

# Haskell: Programming with Functions

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# Haskell is a programming language

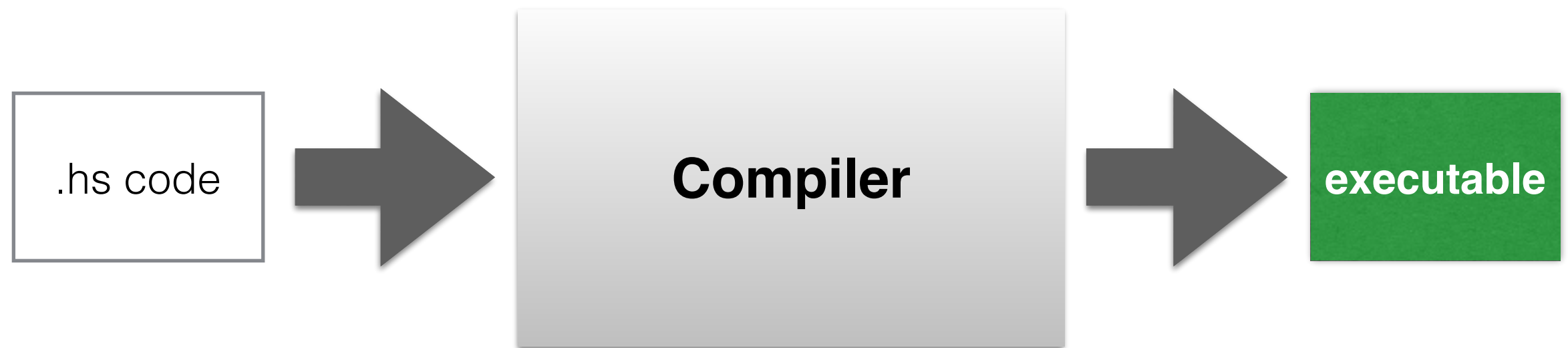
## Programming language

Syntax: How do I write a program?

Semantics: How does the program run?



# Haskell is a programming language



The Glasgow Haskell Compiler (ghc)



# Haskell is a programming language



The Glasgow Haskell Interpreter (ghci)



# Haskell is more than a language

Functional programming

No side effects

Strongly Typed

Lazy evaluation

Monads



# Strongly typed

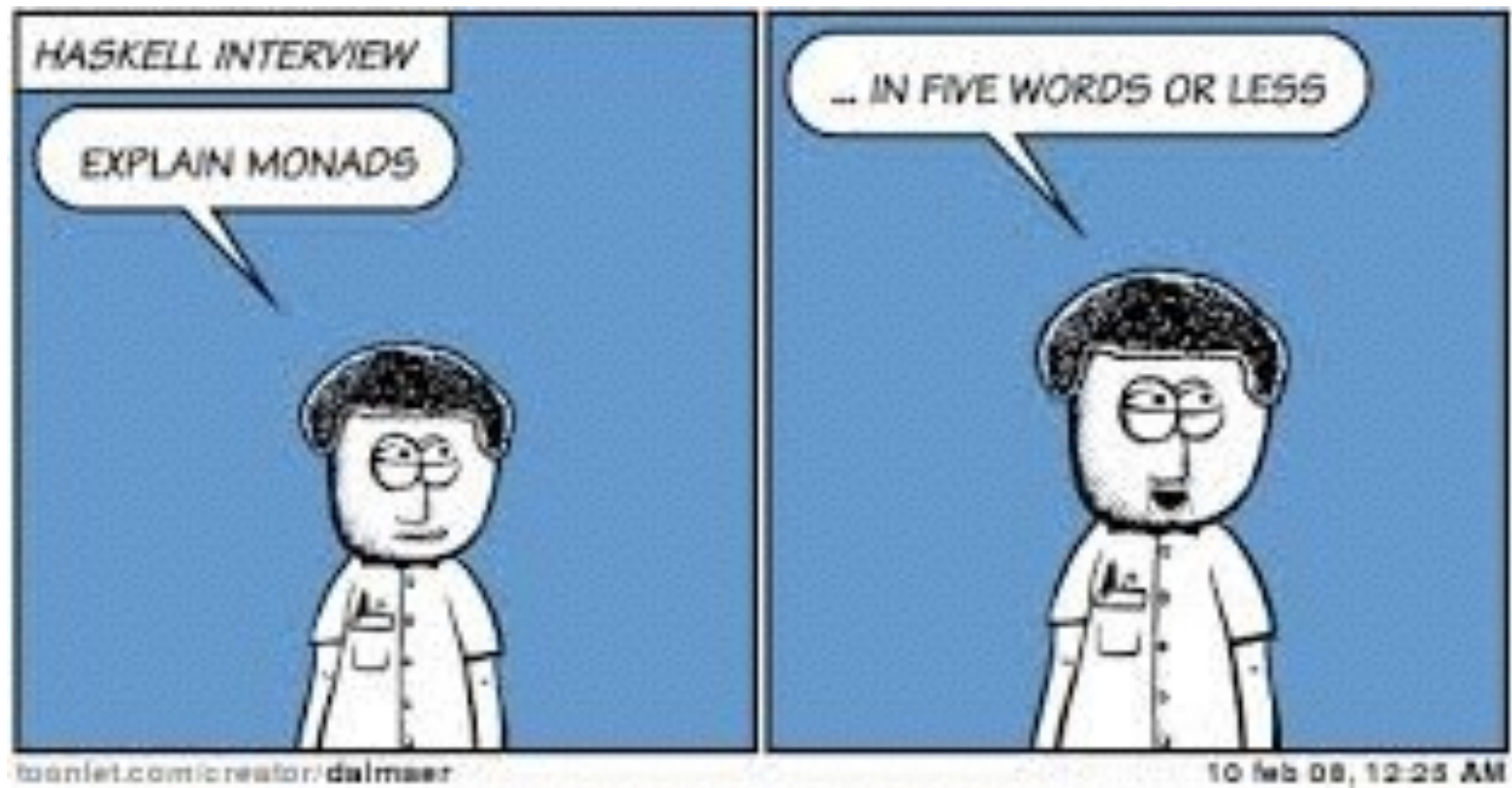
“If it compiles it works!”



# No side effects



# Monads





# Why Haskell?

It is pretty and elegant!

Started as a research language (>20 years ago)

Industry is using it



# Our plan

Learn Haskell

higher order functions

polymorphism

type classes

monads

Learn some theory

$\lambda$ -calculus

type inference

Make an application

build an email classifier!

Let's get started!!!!



