



Haskell Suite

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I LOVE GHC!



Haskell Suite Vision

- A modular set of libraries, together comprising a complete Haskell implementation
 - ... for some definition of complete.
- Each library in the suite supporting fine-grained, explicit operations.
- Focus on interface, not on performance.

Cool use cases

- Transformations: Custom extensions, pre-processors, (type-driven) refactoring, ...
- IDEs: Syntax high-lighting, type tooltips, definition sites, analysis, built-in refactoring, ...
- DSLs: Domain-specific type checking, pre-processing, code generation, quasiquoters, ...
- Light-weight embedded Haskell functionality
- Your cool idea that hasn't even been envisioned yet
- Your own extension you want to test out

Other motivation

- ghc-api, the only current alternative, is monolithic, opaque, and has a different goal.
- GHC needs (front-end) "competition"!
 - Being an entity with different concerns (i.e. not another compiler) is a plus.

Here be code
generators!

haskell-meta

Meta-level programming

haskell-interpreter

Interpreted execution

haskell-types

Type inference

haskell-desugar

AST simplification

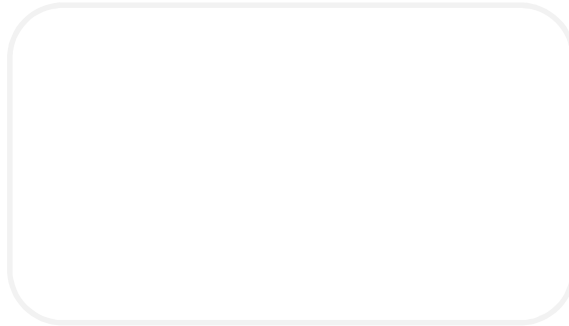
haskell-names

Name resolution, scope
analysis, import chasing

haskell-src(-exts)

Parsing, AST(s), pretty-
printing

haskell-meta
Meta-level programming



haskell-interpreter
Interpreted execution

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AST simplification

Shayan Najd Javadipour
GSoC 2012 project

haskell-names
Name resolution, scope
analysis, import chasing

Lennart Augustsson

haskell-src(-exts)
Parsing, AST(s), pretty-
printing

haskell-src-extends

- Library for Haskell source code manipulation.
- On hackage since waaaay back, actively maintained since 2006 (with some dips).
- Almost compatible with GHC (for the source side).
 - 7.6 syntactic extensions not yet added
 - GHC is sometimes wrong
- Among the top 20 most downloaded packages on hackage.

haskell-type(-ext)s

- GSoC project this past summer, by Shayan Najd Javadipour
- Result: (More or less) complete type inference for Haskell2010.
 - Much focus on structure for future extension and maintenance.
 - `{-# LANGUAGE NoTraditionalRecordSyntax #-}`
- Development will continue, with the goal of supporting (almost) all that GHC supports.

haskell-names

- Hobby project by the world's best programmer (Lennart).
 - aka haskell-modules
- "90% complete" on delivery.
 - Very nice interface.
 - Support for just the things we want.

Other parts

- Interpreter:
 - Won't be the fastest – but people still use Ruby, PHP, ...
- Meta programming:
 - If we have a parser, an AST and combinators to build with, and pretty-printing, why not use them ourselves?
- Desugaring:
 - Just makes other parts easier
 - An example of a transformation pass

The long and winding road ahead

- An ambitious task – but important!
 - ... at least **I** think so.
- Making this real will eventually need more
{resources | contributors | effort | dedication}*
 - Supersede the old haskell-src
 - Licensing intricacies