Haskell
Simple Recursion

2021-04-16

Agenda

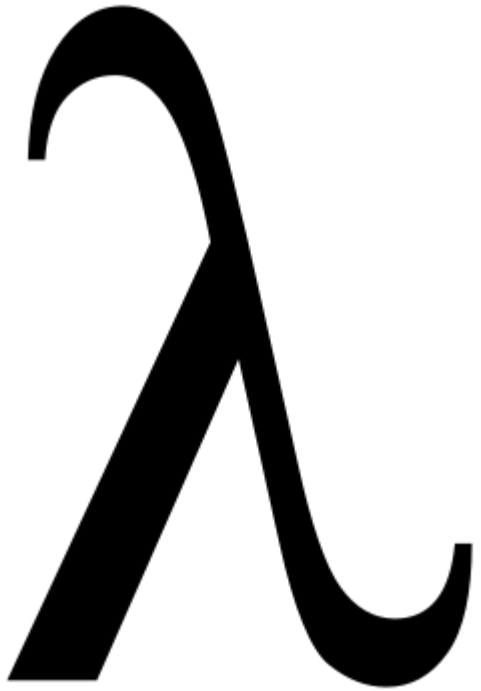
Using Haskell

GHCI

Patterns

Recursion

PA1 tips



Haskell

- Functional programming language
- Equational reasoning
- NO side effects (e.g., write to file, DB, internet)
  - Unless you explicitly handle them
- Weird syntax

Function Application

Elsa: ITE A B C = (((ITE A) B) C)

Haskell: ite a b c = (((ite a) b) c)

LEFT ASSOCIATIVE!

Quiz

In Haskell, like Elsa, which is the correct parenthesization of:

```
fold add 0 empty
```

```
A.  (fold (add 0 empty))
B.  (fold (add (0 empty))
C.  (fold add) (0 empty)
D.  (((fold add) 0) empty)
E.  ????
```

Quiz

In Haskell, like Elsa, which is the correct parenthesization of:

```
fold add 0 empty
```

```
A.  (fold (add 0 empty))
B.  (fold (add (0 empty))
C.  (fold add) (0 empty)
D.  (((fold add) 0) empty)  -- left associative
E.  ????
```

GHCI

Glorious Glasgow Haskell Compiler Interpreter

- `$ make ghci`

Issue?:

```
The following GHC options are incompatible with GHCi and have not been
passed to it: -threaded

Configuring GHCi with the following packages: hw1-haskell

/tmp/haskell-stack-ghci/74924166: createDirectory: permission denied
(Permission denied)
```

Fix: `$ TMPDIR=$HOME/.tmp make ghci`

Haskell

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