

## Appendix A Installation of Tools

Different tools must be installed to be ready to do TTD in C/C++.

This section will guide you to install the necessary tools:

- Visual Studio Community 2017
  - Incl. Visual C++
  - ReSharper C++
- CMAKE
- CppUTest
- OpenCppCoverage Visual Studio Plugin

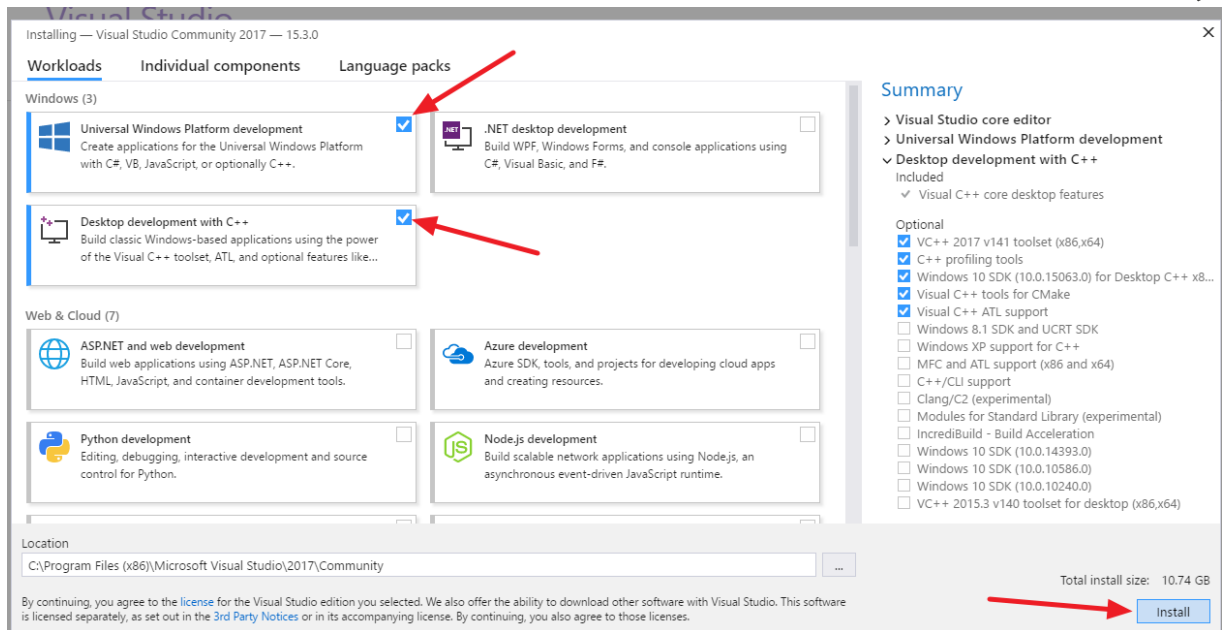
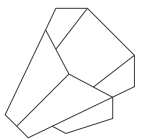
**NOTE: Follow these installation guide lines exactly and only make changes if you really know what you are doing!**

### A.1 Visual Studio 2017 incl. VC++

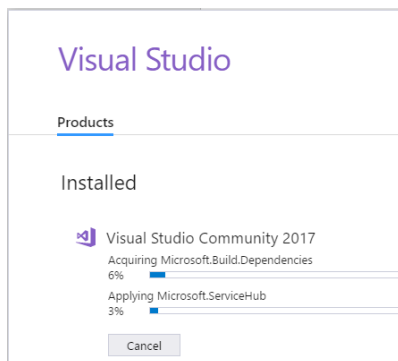
Install *Visual Studio Community 2017* from (<https://www.visualstudio.com/downloads/>)



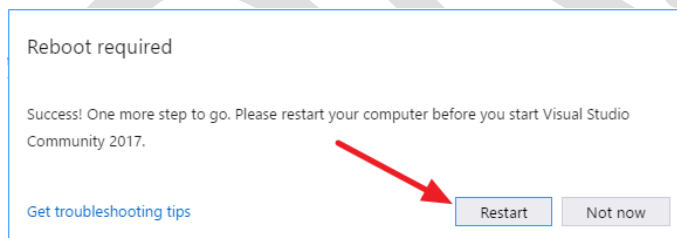
Select Workloads for *Universal Windows Platform development* and *Desktop development with C++*



It takes a while, so grab a cup of coffee ☺

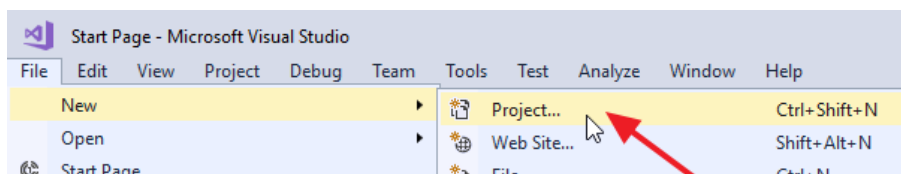


Maybe you need to Restart your computer, maybe not:



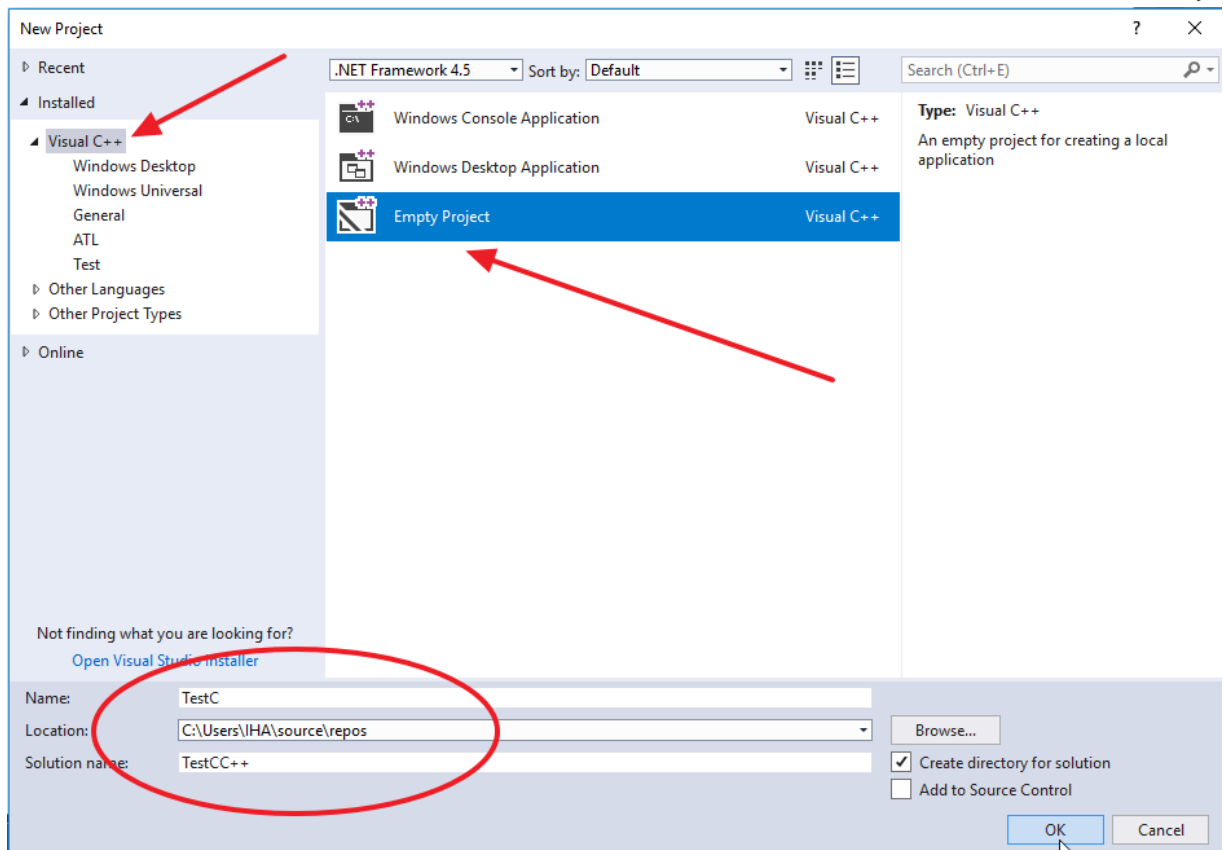
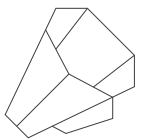
## A.1.1 Test C in Visual Studio

Start Visual Studio and Create a *New Project* from the *File* menu

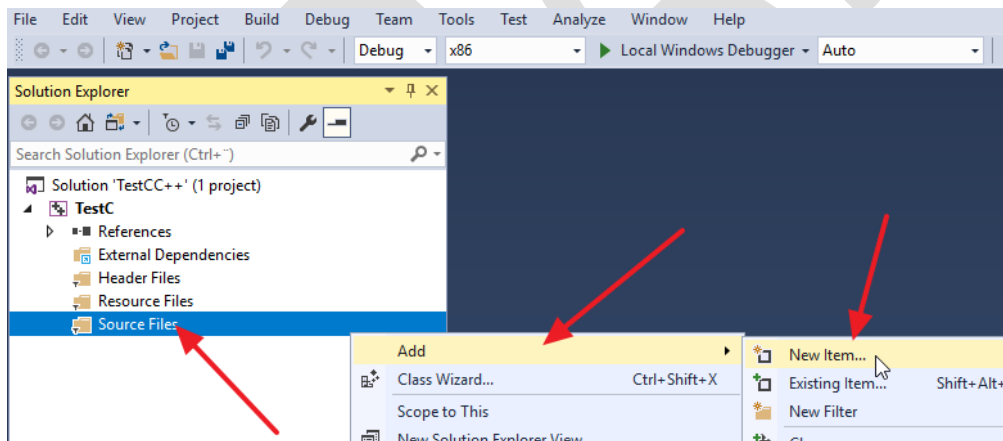


Select *Visual C++ -> Empty Project*.

Give the project and solution a name, here *TestC* and *TestC++*

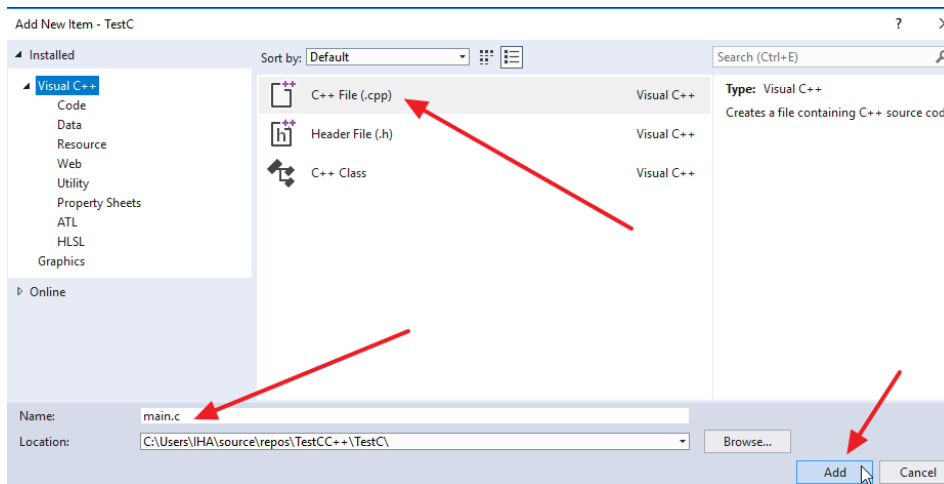
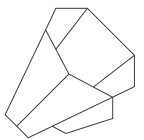


Add a source file (*main.c*) to *Source Files* in the new project

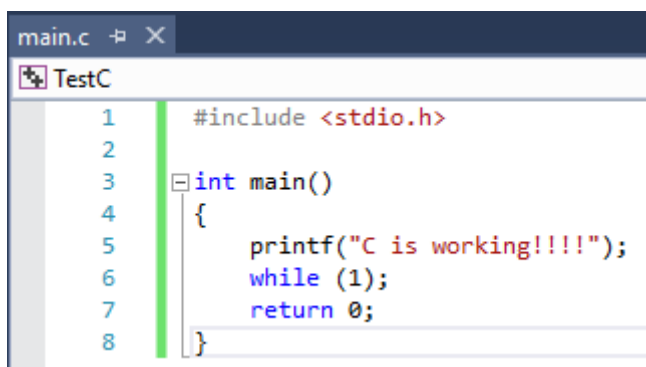


**Important Select C++ File (.cpp) but remember to give file .c extension (main.c).**

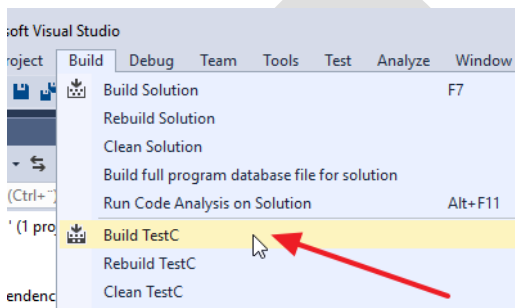
This is the way to tell VC++ that you want it treated as a plain c-file, and compiled with the c-compiler included in VC++.



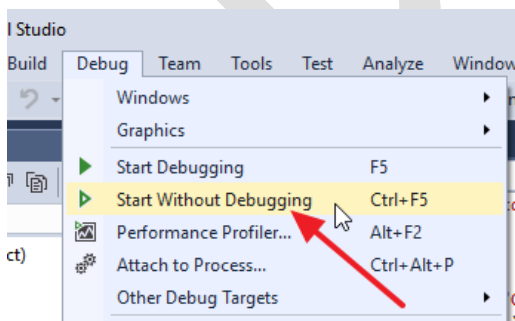
Implement a simple hello world main function:



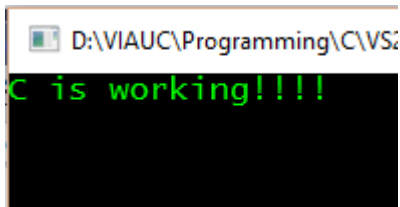
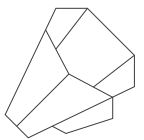
Compile:



And run it without debugging:

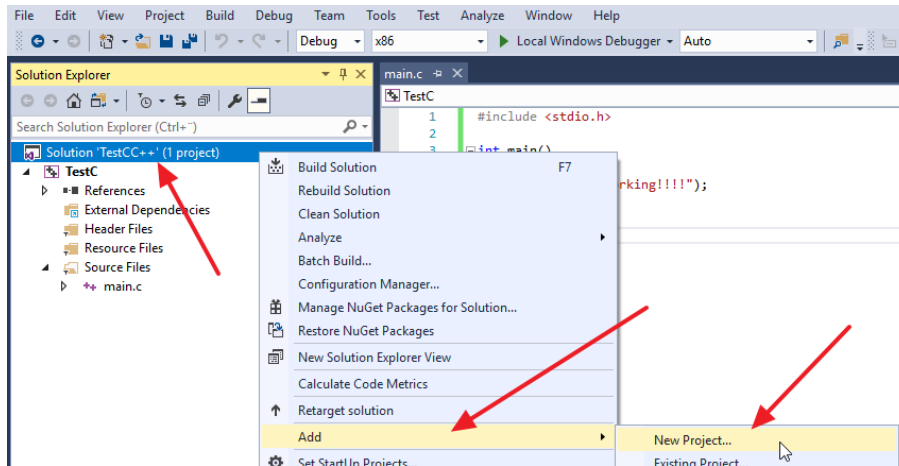


Successful output from the C-program test:

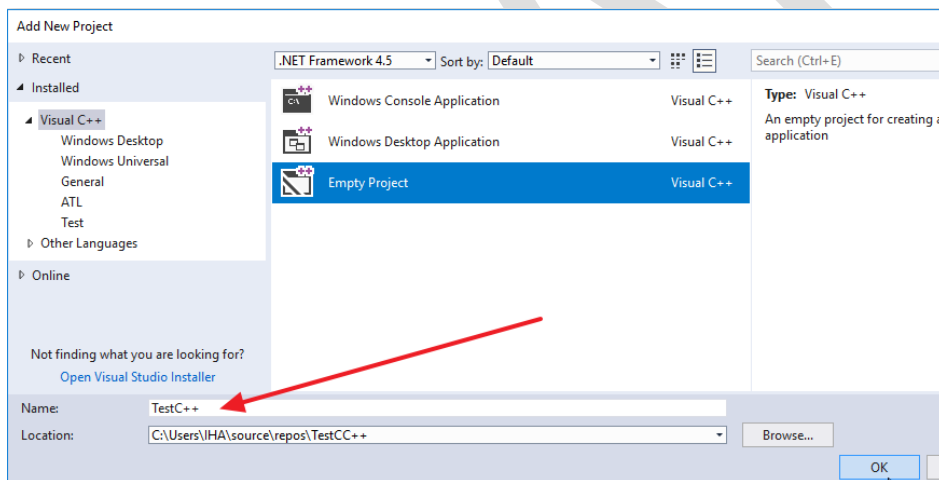


## A.1.2 Test C++ in Visual Studio

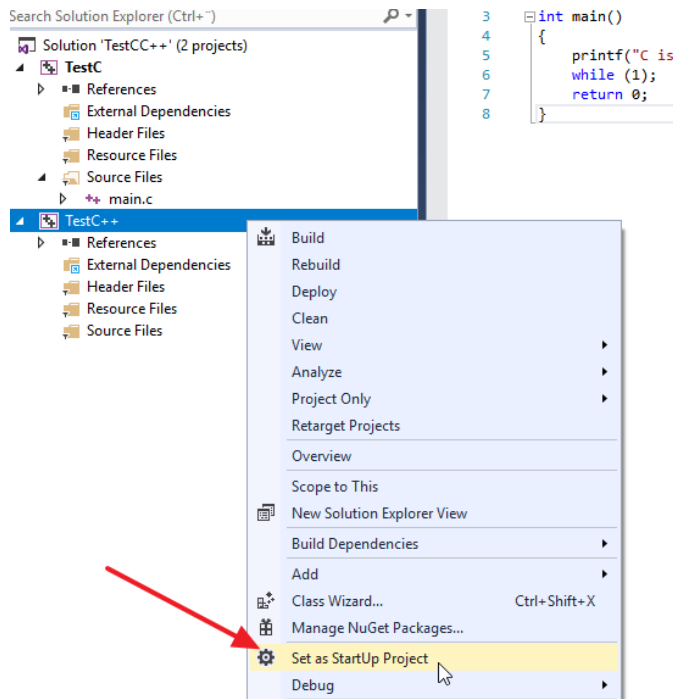
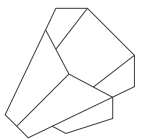
Add a new project to the solution:



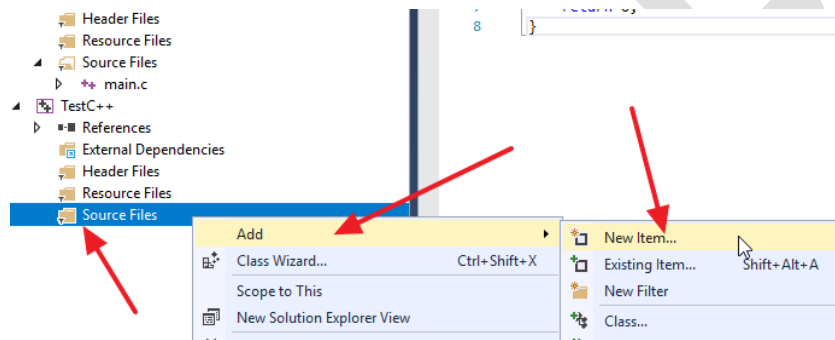
Give the new project a name (here TestC++)



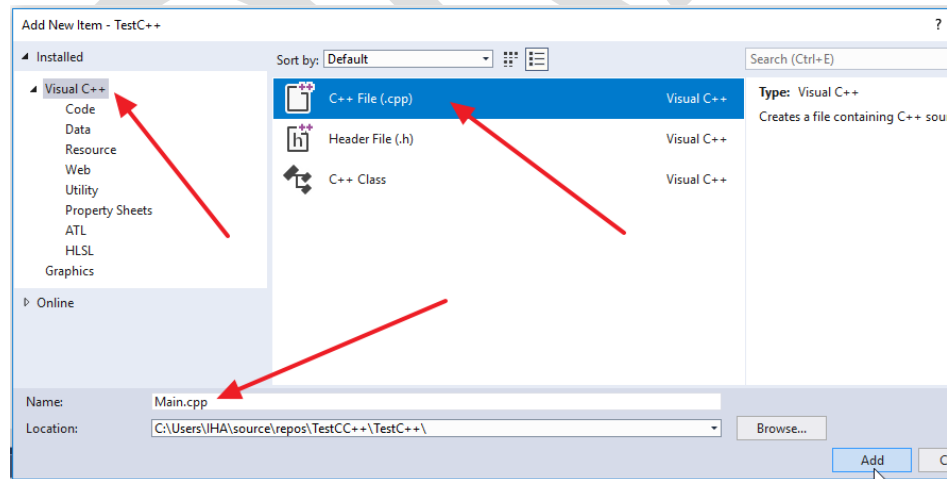
Set the new project as *Startup Project*



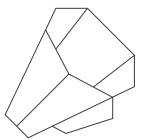
Add a New item... to Source Files



Select C++ File (.cpp) and give it a name (here Main.cpp)



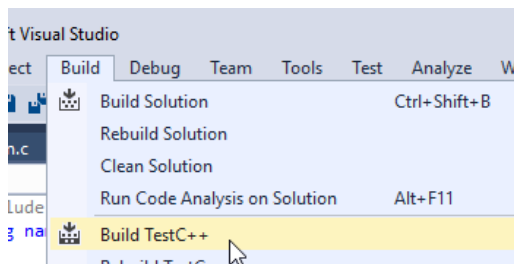
Implement a small C++ hello world main function:



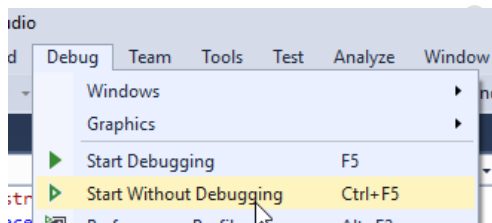
```

1  #include <iostream>
2  using namespace std;
3
4  int main()
5  {
6      cout << "C++ is working!!" << endl;
7
8      while (true);
9      return 0;
10 }
```

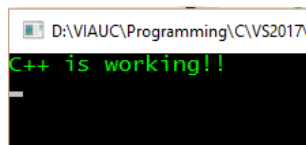
Compile:



And run it without debugging:



Successful output from the C++ program test:

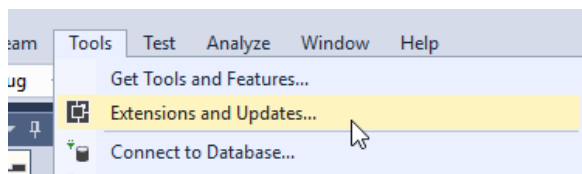


## A.1.3 Install extra tools for Visual Studio

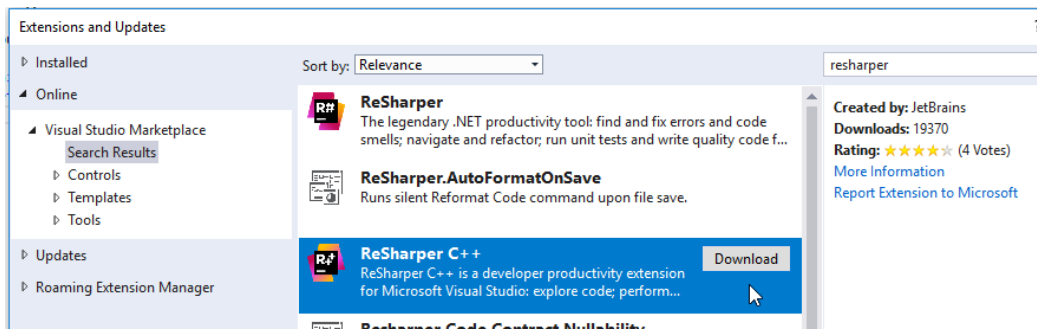
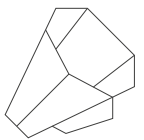
There is a couple of extra useful tools available that we will install.

## A.1.4 ReSharper

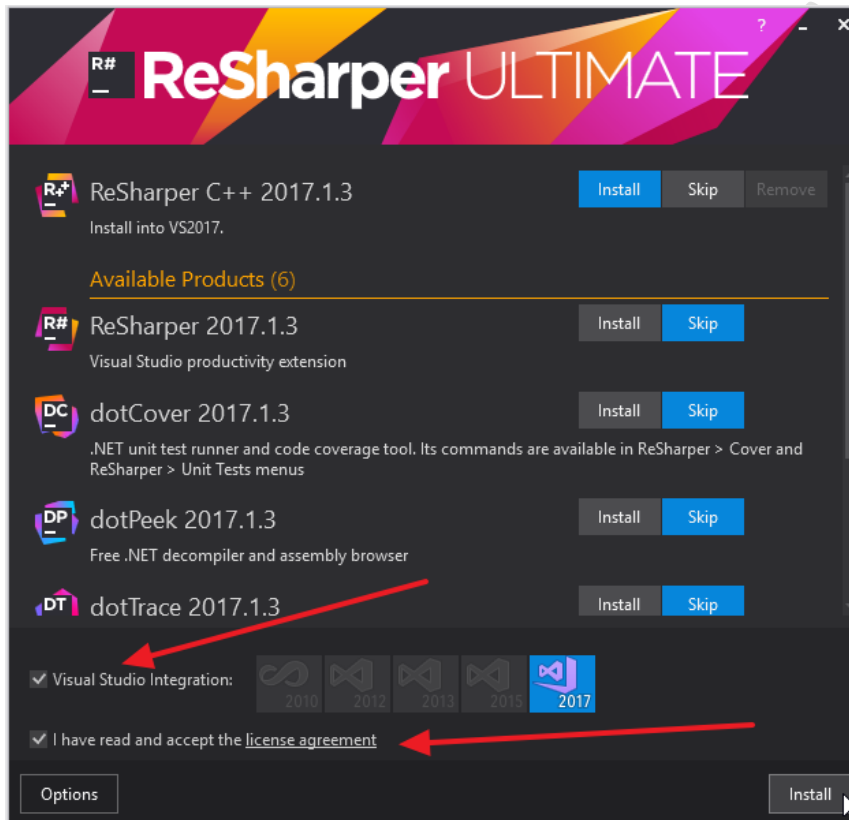
Open *Tools-> Extensions and Updates...*



Find *ReSharper C++* under *Online -> Visual Studio Marketplace* and press *Download*



Run the installation file to install it.



Restart Visual Studio after installation

**Note:** You will need to create an Academic/Student account for ReSharper. Using your VIA email account it is easy to get. Goto <https://www.jetbrains.com/student/> and follow the instructions!