



Development Training - Workstation Setup Guide

Purpose:

Performing development requires a few components to be installed on your workstation. You can, of course, install whatever IDE you prefer, but I will be teaching the class using Visual Studio Code (the most popular IDE for development) and other convenience tools that you may find useful. If you want to set up your development environment similar to mine, the instructions below will walk you through the setup process. If you're following these steps, it is best to do them in the order presented.

If you are using one of my other development training setup guides, it is important to complete the setup in this guide first.

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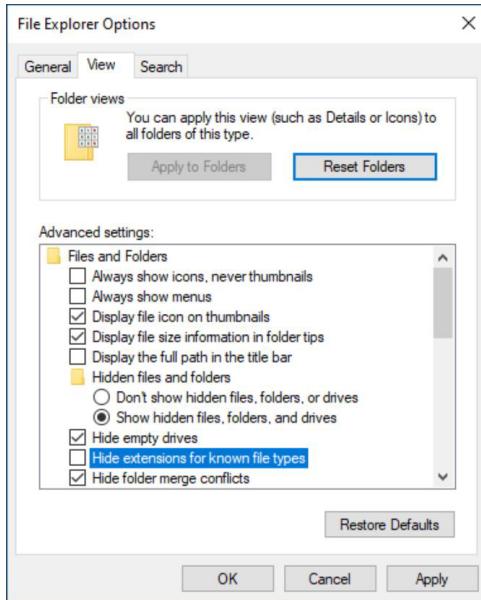
Configure Windows to Show File Extensions

When doing development, the convenience feature in Windows that hides the extensions for known file types is an impediment to the process, so let's turn that off.

1. Launch the Control Panel and go into the settings for "File Explorer Options."

[File Explorer Options](#)

2. On the "View" tab, un-check the box labeled "Hide extensions for known file types" Then click [OK]



Install WinGet (App Installer)

Many of the components we will use are best installed from the terminal using a command-line installer like WinGet.

You can use any installation manager you prefer (like Chocolatey, e.g.), but I will be using WinGet. Follow the steps below to install it.

Note: On Windows 11, WinGet is already installed, but will need to be updated. Follow the same steps but substitute **Update** for **Get** in step 2.

1. Open the Microsoft Store and search for "App Installer"
2. Select the one created by "Microsoft Corporation" and click the [Get] button.



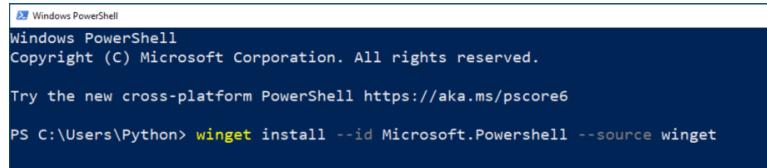
3. The application will install automatically.

Install PowerShell 7

Although the built-in Windows PowerShell application is sufficient for most activities, the newer, open-source PowerShell 7 is significantly more customizable and provides more robust functionality when used in both Windows Terminal and Visual Studio Code.

1. Launch Windows PowerShell and enter the following command:

```
winget install Microsoft.PowerShell
```



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

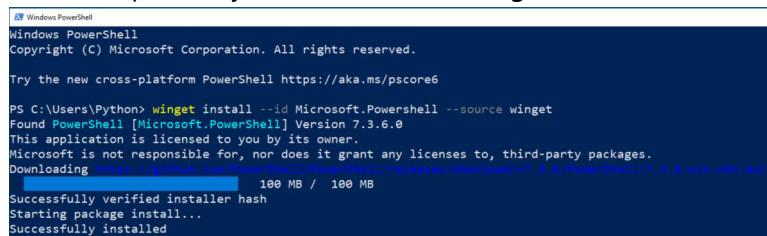
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Python> winget install --id Microsoft.PowerShell --source winget
```

2. The installation will begin automatically. During the install, UAC will prompt you to allow the app to make changes. Choose [Yes]



3. After completion, you will see this message



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

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Python> winget install --id Microsoft.PowerShell --source winget
Found PowerShell [Microsoft.PowerShell] Version 7.3.6.0
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://github.com/PowerShell/PowerShell/releases/download/v7.3.6/PowerShell-7.3.6-win-x64.msi
100 MB / 100 MB
Successfully verified installer hash
Starting package install...
Successfully installed
```

4. Close Windows PowerShell

5. Run `pwsh` to verify that you can now launch PowerShell 7



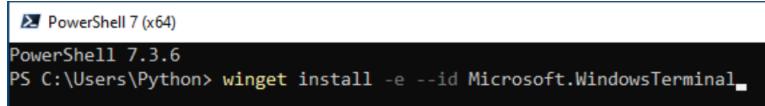
```
PowerShell 7 (x64)
PowerShell 7.3.6
PS C:\Users\Python>
```

Install Windows Terminal

The Windows Terminal application allows you to have multiple terminal tabs open simultaneously and to control which of the command-line applications is in use at any time.

1. Open PowerShell 7 and enter the following command for Windows 10

```
winget install Microsoft.WindowsTerminal
```

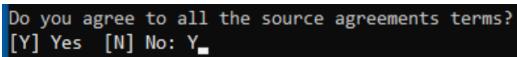


A screenshot of a PowerShell 7 window titled "PowerShell 7 (x64)". The command "winget install -e --id Microsoft.WindowsTerminal" is entered in the command line. The output shows the command being processed.

or the following command for Windows 11 (where the Terminal application is preinstalled)

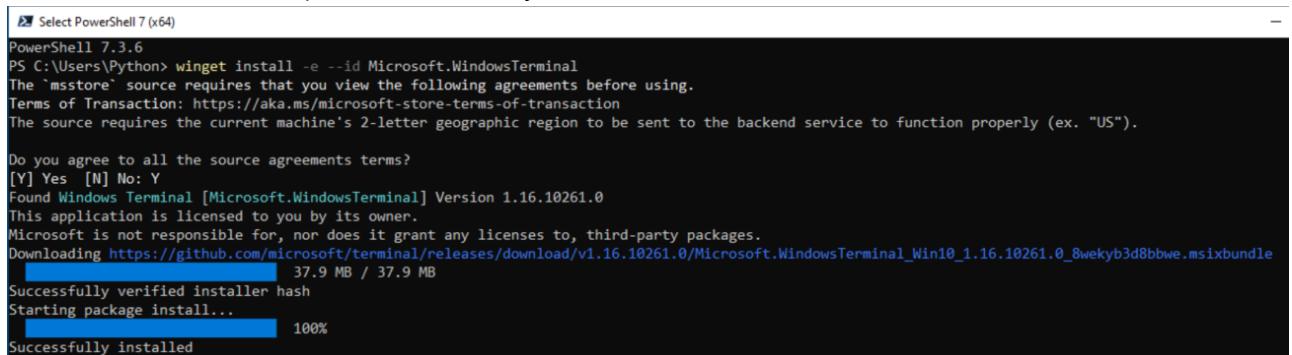
```
winget upgrade Microsoft.WindowsTerminal
```

2. Agree to the terms



A screenshot of a PowerShell 7 window showing a confirmation message: "Do you agree to all the source agreements terms? [Y] Yes [N] No: Y".

3. The installation will complete automatically



A screenshot of a PowerShell 7 window showing the installation process of Windows Terminal. It includes steps like viewing agreements, downloading the package, and successfully installing it.

```
PS C:\Users\Python> winget install -e --id Microsoft.WindowsTerminal
The 'msstore' source requires that you view the following agreements before using.
Terms of Transaction: https://aka.ms/microsoft-store-terms-of-transaction
The source requires the current machine's 2-letter geographic region to be sent to the backend service to function properly (ex. "US").

Do you agree to all the source agreements terms?
[Y] Yes [N] No: Y
Found Windows Terminal [Microsoft.WindowsTerminal] Version 1.16.10261.0
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://github.com/microsoft/terminal/releases/download/v1.16.10261.0/Microsoft.WindowsTerminal_Win10_1.16.10261.0_8wekyb3d8bbwe.msixbundle
  37.9 MB / 37.9 MB
Successfully verified installer hash
Starting package install...
  100%
Successfully installed
```

4. Close PowerShell 7

5. Run `wt` to verify that you can open Windows Terminal

Install the CaskaydiaCove Nerd Font

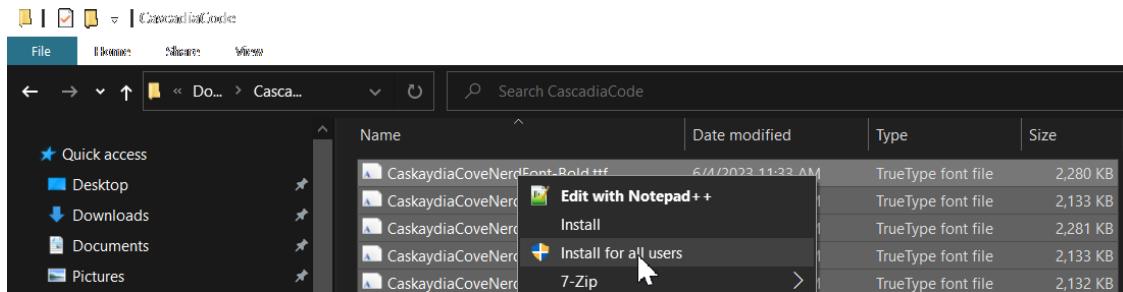
We will be customizing our terminal to show additional information that will require glyph characters not included in most standard fonts. In order to support this, we'll be installing a so-called "nerd font" that includes these extra glyphs. The one I prefer is called CaskaydiaCove, which is a nerd-font port of Microsoft's Cascadia Code font. There are many different distributions of this font, and some don't include all of the glyphs, so I recommend obtaining the one distributed on the Nerd Fonts website (below).

1. Launch a browser and navigate to: <http://www.nerdfonts.com/font-downloads>

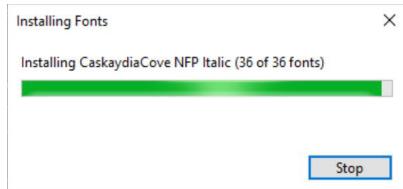
2. Find "CaskaydiaCove Nerd Font" and click on "Download"



3. Unzip and open the download file, select all of the fonts, right click, and select "Install for all users"



4. The fonts will install to Windows automatically

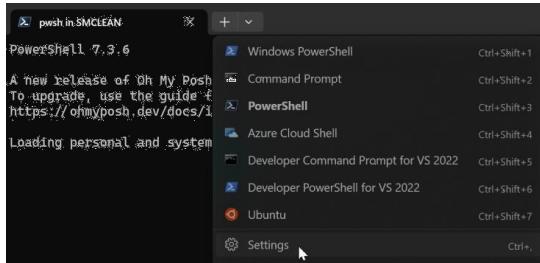


Customize the Windows Terminal

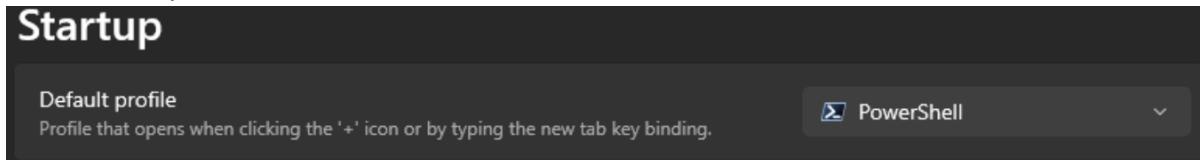
To ready the Windows Terminal for our later setup, we need to configure a few preliminary settings.

Note: You may have to reboot after installing your fonts before this step

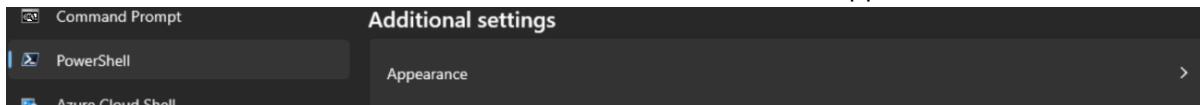
1. Open the Windows Terminal and click on the drop-down arrow next to the tab [+] button. Select "Settings"



2. In the "Startup" section, set the "Default Profile" to "PowerShell"



3. Under "Profiles" select "PowerShell" then scroll down and click on "Appearance"



4. In the "Font Face" setting, assign "CaskaydiaCove Nerd Font"



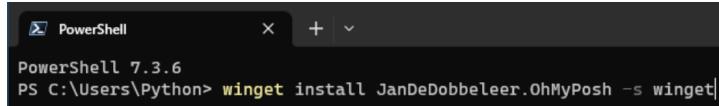
5. Click [Save]

Set Up Oh-My-Posh

It's often useful to see additional information (execution time, repository state, etc.) in the terminal. We can set up PowerShell 7 in Windows Terminal to provide info using a utility called "Oh My Posh."

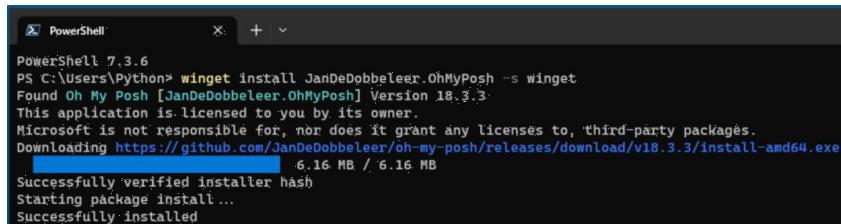
1. Open Windows Terminal and in your PowerShell 7 tab, enter the following command:

```
winget install JanDeDobbeleer.OhMyPosh
```



```
PowerShell 7.3.6
PS C:\Users\Python> winget install JanDeDobbeleer.OhMyPosh -s winget|
```

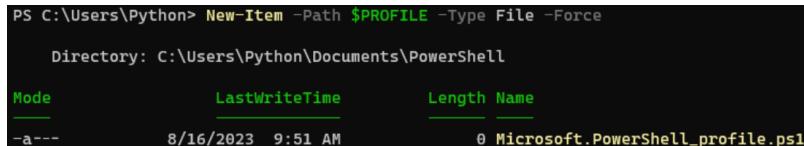
2. A successful install will look like this:



```
PowerShell 7.3.6
PS C:\Users\Python> winget install JanDeDobbeleer.OhMyPosh -s winget
Found Oh My Posh [JanDeDobbeleer.OhMyPosh] Version 18.3.3
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://github.com/JandeDobbeleer/oh-my-posh/releases/download/v18.3.3/install-amd64.exe
  6.16 MB / 6.16 MB
Successfully verified installer hash
Starting package install...
Successfully installed
```

3. In the terminal, enter the following line to create a setup file for your PowerShell profile:

```
New-Item -Path $PROFILE -Type File -Force
```

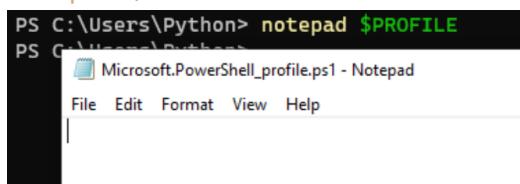


```
PS C:\Users\Python> New-Item -Path $PROFILE -Type File -Force
Directory: C:\Users\Python\Documents\PowerShell

Mode                LastWriteTime         Length Name
-a---       8/16/2023  9:51 AM            0 Microsoft.PowerShell_profile.ps1
```

4. In the terminal, enter the following command to open the file in notepad:

```
notepad $PROFILE
```



```
PS C:\Users\Python> notepad $PROFILE
PS C:\Users\Python>
```

Microsoft.PowerShell_profile.ps1 - Notepad
File Edit Format View Help

5. In the Notepad file, add the following line and save the file:

```
oh-my-posh init pwsh | Invoke-Expression
```



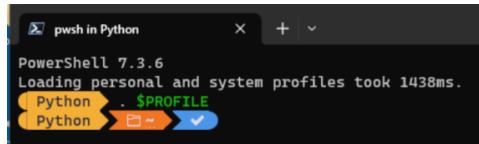
```
Microsoft.PowerShell_profile.ps1 - Notepad
File Edit Format View Help
oh-my-posh init pwsh | Invoke-Expression
|
```

6. In the terminal, enter the following command to reload the profile:

```
. $PROFILE
```

Note: You may need to close and reopen the terminal window or reboot to load the profile path.

7. You should now see a prompt like this in the terminal indicating that you've configured Oh My Posh:



```
pwsh in Python      x + v
PowerShell 7.3.6
Loading personal and system profiles took 1438ms.
Python . $PROFILE
Python
```

Note: If you don't see the folder glyph, make sure you installed and configured your nerd font

8. You can configure literally thousands of options for what information the terminal prompt will show, but for purposes of the Python training class, I will use Jan DeDobbeleer's default. To implement this, add the following line to the profile setup in Notepad and save:

```
oh-my-posh init pwsh --config  
"$env:POSH_THEMES_PATH/jandedobbeleer.omp.json" | Invoke-Expression  
$env:VIRTUAL_ENV_DISABLE_PROMPT = 1
```



```
Microsoft.PowerShell_profile.ps1 - Notepad  
File Edit Format View Help  
oh-my-posh init pwsh | Invoke-Expression  
oh-my-posh init pwsh --config "$env:POSH_THEMES_PATH/jandedobbeleer.omp.json" | Invoke-Expression  
$env:VIRTUAL_ENV_DISABLE_PROMPT = 1
```

9. In the terminal, enter the following command to reload the profile:

. \$PROFILE

10. Edit the JSON file (path below) for the theme in any test editor (I used Notepad++):

C:\Users\USERNAME\AppData\Local\Programs\oh-my-posh\themes\jandedobbeleer.omp.json

11. Find the python section.

From CTRL-F, search for \ue235, the Python powerline glyph

```
92 |     "style": "powerline",  
93 |     "template": "\ue235 {  
94 |         "type": "python"
```

12. Edit this section so that it reads as follows:



```
{  
    "background": "#FFDE57",  
    "foreground": "#111111",  
    "powerline_symbol": "\ue0b0",  
    "properties": {  
        "display_mode": "files",  
        "fetch_virtual_env": true,  
        "folder_name_fallback": false  
    },  
    "style": "powerline",  
    "template": "\ue235 {{ if .Error }}{{ .Error }}{{ else }}{{ if .Venv }}  
({{ .Venv }}) {{ end }}{{ .Full }}{{ end }} ",  
    "type": "python"  
},
```

13. Now, you should see something like this:



This is how we want our prompt to appear in Visual Studio Code, so we're done setting up the terminal.

Set Up Quake Mode Terminal (optional)

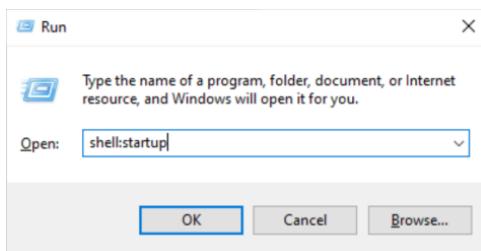
I like to have the terminal available at all times.

There is a special command to launch the Windows terminal in so-called "Quake-Mode."

When in this mode, the terminal is at the top of the main monitor screen and can be hidden or shown using the keyboard shortcut window+back-tick **田+`**

1. Click the start button and type "run" to open a run command. In the run box, enter the following command and click [OK]

shell:startup

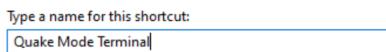


2. In the window that pops up, right click and choose New > Shortcut. In the shortcut wizard, enter the following location and click [Next]

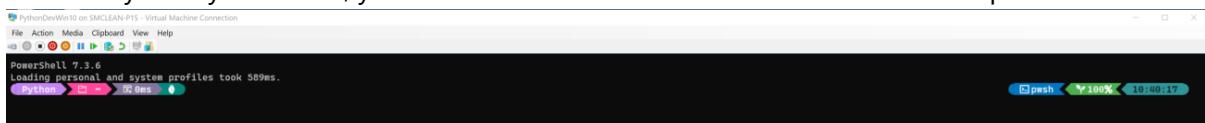
wt -w _quake



3. Name the shortcut whatever you want and click [Finish]



4. Now every time you reboot, you'll have a hideable PowerShell terminal at the top of the screen



Install Notepad++ (optional)

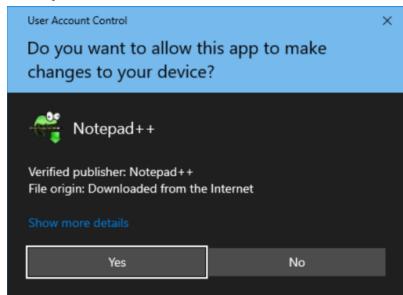
Even though we're using Visual Studio Code as our IDE, it's often useful to have a full-featured text editor as well. I like to use Notepad++ for this.

1. In the terminal, enter the following command

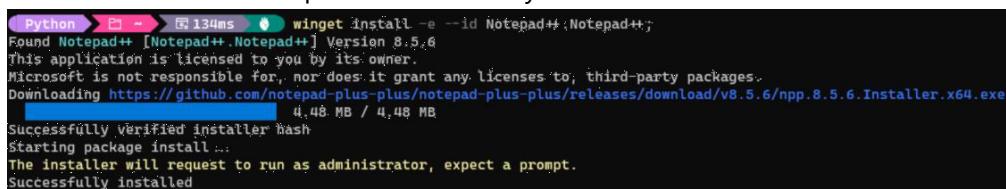
```
winget install Notepad++.Notepad++
```



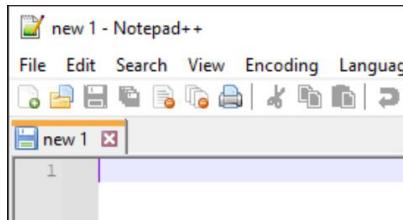
2. Respond "Yes" to the UAC warning



3. The installation will complete automatically



4. Verify that you can now launch Notepad++



Install Visual Studio Code

Visual Studio Code is an open-source IDE that's useful for a wide variety of coding languages. I use it for Python, HTML, JavaScript, and CSS, even though I have Visual Studio Enterprise available for .NET development.

The slick, easy, and highly customizable interface make VS code the most popular IDE for Python developers.

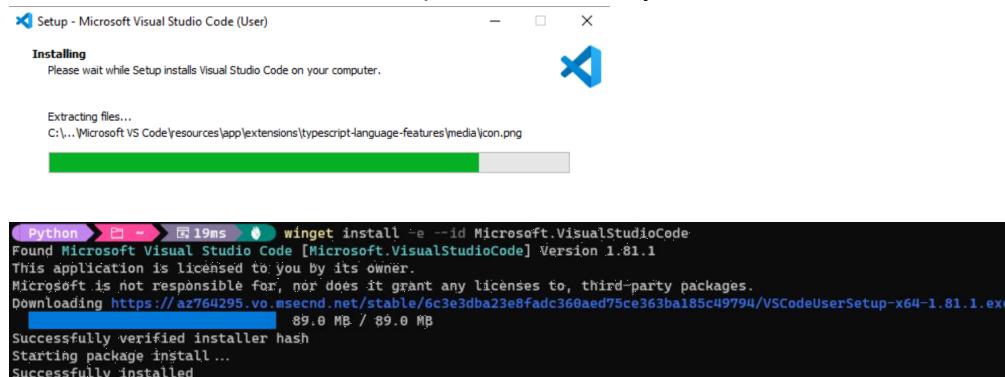
1. In the terminal, enter the following command;

```
winget install Microsoft.VisualStudioCode
```

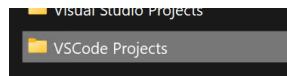


```
winget install -e --id Microsoft.VisualStudioCode
```

2. The installation will start and complete automatically



3. Create a folder called "VSCode Projects." I created mine on the C: root.



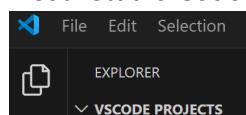
4. In the terminal, navigate to the folder you created and enter the following command:

```
code .
```

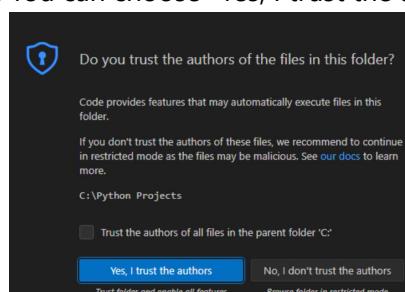


Note: You may have to reboot to update your system paths before this command will work.

5. Visual Studio Code will automatically launch in your project folder.



6. You can choose "Yes, I trust the authors" to allow VS Code to trust your project folder going forward.



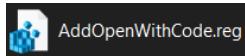
Add Visual Studio Code Context Menu Options (optional)

Some developers find it useful to have the option to get to VS Code using the mouse instead of the terminal. Because we installed VS Code using WinGet, this option is not enabled during the install, and it is not available as a setting from within the application, because it requires editing the registry.

If you want to add the "Open with VS Code" option to the right click context menu, do the following:

1. Create a text file anywhere on your PC and call it "AddOpenWithCode.reg"

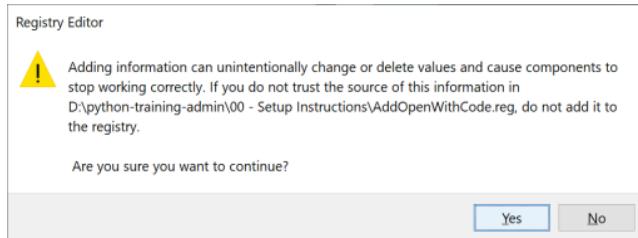
Note: [An example is included here](#)



2. Edit the file in your preferred text editor and paste the text below. Make sure to replace all instances of "user_name" with your Windows username. Then save the file.

```
Windows Registry Editor Version 5.00
; ***** Note: You must replace all instances of user_name with your
username *****
;
; Open files
[HKEY_CLASSES_ROOT\*\shell\VSCode]
@="Open w&ith VS Code"
"Icon"="C:\Users\user_name\AppData\Local\Programs\Microsoft VS
Code\Code.exe,0"
[HKEY_CLASSES_ROOT\*\shell\VSCode\command]
@="\"C:\Users\user_name\AppData\Local\Programs\Microsoft VS
Code\Code.exe\" \"%1\"
;
; This will make it appear when you right click ON a folder
; The "Icon" line can be removed if you don't want the icon to appear
[HKEY_CLASSES_ROOT\Directory\shell\VSCode]
@="Open w&ith VS Code"
"Icon"="\"C:\Users\user_name\AppData\Local\Programs\Microsoft VS
Code\Code.exe\",0"
[HKEY_CLASSES_ROOT\Directory\shell\VSCode\command]
@="\"C:\Users\user_name\AppData\Local\Programs\Microsoft VS
Code\Code.exe\" \"%1\"
;
; This will make it appear when you right click INSIDE a folder
; The "Icon" line can be removed if you don't want the icon to appear
[HKEY_CLASSES_ROOT\Directory\Background\shell\VSCode]
@="Open w&ith VS Code"
"Icon"="\"C:\Users\user_name\AppData\Local\Programs\Microsoft VS
Code\Code.exe\",0"
[HKEY_CLASSES_ROOT\Directory\Background\shell\VSCode\command]
@="\"C:\Users\user_name\AppData\Local\Programs\Microsoft VS
Code\Code.exe\" \"%V\"
;
```

3. Run the registry script **as administrator**, and choose the "Yes" option when prompted.



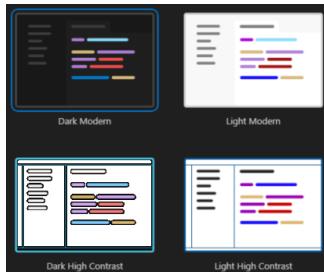
4. Once the script has run, you will now have the new option "Open with VS Code" when you right-click on a folder or code file.



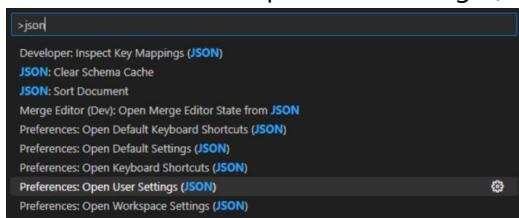
Customize Visual Studio Code

Now, we need to set up VS Code and install a few add-ons before we're ready to start coding.

1. On initial launch, you are prompted to select a color theme. I usually select "Dark Modern."



2. If you installed Oh My Posh, you'll want it to work in VS Code just like it does in Windows Terminal. To do this, press **[CTRL]+[SHIFT]+[P]** to bring up the menu. Search for "json" and select the options titled "Preferences: Open User Settings (JSON)"



3. In the JSON file, add the following lines **before** the last closing curly-brace:

```
,
```

```
"terminal.integrated.profiles.windows": {
```

```
    "PowerShell": {
```

```
        "path": "C:\\\\Program Files\\\\PowerShell\\\\7\\\\pwsh.exe",
```

```
        "args": [
```

```
            "-noexit"
```

```
        ]
```

```
    }
```

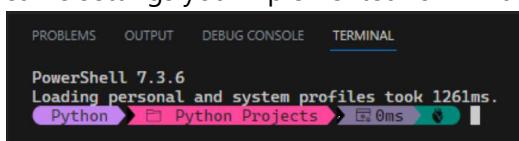
```
},
```

```
"terminal.integrated.defaultProfile.windows": "PowerShell",
```

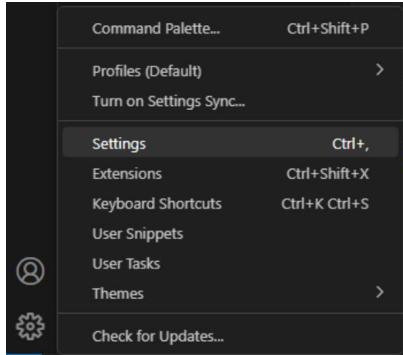
```
"terminal.integrated.fontFamily": "'CaskaydiaCove Nerd Font', monospace",
```

```
"terminal.integrated.fontSize": 14
```

4. Save the JSON file and click on Terminal > New Terminal. Your VS Code terminal should launch with the same settings you implemented for Windows Terminal.

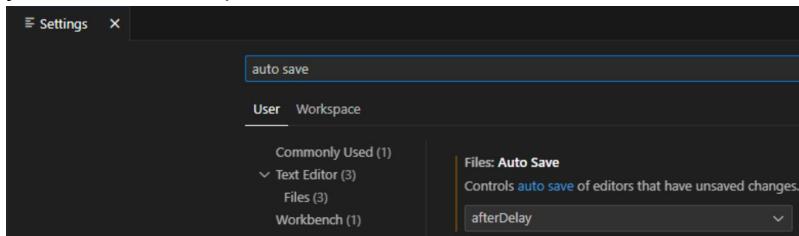


5. Click on the "settings" cog (at the lower left) and select "Settings"

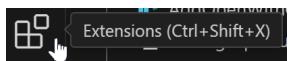


6. Search for "auto save" and change the "Files: Auto Save" setting to "afterDelay"

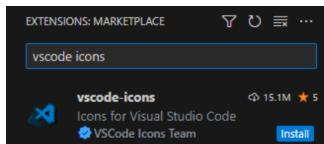
This ensures that your file changes save as you type and makes the process of updating and testing your code much quicker



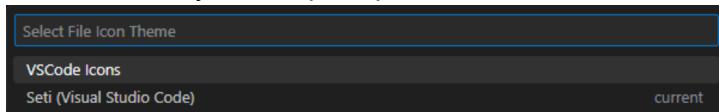
7. Click on the "Extensions" icon



8. Search for "vscode icons" and install the extension



9. After it installs, you'll be prompted to select a theme. Select the default "VSCode Icons"

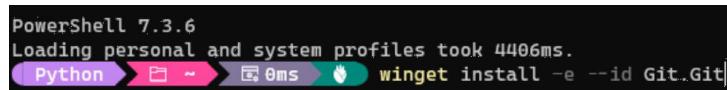


Install GIT

GIT is the underlying technology used to communicate with code repositories in Bitbucket and GitHub, so we'll need to install and configure it.

1. In your terminal, enter the following command

```
winget install Git.Git
```

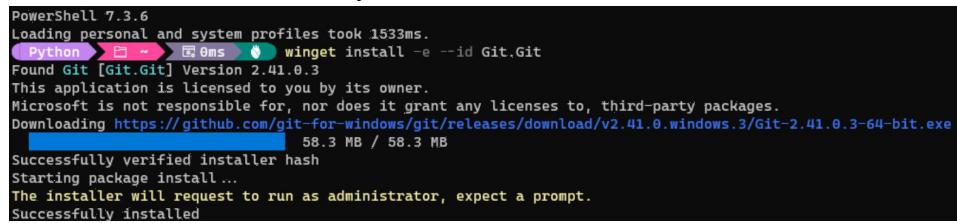


```
PowerShell 7.3.6
Loading personal and system profiles took 4406ms.
Python ➜ 📂 ~ ➜ 0ms ➜ winget install -e --id Git.Git
```

2. Select "Yes" at the UAC prompt



3. After successful installation, you'll see this:



```
PowerShell 7.3.6
Loading personal and system profiles took 1533ms.
Python ➜ 📂 ~ ➜ 0ms ➜ winget install -e --id Git.Git
Found Git [Git.Git] Version 2.41.0.3
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://github.com/git-for-windows/git/releases/download/v2.41.0.windows.3/Git-2.41.0.3-64-bit.exe
58.3 MB / 58.3 MB
Successfully verified installer hash
Starting package install ...
The installer will request to run as administrator, expect a prompt.
Successfully installed
```

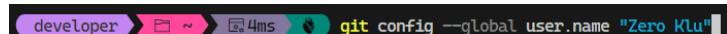
4. From a terminal, run the following commands to configure your default git settings:

```
git config --global user.email "your_git_email"
```



```
developer ➜ 📂 ~ ➜ 34ms ➜ git config --global user.email "zeroklu@outlook.com"
```

```
git config --global user.name "your_git_name"
```



```
developer ➜ 📂 ~ ➜ 4ms ➜ git config --global user.name "Zero Klu"
```

Set Up a Source Control Account

Option 1: Bitbucket

If you're one of my employees, the development team uses Bitbucket as our source control system for code sharing.

If not, skip to [Option 2: GitHub](#).

Since I share out development training repositories in the class, you'll need a Bitbucket account.

Note: If you already have a Bitbucket account, skip to the [Set Up Visual Studio Code to Use Source Control](#) section

1. In a browser, navigate to <https://bitbucket.org> and click on the [Get it free] button.

[Get it free](#)

2. Click [Next]

[Next](#)

3. Enter your work email address and click on [Sign up]

Bitbucket

Sign up to continue

somebody@databankimx.com

By signing up, I accept the Atlassian Cloud Terms of Service
and acknowledge the Privacy Policy.

[Sign up](#)

4. Check your email for a verification message. In the message, click [Verify your email]



You're nearly there!

Hi [REDACTED]

To finish setting up your account and start using Bitbucket, confirm we've got the
correct email for you.

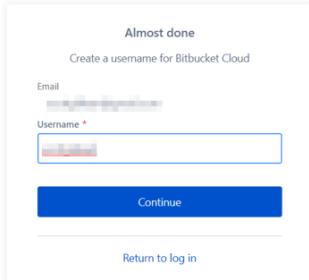
[Verify your email](#)

5. On the page that pops up, enter your full name and create a password

The screenshot shows the Bitbucket account setup page. It features a header with the Bitbucket logo and a message: "Email address verified" with a green checkmark. Below this, there are three input fields: "Email address" (redacted), "Full name" (redacted), and "Password" (redacted). The password field has a strength indicator at the bottom right showing "Very strong". At the bottom of the page, there is a link to the "Terms of Service" and "Privacy Policy", followed by a "Continue" button.

6. On the next screen, create a Bitbucket username

 Bitbucket



The screenshot shows a "Create a username for Bitbucket Cloud" form. It includes fields for "Email" and "Username *". A blue "Continue" button is at the bottom, and a "Return to log in" link is below it.

7. When you reach the survey page, just click on "Skip"

Skip Submit

Option 2: GitHub

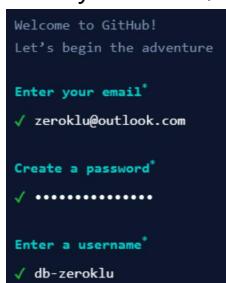
I have replicated my training repositories on GitHub. If you are not one of my employees and/or are not taking OnBase development training, you may find GitHub easier to access from VS Code, since GitHub functionality is built-in.

1. In your browser, go to <https://github.com>

2. Click the [Sign Up] button

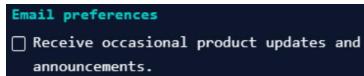
Sign in 

3. Enter your email, a password, and a username



The screenshot shows the GitHub sign-up form with fields for "Enter your email*", "Create a password*", and "Enter a username*". Sample entries "zero@outlook.com", "*****", and "db-zero" are shown with checkmarks.

4. You can ignore the option to receive email announcements


Email preferences
 Receive occasional product updates and announcements.

5. Click on the [Verify] button to access a puzzle that must be solved to complete your enrollment

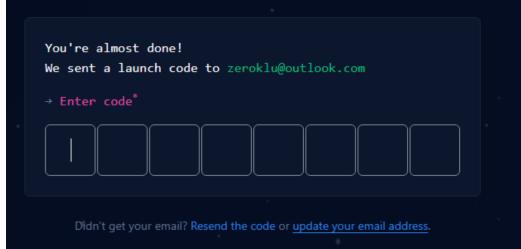


The screenshot shows a "Protecting your account" section with a CAPTCHA challenge: "Please solve this puzzle so we know you are a real person". A "Verify" button is at the bottom.

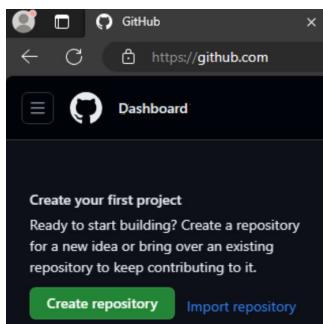
6. Solve the puzzle and click [Submit]



7. Enter the code sent to verify your email address



8. You will be presented with your dashboard page, indicating that you successfully set up your GitHub account.



Set Up Visual Studio Code to Use Source Control

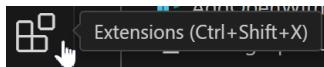
Option 1: Bitbucket

If you chose Bitbucket for source control, you'll need to configure the Bitbucket extension in VS Code in order to properly access the training repository.

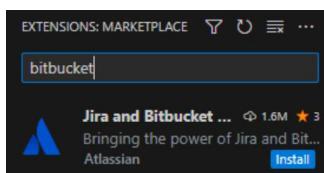
If you chose GitHub, skip to [Option 2: GitHub](#)

1. Launch Visual Studio Code

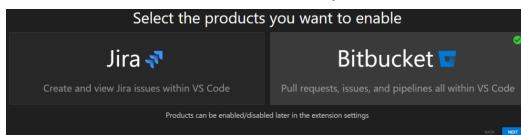
2. Click on the "Extensions" icon on the left nav-bar



3. Search for "bitbucket" and install the "Jira and Bitbucket" extension



4. After the extension installs, it will launch a setup wizard. Unselect Jira and click [Next]



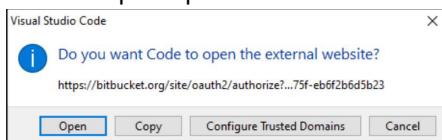
5. Select the option for "Bitbucket Cloud"



6. You may receive a firewall alert. If you do, click on [Allow Access]



7. You'll be prompted to let VS Code access the Bitbucket URL. Click [Open]



8. Log in



Log in to continue

9. Click [Grant Access]

Confirm access to your account

Atlascode Integration (http://127.0.0.1) is requesting access to the following:

- Read your account information
- Read and modify your repositories' issues
- Access your repositories' build pipelines
- Read your workspace's project settings and read repositories contained within your workspace's projects
- Read and modify your repositories and their pull requests
- Read and modify your snippets
- Read your team membership information

By installing the App you agree to the [privacy policy](#) provided by Atlascode Integration.

[Grant access](#) [Cancel](#)

10. You'll see a success page. You can close the browser after this comes up



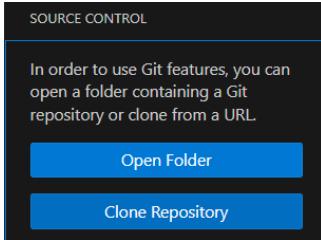
Option 2: GitHub

For GitHub, VS Code credential setup takes place the first time you attempt to access a repository. To do this, take the following steps:

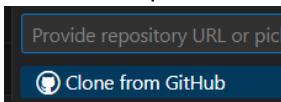
1. In VS Code, click on the Source Control icon



2. Click the button labeled [Clone Repository]



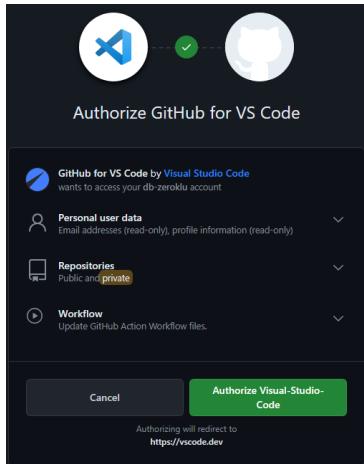
3. Select the option to "Clone from GitHub"



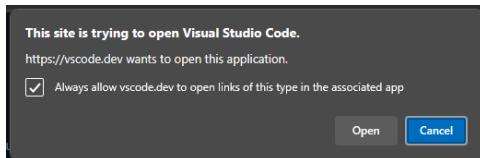
4. Select "Allow" when prompted to allow the GitHub extension to attempt to log in



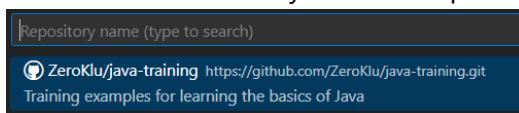
5. Choose the "Authorize" button



6. Optionally check the "Always allow..." box, then select "Open"



7. You should now see any available repositories from GitHub to which you have access



Congratulations! Your system is set up for development training.

Happy Coding!
