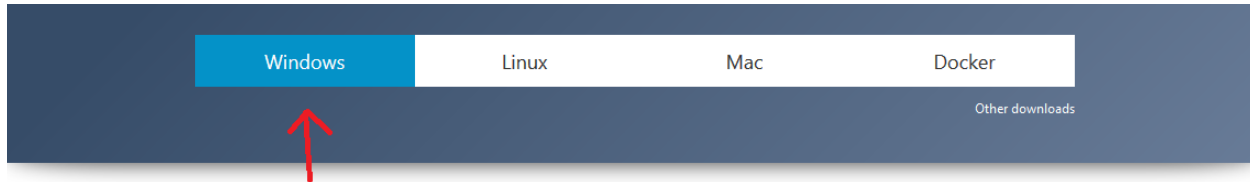# BME 121 Programming Software Setup Guide (Windows)

Setting up your Windows computer for BME 121 involves 4 total steps.

## 1) Compiler: .NET Core

Open a browser window to https://www.microsoft.com/net/core, ensure you're on the Windows tab and then click on the link for **.NET Core SDK for Windows** to download the installer:



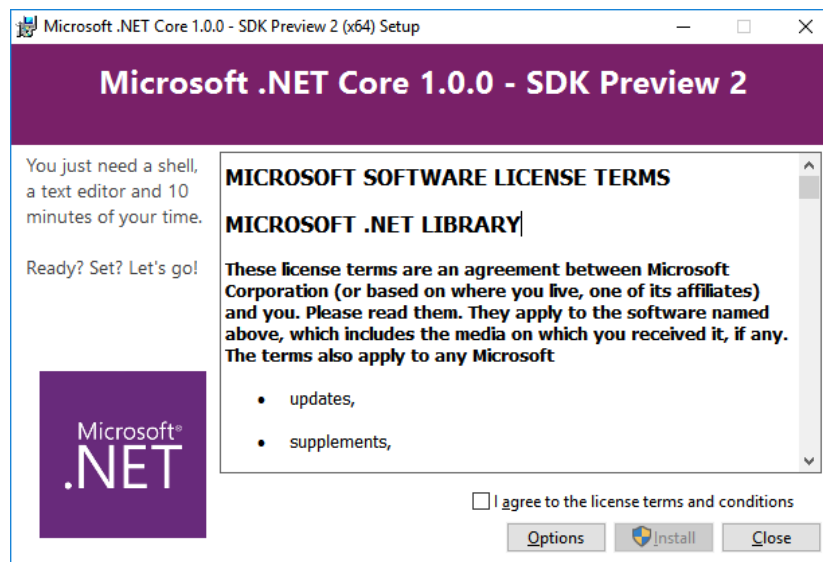Run the downloaded program to install the .NET Core SDK:

If you see the following screen, press Close and you have successfully completed this step!
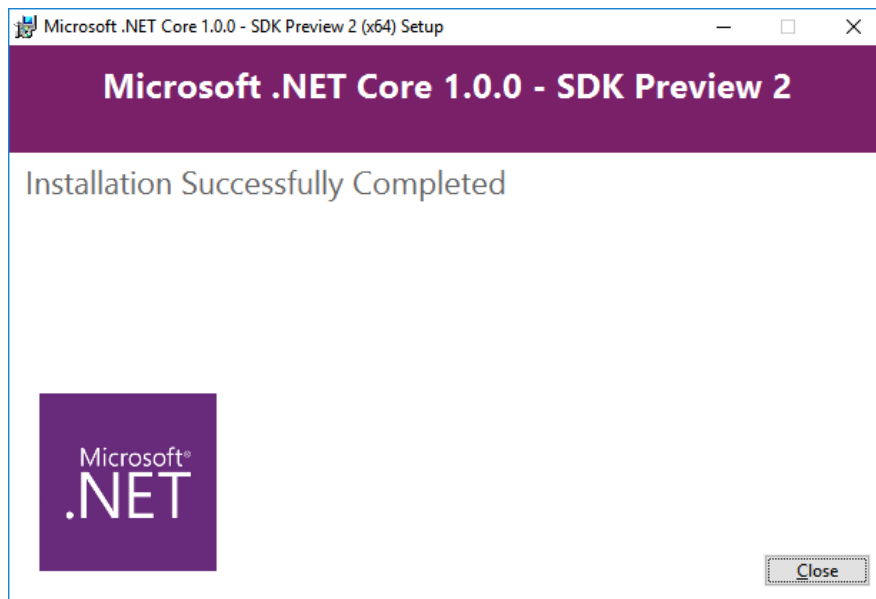


## 2) Text editor: Geany

Open a browser window to http://www.geany.org/Download/Releases and download the Windows Binary setup.exe:
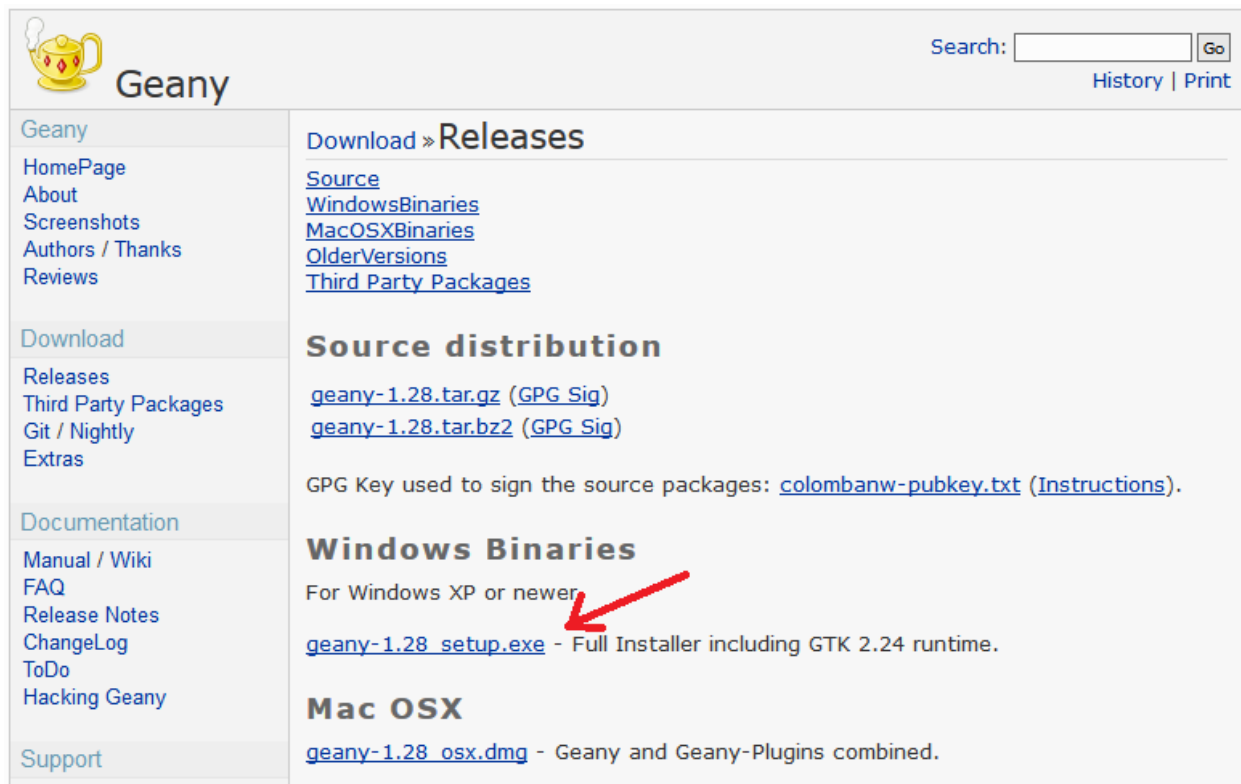
Run the downloaded program to install Geany:



On the Choose Components page, select Full install and then press Next. There's no need to change any of the check boxes:

Continue the installation process until you see this page:



Check "Run Geany" then press Finish. You should see the Geany editor like below:

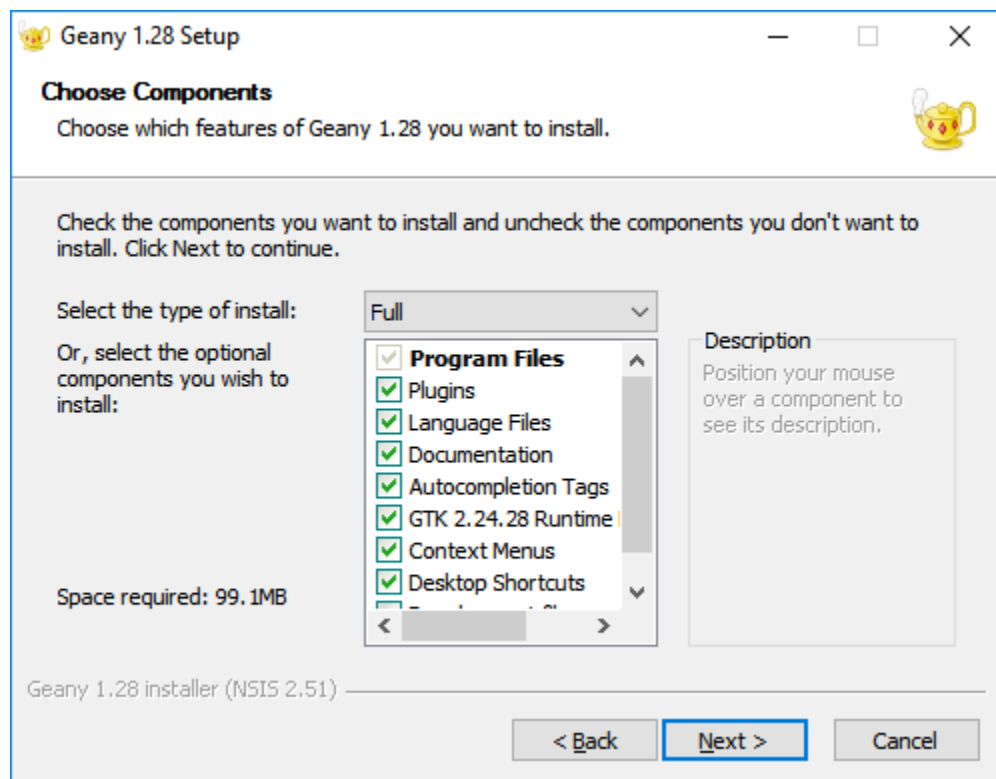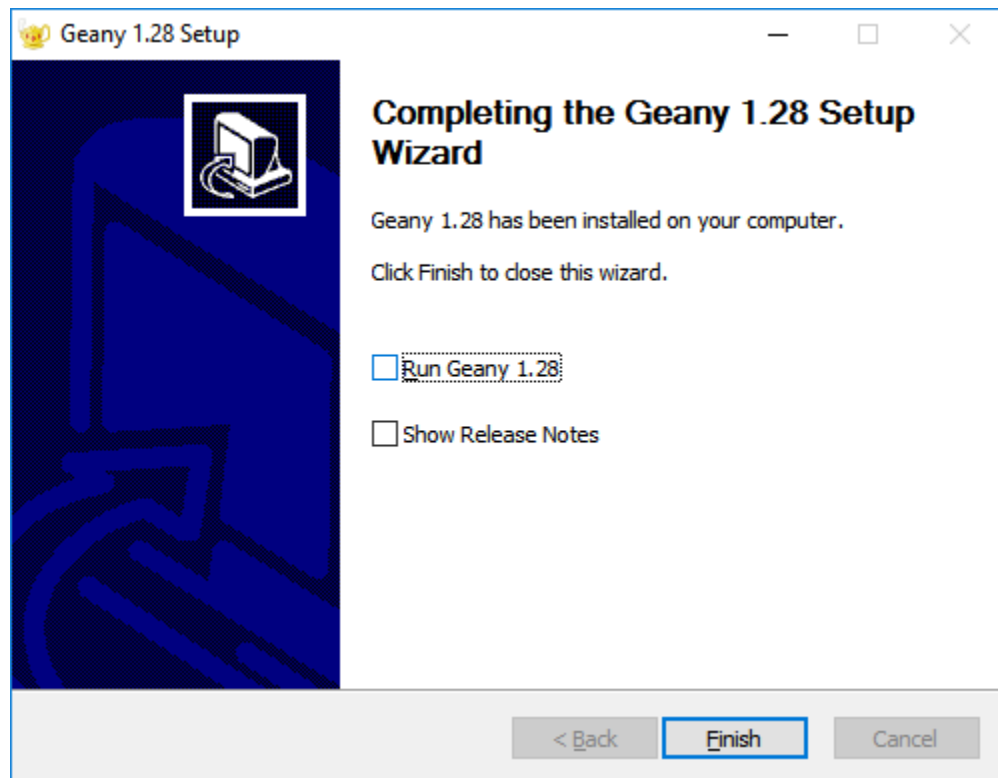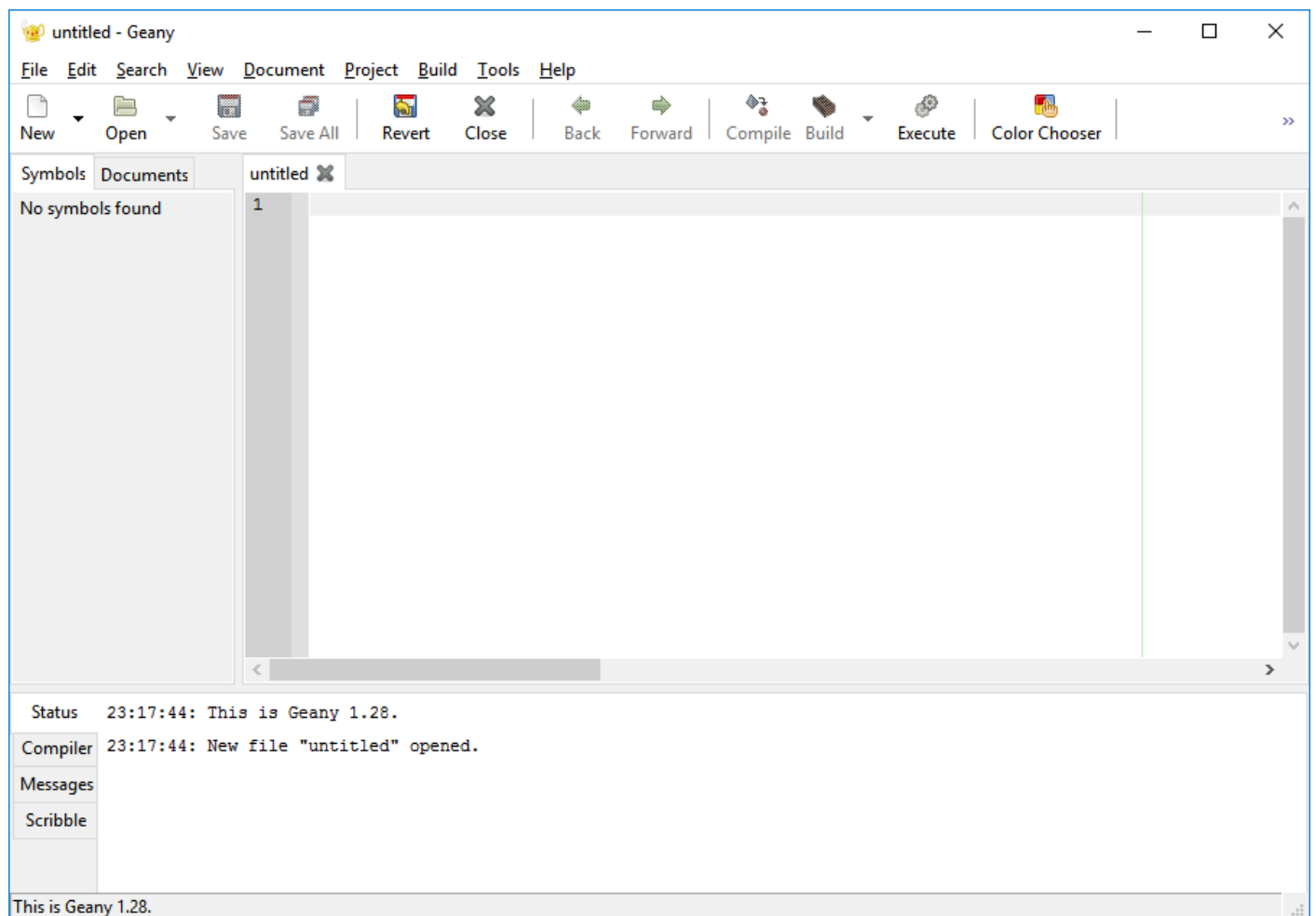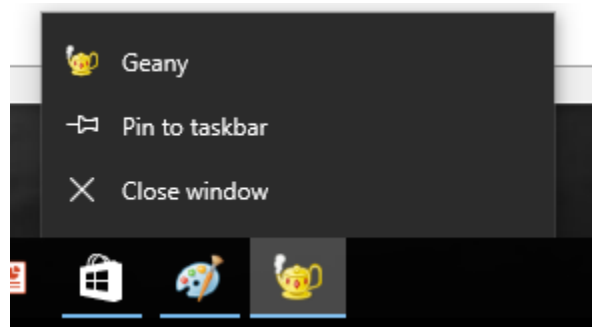Optional: You might want to add a task bar shortcut to Geany to make it easier to open and close this editor:

For Windows 10: with Geany still open, right click on the Geany icon on the task bar, and press "Pin to taskbar". Then close the Geany editor. The icon should stay on the task bar (:

For older editions of Windows, ask a TA!



You should also find Geany in the start menu applications list. This step is complete!


## 3) Command Prompt: PowerShell

Check to see if your Windows has PowerShell installed:

Press start then type "powershell". If you see the following option, then click on the PowerShell application (Note: **not** the ISE) to run the PowerShell program. If the program does not show, then skip to the install instructions below and repeat this step once PowerShell has been set up.
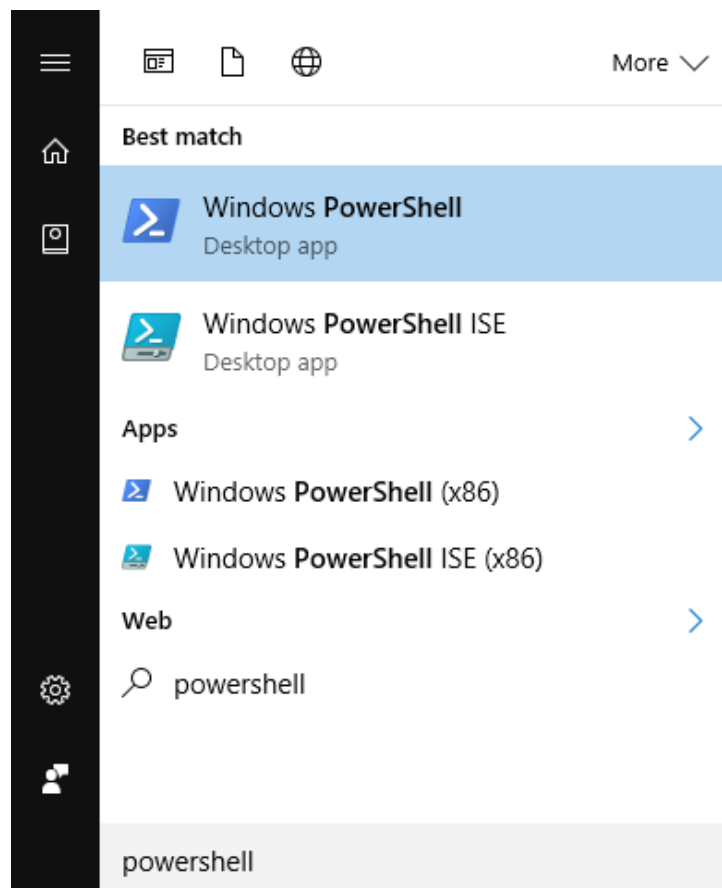


The PowerShell program should run as a window that looks something like this:
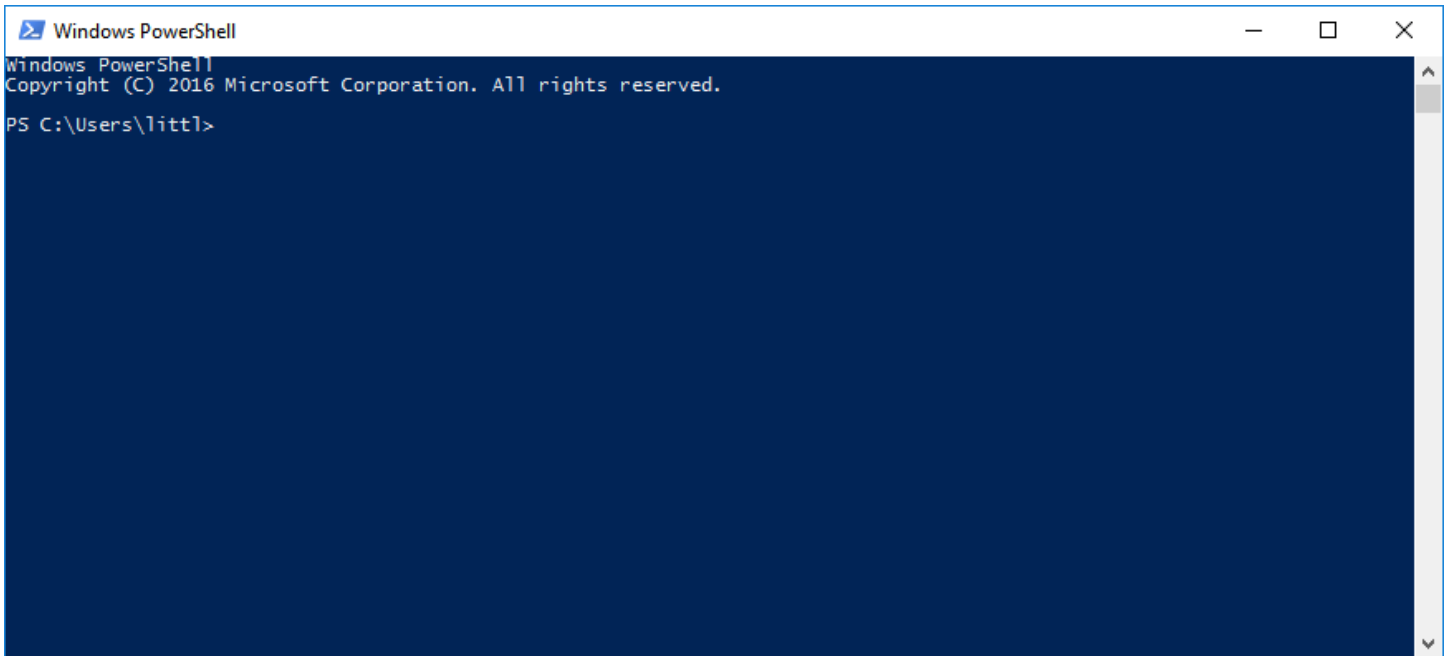
Note that your window will most likely display a different path, eg C:\Users\*YourWindowsUserName*> as part of the final line of text. This is the folder of your windows user account, take a note of this folder path for step 4. If you see a window like this with such a path, then this step is complete! If you see a drastically different path, ask for a TA and we'll help you figure out what your Users path is (:

You can also create a task bar icon for PowerShell like in step 2.

If PowerShell is not installed:

Open a browser window to https://github.com/powershell/powershell, scroll down and download the **.msi** install program for your version of Windows:

## Get PowerShell

You can download and install a PowerShell package for any of the following platforms.

| Platform | Downloads | How to Install |
| --- | --- | --- |
| Windows 10 / Server 2016 | .msi | Instructions |
| Windows 8.1 / Server 2012 R2 | .msi | Instructions |
| Ubuntu 16.04 | .deb | Instructions |
| Ubuntu 14.04 | .deb | Instructions |
| CentOS 7 | .rpm | Instructions |
| OS X 10.11 | .pkg | Instructions |
| Docker | | Instructions |

Run the downloaded program to install PowerShell:
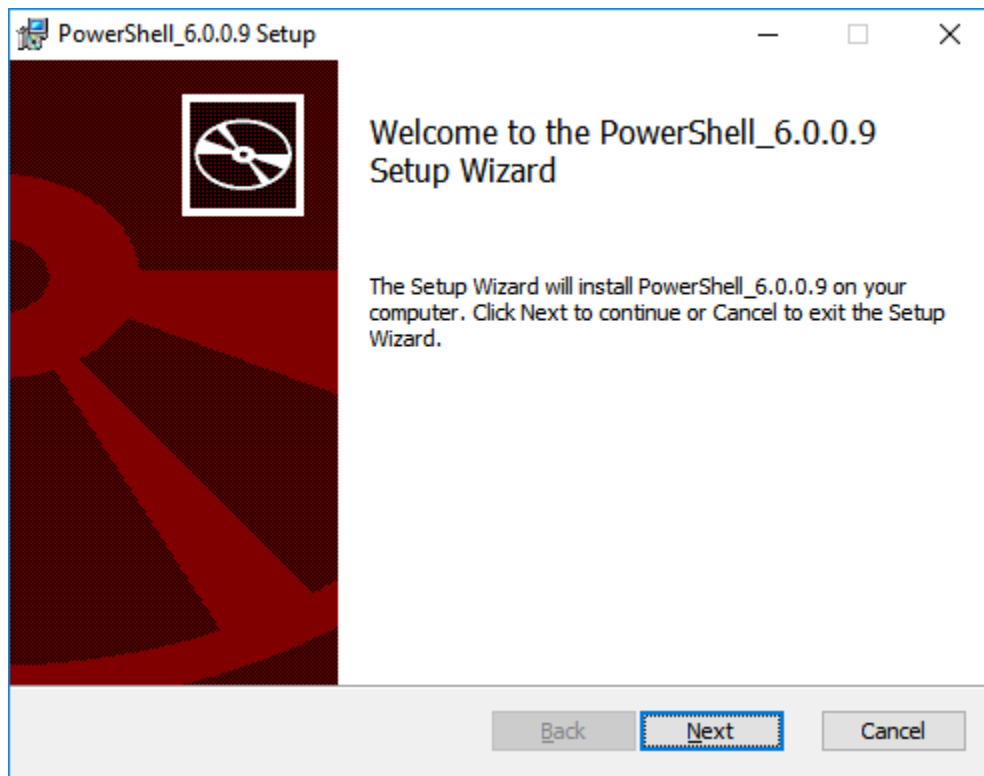


If you see the following screen, press Finish and PowerShell is installed. Repeat the earlier step to check that you can run PowerShell. Note that you might see a black window with white text instead of a blue window, it is still okay as long as the first line says PowerShell.
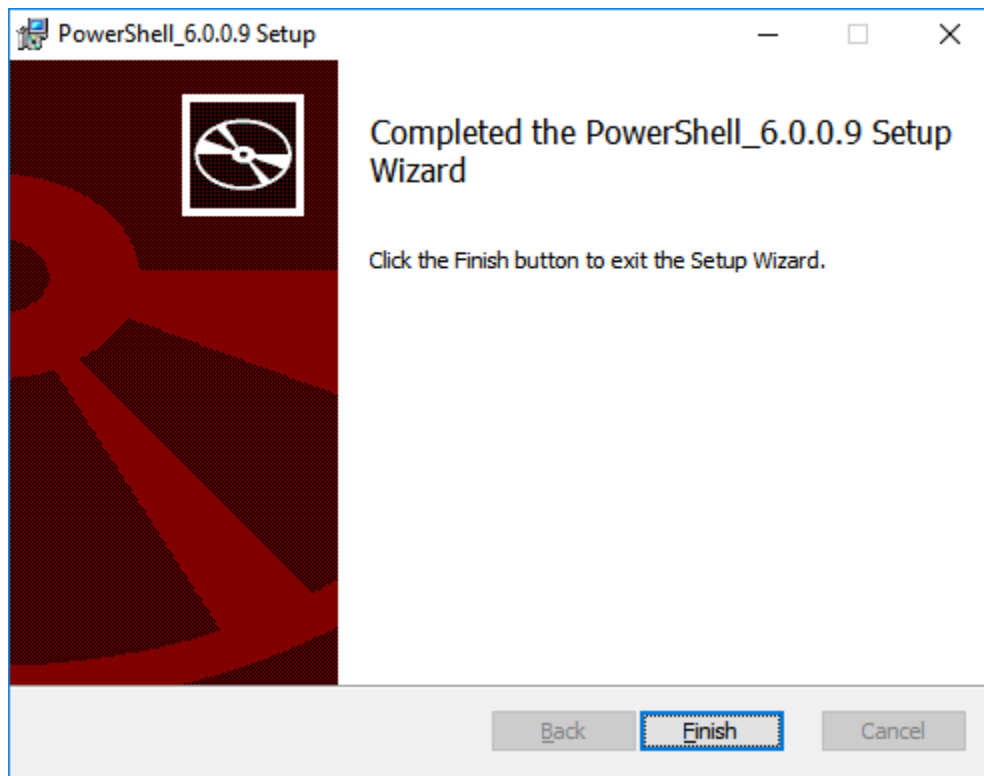
## 4) Making sure everything works together:

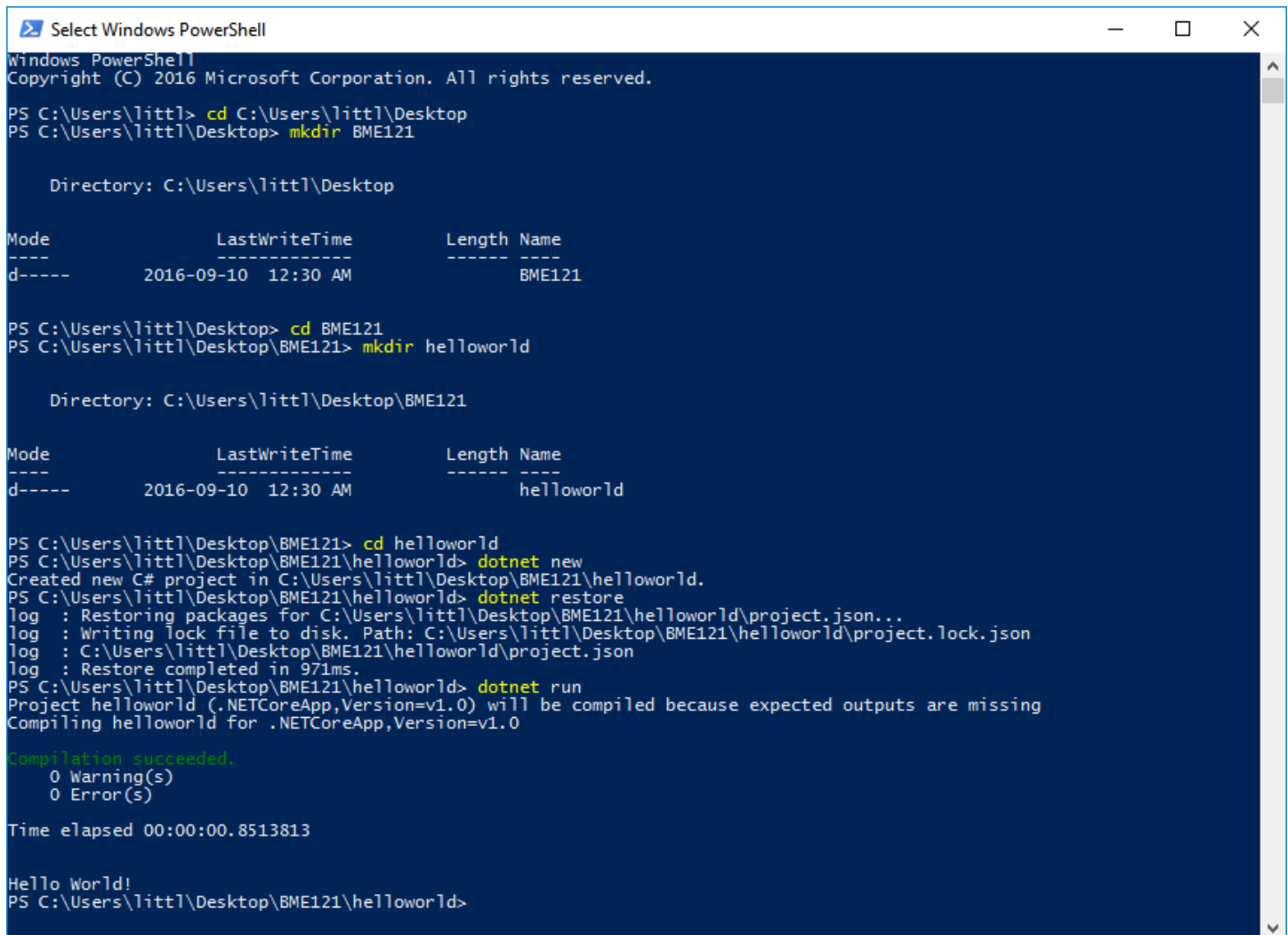In this step, we will run all three software tools together to create and edit your first computer program.

Open up PowerShell, and enter the following commands in sequence:

```
cd C:\Users\YourWindowsUserName\Desktop
mkdir BME121
cd BME121
mkdir helloworld
cd helloworld
dotnet new
dotnet restore
dotnet run
```

The PowerShell window should appear similar to the following with all of these commands entered:

```
Select Windows PowerShell                                                    —    □    ×

Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\littl> cd C:\Users\littl\Desktop
PS C:\Users\littl\Desktop> mkdir BME121


    Directory: C:\Users\littl\Desktop


Mode                LastWriteTime         Length Name
----                -------------         ------ ----
d-----        2016-09-10  12:30 AM                BME121


PS C:\Users\littl\Desktop> cd BME121
PS C:\Users\littl\Desktop\BME121> mkdir helloworld


    Directory: C:\Users\littl\Desktop\BME121


Mode                LastWriteTime         Length Name
----                -------------         ------ ----
d-----        2016-09-10  12:30 AM                helloworld


PS C:\Users\littl\Desktop\BME121> cd helloworld
PS C:\Users\littl\Desktop\BME121\helloworld> dotnet new
Created new C# project in C:\Users\littl\Desktop\BME121\helloworld.
PS C:\Users\littl\Desktop\BME121\helloworld> dotnet restore
log  : Restoring packages for C:\Users\littl\Desktop\BME121\helloworld\project.json...
log  : Writing lock file to disk. Path: C:\Users\littl\Desktop\BME121\helloworld\project.lock.json
log  : C:\Users\littl\Desktop\BME121\helloworld\project.json
log  : Restore completed in 971ms.
PS C:\Users\littl\Desktop\BME121\helloworld> dotnet run
Project helloworld (.NETCoreApp,Version=v1.0) will be compiled because expected outputs are missing
Compiling helloworld for .NETCoreApp,Version=v1.0

Compilation succeeded.
    0 Warning(s)
    0 Error(s)

Time elapsed 00:00:00.8513813


Hello World!
PS C:\Users\littl\Desktop\BME121\helloworld>
```

In particular, the command "dotnet new" creates a brand new C# project with some default code written in the folder called helloworld. Command "dotnet restore" prepares the project for compiling, and "dotnet run" both compiles and runs the default code.

Take note of the 2nd last line of text: "Hello World!"; the default code displays to the console this text. Now we'll open up the file that contains this default code using Geany.

Open up Geany. Click on the Open icon and select Desktop on the left menu. Then navigate to the project directory: C:\Users\*YourWindowsUserName*\Desktop\BME121\helloworld and open the Program.cs file:
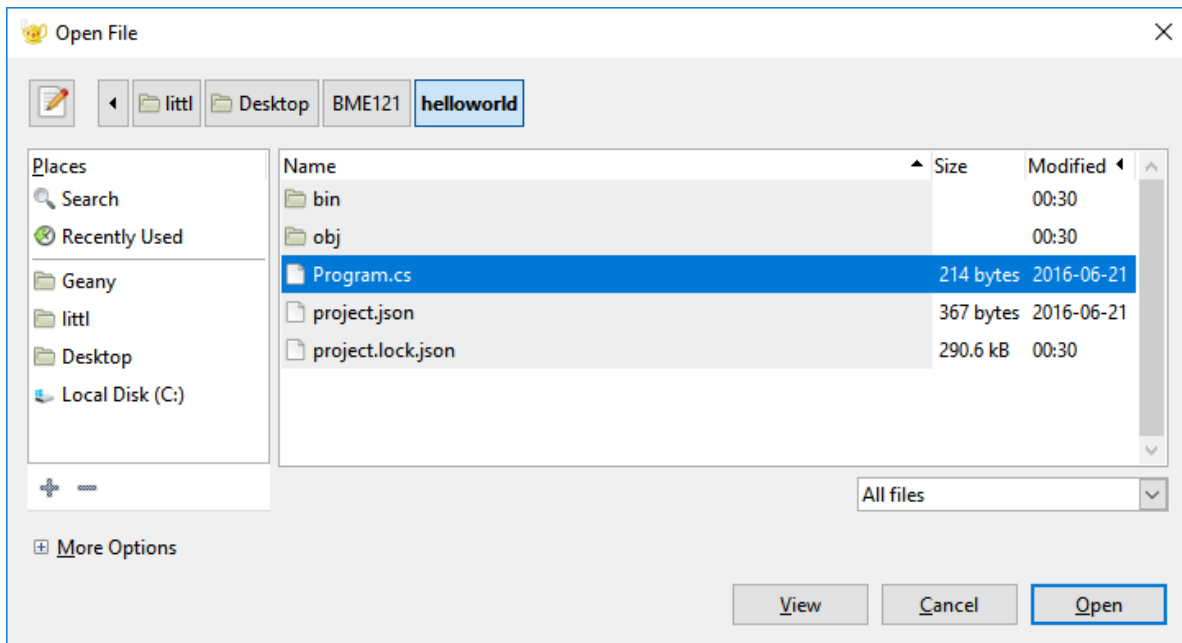


Geany should look something like this with the file opened:
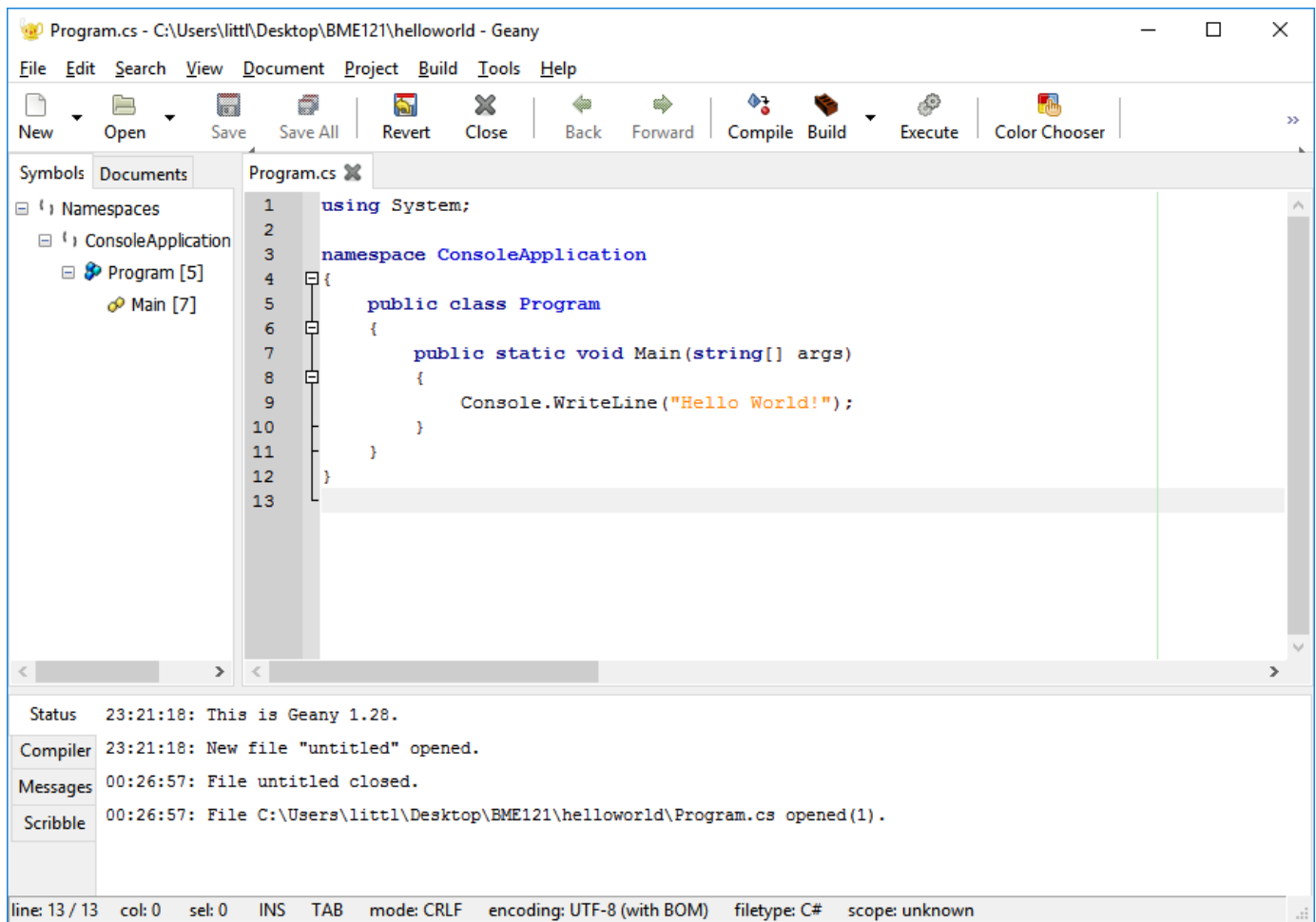


If you see this, then this step is complete!

Note that using the commands, we have created a BME121 folder on your desktop, and within that a folder for your first program called helloworld. For this course, we suggest keeping your projects and assignments within a single BME121 folder. You can move the BME121 folder to another more convenient location, just keep track of where it is and jot down the Path to the folder as you'll need that in PowerShell.