Web Application Development in Haskell

There is a lot of discussion about the pros and cons of various languages. When it comes to the domain of web applications, Javascript, Java, PHP and Python are the languages of choice. Much of Virtual Labs' infrastructure is built in Python and Javascript.

Haskell, a pure functional language, has not received much exposure in this area. However, there are features of Haskell that make it ideal for building web applications – conciseness, type-safety, the separation of pure (calculation) and impure (stateful) parts of the system using the monad construct, etc..

In this project, we showcase a proof-of-concept of a typical CRUD web application written in Haskell. The application implements an User Directory app, with CRUD operations performable on the users within the directory. We also take an implementation of the same application, written in Python, and perform a comparision study between the two softwares.

The aim of the comparision study is to compare how suitable Haskell is for writing large, modular and easily-extensible and maintainable systems. Only a preliminary comparision study was performed.

On performing a comparision, we see that Haskell code used for the purpose of developing web applications is much more concise – the code used in the Haskell implementation is one-fourth the size of the code used in the Python implementation. It is also type-safe, and highly modular. However, the comparision study is still in the preliminary stage – a number of further factors need to be tested.

Intern Name: Atreyee Ghosal
Mentor Name: Venkatesh Choppella