

# Programming Elixir



## Programming Elixir

Functional  
▷ Concurrent  
▷ Pragmatic  
▷ Fun



Dave Thomas

Foreword by  
José Valim,  
Creator of Elixir

edited by Lynn Beighley

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出版者:The Pragmatic Bookshelf

出版时间:2013-10-15

装帧:Paperback

isbn:9781937785581

As a developer, you've probably heard that functional programming techniques help manage the complexities of today's real-world, concurrent systems. You're also investigating designs that help you maximize uptime and manage security.

This book is your guide to Elixir, a modern, functional, and concurrent programming

language. Because Elixir runs on the Erlang VM, and uses the underlying Erlang/OTP architecture, it benefits from almost 20 years of research into high performance, highly parallel, and seriously robust applications. Elixir brings a lot that's new: a modern, Ruby-like, extendable syntax, compile and runtime evaluation, a hygienic macro system, and more.

But, just as importantly, Elixir brings a sense of enjoyment to parallel, functional programming. Your applications become fun to work with, and the language encourages you to experiment.

Part 1 covers the basics of writing sequential Elixir programs. We'll look at the language, the tools, and the conventions.

Part 2 uses these skills to start writing concurrent code—applications that use all the cores on your machine, or all the machines on your network! And we do it both with and without OTP.

And Part 3 looks at the more advanced features of the language, from DSLs and code generation to extending the syntax.

By the end of this book, you'll understand Elixir, and know how to apply it to solve your complex, modern problems.

## 作者介绍:

Dave Thomas is a programmer who likes to evangelize cool stuff. He cowrote *The Pragmatic Programmer*, and was one of the creators of the Agile Manifesto. His book *Programming Ruby* introduced the Ruby language to the world, and *Agile Web Development with Rails* helped kickstart the Rails revolution.

## 目录: Contents and Extracts

This book is currently in beta, so the contents and extracts will change as the book is developed.

Preface/Introduction

Conventional Programming

Pattern Matching

Assignment: I do not think it means what you think it means

More Complex Matches

Ignoring a Value With

Variables Bind Once (Per Match)

Another way of looking at the equals sign

Immutability

You Already Have (Some) Immutable Data

Immutable Data Is Known Data

Performance Implications of Immutability

Coding With Immutable Data

Elixir Basics excerpt

Value Types

System Types

Collection Types

Names, Source Files, Conventions, Operators, and So On

End of the Basics

Anonymous Functions  
Functions and Pattern Matching  
One Function, Multiple Bodies  
Functions Can Return Functions  
Passing Functions as Arguments  
Functions Are The Core  
Modules and Named Functions  
The Body of the Function is a Block  
Function Calls and Pattern Matching  
Guard Clauses  
Default Parameters  
|> — The Amazing Pipe Operator  
Modules  
Module Attributes  
Module Names: Elixir, Erlang, and Atoms  
Lists and Recursion  
Heads and Tails  
Using Head and Tail to Process a List  
Using Head and Tail to Build a List  
Creation of a Map Function  
Keeping Track of Values During Recursion  
More Complex List Patterns  
List Comprehensions  
Using the Built-in Libraries  
Strings and Binaries  
String Literals  
The Name “strings”  
Single Quoted Strings—Lists of Character Codes  
Binaries  
Double Quoted Strings are Binaries  
Binaries and Pattern Matching  
Records  
Defining Records: defrecord  
Records and Pattern Matching  
Advanced Records  
Control Flow  
if and unless  
cond  
case  
Raising Exceptions  
Designing With Exceptions  
What we’ve seen  
Organizing a Project  
The Project: Fetch Issues from Github  
Task: Use Mix to Create our New Project  
Transformation: Parse the Command Line  
Step: Write Some Basic Tests  
Transformation: Fetch from Github  
Task: Use External Libraries  
Transformation: Convert Response  
Transformation: Take First N Items  
Transformation: Format the Table  
Task: Make a command line executable (#sec.cmd-line}  
Task: Test The Comments

Task: Create Project Documentation  
What We've Just Seen  
Concurrent Programming  
Working With Multiple Processes  
A Simple Process  
Process Overhead  
When Processes Die  
Parallel Map—The Hello World of Erlang  
A Fibonacci Server  
What's Next  
Nodes—The Key To Distributing Services excerpt  
Naming Nodes  
Naming Your Processes  
I/O, PIDs, and Nodes  
What's Next  
OTP: Servers  
Some OTP Definitions  
An OTP Server  
GenServer Callbacks  
Naming A Process  
Tidying Up The Interface  
What We Learned  
OTP: Supervisors  
Supervisors And Workers  
Supervisors Are The Heart of Reliability  
OTP: Applications  
Application: I do not think it means what you think it means  
The Application Specification File  
Turning Our Sequence Program into an OTP Application  
Tell Mix About The Application  
Create the application OTP entry point  
Hot Code Swapping  
OTP is Big. Unbelievably Big  
Web Applications with Dynamo  
More Advanced Elixir  
Protocols  
Use and Using  
Macros  
• • • • • (收起)

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标签

elixir

programming

erlang

函数式编程

FP

编程

Elixir

并发

评论

不懂 Erlang 的话，最好还是先学 Erlang。

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有点意思，像是clojure+ruby.

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很好的入门书。

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用过rails,感觉就熟悉很多了。

毕竟是最佳实践，源代码的量也少一些，比直接看erlang,要容易一些。erlang的上层语言，就像学习高级语言一样，理解上好懂一些，但真正搞懂还是等往下看。

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挺有意思的一个语言，基于erlang  
vm，继承了erl强大的能力，同时语法更亲民。很好的生产力工具。

比 Elixir in Action 差远了

感觉只是把erlang做了些封装，还是直接用erlang坑会少一些。语法糖模仿的ruby的block，但和fp结合的不如ruby之于fp

习惯了 static typing 的思维用 dynamic typing 的语言总会感觉一团混沌。然而 practically 这可能的确是在开发中提升效率的一种方式。只要语言本身设计得当那么 dynamic typing 的 pitfalls 也可以被有效控制。

入门书籍

出版日期是 2013-10-15，elixir的v 1.0是在September 18, 2014，所以书中有些部分可能有误。

我只读了基础部分，写得确实好

对新语言兴趣不大了

Elixir意在pattern matching，說好了就成。Elixir之所以比Erlang重要，除了語法問題還因為有Phoenix Framework有出現沒有Phoenix我們還不如用Go

相当推荐

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## 书评

或许，你看了下面的书评会觉得我是在帮忙打广告的，但是我只想说，我仅以一个2年coding.net 用户来评价一下这本书：）

正如这本书的推荐序一样，看了elixir，的确让人感到elixir脑洞大开，一年前搞过一段时间erlang，然而由于社区的不够活跃，又碰到了chicago这个w...

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Elixir 之前一直只有英文版本。后来看到杜叔着手翻译了这边 Elixir 算是中文版本的开荒之作，好像在 WebIDE 里面也用到了。Elixir 是一门暴力语言，基于 Erlang，天然处理并发的。对于书还没来得及全部读完，但是对于译者我是很是熟知的。Coding WebIDE 的架构师杜万，杜叔...

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