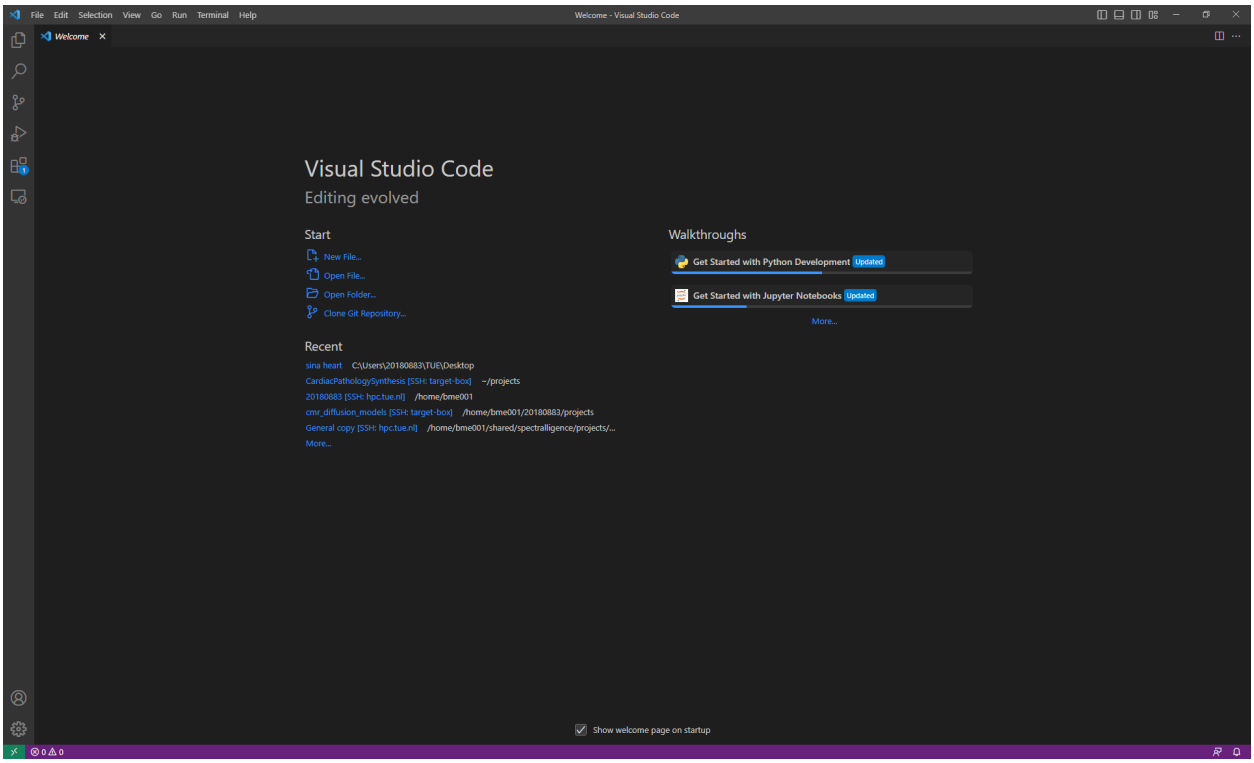
VS Code demo

Download and install VS Code, free and available for all platforms

- https://code.visualstudio.com/
- introduction videos https://code.visualstudio.com/docs/getstarted/introvideos

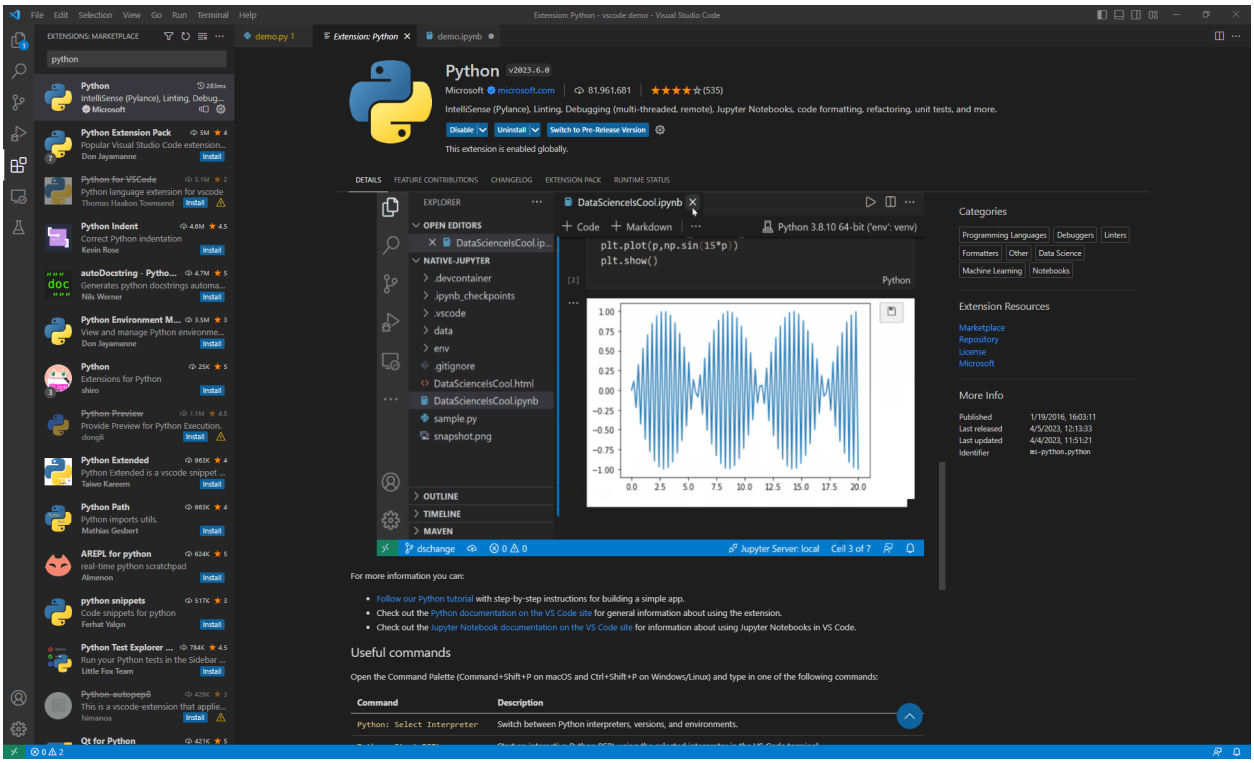


Getting Started with Python in VS Code

https://code.visualstudio.com/docs/python/python-tutorial

Install python extension to support python language

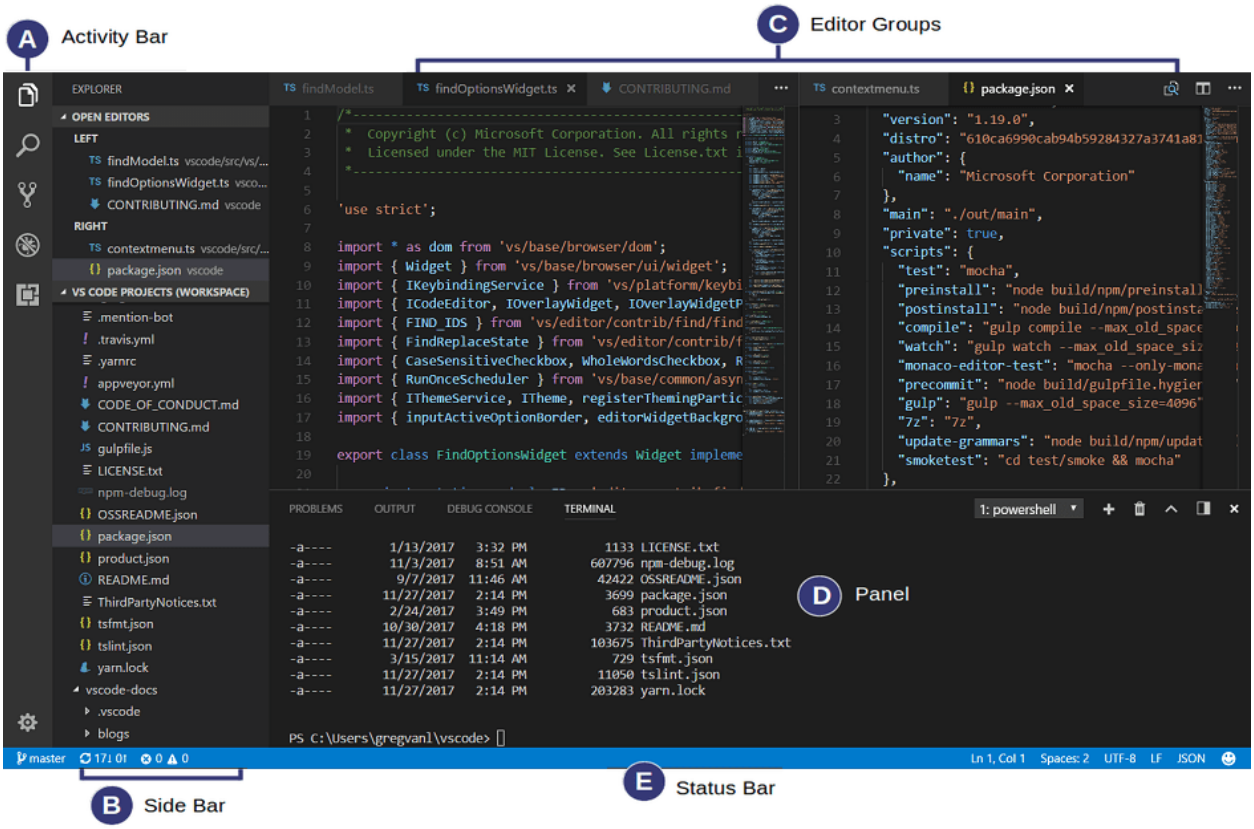
Along with the Python extension, you need to install a Python interpreter



Using Python environments in VS Code:
https://code.visualstudio.com/docs/python/environments

The basic layout of the VS Code interface

At its heart, Visual Studio Code is a code editor. Like many other code editors, VS Code adopts a common user interface and layout of an explorer on the left, showing all of the files and folders you have access to, and an editor on the right, showing the content of the files you have opened.



Basic layout

- **Editor** - The main area to edit your files. You can open as many editors as you like side by side vertically and horizontally.
- **Side Bar** - Contains different views like the Explorer to assist you while working on your project.
- **Status Bar** - Information about the opened project and the files you edit.
- **Activity Bar** - Located on the far left-hand side, this lets you switch between views and gives you additional context-specific indicators, like the number of outgoing changes when Git is enabled.
- **Panels** - You can display different panels below the editor region for output or debug information, errors and warnings, or an integrated terminal. Panel can also be moved to the right for more vertical space.

Hands-on: reproduce the results from this tutorial

https://scikit-learn.org/stable/auto_examples/manifold/plot_lle_digits.html#embedding-techniques-comparison

Jupiter notebook and interactive python #%%

Debug code using the built-in debugger

https://code.visualstudio.com/Docs/editor/debugging

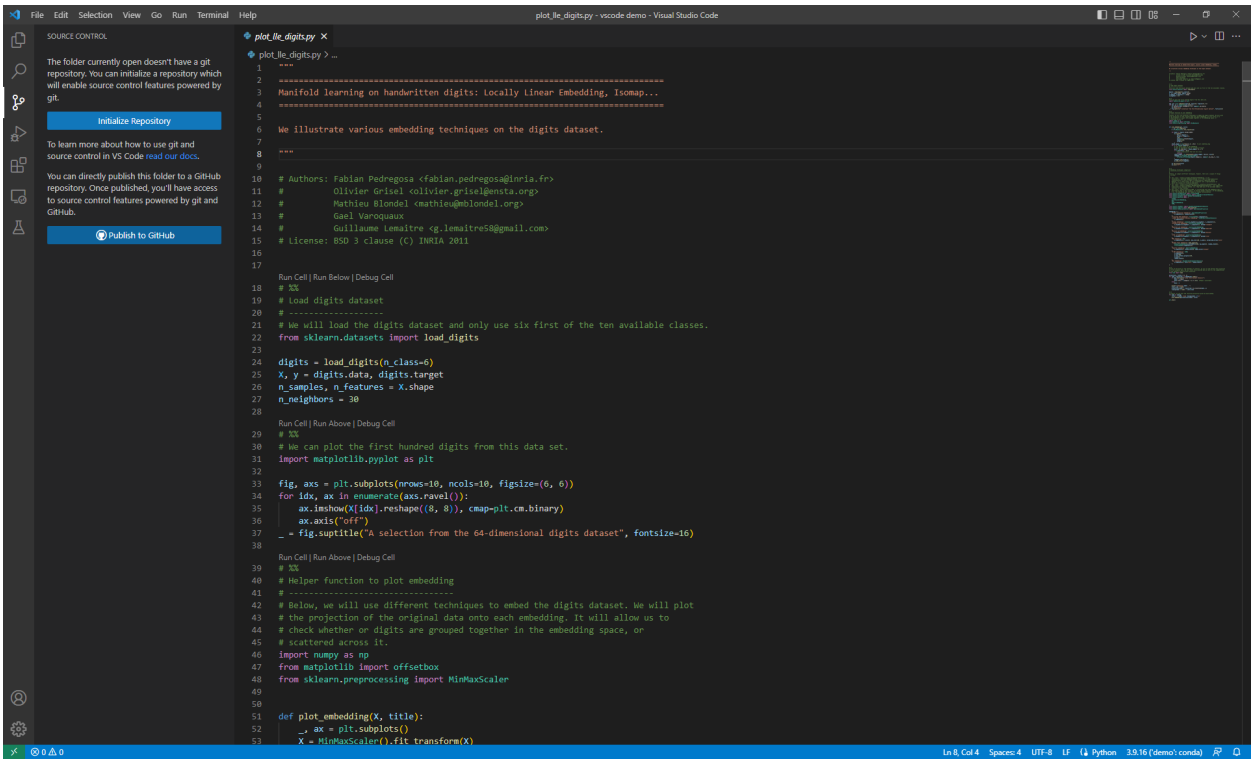
Debug actions

Once a debug session starts, the **Debug toolbar** will appear on the top of the editor.

Action	Explanation
Continue / Pause `F5`	**Continue**: Resume normal program/script execution (up to the next breakpoint). **Pause**: Inspect code executing at the current line and debug line-by-line.
Step Over `F10`	Execute the next method as a single command without inspecting or following its component steps.
Step Into `F11`	Enter the next method to follow its execution line-by-line.
Step Out `Shift+F11`	When inside a method or subroutine, return to the earlier execution context by completing remaining lines of the current method as though it were a single command.
Restart `Ctrl+Shift+F5`	Terminate the current program execution and start debugging again using the current run configuration.
Stop `Shift+F5`	Terminate the current program execution.

Manage source control and use Git with VS Code

https://code.visualstudio.com/docs/sourcecontrol/overview



Connect to the server and develop your code remotely

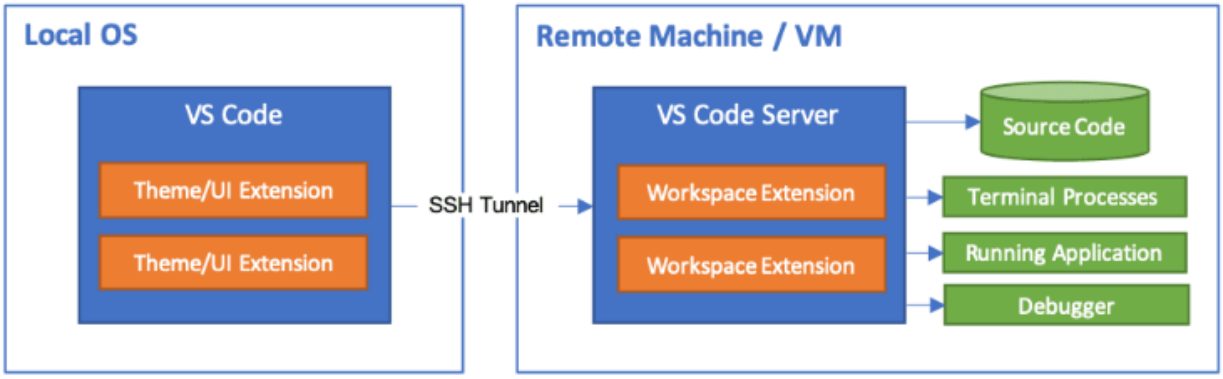
https://code.visualstudio.com/docs/remote/remote-overview

Remote Development using SSH

Edit

The **Visual Studio Code Remote - SSH** extension allows you to open a remote folder on any remote machine, virtual machine, or container with a running SSH server and take full advantage of VS Code's feature set. Once connected to a server, you can interact with files and folders anywhere on the remote filesystem.

No source code needs to be on your local machine to gain these benefits since the extension runs commands and other extensions directly on the remote machine.



This lets VS Code provide a **local-quality development experience** - including full IntelliSense (completions), code navigation, and debugging - **regardless of where your code is hosted**.

AI Tools in VS Code, GitHub Copilot extension

https://code.visualstudio.com/docs/editor/artificial-intelligence