

# Structure

CTFd themes are made up of 3 main components:

- [Jinja Templates](#)
- [JavaScript \(JS\)](#)
- [Cascading Style Sheets \(CSS\)](#)

## Jinja Templates

The Jinja templates are rendered by [Flask](#) which is the underlying framework that CTFd is written in. Once the template is rendered to HTML, the HTML will load the appropriate JavaScript (JS) and CSS files.

## JavaScript and CSS

The JS and CSS files are created through the use of a [build system](#). CTFd has a build system designed around [Vite](#) which itself is based on [Rollup](#).

## Folders and Files

While the only two folders which are absolutely required by a CTFd theme are `static` and `templates`, in general themes should be broken down into the following structure:

```
| -- assets/  
| -- static/  
| -- templates/  
| -- package.json  
`-- vite.config.js
```

Note that we are not including other files such as configuration files, instructions, node\_modules, etc. since

Jinja Templates  
Javascript and CSS  
Folders and Files  
assets  
static  
templates  
package.json  
vite.config.js

they are only used to build our theme structure.

## assets

The `assets` directory generally contains the uncompiled, unminified source of any JS or CSS files.

You may commonly see a structure such as:

```
assets/
|-- js/
`-- scss/
```

## static

The `static` directory will contain the compiled and minified JS and CSS files that will be served by CTFd to the user's browser. The structure for this is roughly:

```
static/
|-- assets
|-- manifest.json
`-- manifest-css.json
```

The `manifest.json` and `manifest-css.json` files should be automatically generated by the JS/CSS build system. In the following sections it is documented how to generate these files using Vite.

## templates

The `templates` directory will contain the Jinja HTML templates that are rendered by CTFd and served to the user. Templates must have a very specific structure which is documented in the [templates section](#).

## package.json

`package.json` is a JSON file specified by most JavaScript projects. `package.json` is documented by

npm. In most cases this should be generated for you when you create your project.

# vite.config.js

`vite.config.js` is the configuration file for the Vite build system used. The configuration for `vite.config.js` is outlined further in the Build System section.

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