

Setting up tree-sitter in Emacs 29.x

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Emacs 29 comes with tree-sitter which is a library for editors to parse source code dynamically. Tree-sitter makes it much easier for editors and IDEs to have accurate syntax highlighting and enables more complicated features like refactoring support. This article explains how to set it up in Emacs using C++ as an example. C++ serves as a good example here because it involves a couple of common problems.

Emacs 29 comes with the tree-sitter library, but for it to function you still need the grammar definition files for the languages you use. Emacs provides a function `treesit-install-language-grammar` to install them automatically, but you need to tell it where to find them in the variable `treesit-language-source-alist`. Add this to your `init.el`:

```
(setq treesit-language-source-alist      '((cpp "https://github.com/tree-sitter/tree-sitter-cpp")
      (c "https://github.com/tree-sitter/tree-sitter-c")))
```

You can find treesit grammars for other languages and add them here. I included C because `c++-mode` is derived from `c-mode`. You probably need to do the same for other C-like languages.

Then install any grammar libraries not already installed:

```
(dolist (lang treesit-language-source-alist) (unless (treesit-language-available-p (car lang)) (treesit-install-language-grammar (car lang))))
```

The tree-sitter version of `c++-mode` is called `c++-ts-mode`, and it will look for `tree-sitter-c++` by default (not only the grammar library name but also the symbol defined in it). You need to map `c++` to the correct name:

```
(setq treesit-load-name-override-list  '((c++ "libtree-sitter-cpp")))
```

The tree-sitter major modes are not default, so we need to ask Emacs to use `c++-ts-mode` instead of `c++-mode` when editing C++ source:

```
(add-to-list 'major-mode-remap-alist '(c-mode . c-ts-mode))(add-to-list 'major-mode-remap-alist '(c++-mode . c++-ts-mode))(add-to-list 'major-mode-remap-alist '(c-or-c++-mode . c-or-c++-ts-mode))
```

Restart Emacs and load up a C++ file, and tree-sitter should be enabled. Give `treesit-explore-mode` or `treesit-inspect-mode` a try!