Lab 01 - Setup a development environment

The first step is to build a development environment. Most software installations are done on remote servers. These serves do not have a GUI at all and all of this work is done at the command line. Some systems, like IoT systems, are too small to use a GUI - again all the work is done at the command line.

The command line has advantages. It can be scripted so that you can re-produce your results. It is also easier to document.

This is going to be broken up based on the operating system you are working with.

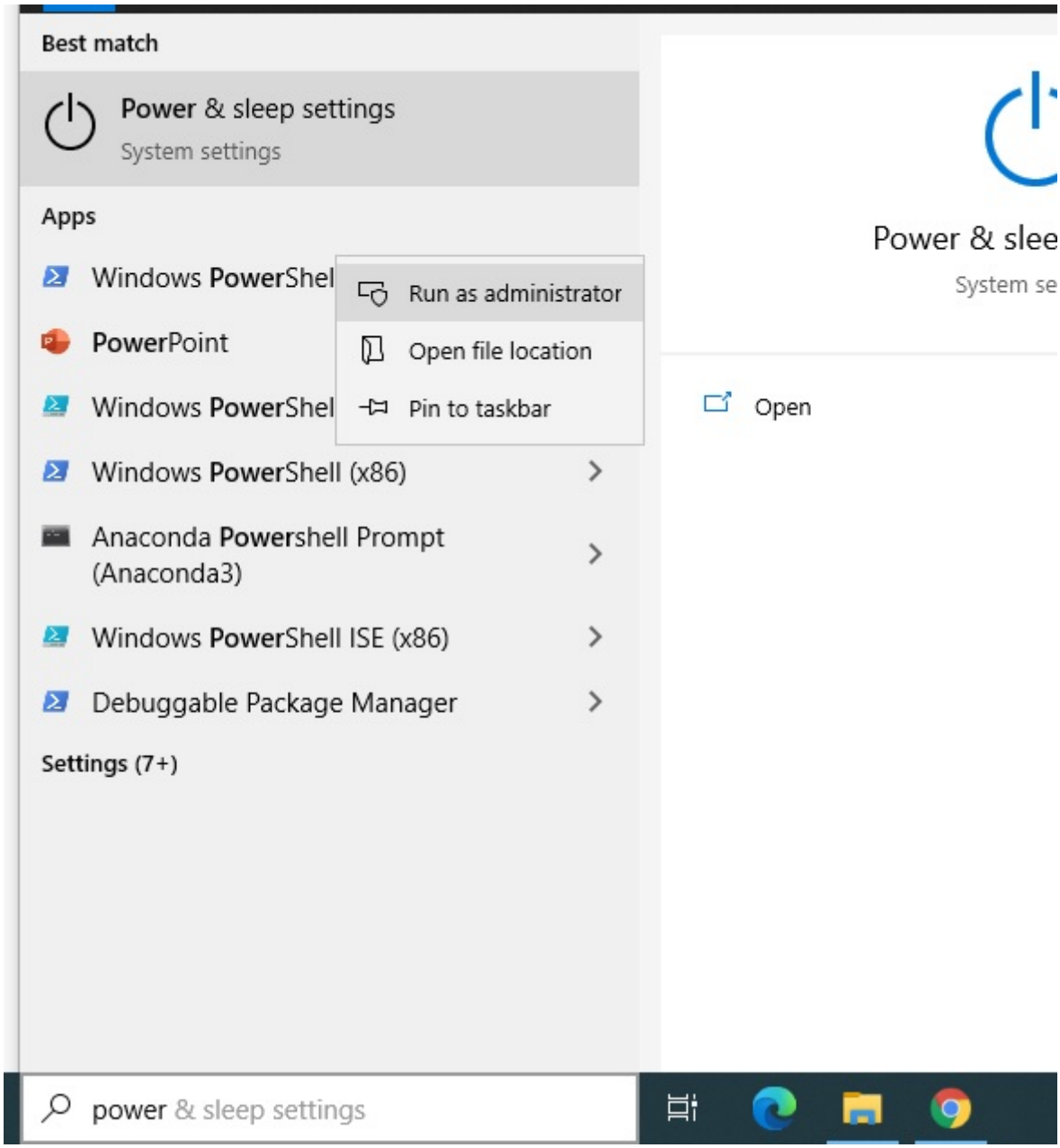
Windows

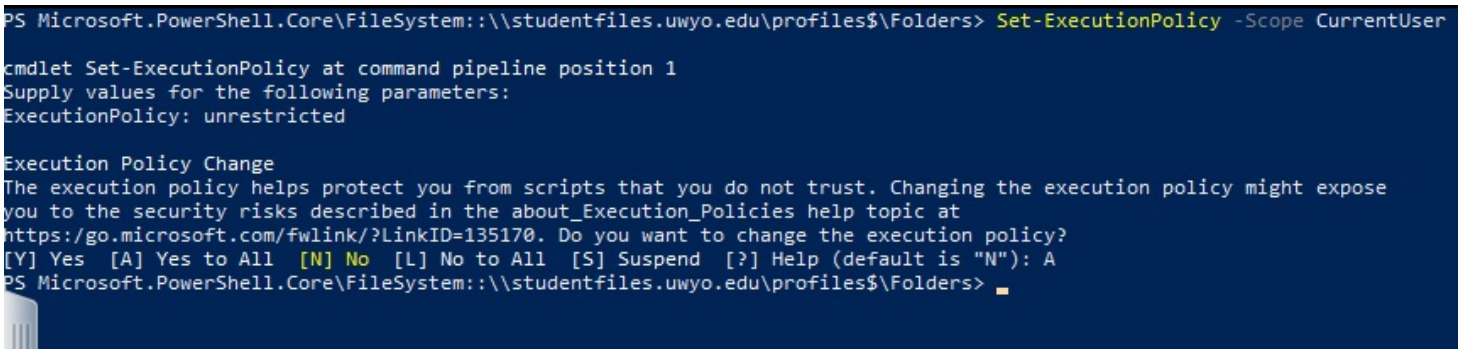
On Windows the command line is the Power Shell. There are 2 different security levels that the power shell can run under. The first is as your login user. The 2nd is as an administrative user.

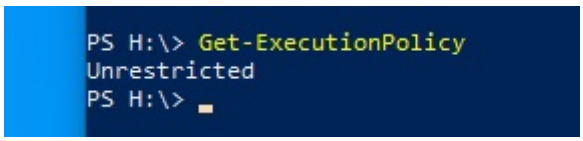
There is an older command line, command.com, but it will not work for most of this.

It is important that you configure your system for development.

1. Setup so that PowerShell can run .ps scripts.



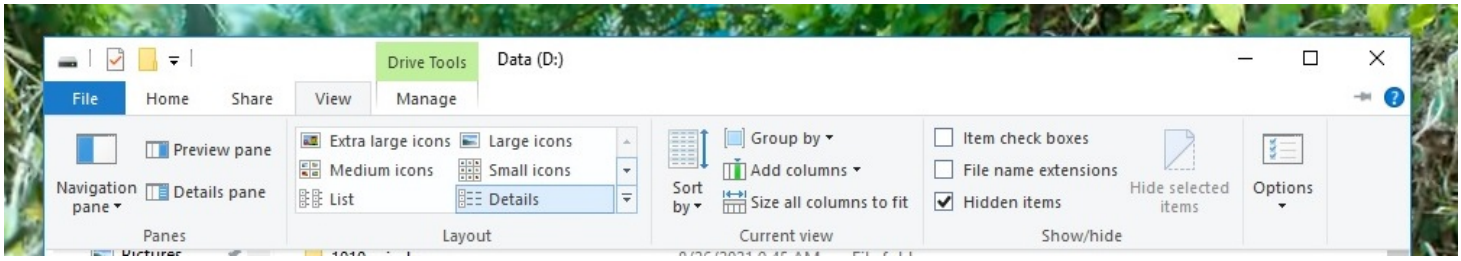




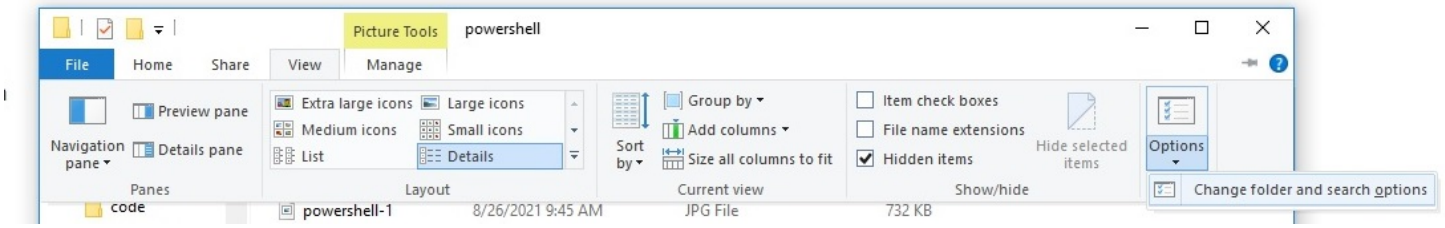
1. Configure your desktop explore shows all files and shows file extensions. The file extension is the last few characters after the last dot (.) in a file name. In windows 10 there is a configuration

superficially for development that will set this and a few other settings to make your life easier.

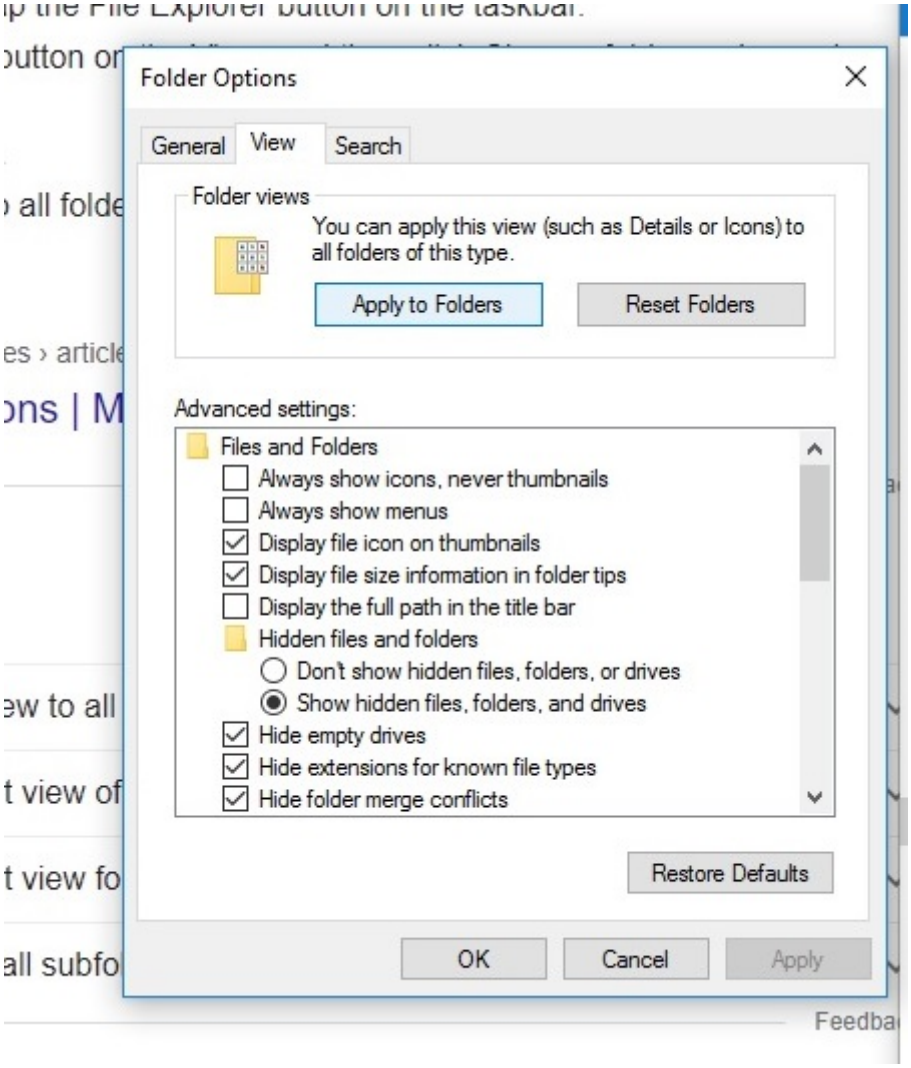
Open file explorer and click on view on the top of the explorer and the click on view and then select details:



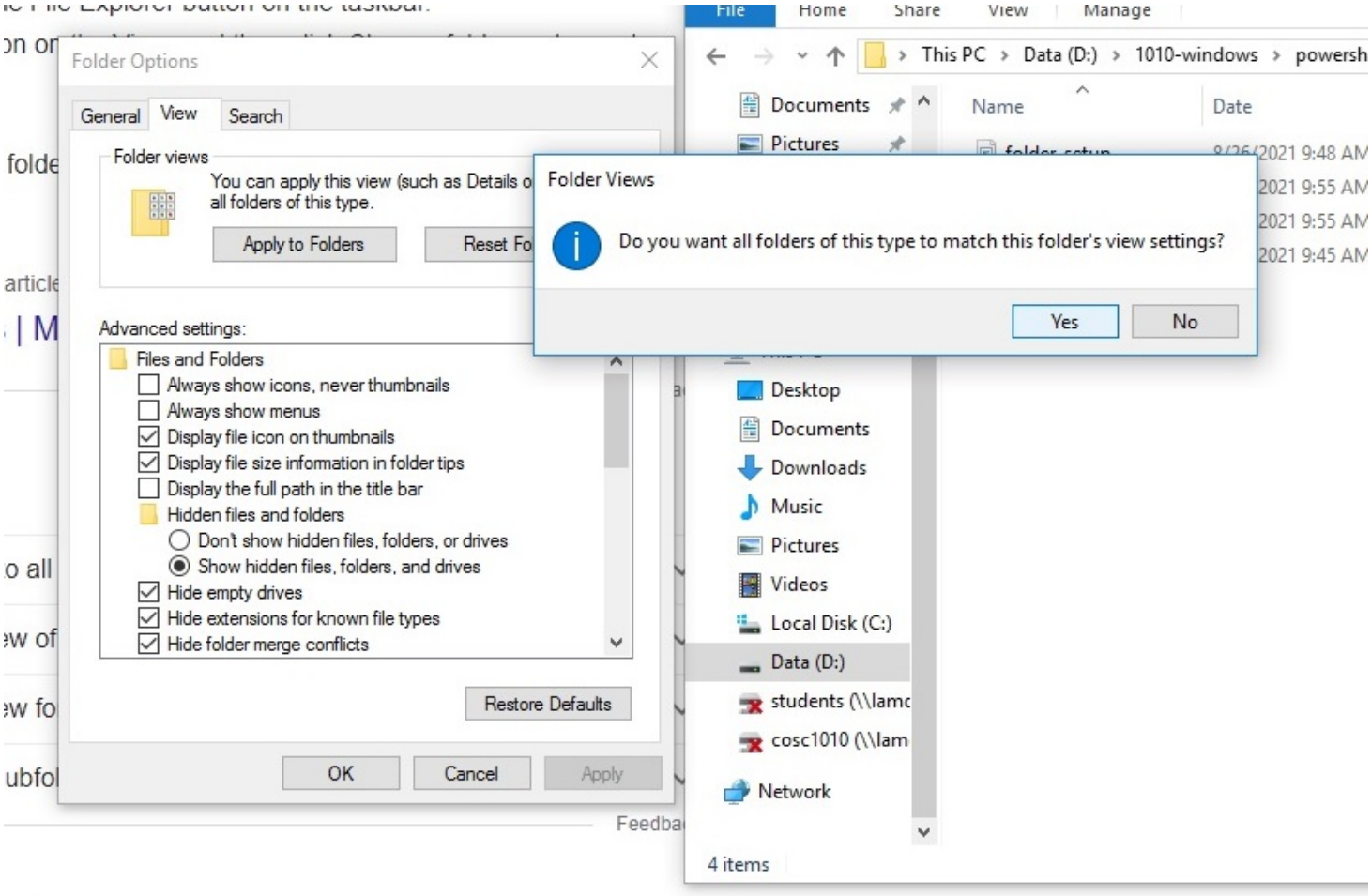
In the same folder click on view and then go to options and then click on change folders and search options:



Then click on Apply to folders:



Then click yes:

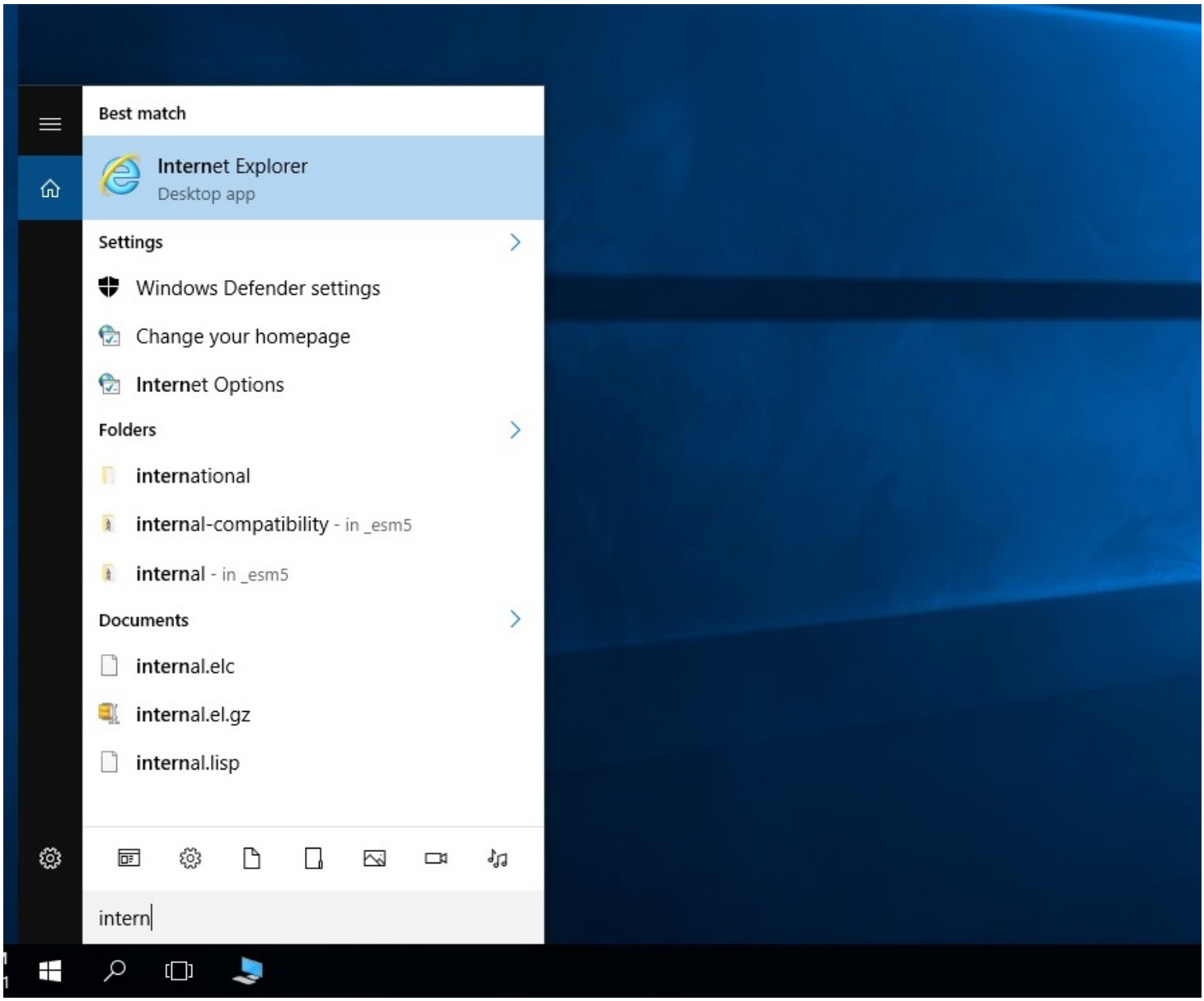


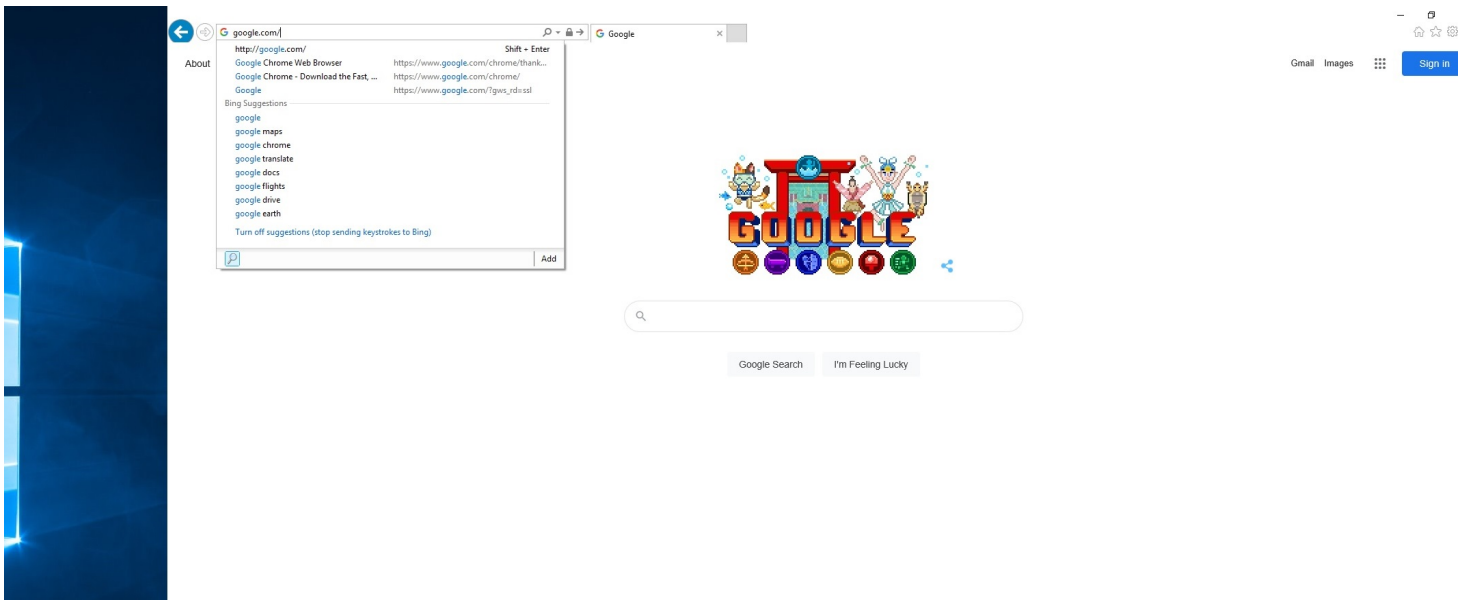
1. For a lot of stuff we will use the Linux/Unix 'bash' shell - this will be installed as a part of our 'git' install a little bit later. 'bash' is the same shell that is used on many Mac and most Linux systems.

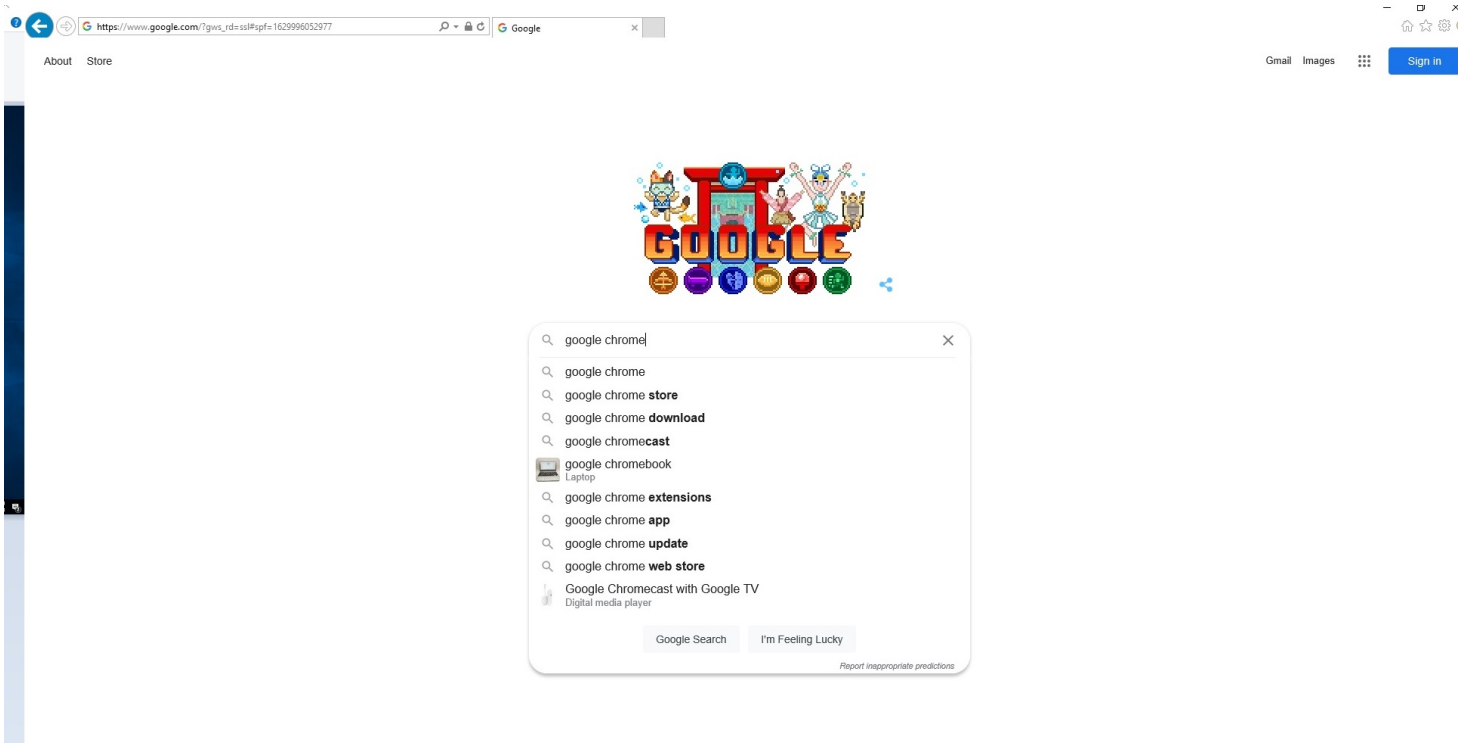
Install Google Chrome

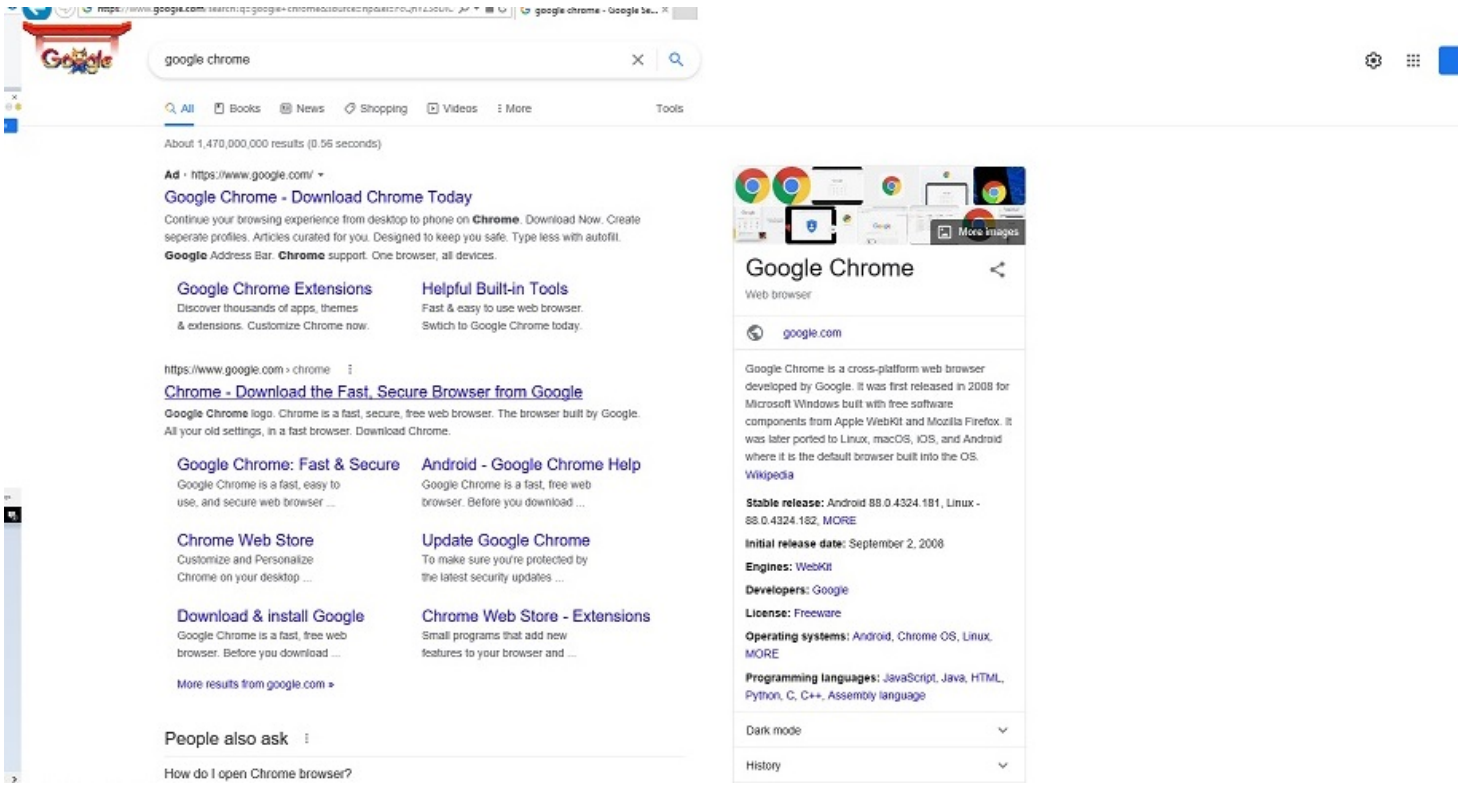
A number of tools depend on the Google Chrome portability library.

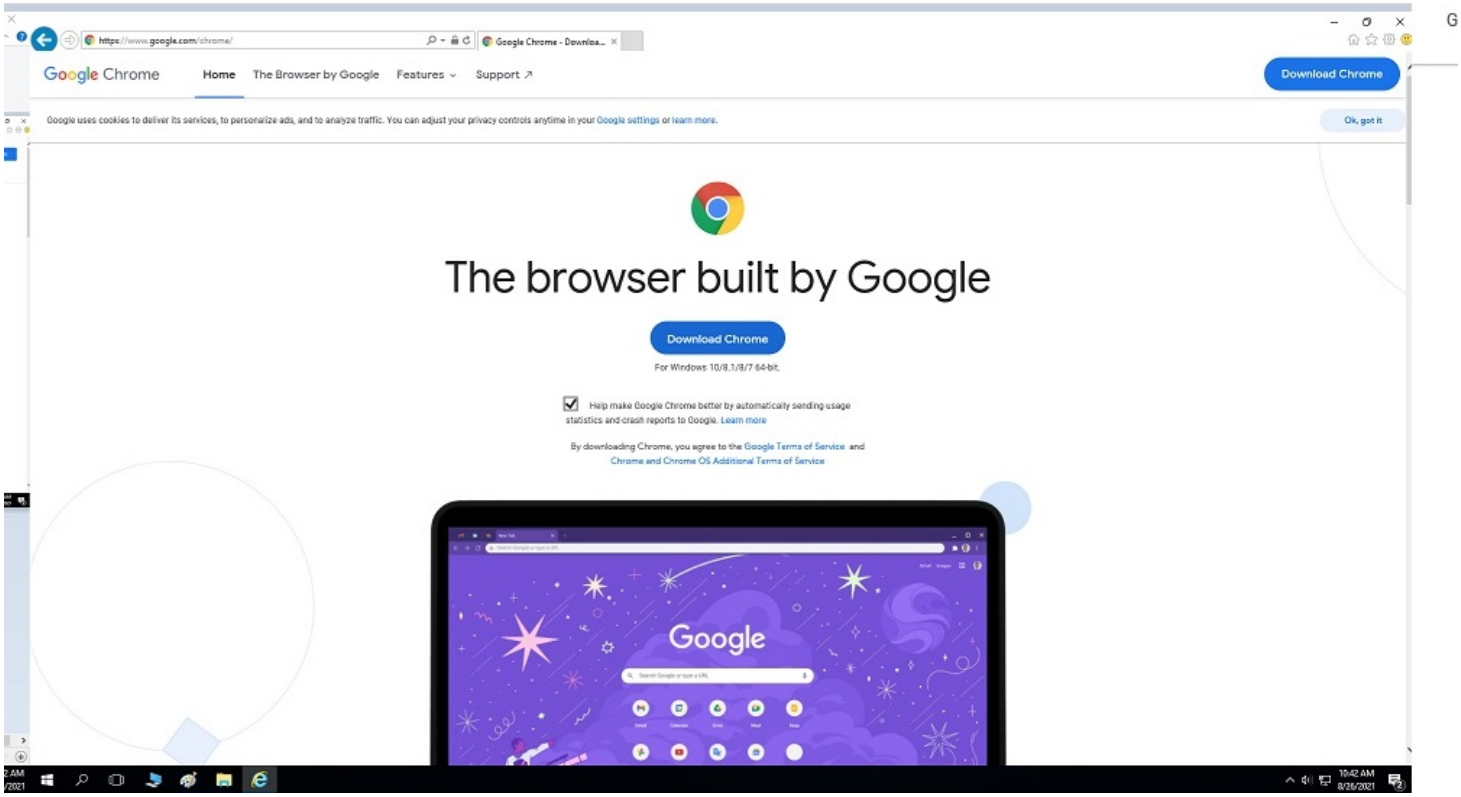
1. Install Chrome (if you have not already done it) https://www.google.com/chrome/?brand=CHBD&gclid=CjwKCAjwyo36BRAXEiwA24CwGSgDDdrI4XOUKv4CPwFQfs7M2HaXiRJ-MMeszA20rC72r-9U13-8jBoCQV4QAvD_BwE&gclsrc=aw.ds

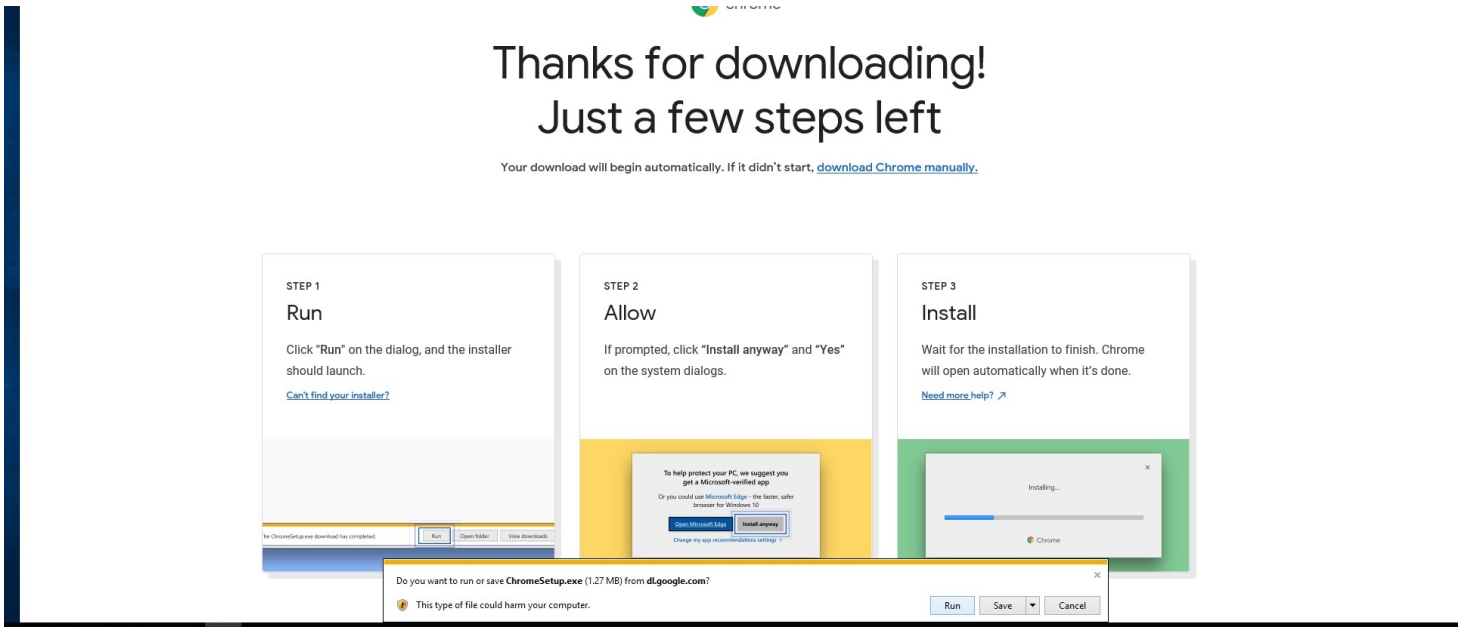

Best match
Internet Explorer
Desktop app
Settings
Windows Defender settings
Change your homepage
Internet Options
Folders
international
internal-compatibility - in _esm5
internal - in _esm5
Documents
internal.elc
internal.el.gz
internal.lisp
intern


google.com/
Google
About
Gmail
Images
Sign in
Google Search
I'm Feeling Lucky


https://www.google.com/?gws_rd=ssl#spf=1629996052977
Google
About
Store
Gmail
Images
Sign in
google chrome
google chrome
google chrome store
google chrome download
google chromecast
google chromebook
Laptop
google chrome extensions
google chrome app
google chrome update
google chrome web store
Google Chromecast with Google TV
Digital media player
Google Search
I'm Feeling Lucky
Report inappropriate predictions


google chrome
All
Books
News
Shopping
Videos
More
Tools
About 1,470,000,000 results (0.56 seconds)
Ad · https://www.google.com/
Google Chrome - Download Chrome Today
Continue your browsing experience from desktop to phone on Chrome. Download Now. Create seperate profiles. Articles curated for you. Designed to keep you safe. Type less with autofill. Google Address Bar. Chrome support. One browser, all devices.
Google Chrome Extensions
Discover thousands of apps, themes & extensions. Customize Chrome now.
Helpful Built-in Tools
Fast & easy to use web browser. Switch to Google Chrome today.
https://www.google.com › chrome
Chrome - Download the Fast, Secure Browser from Google
Google Chrome logo. Chrome is a fast, secure, free web browser. The browser built by Google. All your old settings, in a fast browser. Download Chrome.
Google Chrome: Fast & Secure
Google Chrome is a fast, easy to use, and secure web browser ...
Android - Google Chrome Help
Google Chrome is a fast, free web browser. Before you download ...
Chrome Web Store
Customize and Personalize Chrome on your desktop ...
Update Google Chrome
To make sure you're protected by the latest security updates ...
Download & install Google
Google Chrome is a fast, free web browser. Before you download ...
Chrome Web Store - Extensions
Small programs that add new features to your browser and ...
More results from google.com »
People also ask
How do I open Chrome browser?
More images
Google Chrome
Web browser
google.com
Google Chrome is a cross-platform web browser developed by Google. It was first released in 2008 for Microsoft Windows built with free software components from Apple WebKit and Mozilla Firefox. It was later ported to Linux, macOS, iOS, and Android where it is the default browser built into the OS.
Wikipedia
Stable release: Android 88.0.4324.181, Linux - 88.0.4324.182, MORE
Initial release date: September 2, 2008
Engines: WebKit
Developers: Google
License: Freeware
Operating systems: Android, Chrome OS, Linux, MORE
Programming languages: JavaScript, Java, HTML, Python, C, C++, Assembly language
Dark mode
History



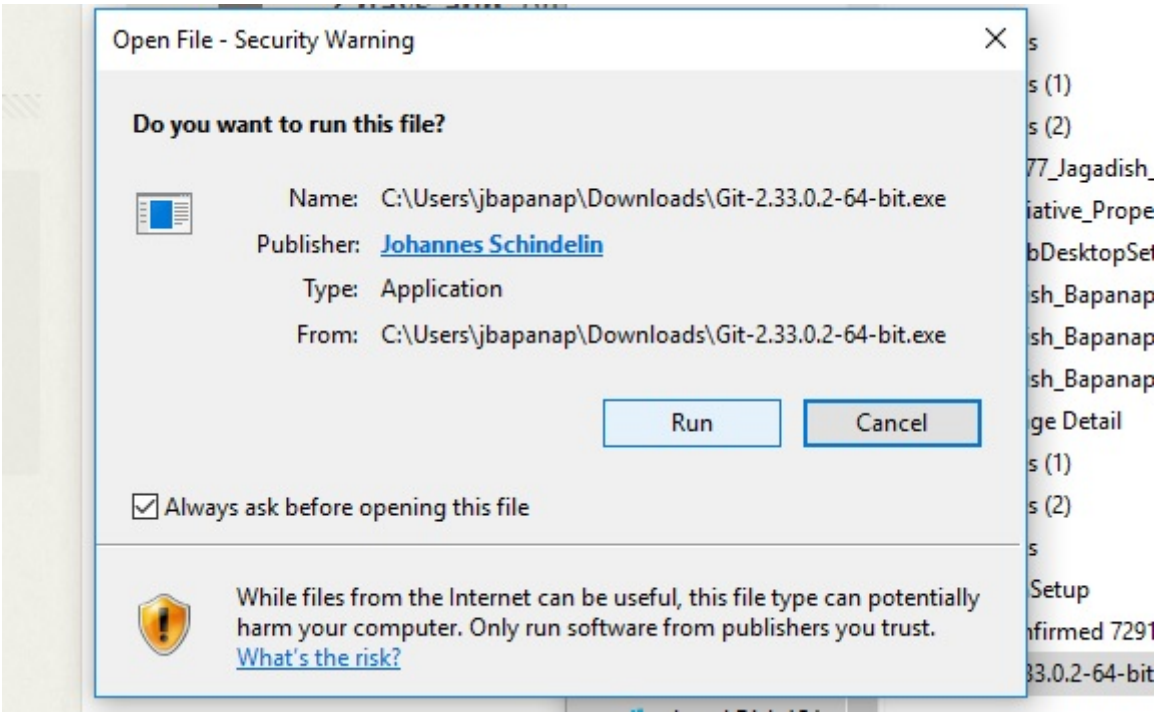


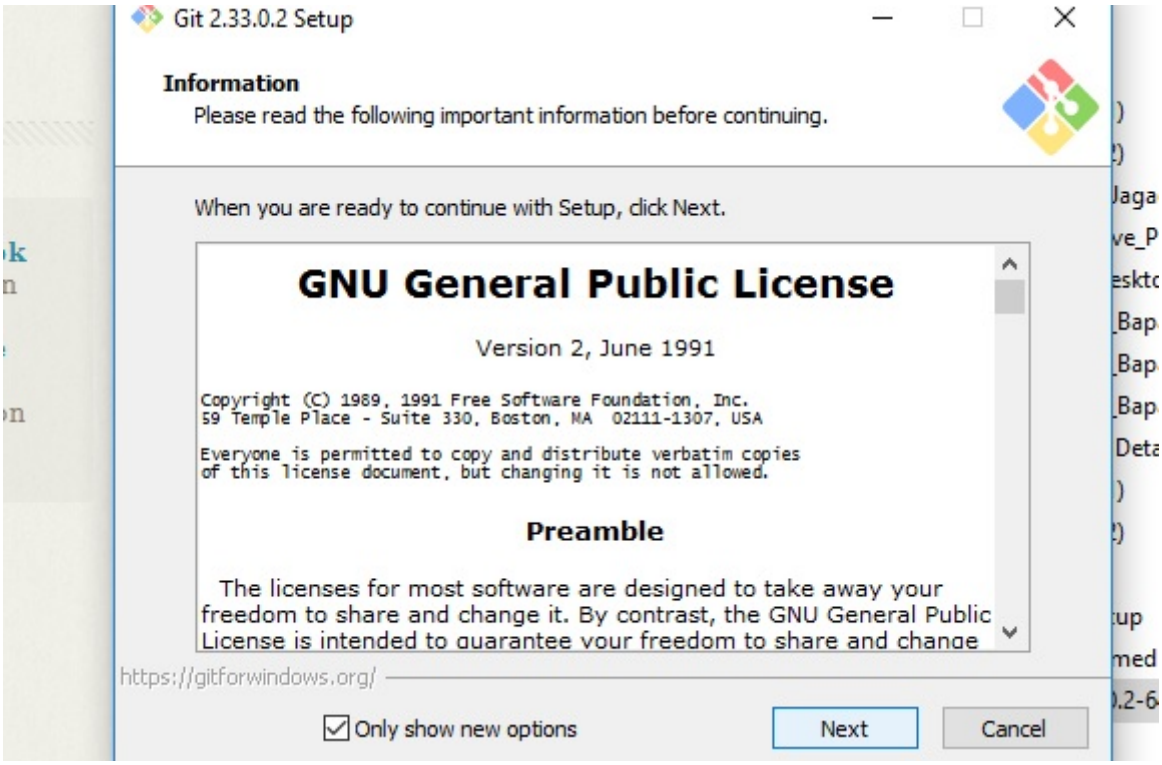
Source code control

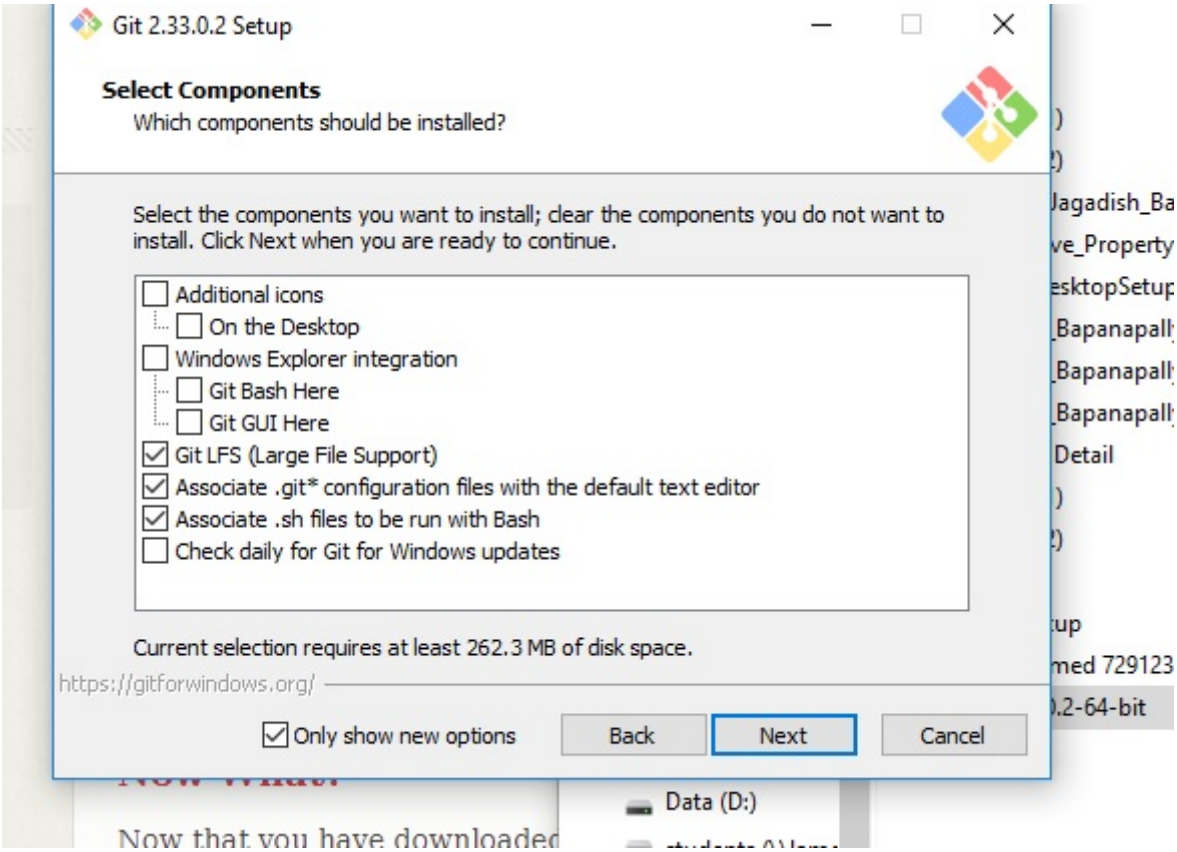
1. We will be using 'https://github.com' for class handouts and for turning working with files through the semester. The underlying system that github uses is 'git'. You will need to to to 'https://github.com' and create a free account on the site.
2. Bring up this page in the "chrome" browser with [.)
3. Determine what version of windows you have, the 32 bit or 64 bit version. https://support.microsoft.com/en-us/windows/which-version-of-windows-operating-system-am-i-running-628bec99-476a-2c13-5296-9dd081cdd808 has an explanation.

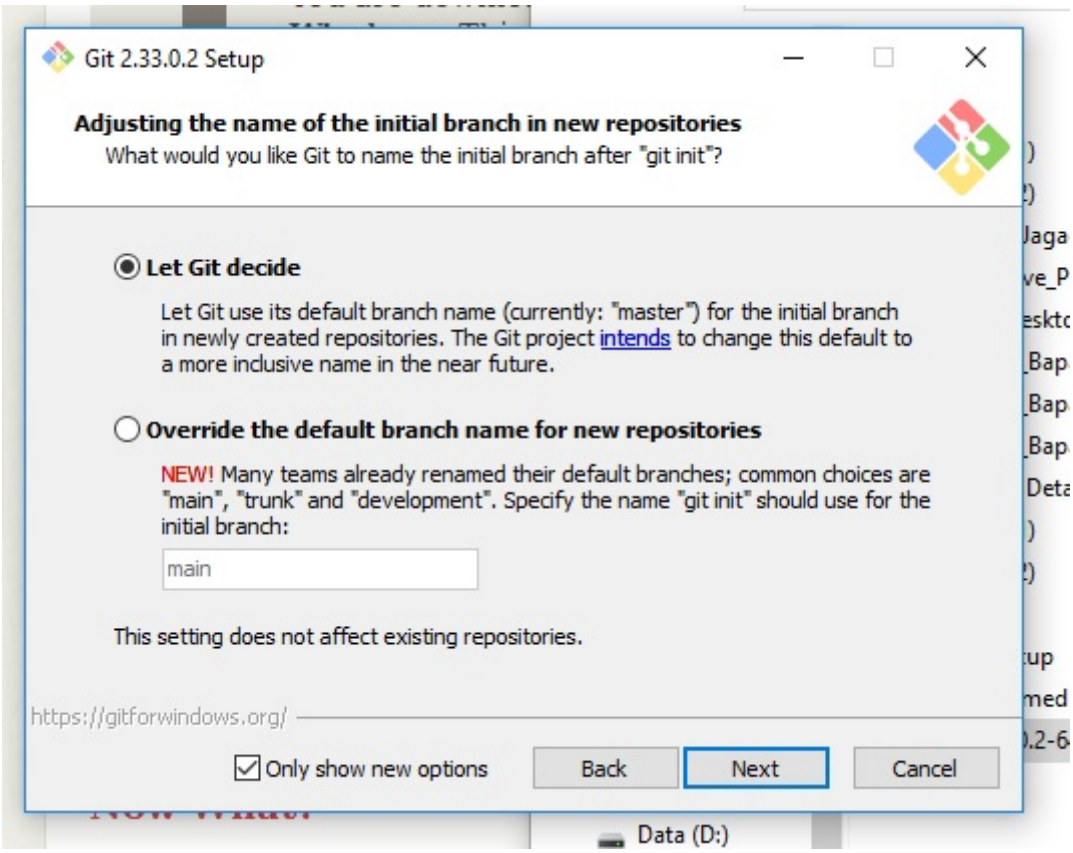
4. You will also need the windows 'git' tools installed. https://git-scm.com/download/win in chrome will start the download as soon as you go to the page. Run the installer. You should end up with a MinGW Bash shell icon on your desktop.

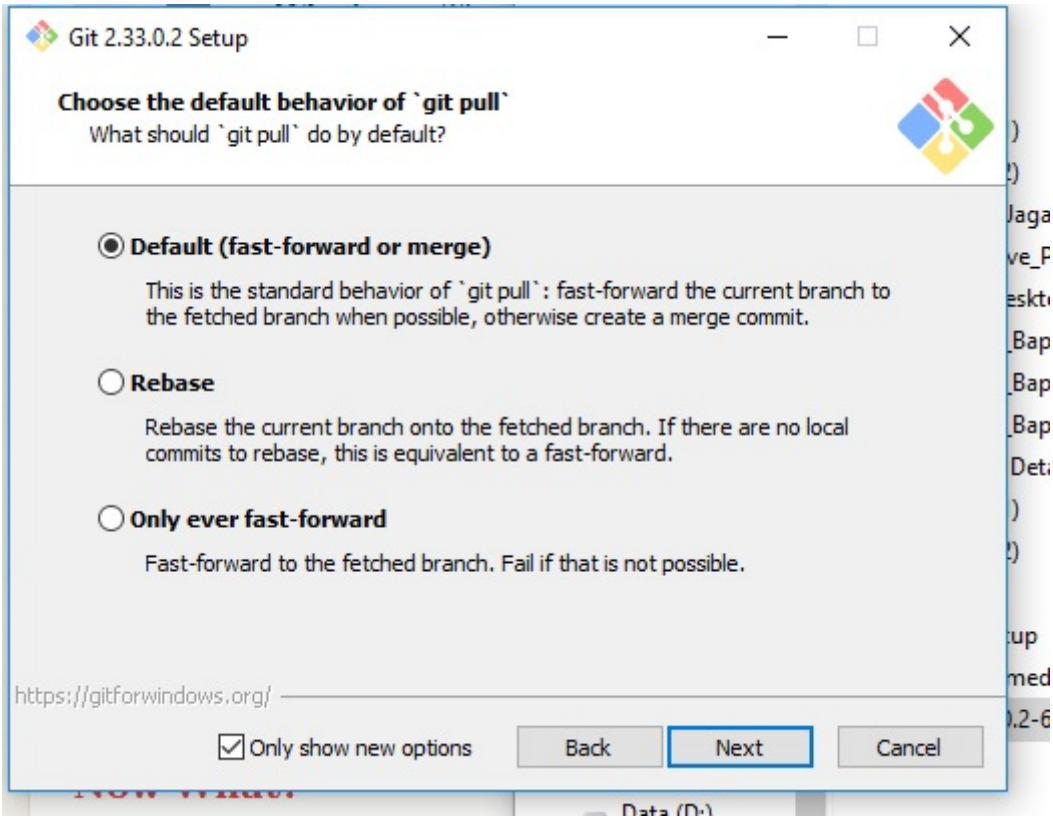
After downloading the git tools setup file, double click on it:

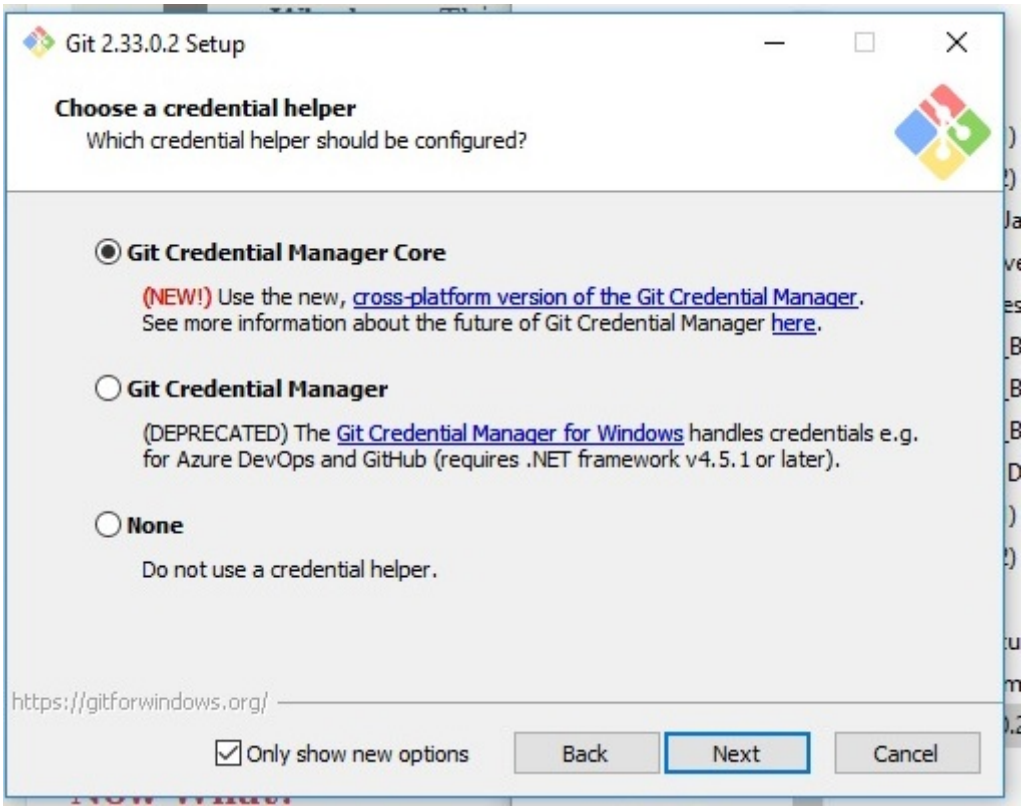


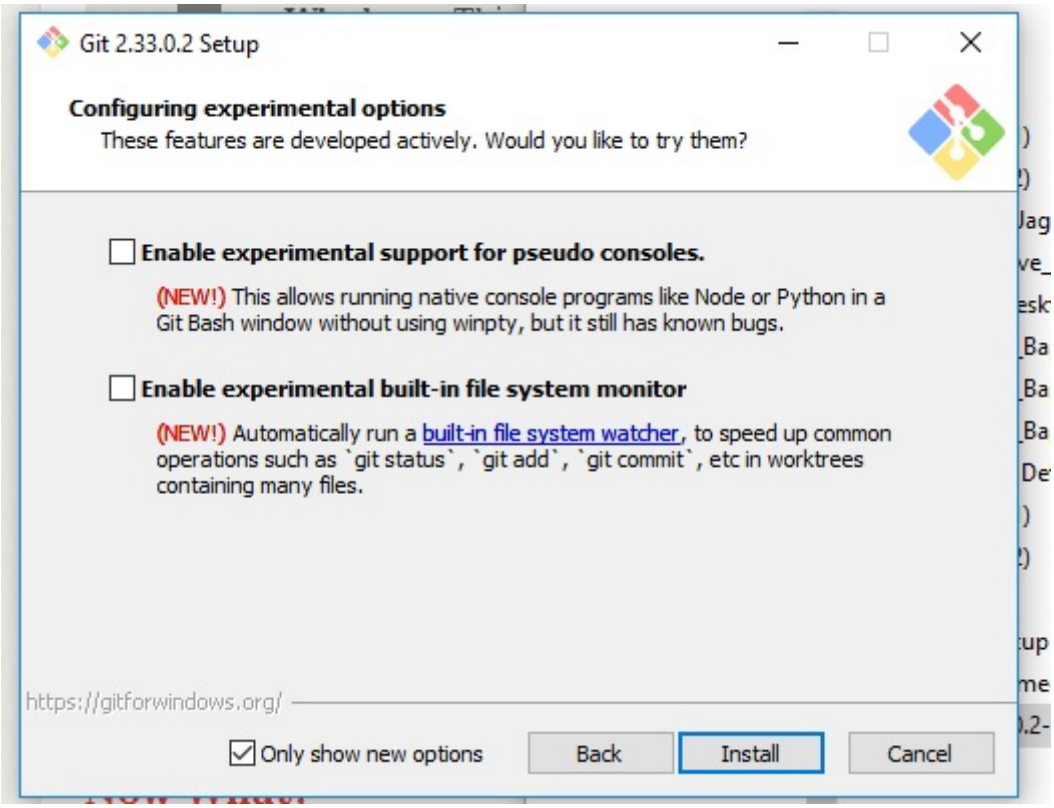


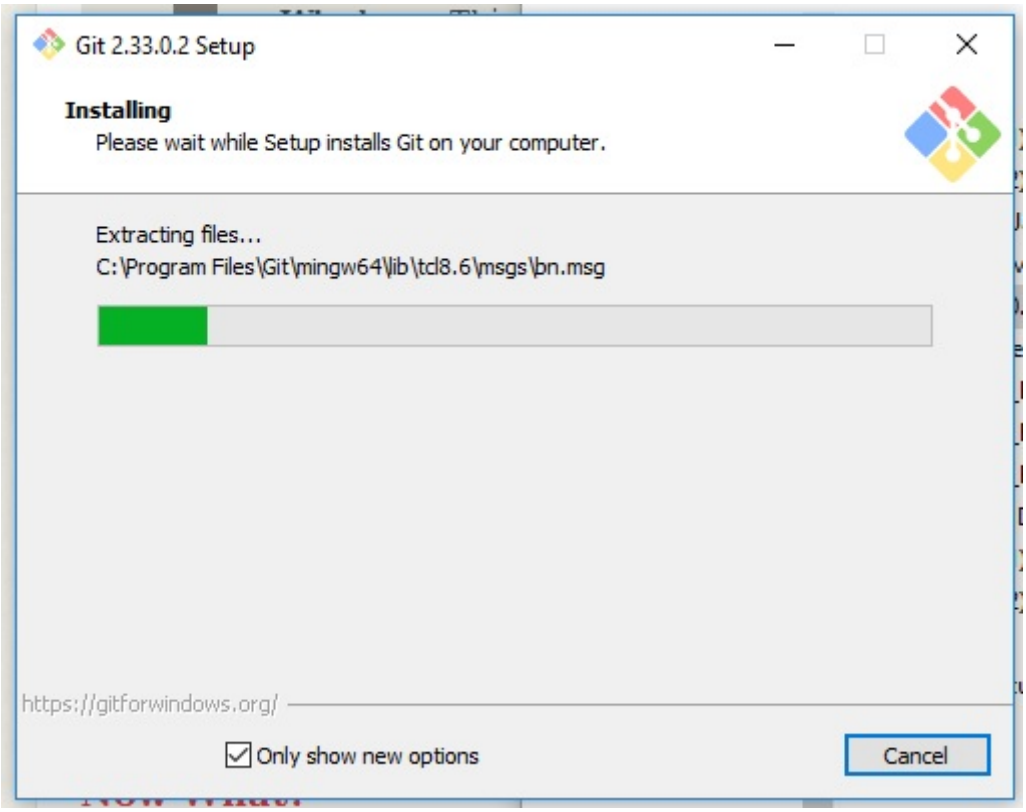

Git 2.33.0.2 Setup
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Additional icons
On the Desktop
Windows Explorer integration
Git Bash Here
Git GUI Here
Git LFS (Large File Support)
Associate .git* configuration files with the default text editor
Associate .sh files to be run with Bash
Check daily for Git for Windows updates
Current selection requires at least 262.3 MB of disk space.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel
Data (D:)

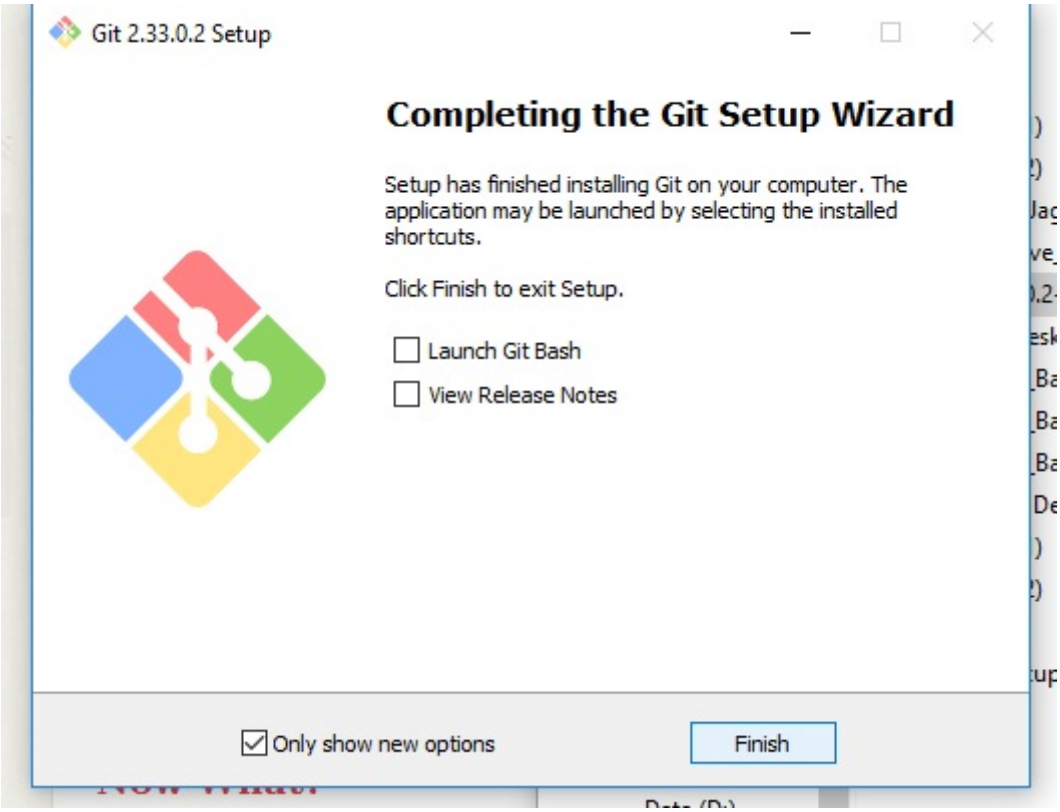

Git 2.33.0.2 Setup
Adjusting the name of the initial branch in new repositories
What would you like Git to name the initial branch after "git init"?
Let Git decide
Let Git use its default branch name (currently: "master") for the initial branch in newly created repositories. The Git project intends to change this default to a more inclusive name in the near future.
Override the default branch name for new repositories
NEW! Many teams already renamed their default branches; common choices are "main", "trunk" and "development". Specify the name "git init" should use for the initial branch:
main
This setting does not affect existing repositories.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel
Data (D:)


Git 2.33.0.2 Setup
Choose the default behavior of `git pull`
What should `git pull` do by default?
Default (fast-forward or merge)
This is the standard behavior of `git pull`: fast-forward the current branch to the fetched branch when possible, otherwise create a merge commit.
Rebase
Rebase the current branch onto the fetched branch. If there are no local commits to rebase, this is equivalent to a fast-forward.
Only ever fast-forward
Fast-forward to the fetched branch. Fail if that is not possible.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel


Git 2.33.0.2 Setup
Choose a credential helper
Which credential helper should be configured?
Git Credential Manager Core
(NEW!) Use the new, cross-platform version of the Git Credential Manager.
See more information about the future of Git Credential Manager here.
Git Credential Manager
(DEPRECATED) The Git Credential Manager for Windows handles credentials e.g. for Azure DevOps and GitHub (requires .NET framework v4.5.1 or later).
None
Do not use a credential helper.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel

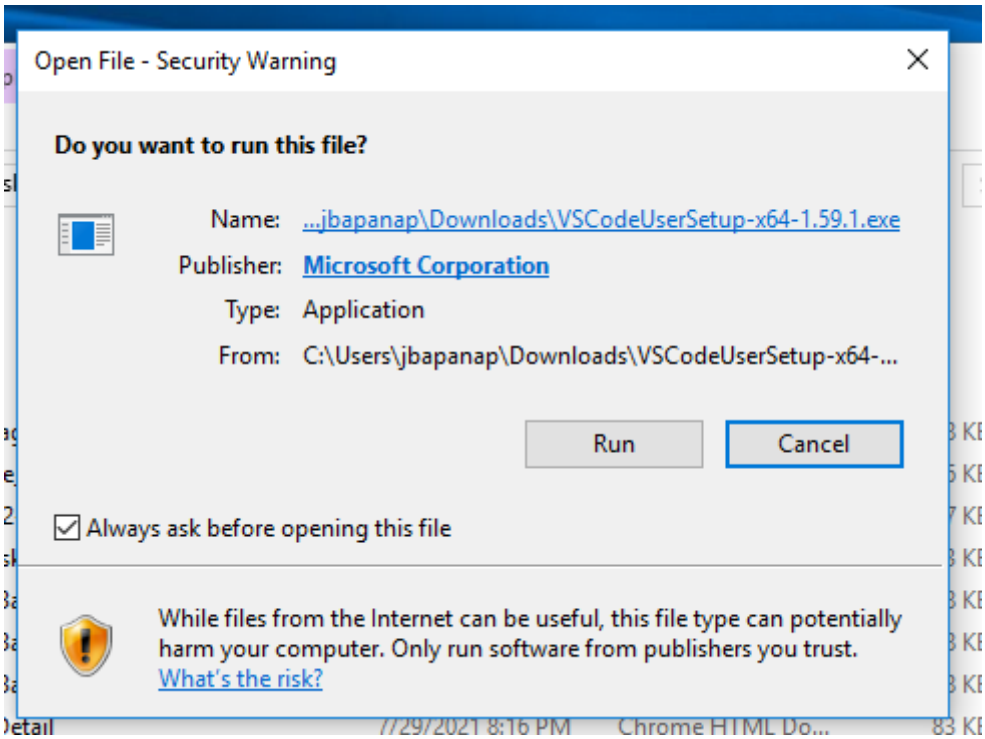

Git 2.33.0.2 Setup
Configuring experimental options
These features are developed actively. Would you like to try them?
Enable experimental support for pseudo consoles.
(NEW!) This allows running native console programs like Node or Python in a Git Bash window without using winpty, but it still has known bugs.
Enable experimental built-in file system monitor
(NEW!) Automatically run a built-in file system watcher, to speed up common operations such as `git status`, `git add`, `git commit`, etc in worktrees containing many files.
https://gitforwindows.org/
Only show new options
Back
Install
Cancel

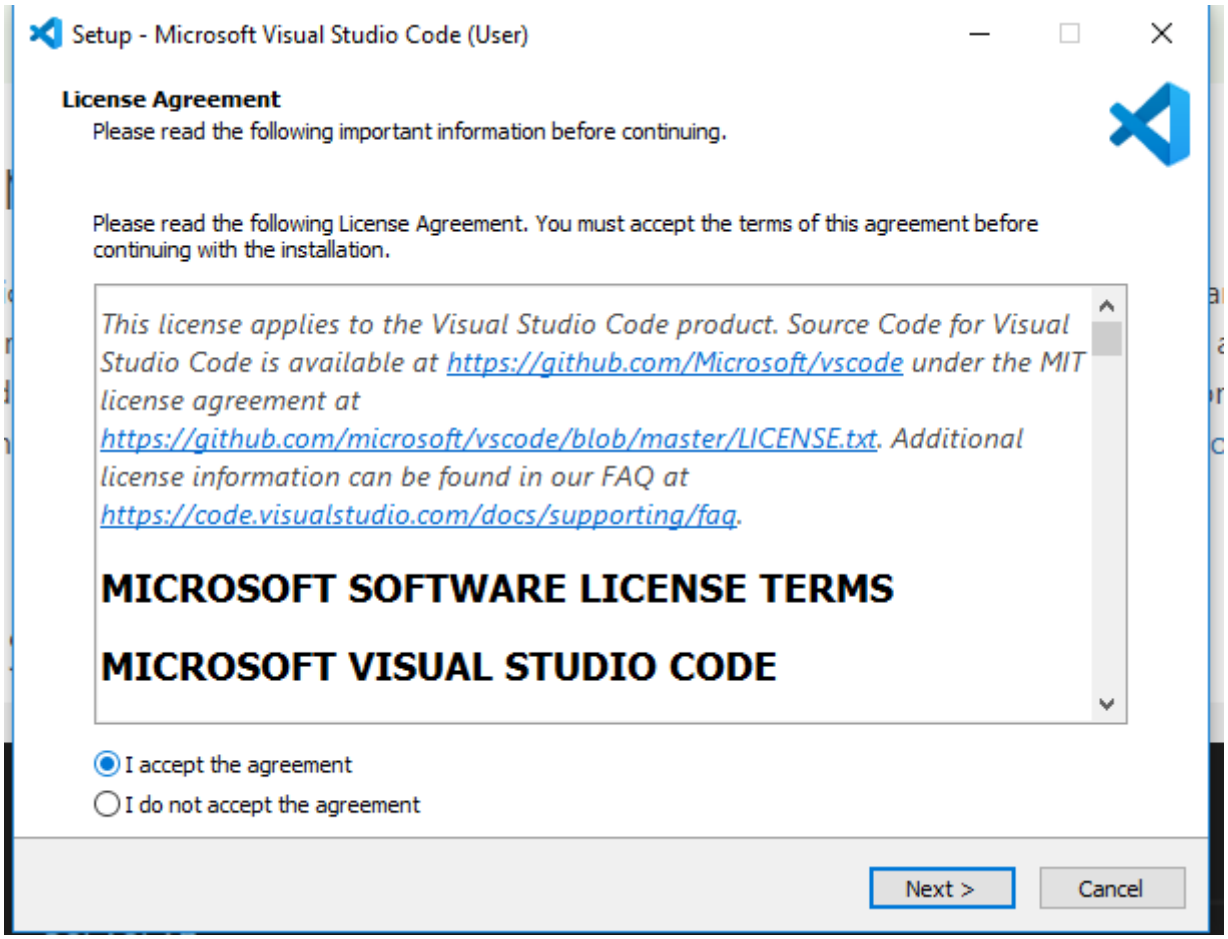

Git 2.33.0.2 Setup
Installing
Please wait while Setup installs Git on your computer.
Extracting files...
C:\Program Files\Git\mingw64\lib\tcl8.6\msgs\bn.msg
https://gitforwindows.org/
Only show new options
Cancel

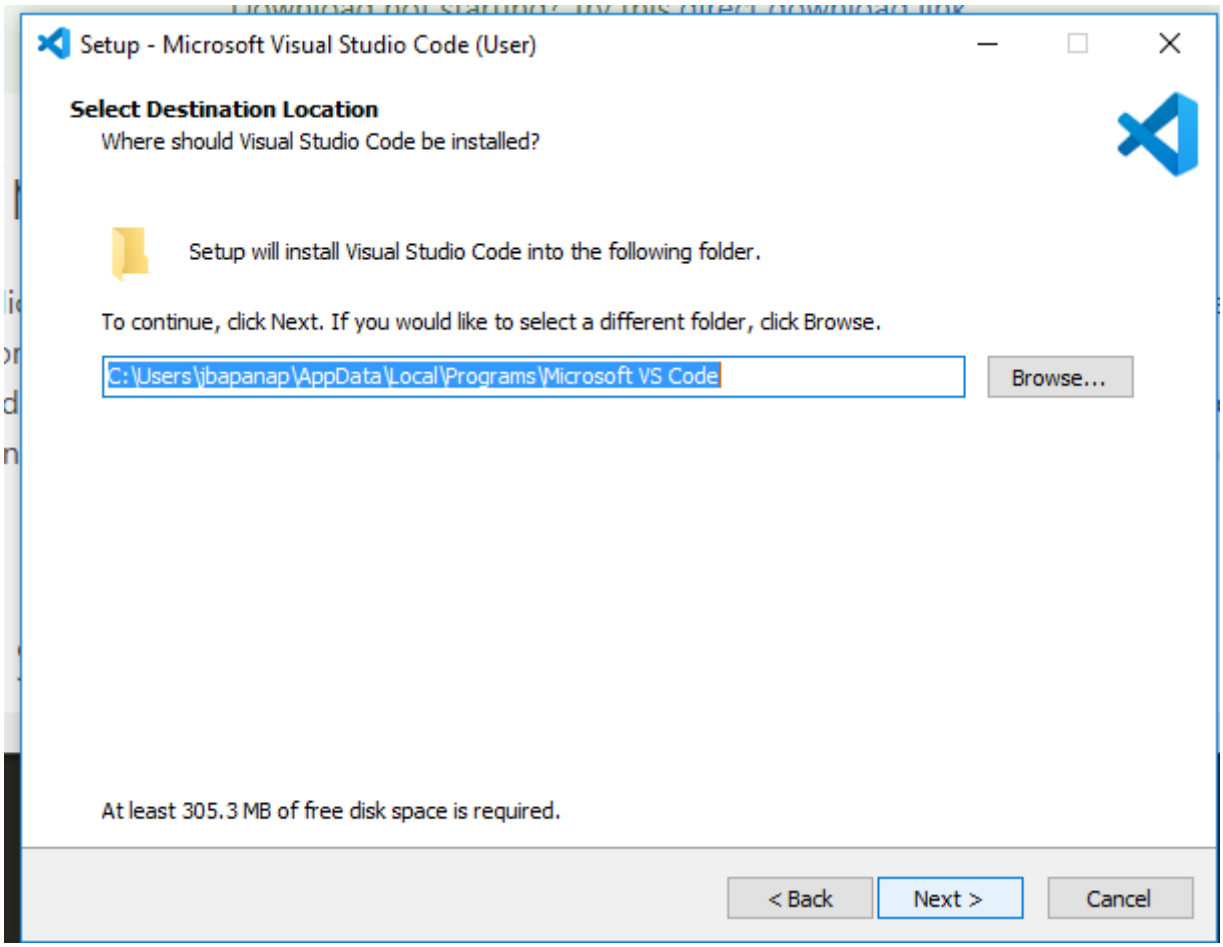


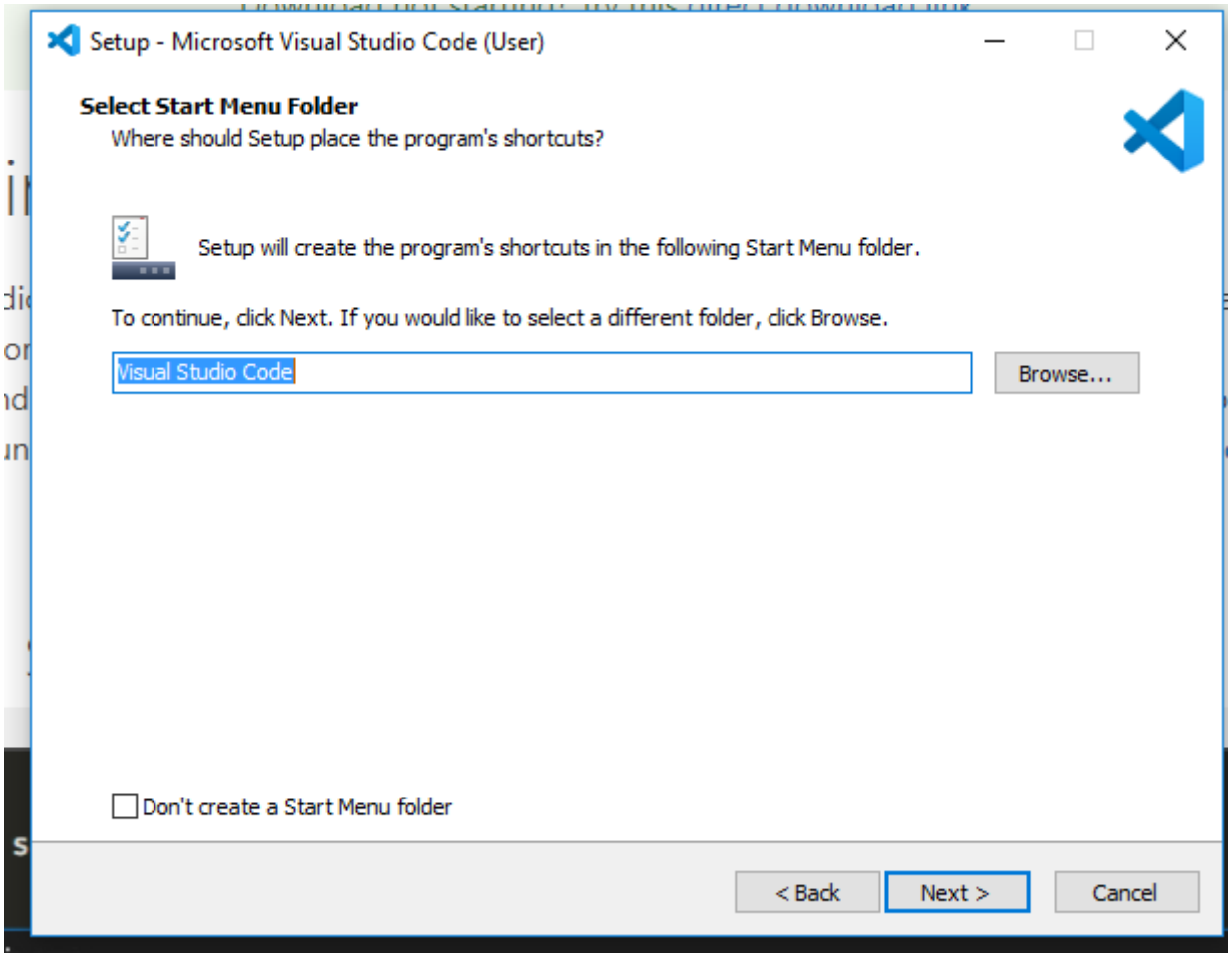
1. Install VS Code https://code.visualstudio.com/download

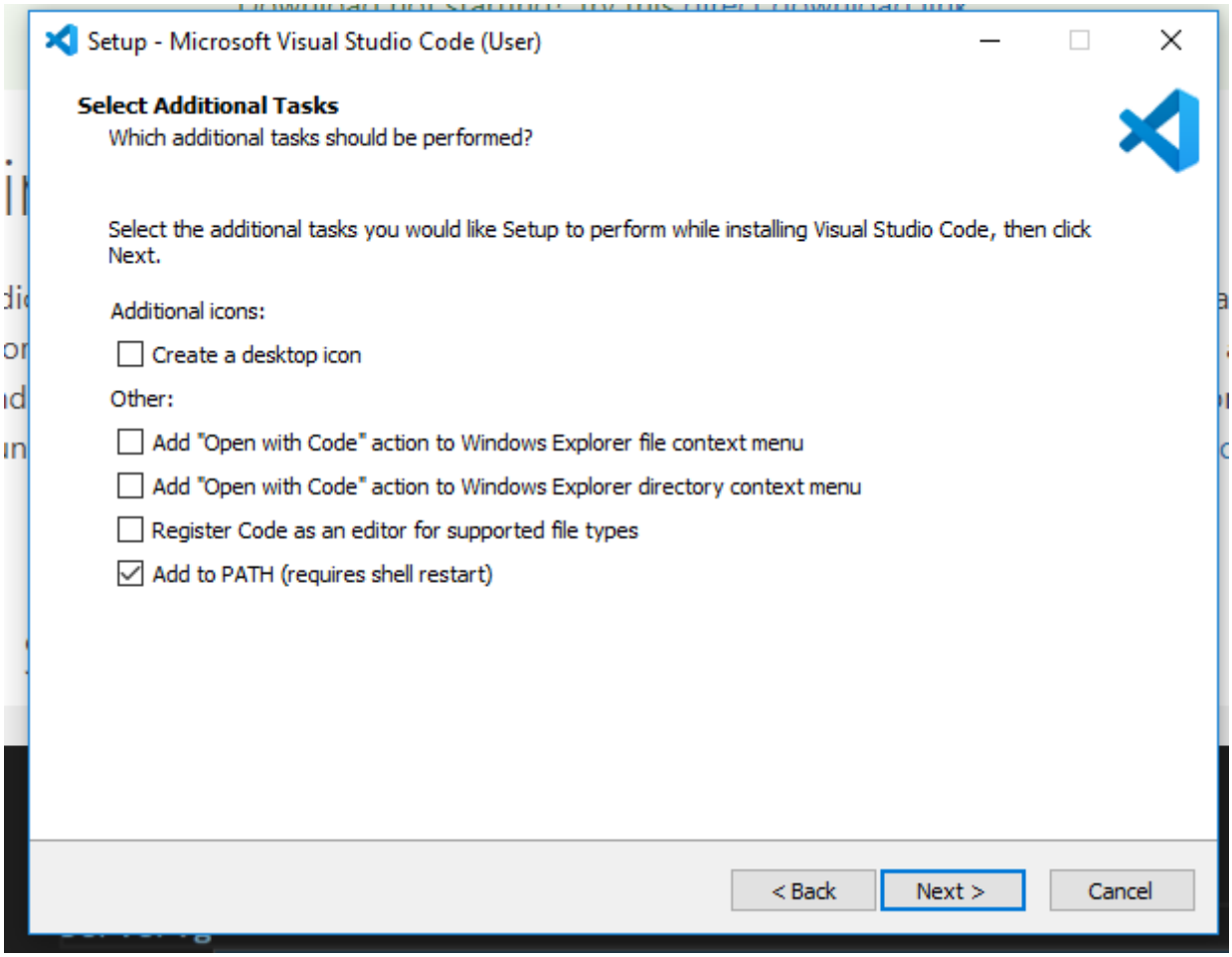
Download vs code and double click on the setup file:

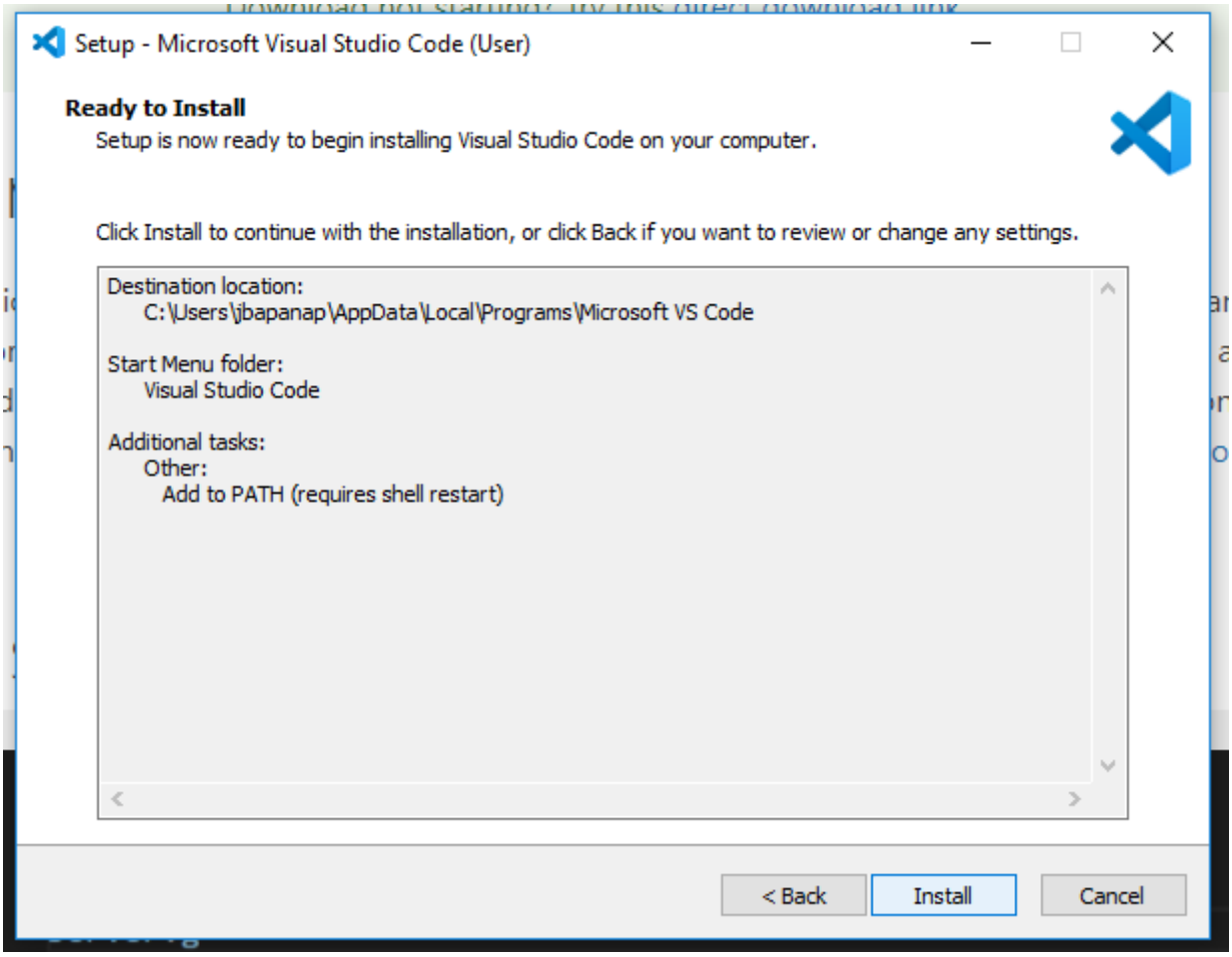


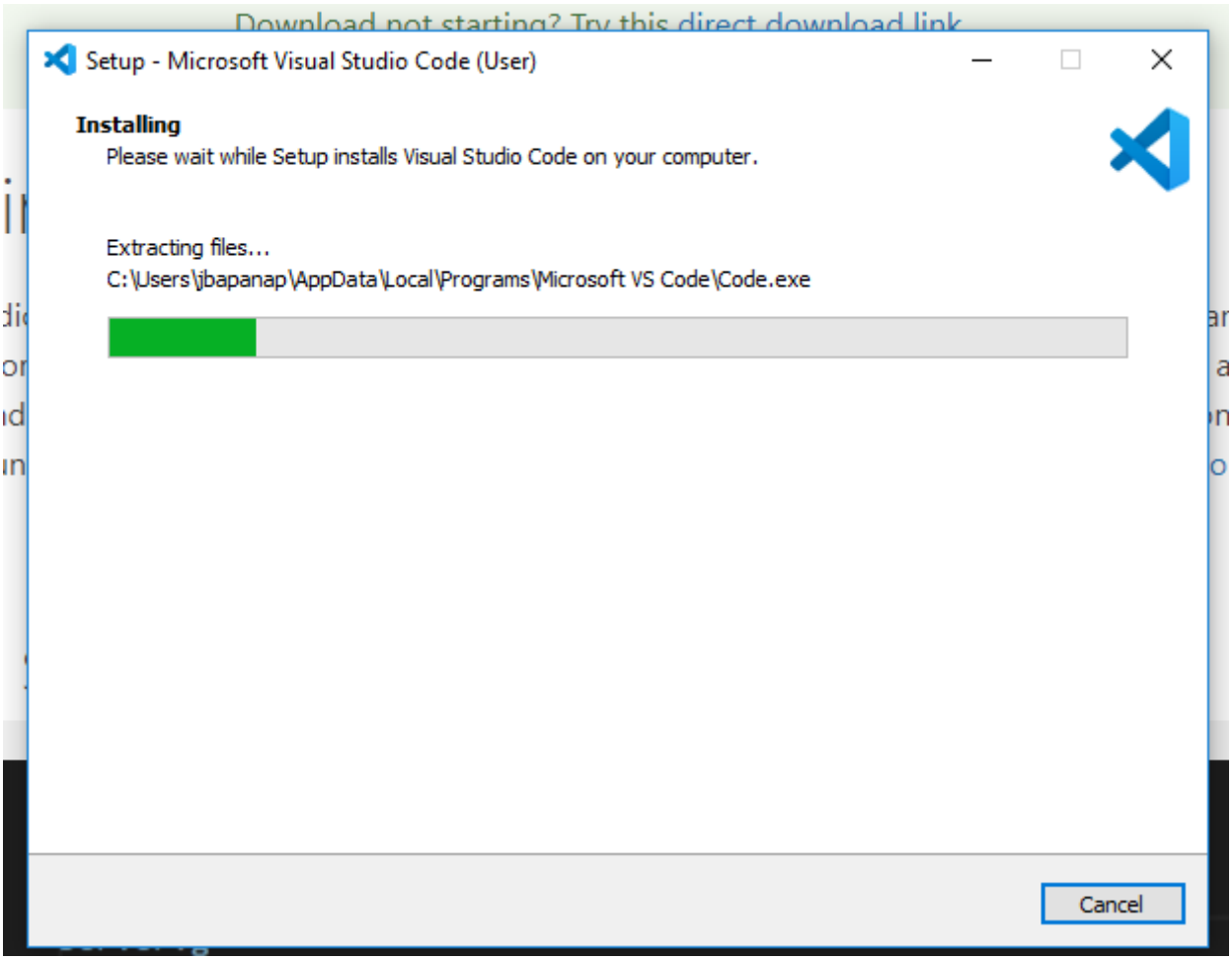

Setup - Microsoft Visual Studio Code (User)
License Agreement
Please read the following important information before continuing.
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.
This license applies to the Visual Studio Code product. Source Code for Visual Studio Code is available at https://github.com/Microsoft/vscode under the MIT license agreement at https://github.com/microsoft/vscode/blob/master/LICENSE.txt. Additional license information can be found in our FAQ at https://code.visualstudio.com/docs/supporting/faq.
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT VISUAL STUDIO CODE
I accept the agreement
I do not accept the agreement
Next >
Cancel

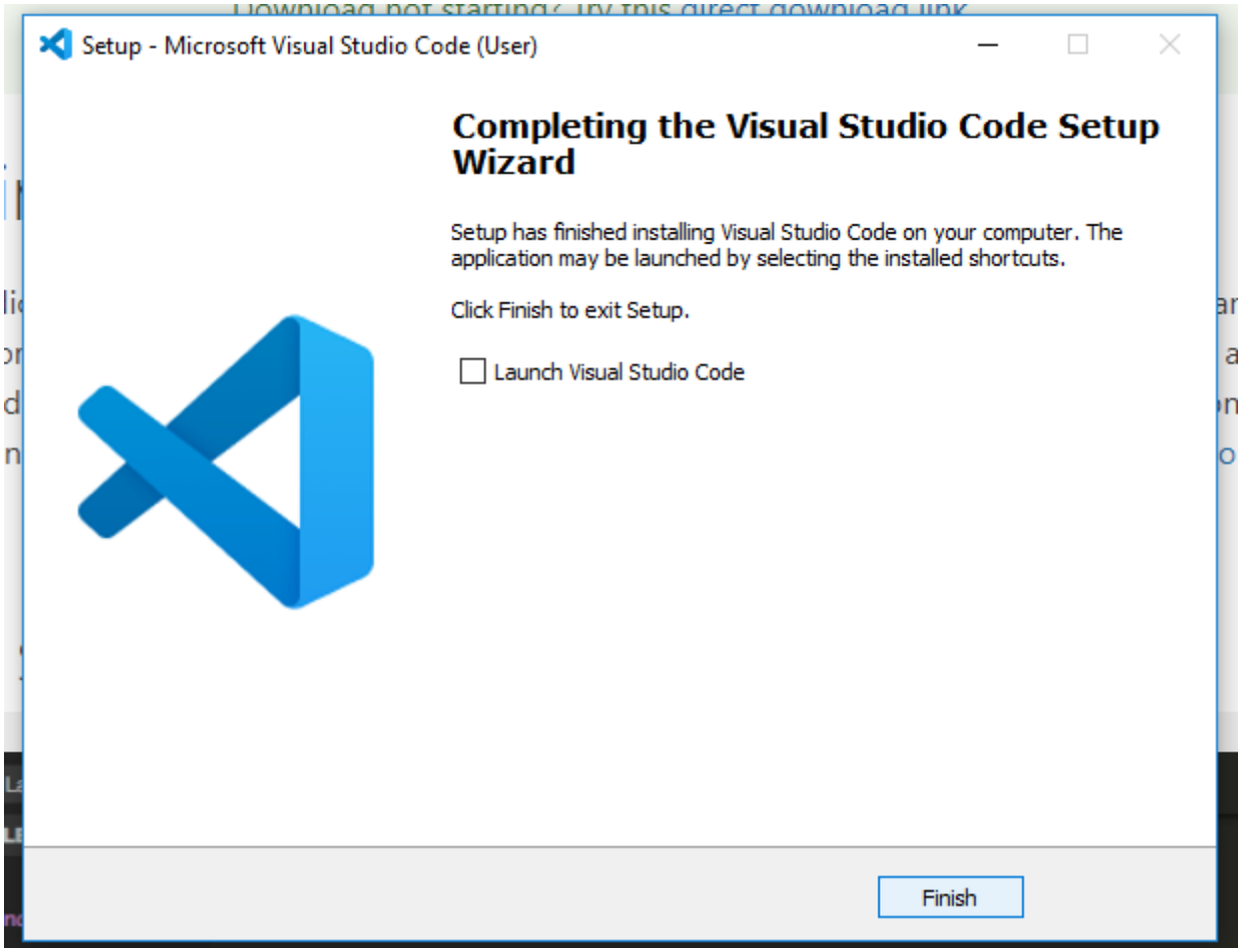

Setup - Microsoft Visual Studio Code (User)
Select Destination Location
Where should Visual Studio Code be installed?
Setup will install Visual Studio Code into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Users\jbapanap\AppData\Local\Programs\Microsoft VS Code
Browse...
At least 305.3 MB of free disk space is required.
< Back
Next >
Cancel


Setup - Microsoft Visual Studio Code (User)
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Visual Studio Code
Browse...
Don't create a Start Menu folder
< Back
Next >
Cancel

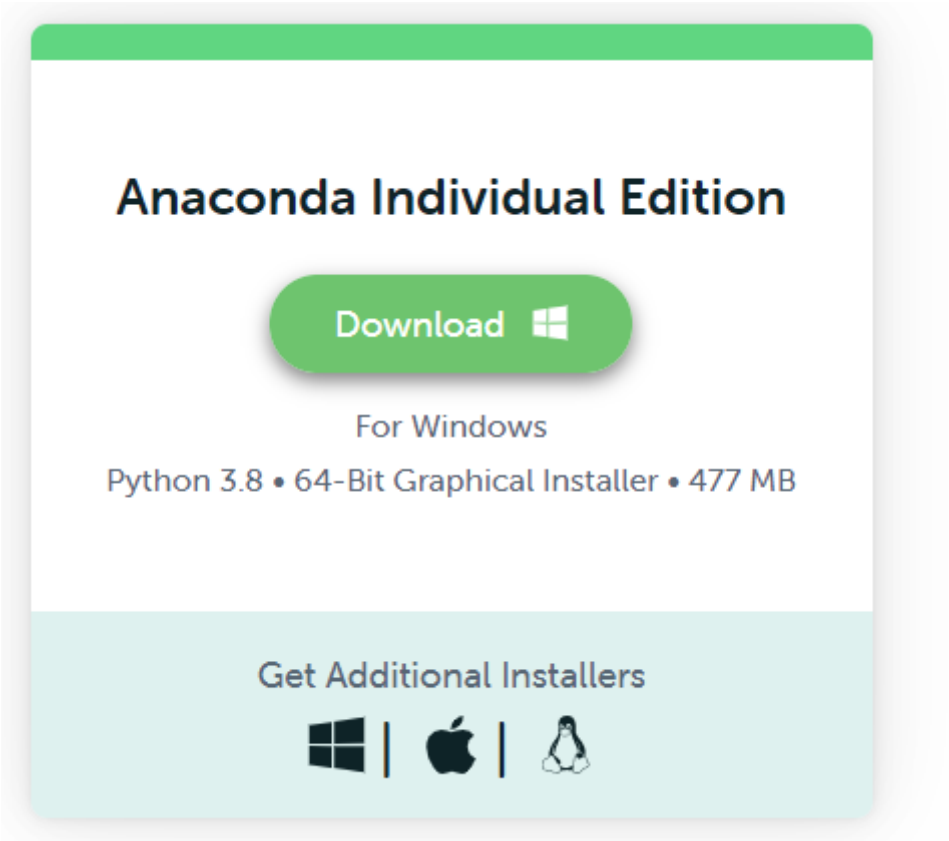

Setup - Microsoft Visual Studio Code (User)
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing Visual Studio Code, then click Next.
Additional icons:
Create a desktop icon
Other:
Add "Open with Code" action to Windows Explorer file context menu
Add "Open with Code" action to Windows Explorer directory context menu
Register Code as an editor for supported file types
Add to PATH (requires shell restart)
< Back
Next >
Cancel

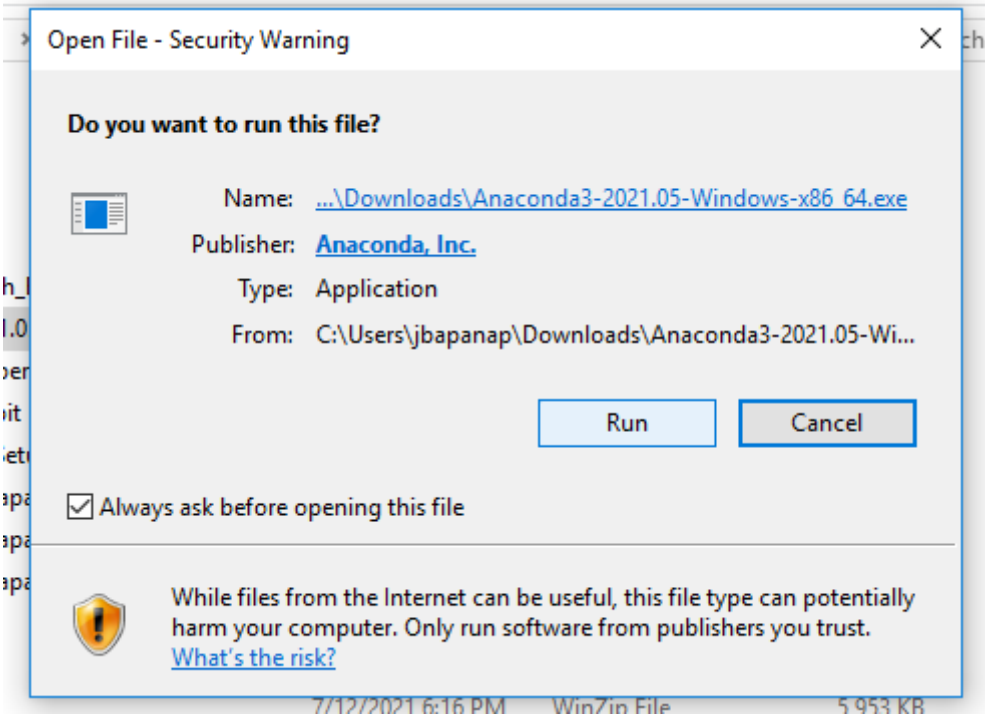

Setup - Microsoft Visual Studio Code (User)
Ready to Install
Setup is now ready to begin installing Visual Studio Code on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Users\jbapanap\AppData\Local\Programs\Microsoft VS Code
Start Menu folder:
Visual Studio Code
Additional tasks:
Other:
Add to PATH (requires shell restart)
< Back
Install
Cancel

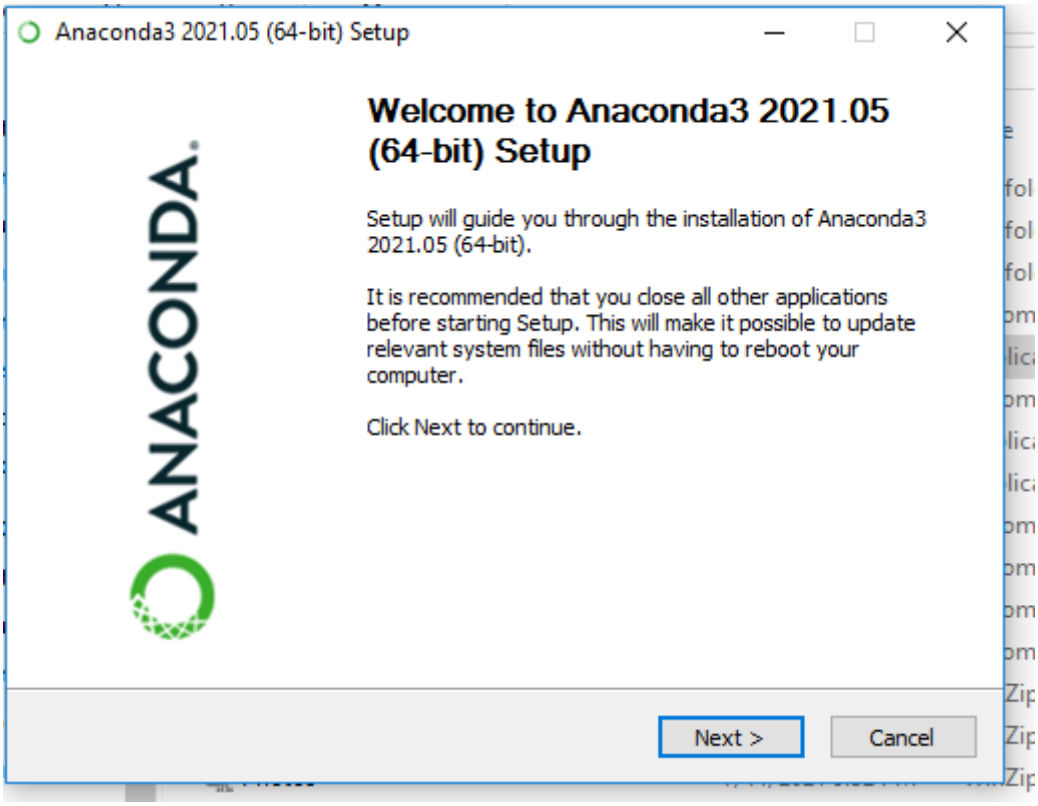

Download not starting? Try this direct download link.
Setup - Microsoft Visual Studio Code (User)
Installing
Please wait while Setup installs Visual Studio Code on your computer.
Extracting files...
C:\Users\jbapanap\AppData\Local\Programs\Microsoft VS Code\Code.exe
Cancel

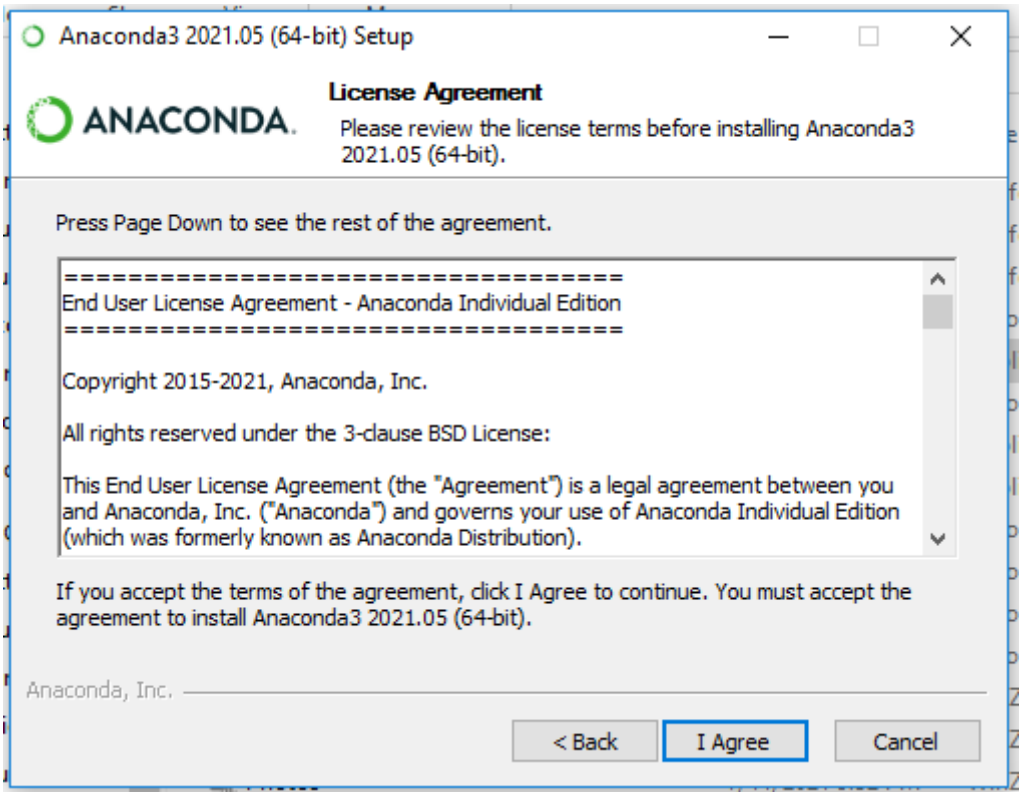


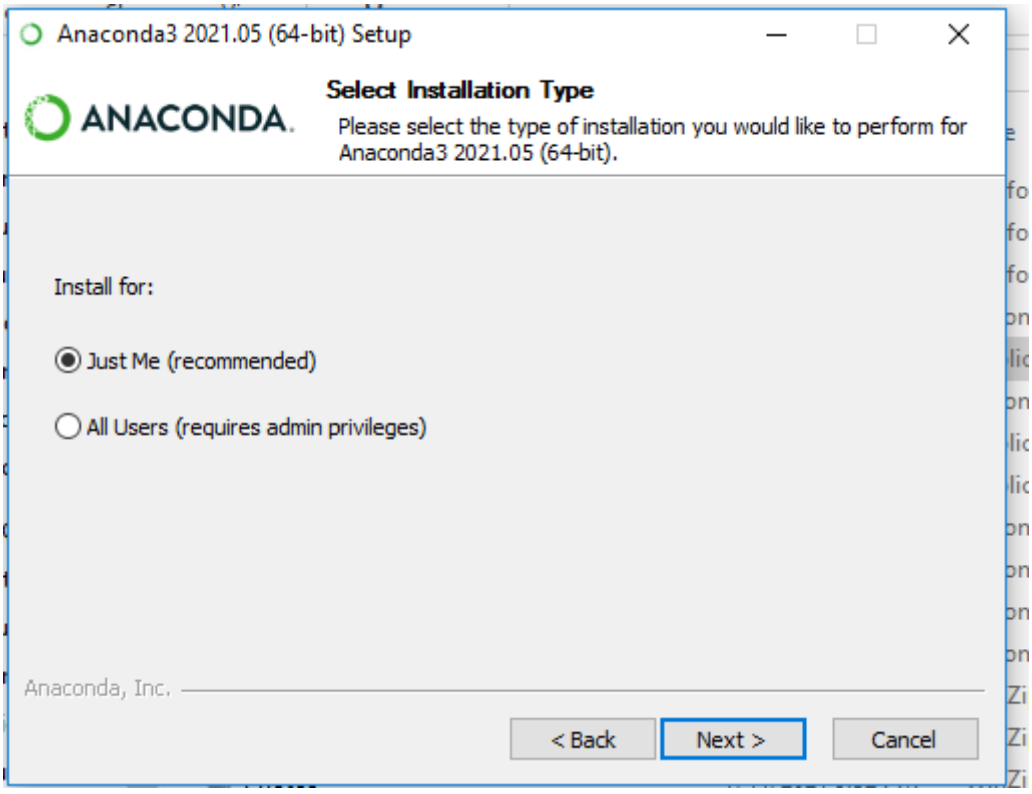
1. Install Anaconda Python https://www.anaconda.com/products/individual

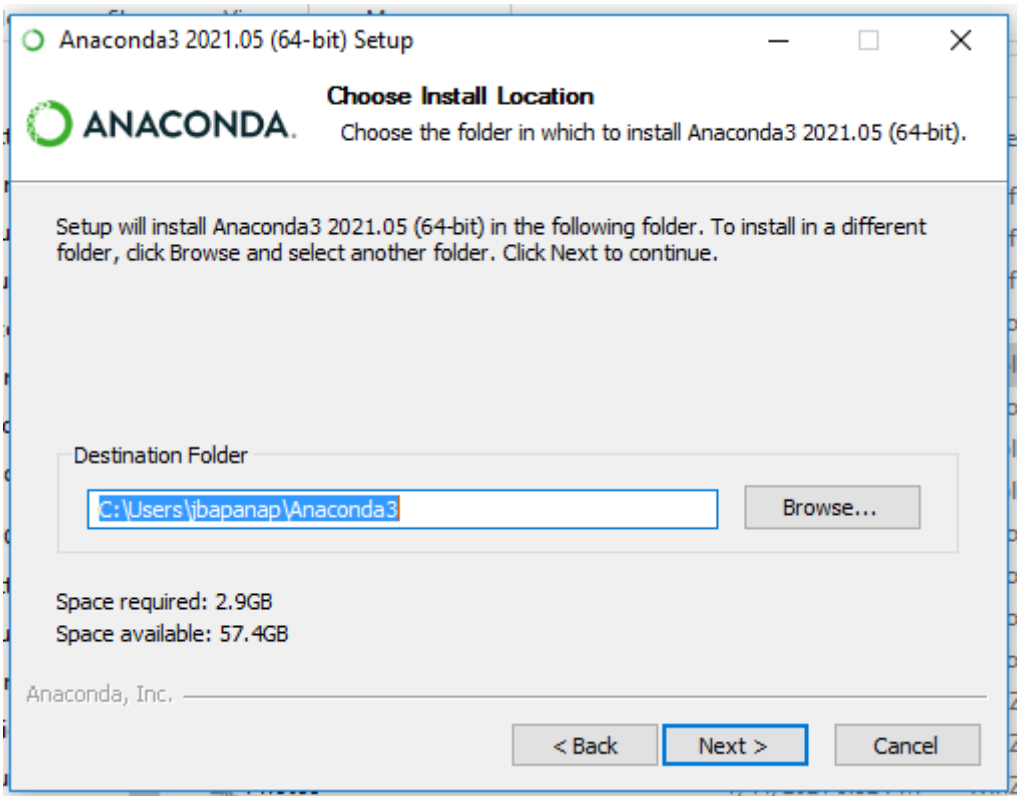


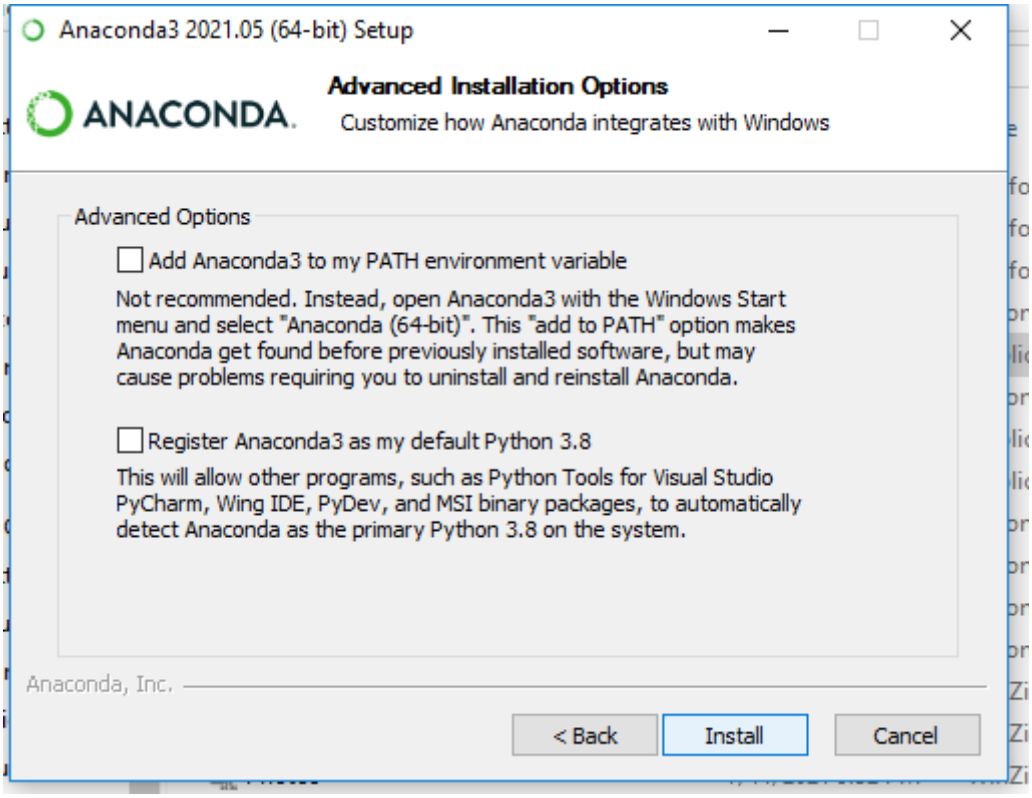

Open File - Security Warning
Do you want to run this file?
Name: ...\Downloads\Anaconda3-2021.05-Windows-x86_64.exe
Publisher: Anaconda, Inc.
Type: Application
From: C:\Users\jbapanap\Downloads\Anaconda3-2021.05-Wi...
Run
Cancel
Always ask before opening this file
While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust.
What's the risk?

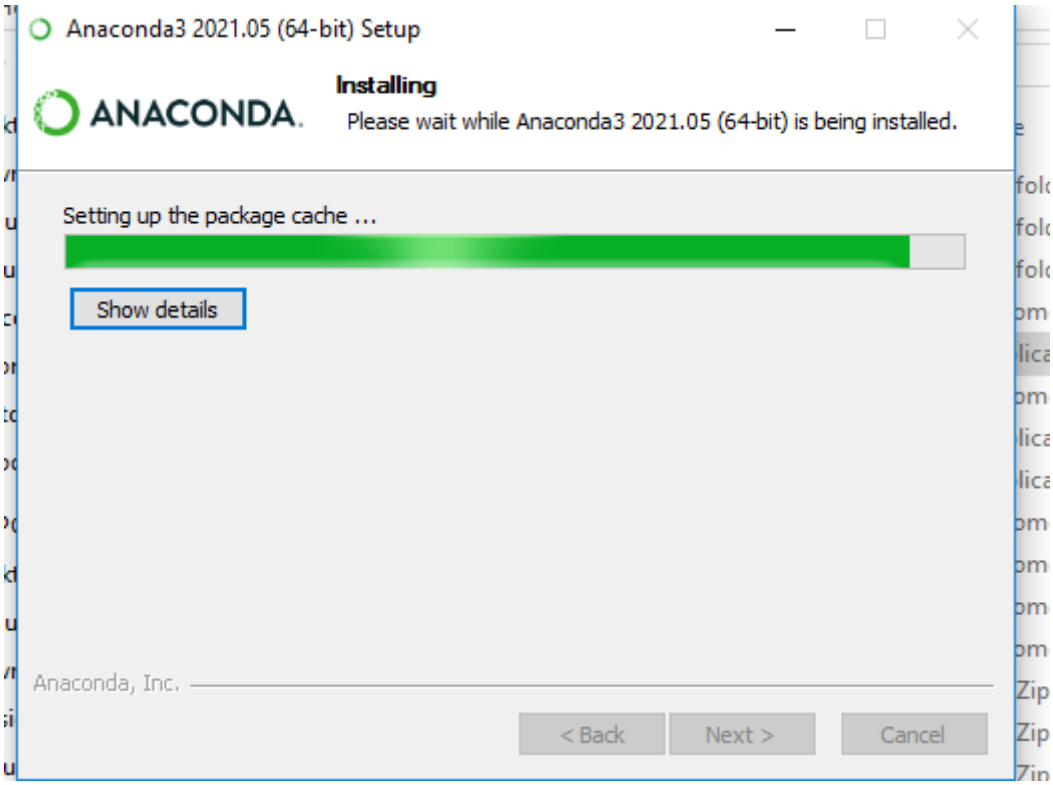

Anaconda3 2021.05 (64-bit) Setup
Welcome to Anaconda3 2021.05 (64-bit) Setup
Setup will guide you through the installation of Anaconda3 2021.05 (64-bit).
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
ANACONDA.
Next >
Cancel


Anaconda3 2021.05 (64-bit) Setup
ANACONDA.
License Agreement
Please review the license terms before installing Anaconda3 2021.05 (64-bit).
Press Page Down to see the rest of the agreement.
==========
End User License Agreement - Anaconda Individual Edition
==========
Copyright 2015-2021, Anaconda, Inc.
All rights reserved under the 3-clause BSD License:
This End User License Agreement (the "Agreement") is a legal agreement between you and Anaconda, Inc. ("Anaconda") and governs your use of Anaconda Individual Edition (which was formerly known as Anaconda Distribution).
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install Anaconda3 2021.05 (64-bit).
Anaconda, Inc.
< Back
I Agree
Cancel


Anaconda3 2021.05 (64-bit) Setup
ANACONDA.
Select Installation Type
Please select the type of installation you would like to perform for Anaconda3 2021.05 (64-bit).
Install for:
Just Me (recommended)
All Users (requires admin privileges)
Anaconda, Inc.
< Back
Next >
Cancel


Anaconda3 2021.05 (64-bit) Setup
ANACONDA.
Choose Install Location
Choose the folder in which to install Anaconda3 2021.05 (64-bit).
Setup will install Anaconda3 2021.05 (64-bit) in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:\Users\jbapanap\Anaconda3
Browse...
Space required: 2.9GB
Space available: 57.4GB
Anaconda, Inc.
< Back
Next >
Cancel


Anaconda3 2021.05 (64-bit) Setup
ANACONDA.
Advanced Installation Options
Customize how Anaconda integrates with Windows
Advanced Options
Add Anaconda3 to my PATH environment variable
Not recommended. Instead, open Anaconda3 with the Windows Start menu and select "Anaconda (64-bit)". This "add to PATH" option makes Anaconda get found before previously installed software, but may cause problems requiring you to uninstall and reinstall Anaconda.
Register Anaconda3 as my default Python 3.8
This will allow other programs, such as Python Tools for Visual Studio PyCharm, Wing IDE, PyDev, and MSI binary packages, to automatically detect Anaconda as the primary Python 3.8 on the system.
Anaconda, Inc.
< Back
Install
Cancel


Anaconda3 2021.05 (64-bit) Setup
ANACONDA.
Installing
Please wait while Anaconda3 2021.05 (64-bit) is being installed.
Setting up the package cache ...
Show details
Anaconda, Inc.
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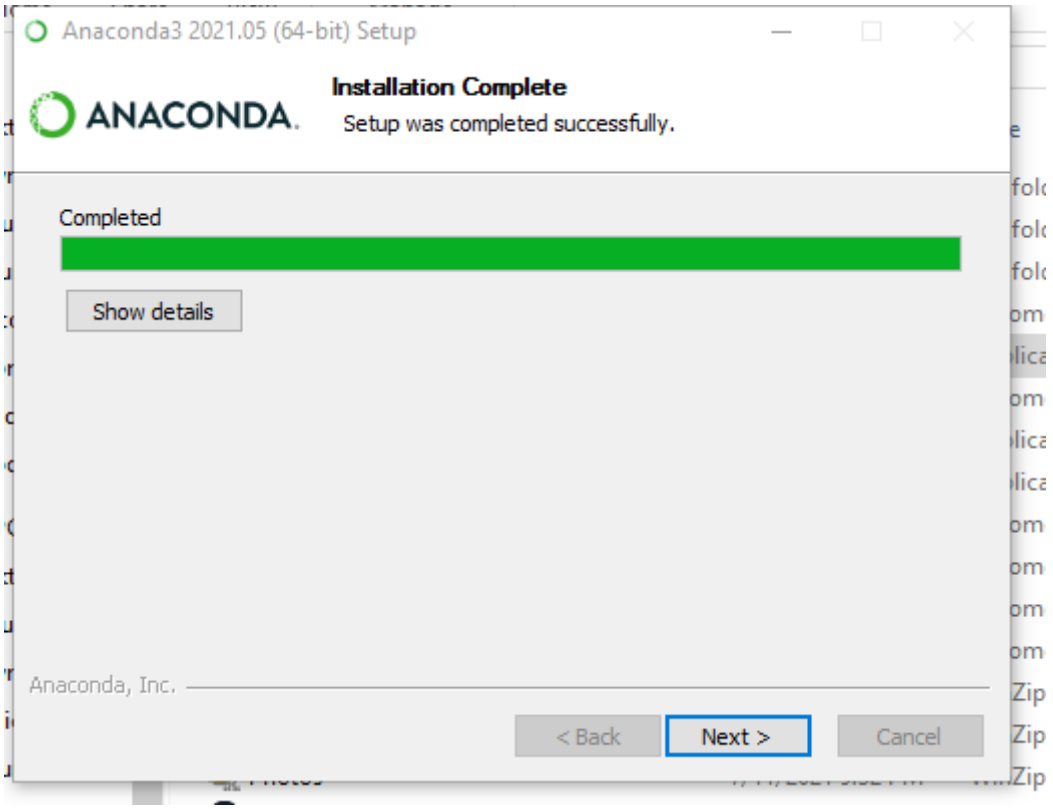
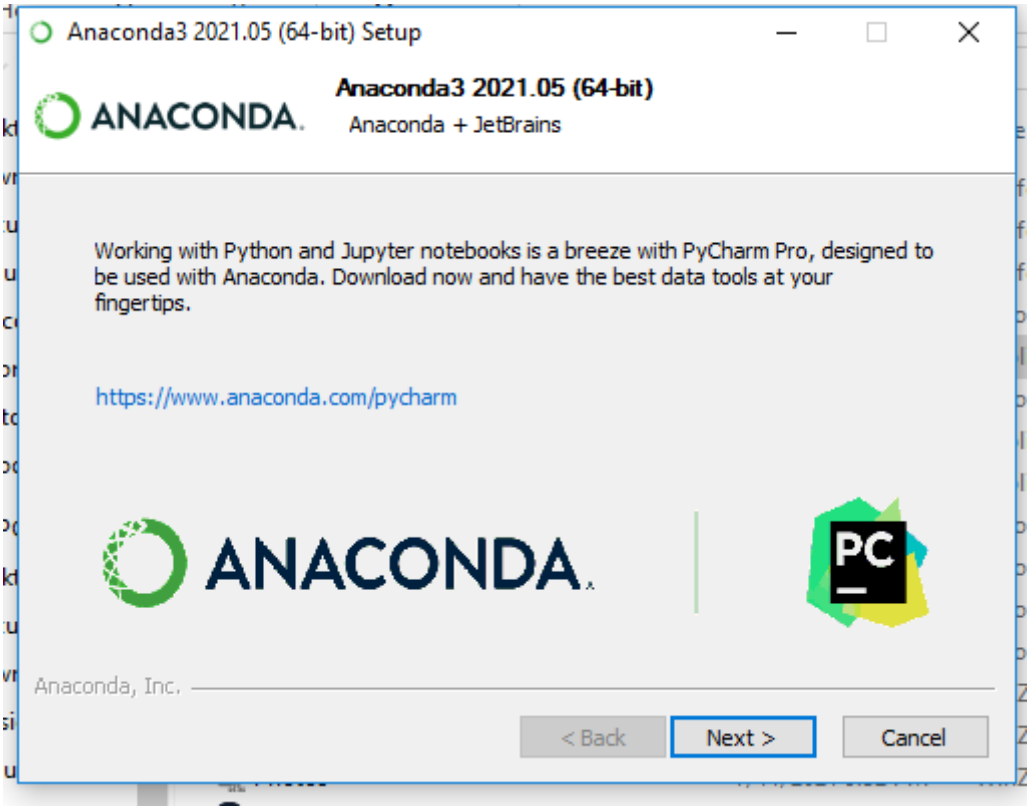
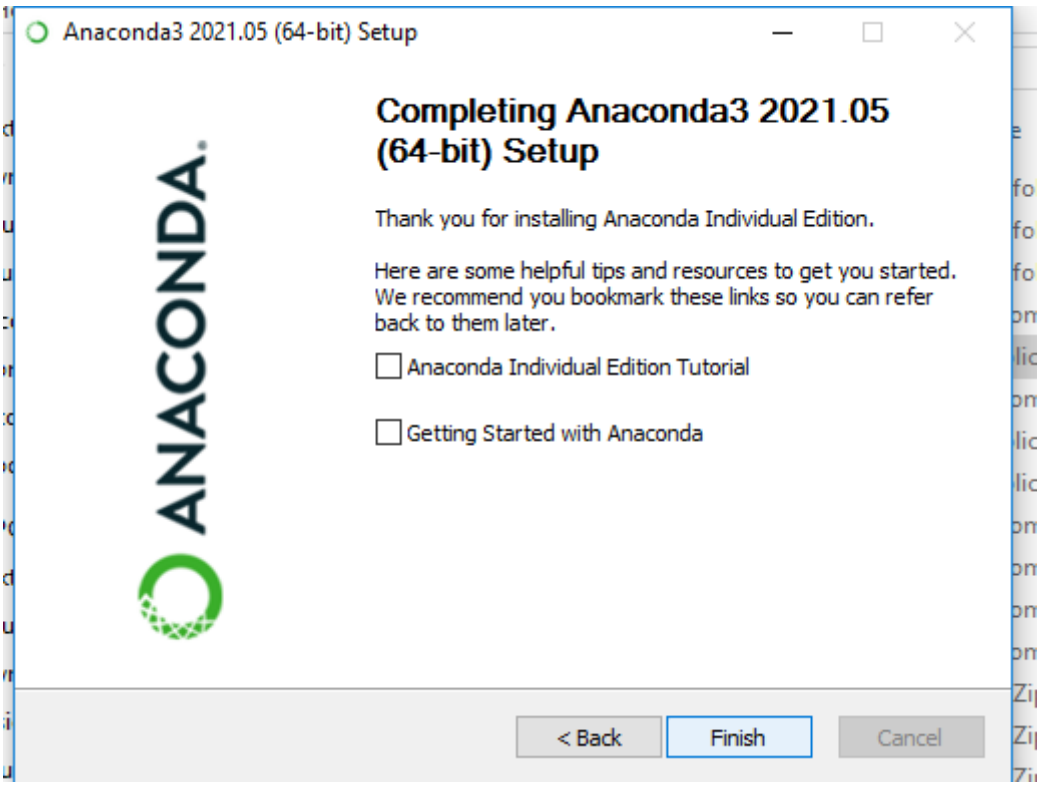
Cancel


Anaconda3 2021.05 (64-bit) Setup
ANACONDA.
Installation Complete
Setup was completed successfully.
Completed
Show details
Anaconda, Inc.
< Back
Next >
Cancel





1. Install “vim”, https://www.vim.org/download.php#pc A good guide to vim on windows https://www.freecodecamp.org/news/vim-windows-install-powershell/ An interactive tutorial on using vim https://www.openvim.com/

vim.org/download.php#pc

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PC: MS-DOS and MS-Windows

For modern MS-Windows systems (starting with XP) you can simply use the executable install
gvim82.exe (ftp)
It includes GUI and console versions, for 32 bit and 64 bit systems. You can select what you w

If you want a signed version you can get a build from
vim-win32-installer
It supports many interfaces, such as Perl, Tcl, Lua, Python and Ruby. There are also 64bit vers
You can also get a nightly build from there with the most recent improvements, with a small ris

Since there are so many different versions of MS operating systems, there are several version
For Vim 5.x, Vim 6.x and Vim 7 look in the pc directory (ftp).

Self-installing executable gvim##.exe gvim82.exe (ftp)
For Vim 6 and later. This includes a GUI version of Vim - with many features and OLE su
space and memory. It's the simplest way to start using Vim on the PC. The installer allow
For Vim 6.3 and later it also includes a console version, both for MS-Windows 95/98/ME

Runtime files vim##rt.zip vim82rt.zip (ftp)
For all the following binary versions you need this runtime archive, which includes the do

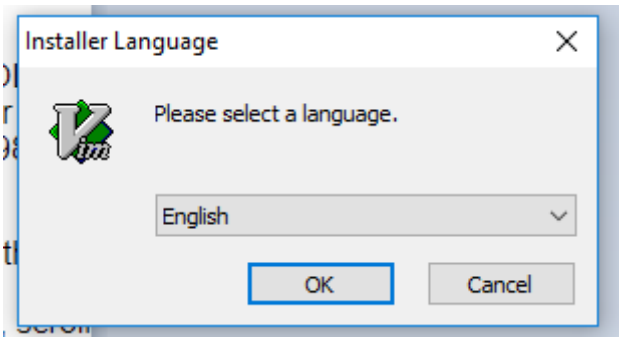
There are three versions that run as an MS-Windows application. These provide menus, scroll

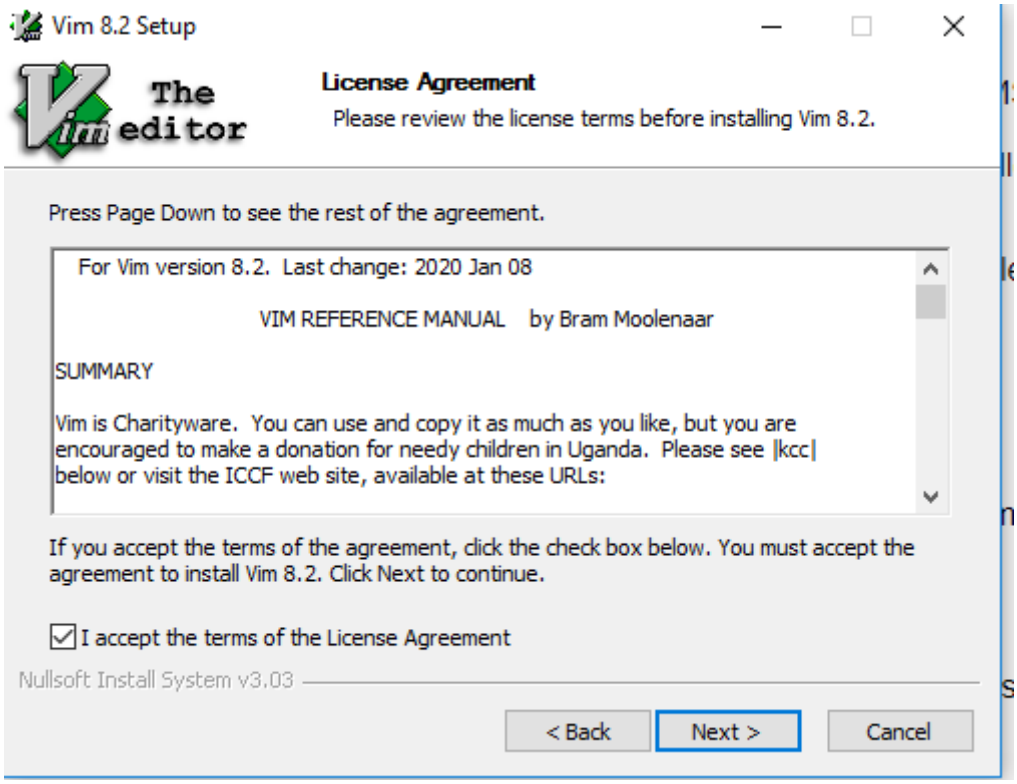
GUI executable gvim##.zip gvim82.zip (ftp)
This is the "normal" GUI version.
OLE GUI executable gvim##ole.zip gvim82ole.zip (ftp)
A GUI version with OLE support. This offers a few extra features, such as integration with

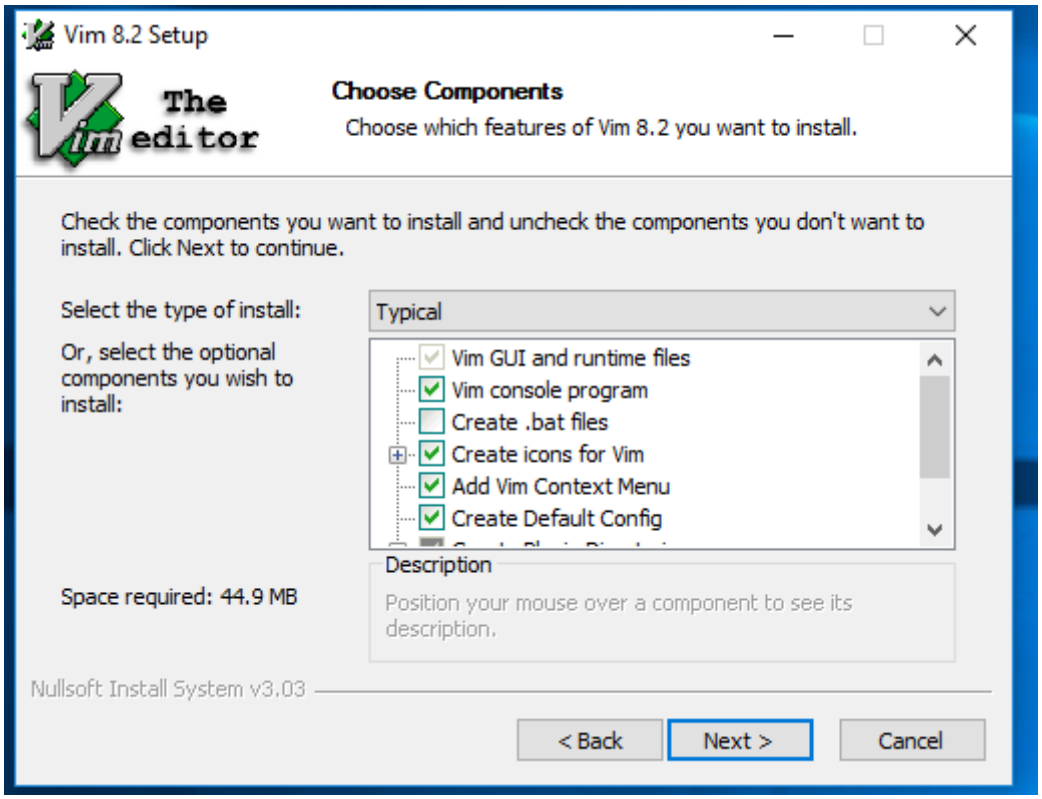
There are three versions that run on MS-DOS or in a console window in MS-Windows:

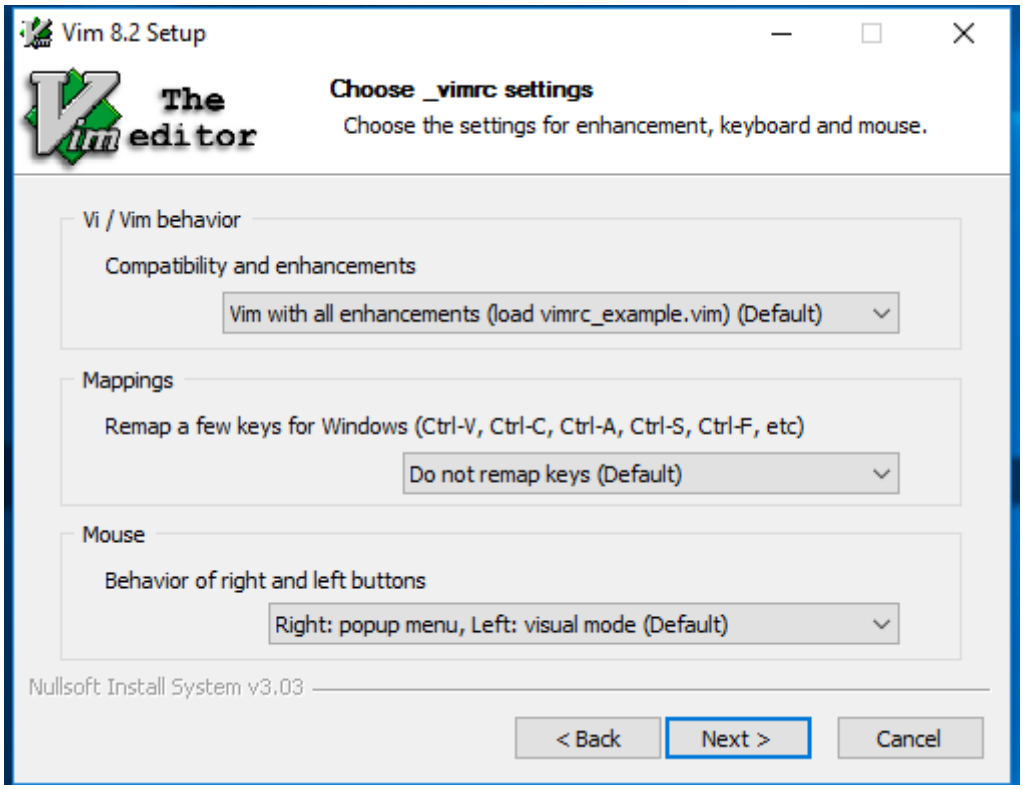
Win32 console executable vim##w32.zip vim82w32.zip (ftp)
The Win32 console version works well on MS-Windows NT/2000/XP/Vista/7. It supports
resizing the console window (this may crash MS-Windows...).
32 bit DOS executable vim##d32.zip vim73_46d32.zip (ftp)
The 32 bit DOS version works well on MS-Windows 95/98/ME. It requires a DPMI manag
Windows NT/2000/XP/Vista/7. It is compiled with "big" features.
Not available for 7.4 and later.
16 bit DOS executable vim##d16.zip vim71d16.zip (ftp)
The 16 bit DOS version is the only one that runs on old MS-DOS systems. Only use this
quickly runs out of memory.
The last version available is 7.1. Version 7.2 and later are too big to fit in the DOS memo

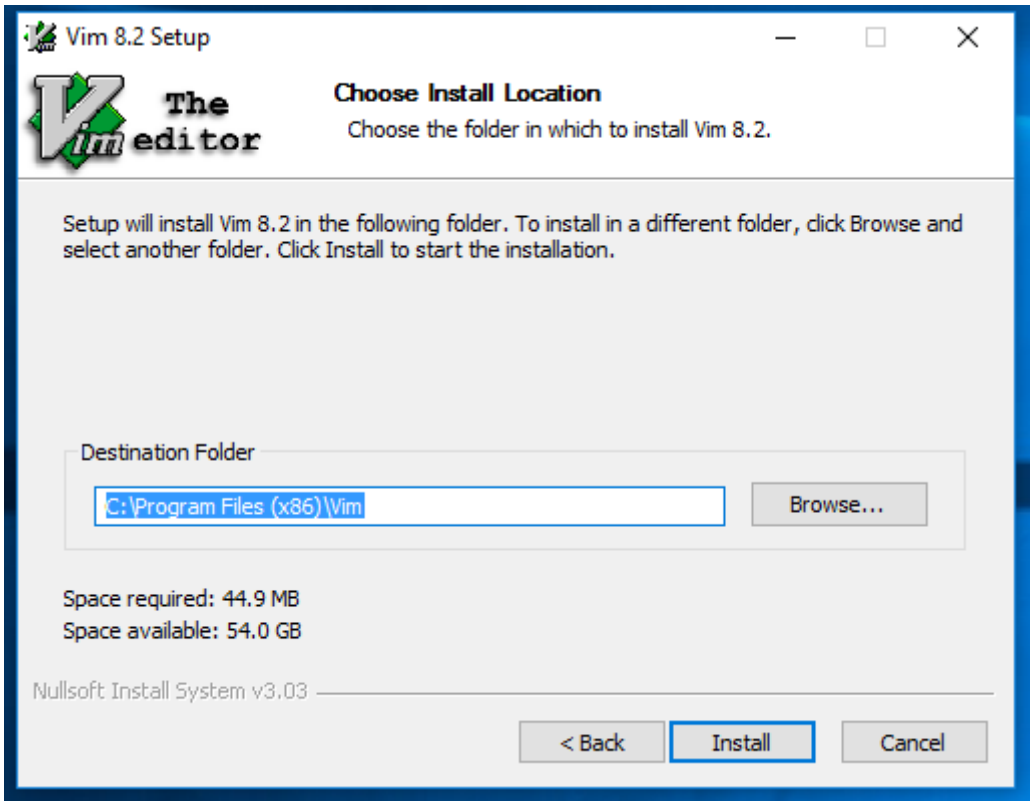
There are a few extra files:

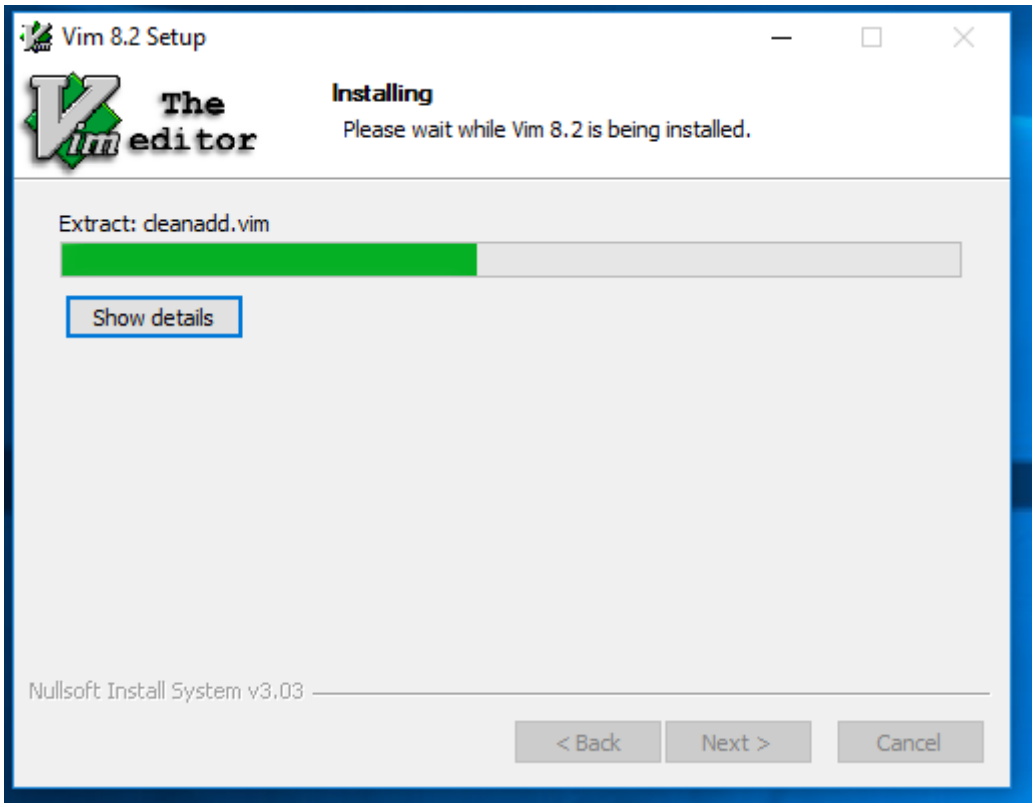


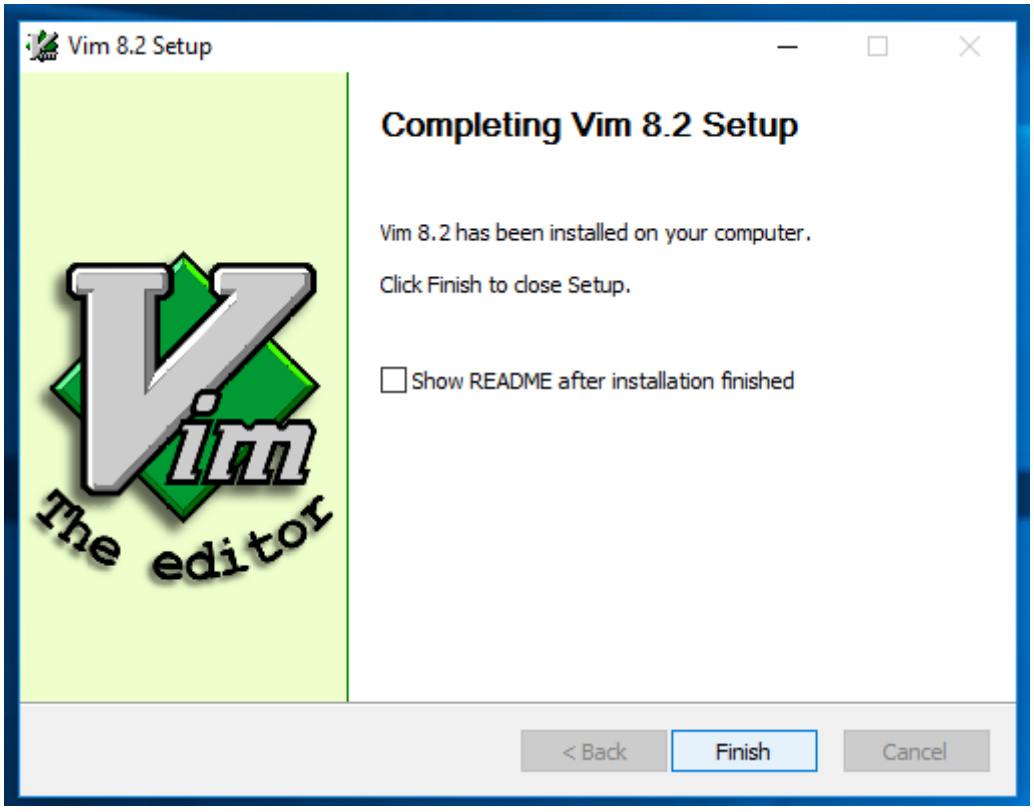

Vim 8.2 Setup
The editor
License Agreement
Please review the license terms before installing Vim 8.2.
Press Page Down to see the rest of the agreement.
For Vim version 8.2. Last change: 2020 Jan 08
VIM REFERENCE MANUAL by Bram Moolenaar
SUMMARY
Vim is Charityware. You can use and copy it as much as you like, but you are encouraged to make a donation for needy children in Uganda. Please see |kcc| below or visit the ICCF web site, available at these URLs:
If you accept the terms of the agreement, click the check box below. You must accept the agreement to install Vim 8.2. Click Next to continue.
I accept the terms of the License Agreement
Nullsoft Install System v3.03
< Back
Next >
Cancel


Vim 8.2 Setup
The editor
Choose Components
Choose which features of Vim 8.2 you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.
Select the type of install:
Typical
Or, select the optional components you wish to install:
Vim GUI and runtime files
Vim console program
Create .bat files
Create icons for Vim
Add Vim Context Menu
Create Default Config
Description
Position your mouse over a component to see its description.
Space required: 44.9 MB
Nullsoft Install System v3.03
< Back
Next >
Cancel


Vim 8.2 Setup
The Vim editor
Choose _vimrc settings
Choose the settings for enhancement, keyboard and mouse.
Vi / Vim behavior
Compatibility and enhancements
Vim with all enhancements (load vimrc_example.vim) (Default)
Mappings
Remap a few keys for Windows (Ctrl-V, Ctrl-C, Ctrl-A, Ctrl-S, Ctrl-F, etc)
Do not remap keys (Default)
Mouse
Behavior of right and left buttons
Right: popup menu, Left: visual mode (Default)
Nullsoft Install System v3.03
< Back
Next >
Cancel


Vim 8.2 Setup
The Vim editor
Choose Install Location
Choose the folder in which to install Vim 8.2.
Setup will install Vim 8.2 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Program Files (x86)\Vim
Browse...
Space required: 44.9 MB
Space available: 54.0 GB
Nullsoft Install System v3.03
< Back
Install
Cancel





Installation on a Mac

We will be using 'https://github.com' for class handouts and for turning working with files through the semester. The underlying system that github uses is 'git'. You will need to to to 'https://github.com' and create a free account on the site.

1. Install XCode (Apple Store) On your Apple Mac bring up the Apple Store. Search for “XCode” - it is free. Install. Once you install XCode you need to start it and accept the license terms for XCode. XCode is free but it requires the “Accept” before it will allow you to run software. Open the finder in /Applications/Utilities and click on Terminal. The enter: `xcode-select –install` to install the command line tools.
2. Install brew. Search for “mac brew”. Cut and paste the line. Bring up a “terminal” - In the finder brows to your /Applications, then in the Utilities you will find a terminal. Paste the “brew” install line into that. Run.
3. Now at the command line (in Terminal) do `$ brew install git` . https://brew.sh/
4. Install “iTerm 2.x” https://iterm2.com/ Since this terminal will be used during the semester please configure it to be in you tool bar.
5. Install Chrome (if you have not already done it) (Search for “Download Chrome” - follow googles instructions) https://www.google.com/chrome/?brand=CHBD&gclid=CjwKCAjwyo36BRAXEiwA24CwGSgDDdrI4XOUKv4CPwFQfs7M2HaXiRJ-MMeszA20rC72r-9U13-8jBoCQV4QAvD_BwE&gclsrc=aw.ds
6. Bring up this page in the “chrome” browser with [.) Navigate around in the site - this is where all the lectures, assignments and lab handouts are built.
7. Install VS Code. Search for “Visual Studio Code” Install. The add the “Python Package to it”. I also installed the “Python Lint” package. https://code.visualstudio.com/download
8. Install Anaconda Python. Search for “Mac Install Anaconda Python” - install the anaconda package (Takes a while). https://www.anaconda.com/products/individual
9. Install “vim” https://github.com/macvim-dev/macvim/releases/tag/snapshot-171

Linux Installs.

This depends on the kind of Linux Ubuntu, RedHat, CentOs, Arch etc, that you have. Let’s get together and figure out hat detail and work on it one-on-one.

Correct Version of Python

First check that you have the correct version of Python! Your system may have an old version of python already on it. All Mac’s do.

```
$ python --version
Python 3.8.3 (default, Jul  2 2020, 16:21:59)
[GCC 7.3.0] :: Anaconda, Inc. on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> quit()
```

You should see “Python 3.8.3” at the top. If you don’t then we need to fix your path so that when you run python you are getting to the version that we just installed.

On a Mac (assuming that you have the latest version of the OS installed) you need to set the “PATH” in the `~/.zshrc` file and then re-start iTerm2. If you installed Anaconda python in `/Users/pschlmp/Anaconda3` (note my username in this - use your own username) then the path will need to be set to:

```
export PATH="/home/pschlump/anaconda3/bin:$PATH"
```

On Windows the path is set as a global system environment variable in the System Variables.
See https://www.architectryan.com/2018/03/17/add-to-the-path-on-windows-10/

Install Packages in Python (Both Windows and Mac)

The installation manager for Python is “pip”. There are 2 ways to run “pip”. In the terminal:

On Mac:

```
$  pip --install <package>
```

or:

```
$ python -m pip --install <package>
```

On Windows:

```
C:\>  pip --install <package>
```

or:

```
C:\> python -m pip --install <package>
```

Most of our installs of python packages will use “pip”.

The exception is installing TensorFlow. It requires more steps to install and we will use the “conda” installer that came with the Anaconda version of Python.

On Mac/Linux:

```
$ conda install -c conda-forge tensorflow
```

On Windows:

```
C:\> conda install -c conda-forge tensorflow
```

The set of things to install with pip :

```
pip --install pandas
pip --install numpy
pip --install bottle
pip --install sqlite3
pip --install matplotlib
pip --install bs4
```

Then

```
$ conda install -c conda-forge tensorflow
```

Configure and Demo of Using Debugger

1. Configure VS Code (common) (Note on Windows the path (if you have to enter it) is `C:\anaconda3\python.exe` Usually VS Code will give you a drop down menu to pick from.
2. Use VS Code debugger (common)

Simple Hello world Program

Edit a file called `hello-world.py` and put the following in it:

```
import sys
print ( "hello world" )
print ( sys.version )
```

At the command line:

```
$ python hello-world.py
```

Modify the file to be:

```
import sys
import tensorflow as tf
import  pandas
import  numpy
import  bottle
import  sqlite3
import  tensorflow
import  keras
import  matplotlib
from bs4 import BeautifulSoup

print ( "hello world" )
print ( sys.version )
```

Run it again.

Use a '#' pound-sign to create a line with your name on it.

```
# Author: Jagadish Bapanapally
# Author: Philip Schlump

import sys
import tensorflow as tf
import  pandas
import  numpy
import  bottle
import  sqlite3
import  tensorflow
import  keras
import  matplotlib
from bs4 import BeautifulSoup

print ( "hello world" )
print ( sys.version )
```

Run it again.

If it works the turn this in as a part of your lab.

Lab Questions

Use the editor and write up an answer to:

1. Your name? Did you put it in the comments at the top of your code. That is important if you want to get credit for the assignment!
2. What part of software installation causes the most frustration?

Save the file and upload this as a part of your lab work.

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