

Teach Yourself Haskell in 24 Hours

The Ultimate Personal Training
Kit¹

ROMAN BYZANTINE

June 2016

¹<https://github.com/klappvisor/teach-yourself-haskell-in-24-hours>

Dedicated to everyone who lives to fight
another day

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Introduction

Congratulations! By reading this sentence, you are already 15 second closer to learning Haskell, one of the most important functional programming language in the world.

After another 23 hours, 59 minutes, and 40 seconds, you will master Haskell functional programming language. This book consists of 24 well-structured and easy to follow 1-hour lessons accompanied with code examples to show you power and conciseness of the greatest functional programming language invented by mankind. We will start from basic concepts like functions, lambdas and pattern matching and continue our journey to such concepts as Monads, Functors, Arrows, etc.

Teach Yourself Haskell in 24 Hours will help you to become proficient with Haskell and teach you how to write next generation software!

Chapter 1

Hour 1 - Getting Started

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

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LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
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Code example which illustrates it:

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data Lol = Lmao | Rolf Lol Lol
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instance Monoid Lol where
    mempty = Lmao
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import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

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Chapter 2

Hour 2 - Hello World

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Chapter 3

Hour 3 - Haskell Syntax

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  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
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Chapter 4

Hour 4 - Thinking functionally

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lol >>> rolf
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Chapter 5

Hour 5 - Laziness

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lol >>> rolf
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Chapter 6

Hour 6 - Referential transparency

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    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 7

Hour 7 - Work with collections

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*, *LMFAO*). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 8

Hour 8 - Pattern matching

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 9

Hour 9 - Working with Strings

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
```

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 10

Hour 10 - Error handling

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours-
LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL.
Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24

Hours- LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL.

```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 11

Hour 11 - Maybe, Either and others

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
- LOL. Teach Yourself Haskell in 24 Hours- LOL. Teach Yourself
Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours-
LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 12

Hour 12 - Modules and Imports

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 13

Hour 13 - Type System

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 14

Hour 14 - Polymorphism

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 15

Hour 15 - Typeclasses

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 16

Hour 16 - Monadic computation

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 17

Hour 17 - Functors

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 18

Hour 18 - Applicative functors

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
    mempty = Lmao
    mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 19

Hour 19 - Monoids

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
- LOL. Teach Yourself Haskell in 24 Hours- LOL. Teach Yourself
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LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

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```
lol >>> rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 20

Hour 20 - Lenses

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours-
LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 21

Hour 21 - Combinators

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
- LOL. Teach Yourself Haskell in 24 Hours- LOL. Teach Yourself
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LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

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```
lol >>> rolf
```

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 22

Hour 22 - Arrows

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

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-- Haskell in 24 Hours- LOL
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  mempty = Lmao
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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import Control.Concurrent
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main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

```
lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 23

Hour 23 - Zippers

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
- LOL. Teach Yourself Haskell in 24 Hours- LOL. Teach Yourself
Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours-
LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - ROLF

Teach Yourself Haskell in 24 Hours - LOOOOOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.. Teach Yourself Haskell in 24 Hours - LOL.

Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL.

```
import Data.Tuple

data Lol = Lol | Rolf deriving (Show)

main = print $ swap (Rolf, Lol)
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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lol >>> rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL.

Chapter 24

Hour 24 - Concurrency

Teach Yourself Haskell in 24 Hours - LOL

Did you really think that you can learn Haskell in 24 hours?!
LOOOOL

Teach Yourself Haskell in 24 Hours - LOL.

LolLol LolLol Lol LolLolLolLolLol Lol Lol (*LOL*, *ROLF*, *LMAO*,
LMFAO). Teach Yourself Haskell in 24 Hours- LOL

LOL LOL LOL LOL LOL LOL LOL LOL LOL *ROLF LOL LOL*
LOL LOL LOL LOL LOL LOL.

Code example which illustrates it:

```
-- Haskell in 24 Hours- LOL
data Lol = Lmao | Rolf Lol Lol
```

```
instance Monoid Lol where
  mempty = Lmao
  mappend = Rolf
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Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours
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Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours-
LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24
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Yourself Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours- LOL. Teach Yourself Haskell in 24 Hours- LOL. Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL. Learn You Haskell in 24 Hours- LOL.

```
import Control.Monad
import Control.Concurrent
import Control.Concurrent.STM

main = do
  lols <- atomically $ newTVar 0
  forM_ [0..49] $ \_ -> do
    forkIO . forever $ do
      atomically $ modifyTVar lols (+1)
      threadDelay 100

  threadDelay 1000000
  lolsFinal <- atomically $ readTVar lols
  putStrLn $ "lols: " ++ show lolsFinal
```

Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Teach Yourself Haskell in 24 Hours - LOL. Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL. Learn You Haskell in 24 Hours - LOL.

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```
lol >>> rolf
```

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