- Download Visual Studio 2017 Community

Visual Studio

Modifying - Visual Studio Community 2017 (15.0.26228.9)

Workloads   Individual components   Language packs

.NET

.NET Core runtime
☑ .NET Framework 3.5 development tools
☑ .NET Framework 4 targeting pack
☑ .NET Framework 4.5 targeting pack
☑ .NET Framework 4.5.1 targeting pack
☑ .NET Framework 4.5.2 targeting pack
☑ .NET Framework 4.6 targeting pack
☑ .NET Framework 4.6.1 SDK
☑ .NET Framework 4.6.1 targeting pack
.NET Native
☑ .NET Portable Library targeting pack

Cloud, database, and server

Azure Authoring Tools
Azure Cloud Services core tools
Azure Compute Emulator
Azure Data Lake Tools
Azure development prerequisites
Azure libraries for .NET
Azure Mobile Apps SDK
Azure Resource Manager core tools
Azure Storage AzCopy
Azure Storage Emulator
Cloud Explorer
☑ CLR data types for SQL Server
Connectivity and publishing tools
Container development tools
☑ Data sources and service references
Data sources for SQL Server support
IIS Express
Redgate SQL Search
Service Fabric Tools
SQL ADAL runtime
SQL Server Command Line Utilities
SQL Server Data Tools
SQL Server Express 2016 LocalDB
SQL Server Native Client
Web Deploy

Visual Studio

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Workloads   Individual components   Language packs

Code tools

Class Designer
☑ ClickOnce Publishing
Dependency Validation
Developer Analytics tools
DGML editor
Git for Windows
GitHub extension for Visual Studio
Help Viewer
LINQ to SQL tools
☑ NuGet package manager
PowerShell tools
PreEmptive Protection - Dotfuscator
☑ Static analysis tools
☑ Text Template Transformation

Compilers, build tools, and runtimes

☑ C# and Visual Basic Roslyn compilers
☑ C++/CLI support
Clang/C2 (experimental)
IncrediBuild
☑ MSBuild
Standard Library Modules
☑ VC++ 2015.3 v140 toolset (x86,x64)
☑ VC++ 2017 v141 toolset (x86,x64)
Visual C++ compilers and libraries for ARM
Visual C++ runtime for UWP
☑ Visual C++ tools for CMake
☑ Windows Universal CRT SDK
Windows XP support for C++

Debugging and testing

☑ C++ profiling tools
JavaScript diagnostics
☑ Just-In-Time debugger
☑ Profiling tools
Testing tools core features

Development activities

ASP.NET and web development tools
☑ C# and Visual Basic
C++ Android development tools
C++ iOS development tools
F# language support
JavaScript and TypeScript language support
Mobile development with JavaScript core features

Visual Studio

Installing - Visual Studio Community 2017 (15.0.26228.9)

Workloads   Individual components   Language packs

Node.js support
Office Developer Tools for Visual Studio
Visual C++ for Linux Development
☑ Visual Studio C++ core features
Visual Studio Tools for Office (VSTO)
Windows Communication Foundation
Windows Workflow Foundation
Xamarin
Xamarin Workbooks

Emulators

Google Android Emulator (API Level 23)
Intel Hardware Accelerated Execution Manager (HAXM)
Visual Studio Emulator for Android
Windows 10 Mobile Emulator (Anniversary Edition)

Games and Graphics

Cocos
☑ Graphics debugger and GPU profiler for DirectX
Image and 3D model editors
Unity editor
Unreal Engine installer
Visual Studio Tools for Unity

SDKs, libraries, and frameworks

Android NDK (R11C)
Android NDK (R11C) (32bit)
Android NDK (R12B)
Android NDK (R12B) (32bit)
Android NDK (R13B)
Android NDK (R13B) (32bit)
Android SDK setup (API level 19 and 21)
Android SDK setup (API level 22)
Android SDK setup (API level 23)
Apache Ant (1.9.3)
Blend for Visual Studio SDK for .NET
Cordova 6.3.1 toolset
☑ Entity Framework 6 tools
☑ Graphics Tools Windows 8.1 SDK
Java SE Development Kit (8.0.920.14)
MFC and ATL support (x86 and x64)
☑ Modeling SDK
TypeScript 2.0 SDK
TypeScript 2.1 SDK
☑ Visual C++ ATL support
☑ Visual Studio SDK

Location

C:\Program Files (x86)\Microsoft Visual Studio\2017\Community

- Make sure that the highlighted components are selected (required because our main development platform is VS 2015)
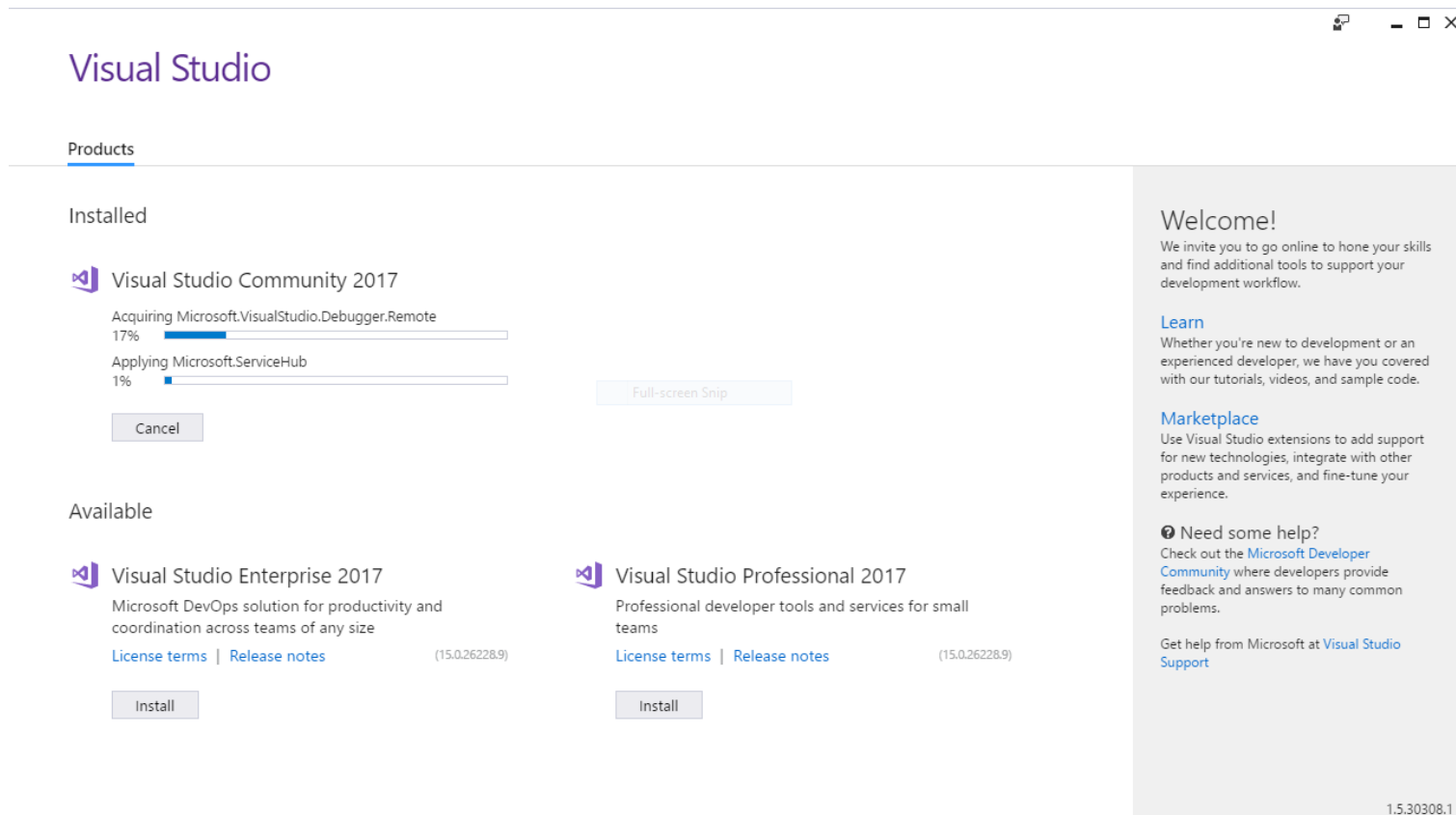
- Visual Studio 2017 is getting installed

Microsoft Build Tools 2015

Select Language:	English ▾	Download

- Download Microsoft Build Tools 2015 from
  https://www.microsoft.com/en-us/download/details.aspx?id=48159
  (required because our main development platform is VS 2015)

- Alternatively, use direct link http://download.microsoft.com/download/4/3/3/4330912d-79ae-4037-8a55-7a8fc6b5eb68/buildtools_full.exe
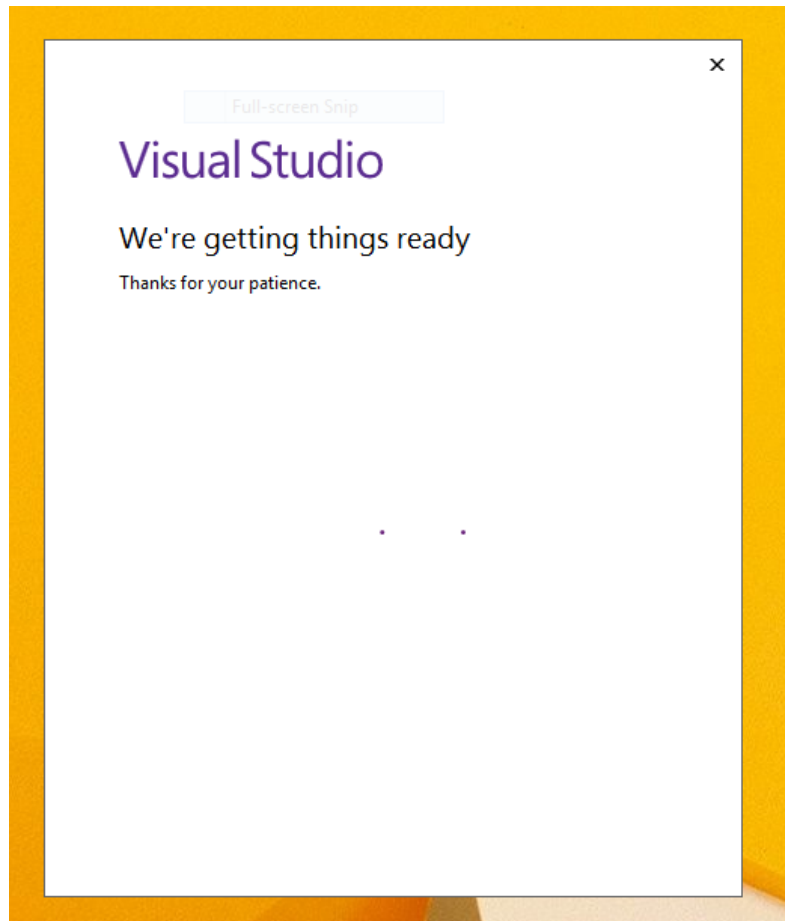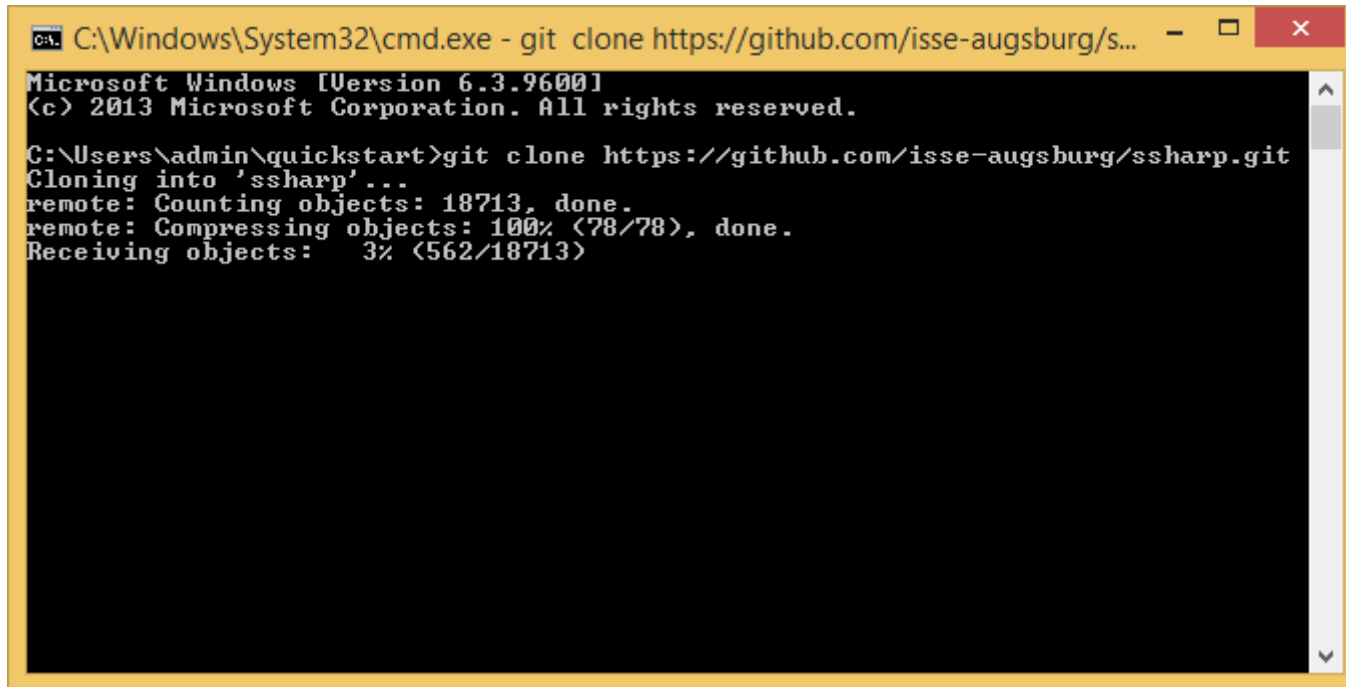
- Start Visual Studio
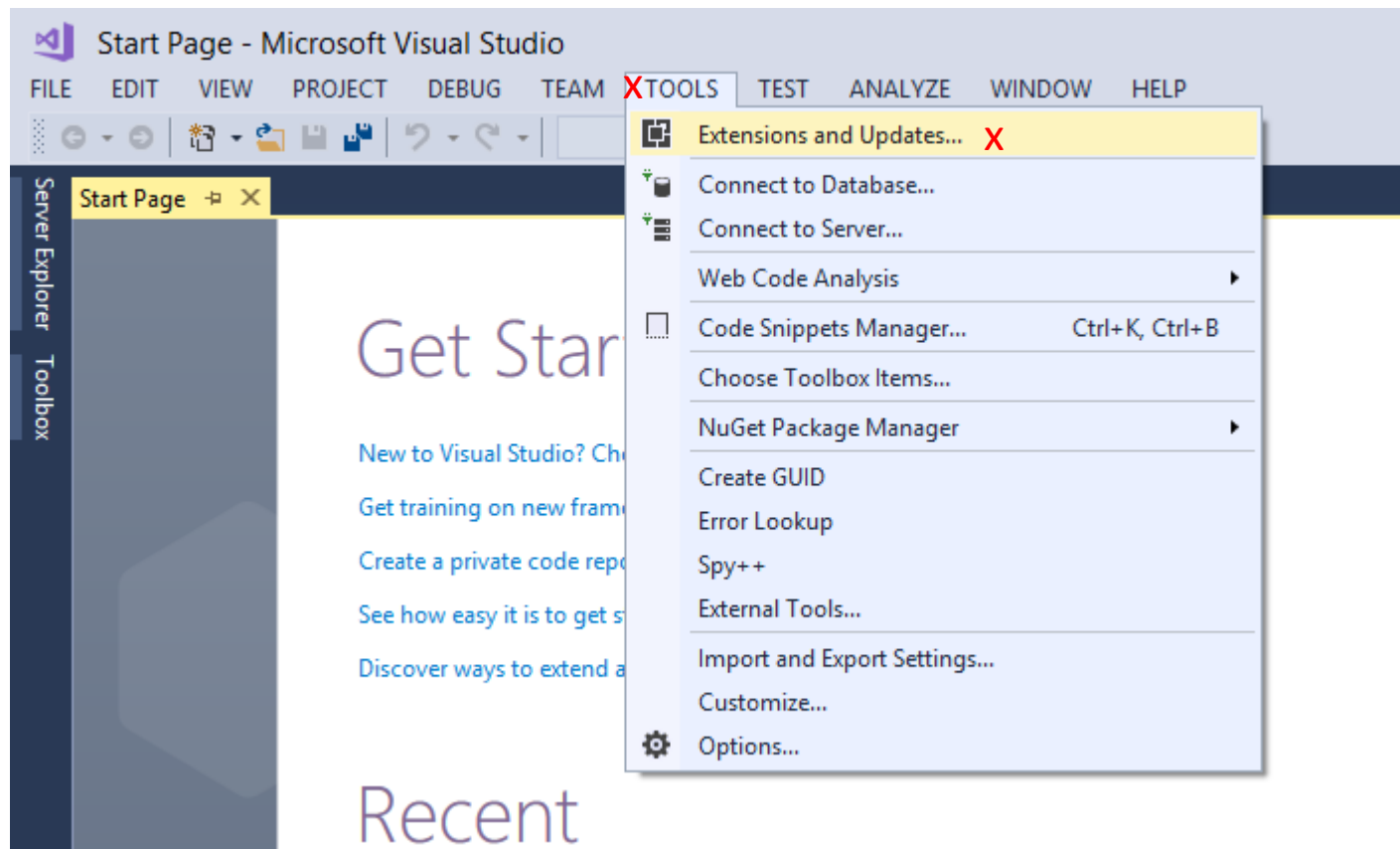
• Open Tools -> Extensions and Updates
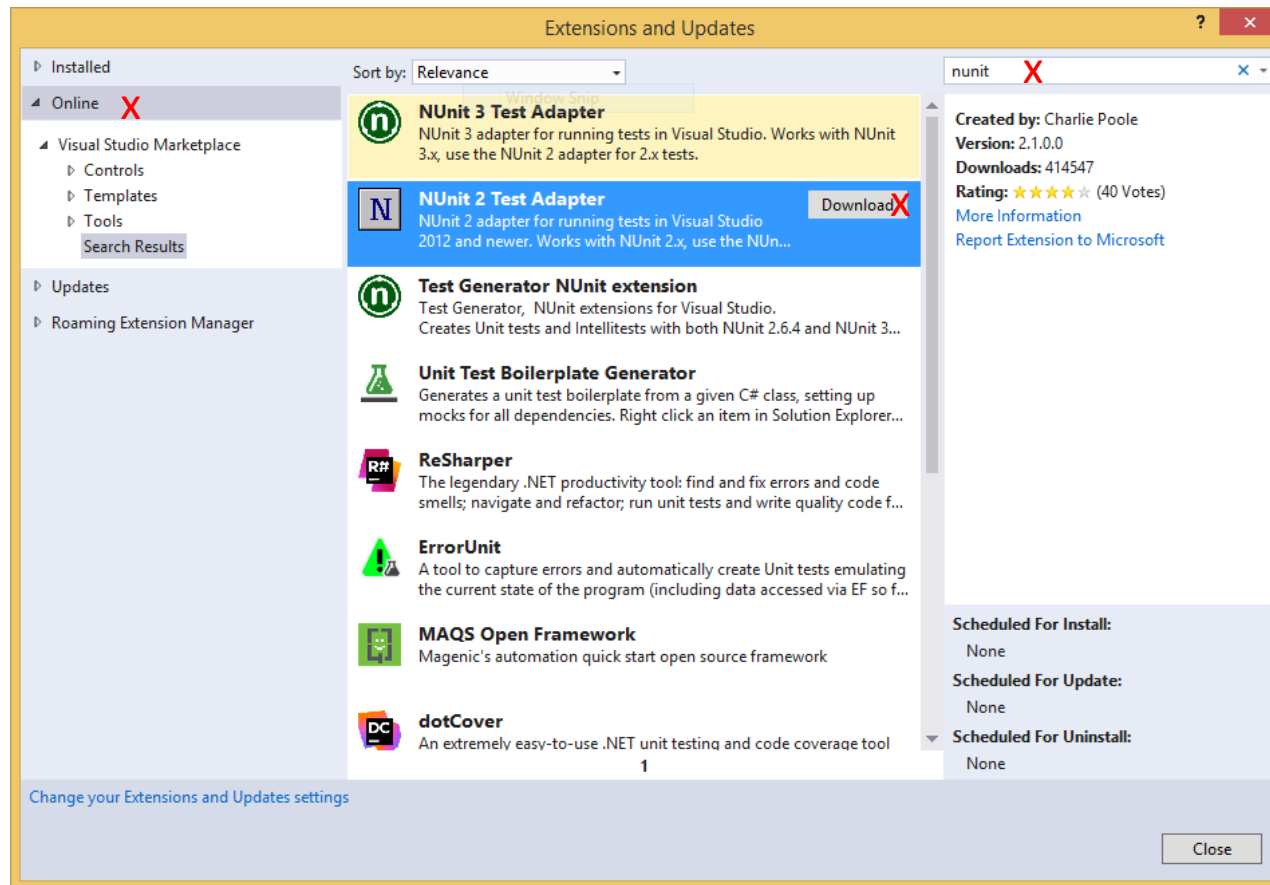
- Select „Online"
- search for „nunit" on the right
- Download Nunit 2 Test Adapter

- Download our git repositiory from
  https://github.com/isse-augsburg/ssharp.git
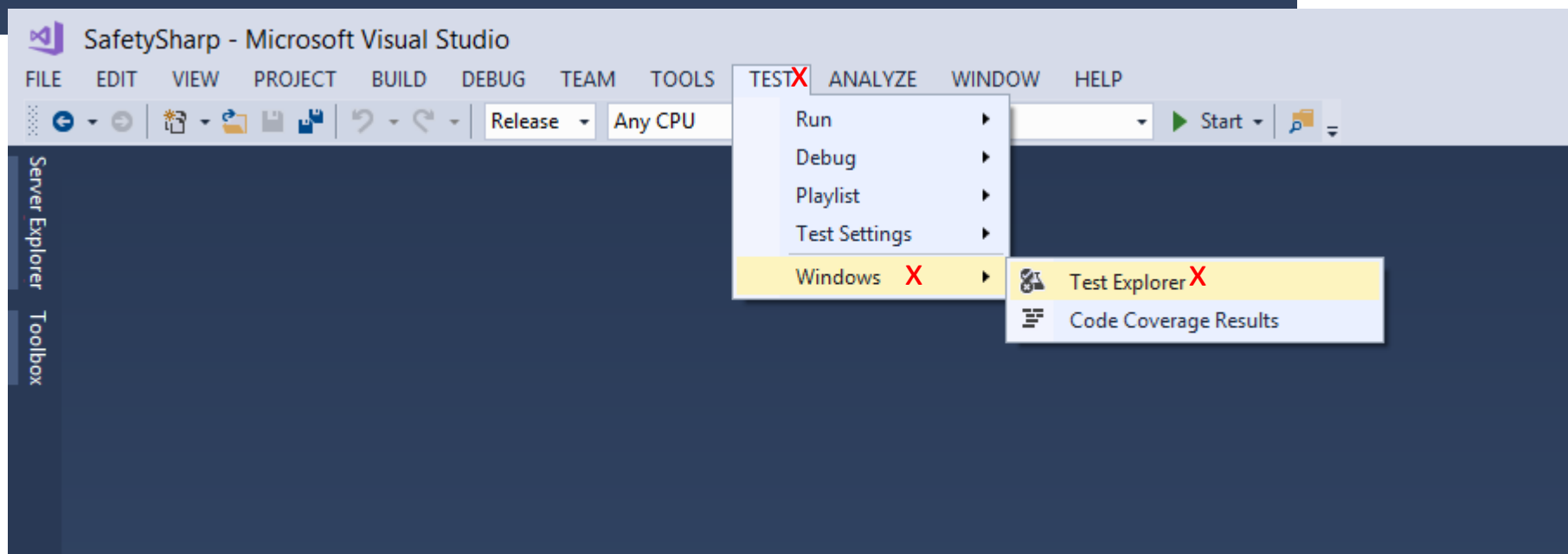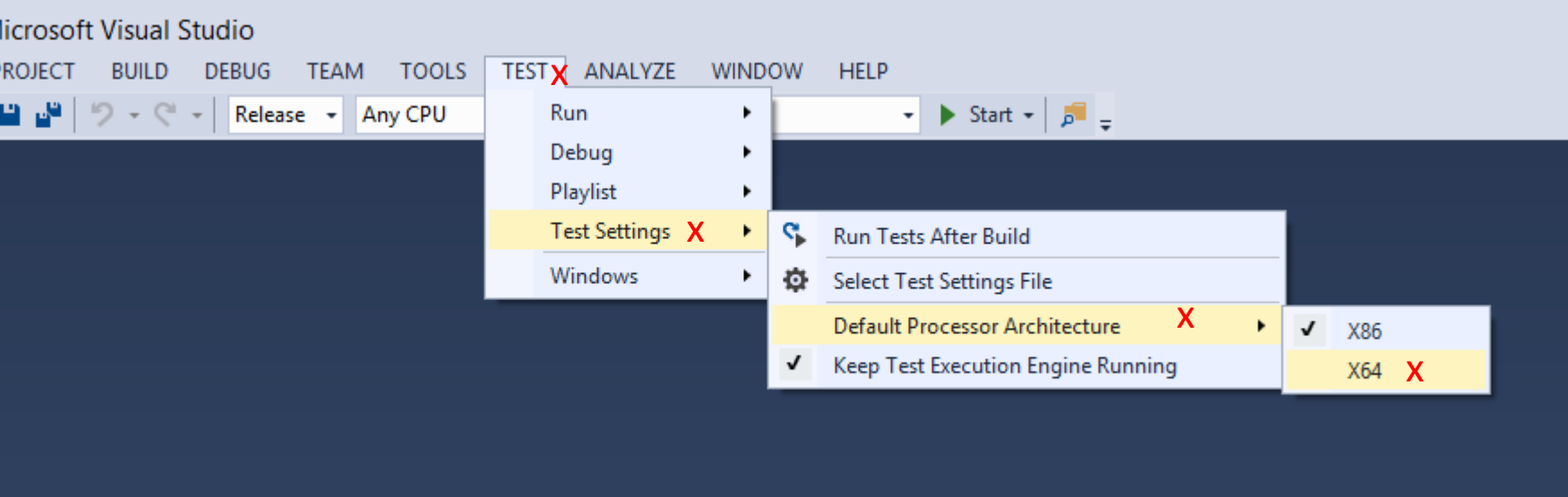- You can use your favorite git tool for that
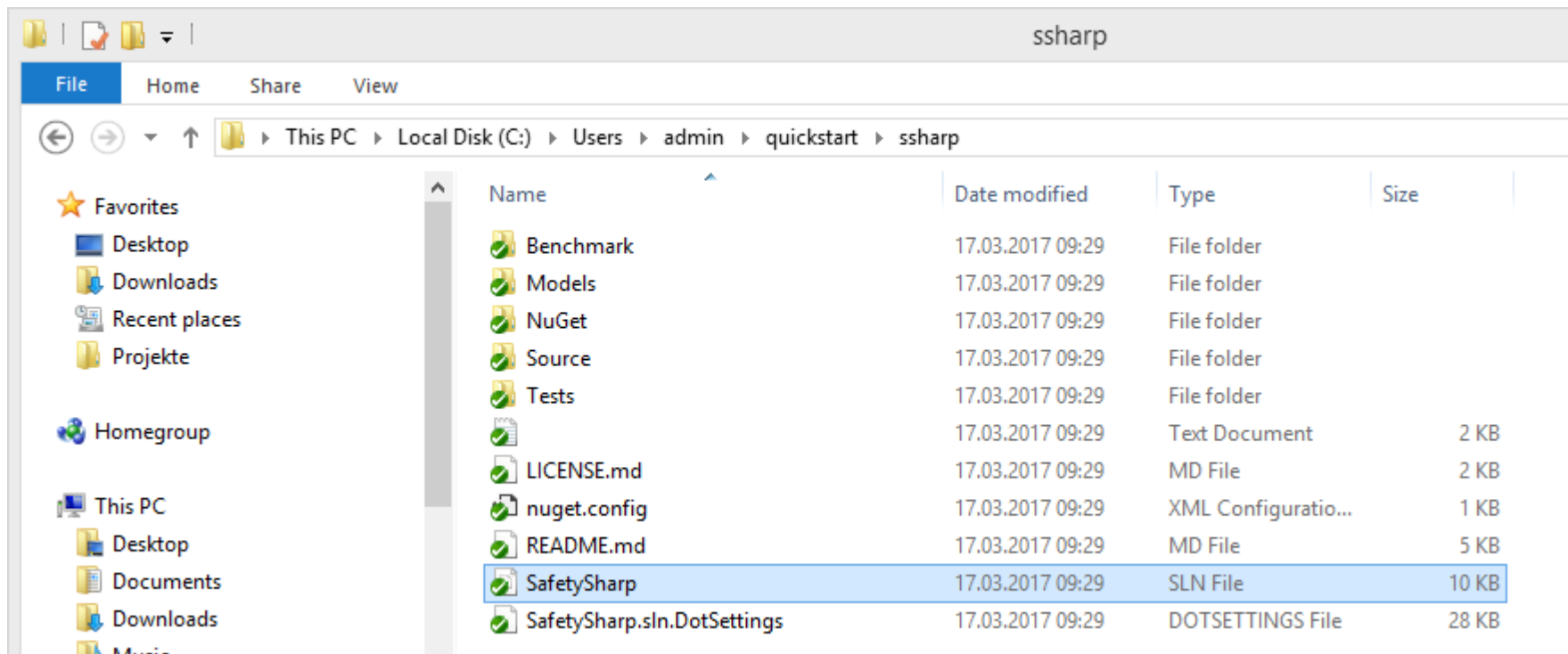
• Open the SafetySharp.sln solution file
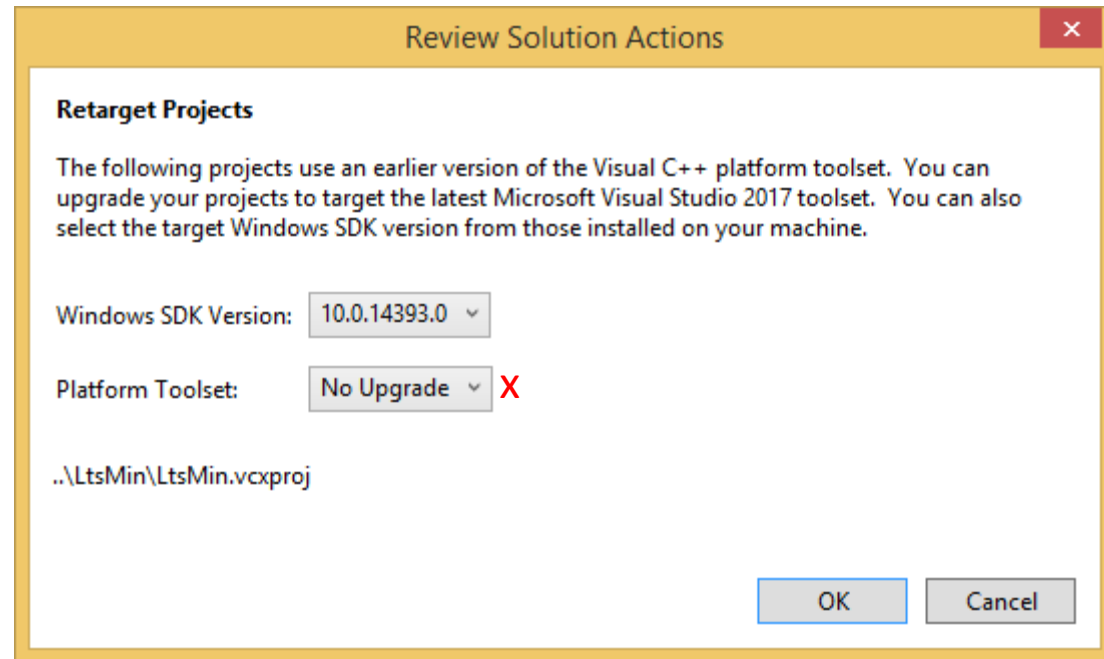
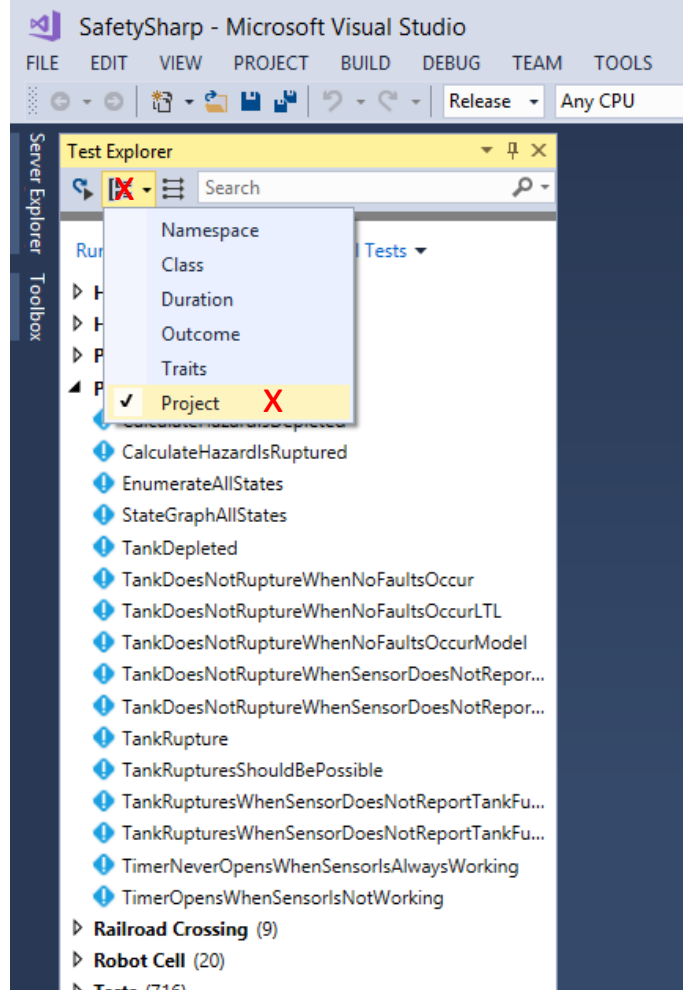- Select Platform Toolset „No Upgrade"
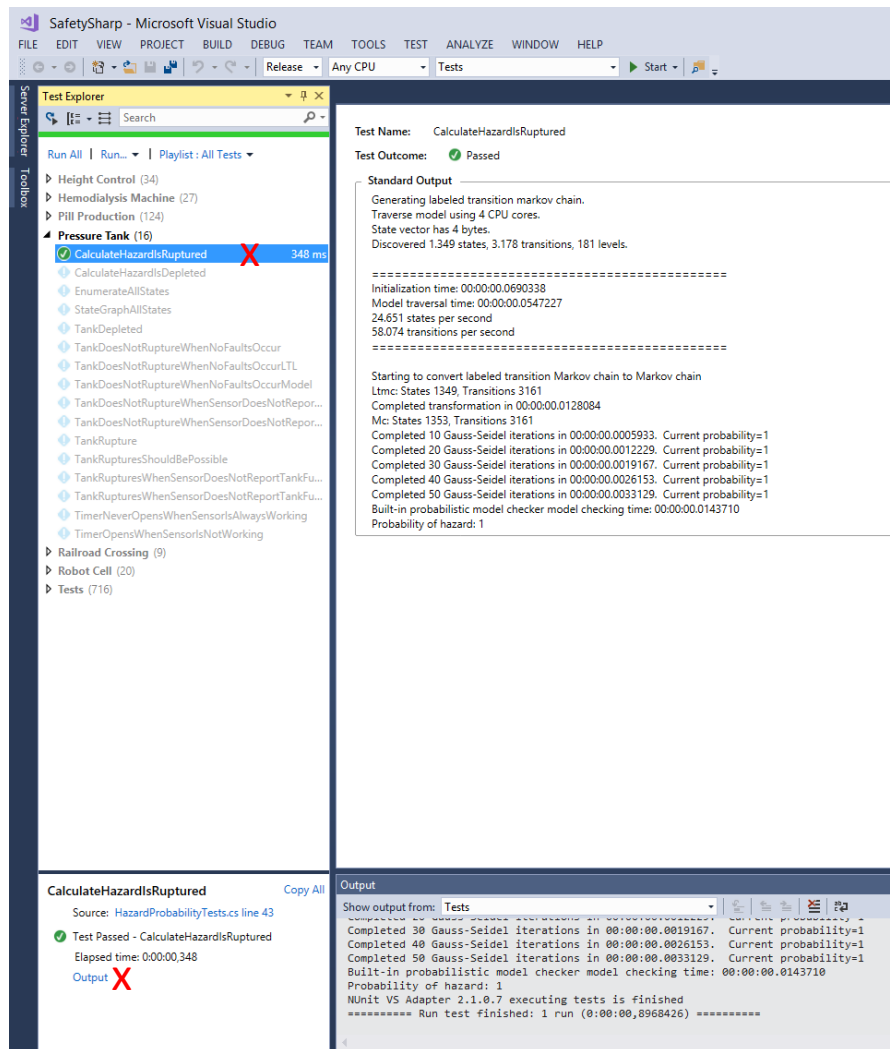 (required because our main development platform is VS 2015)
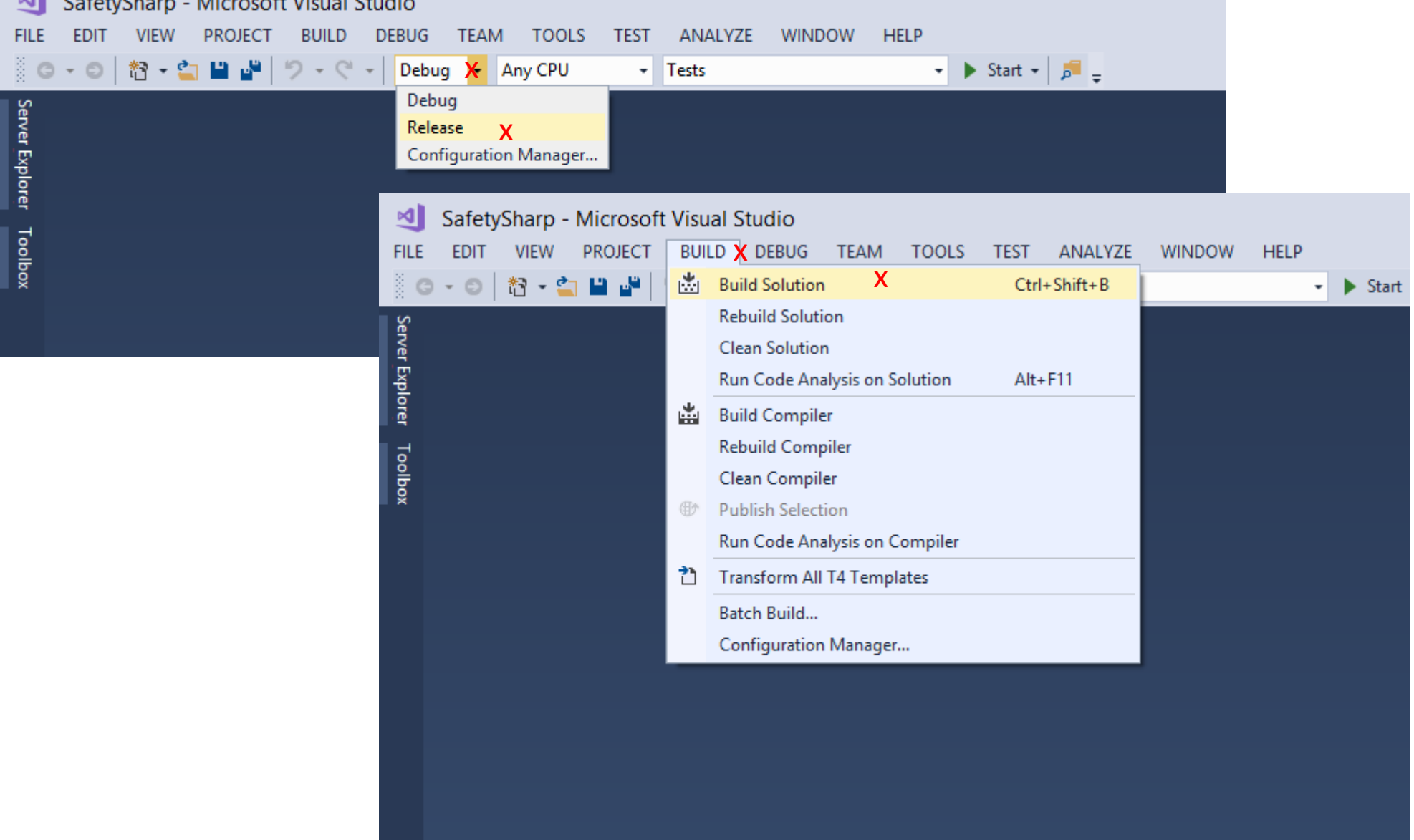
- Select „Release" and run „Build->Build Solution" to create an optimized build

- Select X64 as processor architecture for the tests
- Open the Test Explorer

- Sort the test cases by project
- You may need to restart Visual Studio to see all projects in the test explorer

- Right click on „CalculateProbability…„ and select „run…" to conduct a quantitative analysis
- The hazard probability is shown in the main windows after clicking „Output"

Of the 4 faults contained in the model,
   0 faults are suppressed,
   0 faults are forced, and
   4 faults are nondeterministically activated.

Checking the empty fault set...
Checking 4 sets of cardinality 1...
Checking 6 sets of cardinality 2...
   critical: { SuppressIsFull, SuppressTimeout }
Checking 2 sets of cardinality 3...

===
=======   Deductive Cause Consequence Analysis: Results   =======
===

Elapsed Time: 00:00:00.2297876
Fault Count: 4
Faults: SuppressIsEmpty, SuppressIsFull, SuppressPumping, SuppressTimeout

Checked Fault Sets: 13 (81% of all fault sets)
Minimal Critical Sets: 1
Average Minimal Critical Set Cardinality: 2,0

   (1) { SuppressIsFull, SuppressTimeout }

===
=======   Fault Activation Order Analysis: Results   =======
===

Elapsed Time: 00:00:00.0623714
Order Relationship Count: 1

{ SuppressIsFull, SuppressTimeout }
   (1) SuppressIsFull < SuppressTimeout

- Right click on „CalculateProbability…„ and select „run…" to conduct a DCCA analysis
- The minimal cut sets are shown in the main windows after clicking „Output"