

Run Haskell Anywhere with Java and Jython

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1 Running in the Java Virtual Machine

C is one of the most commonly used languages when it comes to maximizing execution performance. However, C/C++'s "write once compile anywhere" paradigm makes it less portable. In contrast, the near ubiquity of the Java Virtual Machine (JVM) allows it to be "write once run anywhere."

On many occasions, the global development community has leveraged the Java environment to allow other languages to take advantage of Java's "run anywhere" capability. Examples include: JRuby for the Ruby programming language [jru], Scala [sca], Renjin for the R programming language [ren], and Jython for the Python programming language [jyt].

Currently, there is no full implementation of Haskell in the JVM. One Haskell dialect that is runnable in Java is Frege [Wec].

In this project, I will implement, *Hamskill*, a stripped down version of Haskell in the Java Virtual Machine.

2 Implementation Proposal

This section outlines the overall implementation plan for this project. It is divided into subsections based on the overall themes and ideas.

2.1 Types

Hamskill will only support a select subset of the available types. The list of planned types are: **Bool**, **Integer** (i.e. bounded), **Char**, and **List** (currently only bounded is planned, but that may change depending on the speed and complexity of implementation).

While implementing floating point numbers would not add substantial complexity at a general level, ensuring that the floating point behavior of *Hamskill* and Haskell are identical seems beyond the scope of this project.

References

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- [jyt] Platform specific notes. <http://www.jython.org/archive/21/platform.html>. (Accessed on 02/25/2016).
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- [Wec] "Ingo Wechsung". Frege/frege: Frege is a haskell for the jvm. it brings purely functional programing to the java platform. <https://github.com/Frege/frege>. (Accessed on 02/25/2016).