# Nixpkgs's Advanced Usage

`callPackage`, `Overriding`, and `Overlays` are the techniques occasionally used when using Nix to customize the build method of Nix packages.

We know that many programs have a large number of build parameters that need to be configured, and different users may want to use different build parameters. This is where `Overriding` and `Overlays` come in handy. Let me give you a few examples I have encountered:

1. `fcitx5-rime.nix`: By default, `fcitx5-rime` use `rime-data` as the value of `rimeDataPkgs`, but this parameter can be customized by `override`.
2. `vscode/with-extensions.nix`: This package for VS Code can also be customized by overriding the value of `vscodeExtensions`, thus we can install some custom plugins into VS Code.
   - `nix-vscode-extensions`: This is a vscode plugin manager implemented by overriding `vscodeExtensions`.
3. `firefox/common.nix`: Firefox has many customizable parameters too.
4. ...

In short, `callPackage`, `Overriding` and `Overlays` can be used to customize the build parameters of Nix packages.

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RobotDisco Aug 11, 2024

I think it should be noted that all of the techniques in this section are not magical language features. They are just conventions written in the nix programming language that were designed into the nixpkgs source.

You implicitly show this in the callPackage section, which is great, but it is true of overrides and overlays as well. Even if left as an exercise to the reader, knowing that these are just nix code patterns will make these techniques seem less opaque and less intimidating.

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