

Tutorial: Setting up Cline and GitHub Copilot

Prerequisites:

- ***Important: by doing this tutorial you agree that you've read and understood the document: AI Privacy, Safety, and Ethics. If you haven't read it yet, please do so before you continue.***
- This tutorial requires VS Code in the Github Codespaces environment with a GitHub Education account. (This is a setup that is guaranteed to work for all students.) If you haven't yet, please complete the tutorial to set up this service.
- This tutorial also requires an OpenRouter account with an API key; if you haven't yet, please complete the tutorial to set up this service.

Cline is an extension for VS Code that helps you develop software applications using AI coding models. It's similar to other AI chatbots you may have tried (like ChatGPT) but specially designed for developing software, and with the option to swap different models.

A **model** is like an AI brain that has been trained to produce code, and different models have different capabilities depending on how they've been trained and their internal architecture. We connect to different models through APIs that we access through providers. They host and run the model for us: we send our prompt, they process it and send back the results.

While Cline is open source and free to use, the model APIs are unfortunately usually not, or at least not without rate limits. Remember that in exchange for free API access, the provider will use your code and prompts for model training purposes.


VS Code has its own built-in coding assistant, Copilot, which has **code completion** capabilities (like an advanced auto-complete) and a **chat agent** (like a built-in ChatGPT client). Copilot also works really well and is a competent alternative to Cline, but I personally find Cline a bit easier to use, so I'll focus on it in this tutorial. There are many other coding assistants besides these two (Cursor and Windsurf are popular) and you may want to try a few others on your own.

Even when choosing Cline over Copilot, we can still use Copilot's APIs within Cline! Free Copilot API credits are one of the advantages of having a GitHub Education account.

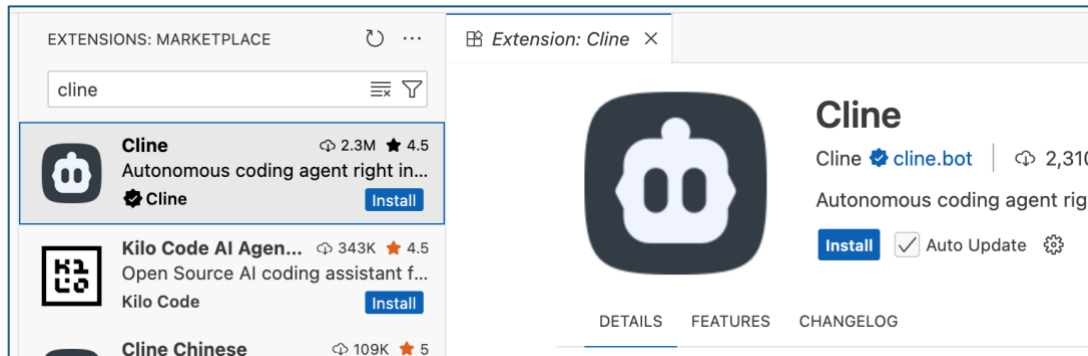
While these tools can help speed up the coding process and sometimes help us find new ways to solve problems, it's important to remember that they cannot do all the work for us and they're only useful to those who understand the underlying coding principles. You'll quickly hit a wall if you're not able to understand the code they produce, the concepts well enough to make useful prompts, or have the skills to manually edit the code when needed.

Task 1: Installing Cline

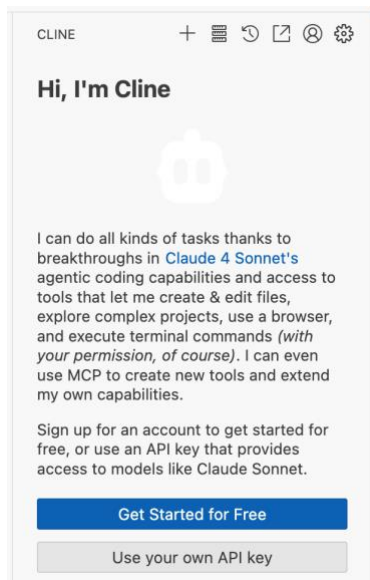
Create a new Codespace with the **blank** template.

Cline can be easily installed in VS code as an extension from the **Extensions** button on the left: 

Search for "**cline**" and click **Install**:



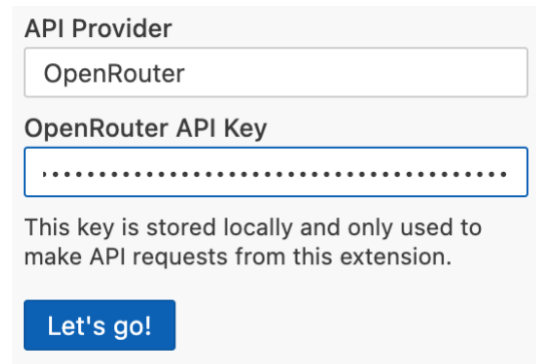
After the installation has finished, a panel for the Cline application will appear on the right:



Task 2: Choose a Model

Unfortunately, "**Get Started for Free**" doesn't yet work in the Codespaces environment; instead, click "**Use your own API key**".

Make sure **OpenRouter** is selected as the provider, and paste in your key:



API Provider

OpenRouter

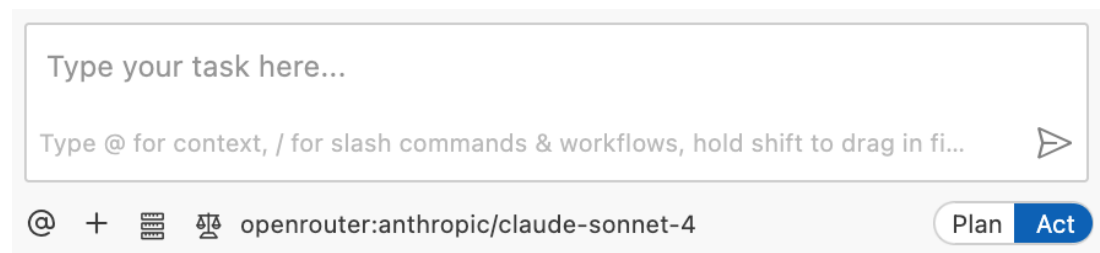
OpenRouter API Key

.....

This key is stored locally and only used to make API requests from this extension.

Let's go!

Underneath the chat window, you'll see the name of the currently selected model. Click that to open the model picker.

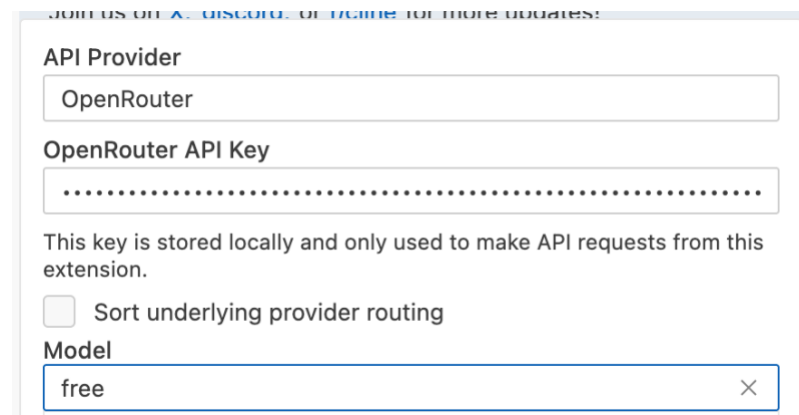


Type your task here...

Type @ for context, / for slash commands & workflows, hold shift to drag in fi...

@ + openrouter:anthropic/claude-sonnet-4 Plan Act

In the **Model** search area, type "**free**":



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API Provider

OpenRouter

OpenRouter API Key

.....

This key is stored locally and only used to make API requests from this extension.

☐ Sort underlying provider routing

Model

free

You'll see a selection of free models. These models are only free for 50 requests per day so don't waste your requests! You'll be surprised how quickly you can use up 50 requests, especially when a program like Cline is making requests on your behalf. Your daily free allotment will reset at 5:00pm.

Choose **Qwen3-coder: free**.

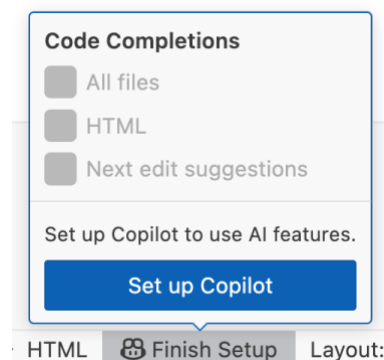
Once again, click the name of the model underneath the chat window to dismiss the model picker. Cline will now use this free model to reason about which coding tasks should be done and generate the code itself.

If you run out of free OpenRouter credits, you can switch to your free GitHub Education credits, but beware; these credits only reset once per month! See the **Appendix** for more information about this.

One final note: not every model has the same capabilities. For example, some models (such as Claude) are advanced enough that they can read and understand images and debug their code using the browser. The free models we're using are less advanced, but still very powerful!

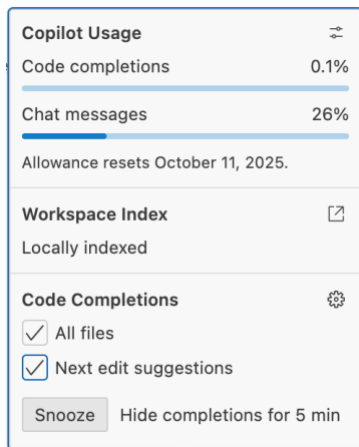
Appendix: Using Copilot's APIs for Inference

To set up GitHub Copilot as an API provider, first click on the robot pilot icon at the bottom of the window, then click **Set up Copilot**:



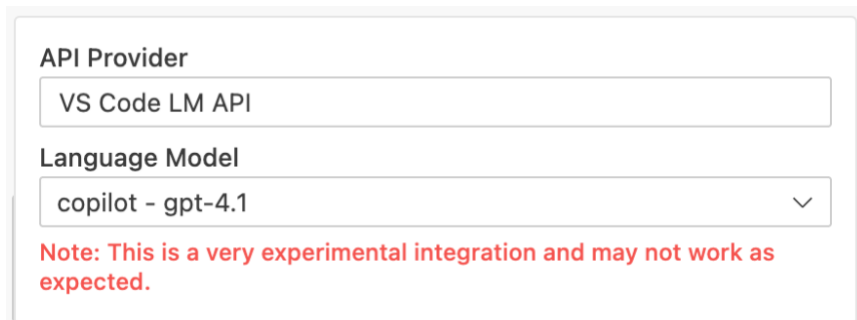
It may take a few minutes for the setup to complete.

When it's done, clicking on the robot pilot icon again will bring up a settings dialog:

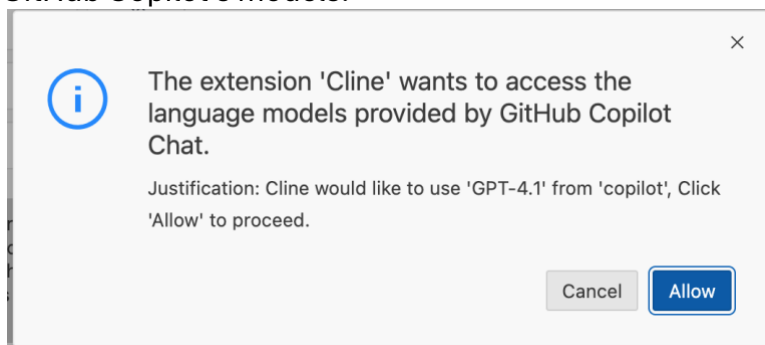


As you can see, your monthly usage is displayed; keep an eye on this. I strongly recommend **unchecking** both boxes in the **Code Completions** area unless you're 100% sure you want to use them, as you can accidentally burn through your entire budget.

Back in the Cline panel, open the model picker again:



Choose the same settings as above. Copilot offers a few models, and not all of them work for all tasks. Gpt - 4.1 seems pretty reliable. You'll be asked to confirm permission to use GitHub Copilot's models:



Click **Allow**, and then you're ready to start coding!