0 Install you a Haskell

Open a terminal and type "`ghci --version`" to see if you have "`ghci`" already installed on your computer. If not, go to the link below.

https://www.haskell.org/ghcup/

Then follow the installation instructions for your platform. If you're unsure where to begin, here is a YouTube video explaining the setup (the instructions are for Windows, but Linux steps are very similar). The interactive installer (GHCup) will set up GHC and Cabal for you. It will optionally allow you to also install HLS and Stack. This is what all these names mean:

- GHC (Glasgow Haskell Compiler) A tool that translates human-readable code into machine-code that a computer can run.
- Cabal (A Haskell build tool) Cabal is used to structure Haskell projects, build them, run them, define dependencies, etc.
- Stack (A Haskell build tool) An alternative to Cabal.
- HLS (Haskell Language Server) You won't use HLS directly, instead your code editor may use it in the background to provide you with a better experience while editing Haskell code (like syntax highlighting and auto-completion).

Choose to install all of them. Additional platform-specific dependencies may also appear (e.g., MSYS2 on Windows); select to install those too.

Next, install the `QuickCheck` package by running the following in your terminal:

```
$ cabal update
$ cabal install --lib QuickCheck
```

You can use Haskell with any text editor as shown in this short video.

We will begin by using the Haskell REPL (read-eval-print-loop), by running the "`ghci`" command in a terminal. This interactive environment is usually provided by GHCi, the interactive Haskell compiler/interpreter. At any time you can type "`:help`" at the prompt to see all the available commands.

Exercise 1

Type "`ghci`" in your terminal.

(a) Try "`3 + 4 * 5`" and "`(3 + 4) * 5`". Does arithmetic in Haskell work as expected?

(b) Find the length of a string by typing "`length "This is a string"`".

(c) Reverse a string by typing "`reverse "Madam I'm Adam"`".

Integrated Development Environments (IDEs)

There is also the option of integrating Haskell and GHCi into your favorite code editor. This is an optional step that some students might wish to pursue. Here, we point to some popular choices:

- Haskell mode for Emacs: https://haskell.github.io/haskell-mode/.
- Haskell extension for Visual Studio Code: https://marketplace.visualstudio.com/items?itemName=haskell.haskell.