

EDAN40 / EDAF95: Getting Started with Haskell

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What do we need?

To get started with Haskell, you will need:

1. A text editor (VSCode / Emacs / Vim, or other): You probably already have a favorite one.
2. A compiler: [96% of Haskell developers use GHC, the Glasgow Haskell Compiler](#).
3. A build system, which downloads dependencies, etc. There are two main ones:
 1. Stack: This is the one we'll use in this course, it's stable and has many features.
 2. Cabal: Is another build system, which is used by stack too, but we prefer stack.
4. GHC can talk to your text editor to display errors, etc, using the Haskell Language Server (HLS). This is optional, but often useful.

A couple of years ago, we would install ghc and stack (or cabal) separately, but there's a tool to manage them both together, called GHCup. GHCup manages versions for GHC, Cabal, Stack, and HLS. This is what we will install.

Installing GHCup

1. Follow the [installation instructions](#).
2. Next [test your setup](#).
 1. Note that you don't have to follow the instructions related to Cabal in detail, since we'll use stack!

Installing Stack

GHCup should install Stack for you. If it does not, see [the user guide](#).

Making Stack and GHC versions match

Stack is very specific about which version of GHC it uses, and it can happen that the version that GHCup installed is not the version that stack wants, if that is the case, stack will install it again. This is not dangerous (doesn't break anything), but GHC is quite big, so you may not want to have too many versions installed on your machine.

The official documentation states there are [ways to avoid this](#), but when we tested them, `stack` still required a specific version of GHC.

To work around this, you can use `ghcup tui` to look what version of GHC is installed and change it if needed. You can test your setup by running `stack ghci`.

Using Stack

You can find the official manual [here](#) But in summary, for the assignments:

1. `stack build` compiles the project, downloading any necessary dependencies. That can take a while the first time.
2. `stack ghci` starts GHCi with all the required modules loaded. This is very useful when you want to test your code!
3. `stack test` runs the tests.
4. `stack bench` runs benchmarks, if there are some.
5. `stack run` will run your program.

Haskell with VSCode

If you're using VSCode, here is a link to the [standard Haskell language support](#)

Interestingly, the extension has support for [automatically running code examples in comments](#)

Removing GHCup

Follow [these instructions](#)

More resources

From [GHCup's suggestions](#)

1. A beginner friendly course: <https://github.com/haskell-beginners-2022/course-plan>
2. A more detailed university course: <https://www.cis.upenn.edu/~cis194/spring13/>
3. A well-designed course from the University of Helsinki: <https://haskell.mooc.fi/>