccardo Perico 7 min read · Feb 28, 2025



1



Two extensions needed



Mssql extension



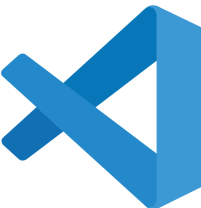
1 | master
2 | SELECT TOP (1000) [id]
3 | , [descr]
4 | FROM [MCP].[dbo].[myTable]

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS **QUERY RESULTS** SNOWFLAKE AZURE

Results (1) Messages Open in New Tab

	id	descr
1	1	Sample 1
2	2	Sample 2
3	3	Sample 3
4	4	Sample 4
5	5	Sample 5
6	6	Sample 6
7	7	Sample 7
8	8	Sample 8
9	9	Sample 9
10	10	Sample 10

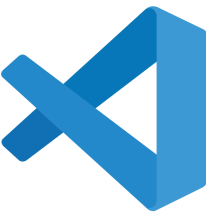
Switch to text
Save as CSV
Save as JSON
Save as Excel



Database Projects extension



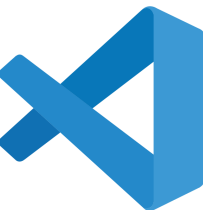
- No offline IntelliSense
- Project explorer and navigation not fluid
- Buggy schema compare
- Few templates for create item
- Missing database settings page



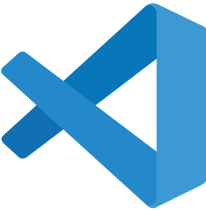
Database Projects SDK-style



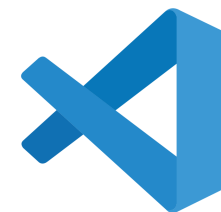
- New database project format
- Make it standard across platforms (SQL Server, Azure SQL, Fabric WH...)
- But... it is preview
- ...super preview



```
WideWorldImportersDW.sqlproj X
WideWorldImportersDW > WideWorldImportersDW.sqlproj > Project > PropertyGroup > DefineDebug
2 <Project DefaultTargets="Build" xmlns="http://schemas.microsoft.com/developer/msbuild/2003"
3 <PropertyGroup>
16 <ModelCollation>1033, CI</ModelCollation>
17 <DefaultFileStructure>BySchemaAndSchemaType</DefaultFileStructure>
18 <DeployToDatabase>True</DeployToDatabase>
19 <TargetFrameworkVersion>v4.5</TargetFrameworkVersion>
20 <TargetLanguage>CS</TargetLanguage>
21 <AppDesignerFolder>Properties</AppDesignerFolder>
22 <SqlServerVerification>False</SqlServerVerification>
23 <IncludeCompositeObjects>True</IncludeCompositeObjects>
24 <TargetDatabaseSet>True</TargetDatabaseSet>
25 </PropertyGroup>
26 <PropertyGroup Condition=" '$(Configuration)|$(Platform)' == 'Release|AnyCPU' ">
27 <OutputPath>bin\Release\</OutputPath>
28 <BuildScriptName>$(MSBuildProjectName).sql</BuildScriptName>
29 <TreatWarningsAsErrors>False</TreatWarningsAsErrors>
30 <DebugType>pdbonly</DebugType>
31 <Optimize>true</Optimize>
32 <DefineDebug>false</DefineDebug>
33 <DefineTrace>true</DefineTrace>
34 <ErrorReport>prompt</ErrorReport>
35 <WarningLevel>4</WarningLevel>
36 </PropertyGroup>
37 <PropertyGroup Condition=" '$(Configuration)|$(Platform)' == 'Debug|AnyCPU' ">
38 <OutputPath>bin\Debug\</OutputPath>
39 <BuildScriptName>$(MSBuildProjectName).sql</BuildScriptName>
40 <TreatWarningsAsErrors>false</TreatWarningsAsErrors>
41 <DebugSymbols>true</DebugSymbols>
42 <DebugType>full</DebugType>
43 <Optimize>false</Optimize>
44 <DefineDebug>true</DefineDebug>
45 <DefineTrace>true</DefineTrace>
46 <ErrorReport>prompt</ErrorReport>
47 <WarningLevel>4</WarningLevel>
48 </PropertyGroup>
49 <PropertyGroup>
50 <VisualStudioVersion Condition="'$(VisualStudioVersion)' == ''>11.0</VisualStudioVersion>
51 <!-- Default to the v11.0 targets path if the targets file for the current VS version
52 <SSDTEExists Condition="Exists('$(MSBuildExtensionsPath)\Microsoft\VisualStudio\v$(VisualStudioVersion)
53 <VisualStudioVersion Condition="'$(SSDTEExists)' == ''>11.0</VisualStudioVersion>
54 </PropertyGroup>
55 <Import Condition="'$(NetCoreBuild)' == 'true' " Project="$(NETCoreTargetsPath)\Microsoft
56 <Import Condition="'$(NetCoreBuild)' != 'true' AND '$(SQLDBExtensionsRefPath)' != '' " Pr
57 <Import Condition="'$(NetCoreBuild)' != 'true' AND '$(SQLDBExtensionsRefPath)' == '' " Pr
58 <ItemGroup>
59 | <PackageReference Condition="'$(NetCoreBuild)' == 'true' " Include="Microsoft.NETFramework
60 </ItemGroup>
61 <ItemGroup>
62 | <Folder Include="Properties" />
63 </ItemGroup>
64 <ItemGroup>
65 | <None Include=".vscode\tasks.json" />
66 </ItemGroup>
67 <ItemGroup>
68 <Build Include="Application\StoredProcedures\Configuration_ApplyPartitionedColumnstore
69 <Build Include="Application\StoredProcedures\Configuration_ApplyPolybase.sql" />
70 <Build Include="Application\StoredProcedures\Configuration_ConfigureForEnterpriseEditi
71 <Build Include="Application\StoredProcedures\Configuration_EnableInMemory.sql" />
72 <Build Include="Application\StoredProcedures\Configuration_PopulateLargeSaleTable.sql"
73 <Build Include="Application\StoredProcedures\Configuration_ReseedETL.sql" />
74 <Build Include="Dimension\Tables\City.sql" />
WWISDK > WWISDK.sqlproj X
WWISDK > WWISDK.sqlproj > Project
1 <?xml version="1.0" encoding="utf-8"?>
2 <Project DefaultTargets="Build">
3 <Sdk Name="Microsoft.Build.Sql" Version="1.0.0" />
4 <PropertyGroup>
5 <Name>WWISDK</Name>
6 <ProjectGuid>{55A4A879-0A35-40CB-A407-766FE9DBF5F6}</ProjectGuid>
7 <DSP>Microsoft.Data.Tools.Schema.Sql.Sql160DatabaseSchemaProvider</DSP>
8 <ModelCollation>1033, CI</ModelCollation>
9 </PropertyGroup>
10 <ItemGroup>
11 | <None Include=".vscode\tasks.json" />
12 </ItemGroup>
13 <Target Name="BeforeBuild">
14 | <Delete Files="$(BaseIntermediateOutputPath)\project.assets.json" />
15 </Target>
16 </Project>
```

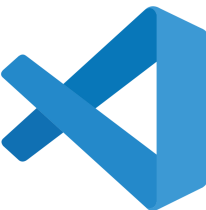


Feature	SDK-style SSDT	SSDT	ADS	VS Code
Create new empty project	X	X	X	X
Create new project from existing database		X	X	X
Open existing Microsoft.Build.Sql projects	X		X	X
Solution management and operations	X	X		
Project run build	X	X	X	X
Publish project to existing server	X	X	X	X
Publish project to a local development instance	X ¹	X ¹	X ²	X ²
Publish options/properties	X	X	X	
Target platform can be updated	X	X	X	X
SQLCMD variables	X	X	X	X
Project references		X	X	
Dacpac references		X	X	X
Package references			X	

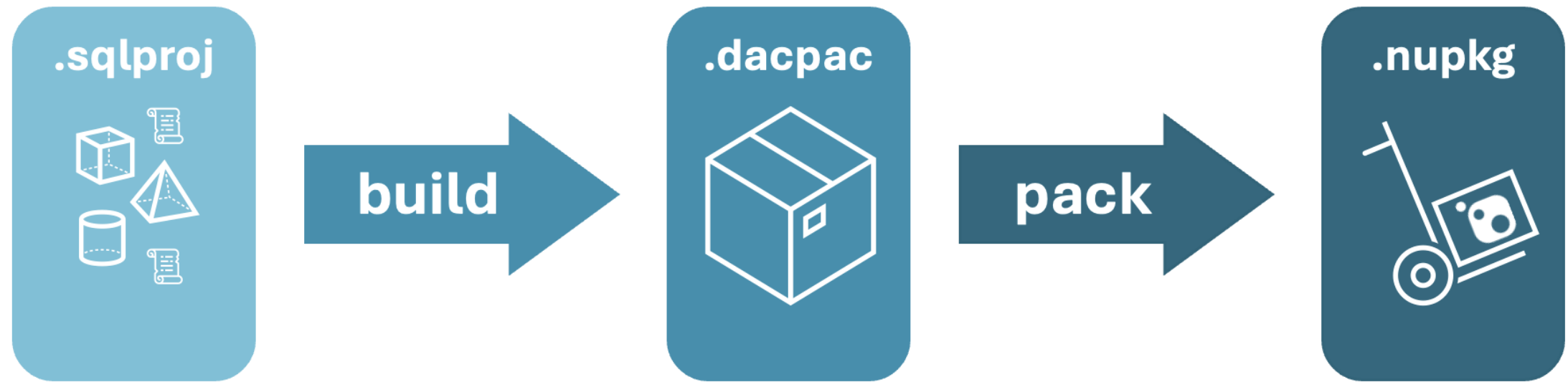


The reference matrix

		Old Style	SDK Style
Old Style	project ref	✓	✗
Old Style	dacpac ref	✓	✗
SDK Style	project ref	✓	Not Recomend
SDK Style	dacpac ref	✓	Not Recomend
SDK Style	package (nuget ref)	✗	✓



Database package reference (NuGet)



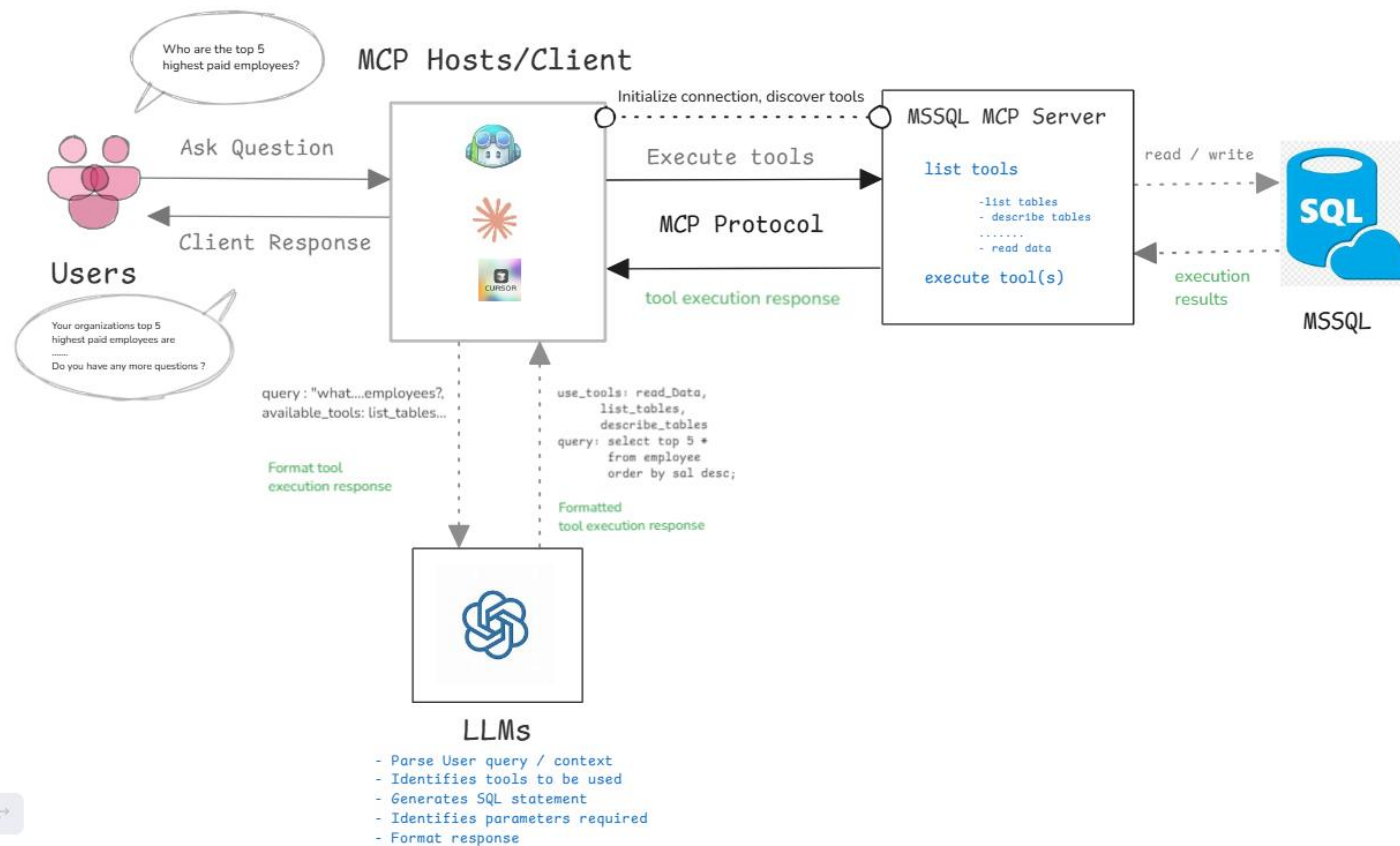


GitHub Copilot

Real world success cases?

- Built T-SQL code based on pattern
- Scanned 82K lines of code to migrate/optimize
 - Documenting process
 - Defining object dependencies
- Defined job processes
 - Got calls stack in job steps
 - For each stored list of views and tables referenced
 - For each view list of tables referenced
 - For each table referenced list of fields referenced

MSSQL MCP Server





Demo

Useful links

- [Azure Data Studio Retirement Announcement](#)
- [Azure Data Studio is dead, and now?](#)
- [SQL Server Management Studio \(SSMS\) 21 Changes](#)
- [Limitations SQL Server Data Tools, SDK-Style \(Preview\)](#)
- [Feature comparison SQL Projects Tools](#)
- [GitHub MssqlMcp repo](#)
- [Introducing MSSQL MCP Server \(Preview\)](#)



Q&A



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Grazie!

