Chisel Project Template

You've done the Chisel Bootcamp, and now you are ready to start your own Chisel project. The following procedure should get you started with a clean running Chisel3 project.

Make your own Chisel3 project

Dependencies

JDK 8 or newer

We recommend LTS releases Java 8 and Java 11. You can install the JDK as your operating system recommends, or use the prebuilt binaries from AdoptOpenJDK.

SBT or mill

SBT is the most common build tool in the Scala community. You can download it here.
mill is another Scala/Java build tool without obscure DSL like SBT. You can download it here

Verilator

The test with `svsim` needs Verilator installed. See Verilator installation instructions here.

How to get started

Create a repository from the template

This repository is a Github template. You can create your own repository from it by clicking the green `Use this template` in the top right. Please leave `Include all branches` **unchecked**; checking it will pollute the history of your new repository. For more information, see "Creating a repository from a template".

Wait for the template cleanup workflow to complete

After using the template to create your own blank project, please wait a minute or two for the `Template cleanup` workflow to run which will removes some template-specific stuff from the repository (like the LICENSE). Refresh the repository page in your browser until you see a 2nd commit by `actions-user` titled `Template cleanup`.

Clone your repository

Once you have created a repository from this template and the `Template cleanup` workflow has completed, you can click the green button to get a link for cloning your repository. Note that it is easiest to push to a repository if you set up SSH with Github, please see the related documentation. SSH is required for pushing to a Github repository when using two-factor authentication.

```
git clone git@github.com:curryfromuestc/chisel-template-curry.git
cd chisel-template-curry
```

Set project organization and name in build.sbt

The cleanup workflow will have attempted to provide sensible defaults for `ThisBuild / organization` and `name` in the `build.sbt`. Feel free to use your text editor of choice to change them as you see fit.

Clean up the README.md file

Again, use you editor of choice to make the README specific to your project.

Add a LICENSE file

It is important to have a LICENSE for open source (or closed source) code. This template repository has the Unlicense in order to allow users to add any license they want to derivative code. The Unlicense is stripped when creating a repository from this template so that users do not accidentally unlicense their own work.

For more information about a license, check out the Github Docs.

Commit your changes

```
git commit -m 'Starting chisel-template-curry'
git push origin main
```

Did it work?

You should now have a working Chisel3 project.

You can run the included test with:

```
sbt test
```

Alternatively, if you use Mill:

```
mill chisel-template-curry.test
```

You should see a whole bunch of output that ends with something like the following lines

```
[info] Tests: succeeded 1, failed 0, canceled 0, ignored 0, pending 0
[info] All tests passed.
[success] Total time: 5 s, completed Dec 16, 2020 12:18:44 PM
```

If you see the above then...

It worked!

You are ready to go. We have a few recommended practices and things to do.

- Use packages and following conventions for structure and naming
- Package names should be clearly reflected in the testing hierarchy
- Build tests for all your work
- Read more about testing in SBT in the SBT docs
- This template includes a test dependency on ScalaTest. This, coupled with `svsim` (included with Chisel) and `verilator`, are a starting point for testing Chisel generators.
  - You can remove this dependency in the build.sbt file if you want to
- Change the name of your project in the build.sbt file
- Change your README.md

Problems? Questions?

Check out the Chisel Users Community page for links to get in contact!