Tutorial: Monads for the Working Lisp Programmer

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Tutorial Outline

- Introduction
- Tutorial Contents
  I. Monads in Haskell
  II. Translating Monads to Lisp
  III. Clojure Monad Library
  IV. Our Library Extensions
  V. Interpreter Example

Please interact and ask questions!

Tutorial Exercises

- We want this to be hands-on
  - We have 5 different exercises
  - Our goal is to leave you with new ideas and concrete experience that you can apply to future projects
- Software requirements:
  - PLT Scheme (or another Lisp if you're OK translating on the fly) [3 exercises]
  - The latest stable Clojure (20090320) and clojure-contrib releases [2 exercises]

Tutorial Exercises

I. Monads in Haskell

II. Translating Monads to Lisp

- **Exercise: Translating a monad**
- **Exercise: Implementing custom monadic syntax**
- **Exercise: Ambiguous parsing with a list monad**

III. Clojure Monad Library

IV. Our Library Extensions

V. Interpreter Example

Tutorial Exercises

I. Monads in Haskell

II. Translating Monads to Lisp

III. Clojure Monad Library

- **Exercise: Implementing mapm**

IV. Our Library Extensions

V. Interpreter Example

Tutorial Exercises

I. Monads in Haskell

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- **Exercise: Building a modular language fragment**

Tutorial Online

- http://github.com/jnewbern/monad-tutorial/tree/new-master/
  - exercises, solutions and slides subdirectories
  - slides/MonadTutorial.pdf is this presentation
  - there might be updates after today (time permitting, no promises)
  - most notably, compatibility tweaks for newer versions of Clojure and its monad library
- Contact us
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