

深入浅出EJB (影印版)



Learn why Lucy likes
to be Remote

Head First EJB™



Test yourself on over
200 realistic mock
exam questions

Passing the Sun Certified Business Component Developer Exam

Sharpen your mind
with 42 EJB puzzles
and exercises

**Written by the
co-developers of the
real SCBCD exam**



Listen in as beans
(after a few martinis)
reveal their deep
secrets



Watch it!

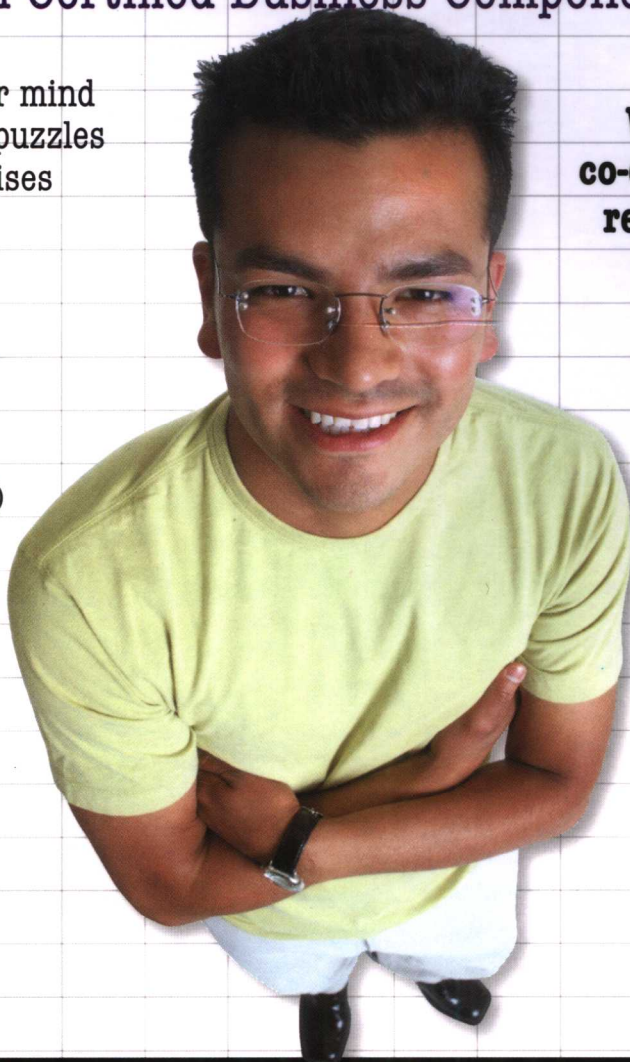
Tune your brain to
steer clear of exam
traps and EJB pitfalls



Discover real-world
tips with our
Off-Path Guides



Discover what
successful exam-passers
know about EJB



第 1 章 (10) 目录 (11) 附录 (12)

深入浅出EJB™ (影印版)

Head First EJB™

Wouldn't it be dreamy if
there was an EJB book that
was more stimulating than
deleting spam from your inbox?
It's probably just a fantasy...



Kathy Sierra
Bert Bates
江苏工业学院图书馆
藏书章

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- 《深入浅出 EJB》(影印版)
- 《深入浅出 Servlet & JSP》(影印版)

Advance praise for *Head First EJB™*

“Until now, I could not have imagined a person smiling while studying an IT book! Using *Head First EJB* materials, I got a great score (91%) and set a world record as the youngest SCBCD, 14 years.”

— **Afsah Shafquat**
(world’s youngest Sun Certified Business Component Developer)

“This is the first EJB book that made milk come out my nose.”

— **Alan Peterson, SCBCD Development Team**

“Finally.. an EJB book that teaches you everything you need to know, and keeps you laughing while doing it.”

— **Kenneth Saks, EJB Container Implementation Lead**
Java Software Group, Sun Microsystems

“This stuff is so good I want to staple the pages to my body.”

— **Kimberly Bobrow, Java Course Development**
Sun Microsystems
(Daughter of Danny Bobrow, inventor of the pull-down menu.)

Praise for the *Head First* approach and *Head First Java™*

“This stuff is so fricking good it makes me wanna WEEP! I’m stunned.”

— **Floyd Jones, BEA Systems**

“Kathy Sierra and Bert Bates’ *Head First Java* transforms the printed page into the closest thing to a GUI you’ve ever seen. In a wry, hip manner, the authors make learning Java an engaging ‘what are they gonna do next’ experience.”

— **Warren Keuffel, Software Development Magazine (September 2003)**

“...the only way to decide the worth of a tutorial is to decide how well it teaches. *Head First Java* excels at teaching. OK, I thought it was silly... then I realized that I was thoroughly learning the topics as I went through the book.”

“The style of *Head First Java* made learning, well, easier.”

— **slashdot (honestpuck’s review)**

Praise for the *Head First* approach

“Java technology is everywhere—in mobile phones, cars, cameras, printers, games, PDAs, ATMs, smart cards, gas pumps, sports stadiums, medical devices, Web cams, servers, you name it. If you develop software and haven’t learned Java, it’s definitely time to dive in—Head First.”

— **Scott McNealy, Sun Microsystems Chairman, President and CEO**

“This is unlike any Java book you’ve ever read—and we mean ever. It’s jokey, funny, occasionally irritating, entertaining, and original. It is (and this is as important as the virtues just listed) educational in the best sense of the word... It works and even the Java pro is likely to look at the familiar from a new angle with this book... here at TechBookReport we can’t want to see the next book in the Head Start (sic) series.”

— **TechBookReport** *[note from marketing: so let me get this straight... we can get people to remember the most obscure technical facts, but we can't get the media to remember the freakin' name of the book???)*

“O’Reilly has just released the BEST Java book ever! ... it is designed to really get you to learn... the book is fun, interesting, and hard to put down... if you need to learn Java, then I can say without reservation that this book is a must.”

— **Paul Wren, Lunch with George (Java/C/C++ User Group)**

“An easy and fun read and an excellent introduction into Java... the humorous undertones of the book constantly made me remember that Java is not difficult to master. Excellent book. ... I would definitely recommend this book to anyone interested in learning Java.”

— **Hampton Roads Oracle Users Group**

“Warning: This isn’t your father’s Java manual. Head First Java is the first, best, possibly the only Java textbook with a real sense of humor. Beyond the engaging style that drags you forward from know-nothing into exalted Java warrior status, Head First Java covers a huge amount of practical matters that other texts leave as the dreaded “exercise for the reader...” It’s clever, wry, hip and practical—there aren’t a lot of textbooks that can make that claim and live up to it while also teaching you about object serialization and network launch protocols. Check it out: it’s a fab, funny, fun way to learn Java from the grounds up.”

— **Dr. Dan Russell, Director of User Sciences and Experience Research
IBM Almaden Research Center
(and teaches Artificial Intelligence at Stanford University)**

"It's fast, irreverent, fun, and engaging. Be careful—you might actually learn something!"

— **Ken Arnold, former Senior Engineer at Sun Microsystems**
Co-author (with James Gosling, creator of Java), "The Java Programming Language"

"If you want to *learn* Java, look no further: welcome to the first GUI-based technical book! This perfectly-executed, ground-breaking format delivers three benefits other Java texts simply can't: 1) the pictures cement the concepts so you learn it all the first time through; 2) the combining of glyphs, artwork, code examples, and accompanying text are remarkably synergistic making the most advanced concepts "childs play"; 3) should you want to revisit a particular concept or detail all you have to do is to scan the pictures as you quickly flip through the pages!"

"Prepare yourself for a truly remarkable ride through Java land."

— **Neil R. Bauman, Captain & CEO,**
Geek Cruises (www.GeekCruises.com)

"'Hey I can understand this stuff now.' That's a recurring thought when someone like me reads this book. After trying to get into other Java books with marginal success, I recognized that this book doesn't just spout data at me, it truly tries to get useful information to stick to my brain..."

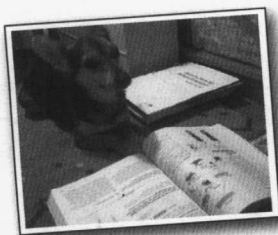
— **Martin Turnley, Utah Java Users Group**

"If anyone in the world is familiar with the concept of 'Head First,' it would be me. This book is so good, I'd marry it on TV!"

— **Rick Rockwell, Comedian**
The original FOX Television "Who Wants to Marry a Millionaire" groom

"Head First Java is like Monty Python meets the gang of four... the text is broken up so well by puzzles and stories, quizzes and examples, that you cover ground like no computer book before."

— **Douglas Rowe, Columbia Java Users Group**



"Just a fabulous method of teaching. I have savored every page and have done my own personal notations in addition to yours. My Dog Pally likes it too. Here she is reading it..."

— **James Tadeo, owner of Pally**
(Pally is available for contract Java development)

Other Java books from O'Reilly

Ant: The Definitive Guide™
Building Java™ Enterprise Applications Volume I: Architecture
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JXTA™ in a Nutshell
Learning Java™
Learning Wireless Java™
Mac OS X for Java™ Geeks
NetBeans™: The Definitive Guide
Programming Jakarta Struts

Be watching for more books in the Head First series!

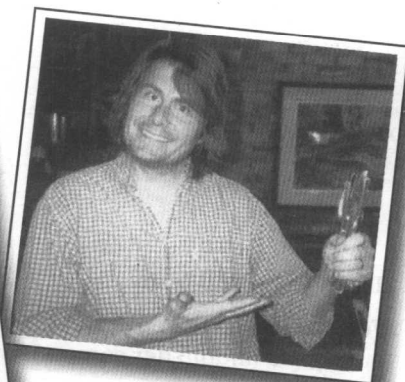
To Sun's EJB 2.0 team.

**For making such a powerful industry standard for
enterprise middle-tier component-based development.**

**And for making sure it was complex enough that people
would need a book to learn it.**

Perpetrators of the Head First series (and this book)

Kathy Sierra



Bert Bates

Kathy has been interested in learning theory since her days as a game designer (she wrote games for Virgin, MGM, and Amblin'). She developed much of the Head First format while teaching New Media Authoring for UCLA Extension's Entertainment Studies program. More recently, she's been a master trainer for Sun Microsystems, teaching Sun's Java instructors how to teach the latest Java technologies, and developing several of Sun's certification exams, including the SCBCD. Together with Bert Bates, she has been actively using the Head First concepts to teach thousands of developers. She is the founder of one of the largest Java community websites in the world, javaranch.com, which won a 2003 Software Development magazine Productivity Award. You can also catch her teaching Java certification classes on the Java Jam Geek Cruise (geekcruises.com).

She recently moved from California to Boulder, Colorado, where she's had to learn new words like, "ice scraper" and "fleece", but at least there's skiing. She likes to run, ride horses, and take the scenic route. In her non-existent spare time, Bert's trying to teach her to play go (she's *awful*).

A famous person once referred to her as "cogent". She's still trying to figure out if he meant that in a *good* way. If you know, or you have any other comments, write to her at kathy@wickedlysmart.com.

Bert is a software developer and architect, but a decade-long stint in artificial intelligence drove his interest in learning theory and technology-based training. He's been teaching programming to clients ever since. Recently, he's been a member of the development team for several of Sun's Java Certification exams, including the new SCBCD.

He spent the first decade of his software career travelling the world to help broadcast clients like Radio New Zealand, the Weather Channel, and the Arts & Entertainment Network (A & E). One of his all-time favorite projects was building a full rail system simulation for Union Pacific Railroad.

Bert is a long-time, hopelessly addicted *go* player, and has been working on a *go* program for way too long. Java may finally be a language expressive enough for him to finish the project. He's a fair guitar player [*note from Kathy: he's way better than fair*], and is now trying his hand at banjo.

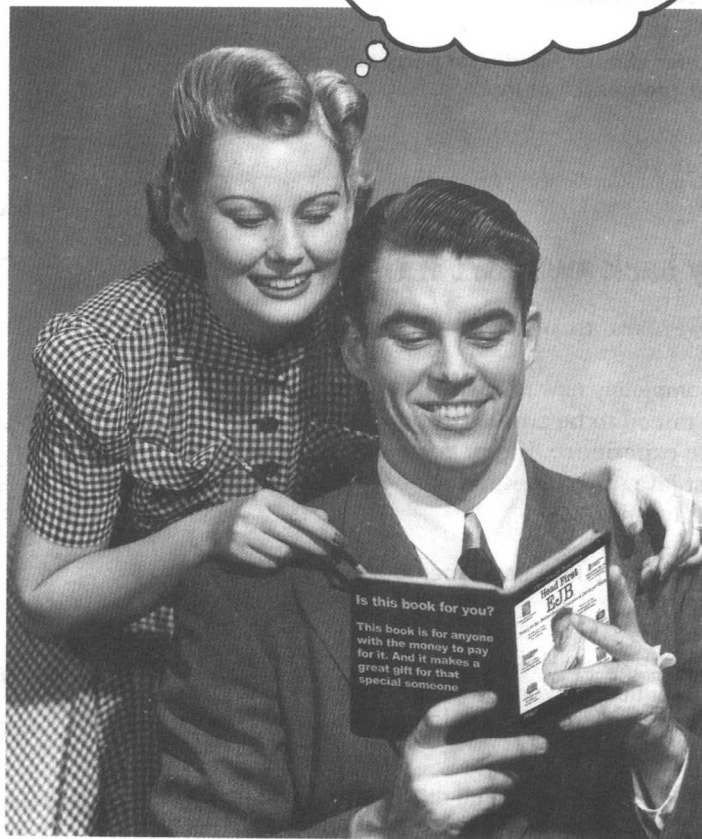
His beloved border collie died the day this book was finished. Thank-you Aiko, for sticking around long enough to help us finish. We'll miss you.

Write to him at terrapi@wickedlysmart.com.

how to use this book

Intro

I can't believe
they put *that* in a
programming book!



In this section, we answer the burning question:
"So, why DID they put that in a programming book?"

Who is this book for?

If you can answer “yes” to *all* of these:

- 1 Do you know Java? (You don't need to be a guru.)
- 2 Do you want to learn, understand, and *remember* EJB, with a goal of passing the SCBCD exam and developing business components?
- 3 Do you prefer stimulating dinner party conversation to dry, dull, technical lectures?

this book is for you.

Who should probably back away from this book?

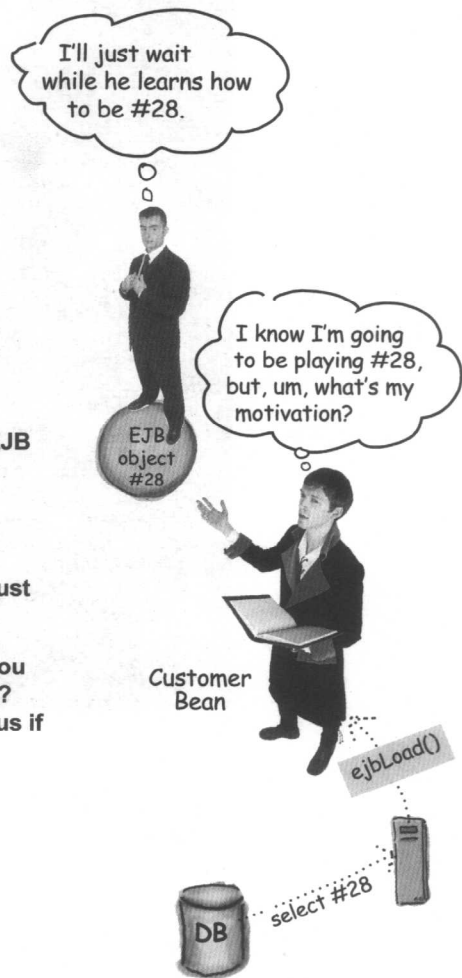
If you can answer “yes” to any *one* of these:

- 1 Are you completely new to Java? (You don't need to be advanced, but you should have some experience. If not, go get a copy of Head First Java, right now, today, and then come back and get this book.)
- 2 Are you a kick-butt Java developer looking for an EJB reference book?
- 3 Are you a J2EE veteran looking for ultra-advanced server techniques, server-specific how-to's, enterprise design patterns, and long, complex, robust real-world code?
- 4 Are you afraid to try something different? Would you rather have a root canal than mix stripes with plaid? Do you believe that a technical book can't be serious if beans are anthropomorphized?

this book is *not* for you.



[note from marketing: who took out the part about how this book is for anyone who can afford it? Why limit our target audience this way?]



We know what you're thinking.

"How can *this* be a serious programming book?"

"What's with all the graphics?"

"Can I actually *learn* it this way?"

"Do I smell pizza?"



And we know what your brain is thinking.

Your brain craves novelty. It's always searching, scanning, *waiting* for something unusual. It was built that way, and it helps you stay alive.

Today, you're less likely to be a tiger snack. But your brain's still looking. You just never know.

So what does your brain do with all the routine, ordinary, normal things you encounter? Everything it *can* to stop them from interfering with the brain's *real* job—recording things that *matter*. It doesn't bother saving the boring things; they never make it past the "this is obviously not important" filter.

How does your brain *know* what's important? Suppose you're out for a day hike and a tiger jumps in front of you, what happens inside your head?

Neurons fire. Emotions crank up. *Chemicals surge.*

And that's how your brain knows...

This must be important! Don't forget it!

But imagine you're at home, or in a library. It's a safe, warm, tiger-free zone. You're studying. Getting ready for an exam. Or trying to learn some tough technical topic your boss thinks will take a week, ten days at the most.

Just one problem. Your brain's trying to do you a big favor. It's trying to make sure that this *obviously* non-important content doesn't clutter up scarce resources. Resources that are better spent storing the really *big* things. Like tigers. Like the danger of fire. Like how you should never again snowboard in shorts.

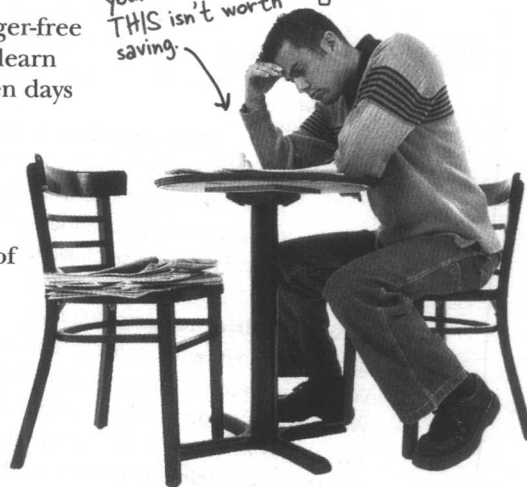
And there's no simple way to tell your brain, "Hey brain, thank you very much, but no matter how dull this book is, and how little I'm registering on the emotional richter scale right now, I really *do* want you to keep this stuff around."

your brain thinks
THIS is important.



Great. Only
637 more dull, dry,
boring pages.

your brain thinks
THIS isn't worth
saving.



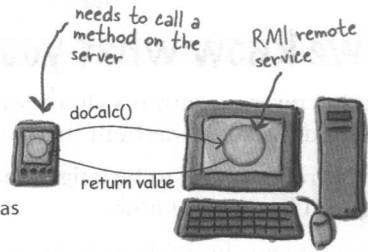
We think of a "Head First" reader as a learner.

So what does it take to *learn* something? First, you have to *get* it, then make sure you don't *forget* it. It's not about pushing facts into your head. Based on the latest research in cognitive science, neurobiology, and educational psychology, *learning* takes a lot more than text on a page. We know what turns your brain on.

Some of the Head First learning principles:



Make it visual. Images are far more memorable than words alone, and make learning much more effective (Up to 89% improvement in recall and transfer studies). It also makes things more understandable. **Put the words within or near the graphics** they relate to, rather than on the bottom or on another page, and learners will be up to *twice* as likely to solve problems related to the content.



Use a conversational and personalized style. In recent studies, students performed up to 40% better on post-learning tests if the content spoke directly to the reader, using a first-person, conversational style rather than taking a formal tone. Tell stories instead of lecturing. Use casual language. Don't take yourself too seriously. Which would you pay more attention to: a stimulating dinner party companion, or a lecture?

It really sucks to be an abstract method. You don't have a body.

Get the learner to think more deeply. In other words, unless you actively flex your neurons, nothing much happens in your head. A reader has to be motivated, engaged, curious, and inspired to solve problems, draw conclusions, and generate new knowledge.

Does it make sense to say Tub IS-A Bathroom? Bathroom IS-A Tub? Or is it a HAS-A relationship?



`abstract void roam();`
No method body!
End it with a semicolon.

And for that, you need challenges, exercises, and thought-provoking questions, and activities that involve both sides of the brain, and multiple senses.



Get—and keep—the reader's attention. We've all had the "I really want to learn this but I can't stay awake past page one" experience. Your brain pays attention to things that are out of the ordinary, interesting, strange, eye-catching, unexpected. Learning a new, tough, technical topic doesn't have to be boring. Your brain will learn much more quickly if it's not.

Touch their emotions. We now know that your ability to remember something is largely dependent on its emotional content. You remember what you care about. You remember when you feel something. No we're not talking heart-wrenching stories about a boy and his dog. We're talking emotions like surprise, curiosity, fun, "what the...?", and the feeling of "I Rule!" that comes when you solve a puzzle, learn something everybody else thinks is hard, or realize you know something that "I'm more technical than thou" Bob from engineering *doesn't*.



Metacognition: thinking about thinking

If you really want to learn, and you want to learn more quickly and more deeply, pay attention to how you pay attention. Think about how you think. Learn how you learn.

Most of us did not take courses on metacognition or learning theory when we were growing up. We were *expected* to learn, but rarely *taught* to learn.

But we assume that if you're holding this book, you want to learn EJB. And you probably don't want to spend a lot of time. And since you're going to take the exam, you need to *remember* what you read. And for that, you've got to understand it. To get the most from this book, or *any* book or learning experience, take responsibility for your brain. Your brain on *this* content.

The trick is to get your brain to see the new material you're learning as Really Important. Crucial to your well-being. As important as a tiger. Otherwise, you're in for a constant battle, with your brain doing its best to keep the new content from sticking.

So just how **DO** you get your brain to treat EJB like it's a hungry tiger?

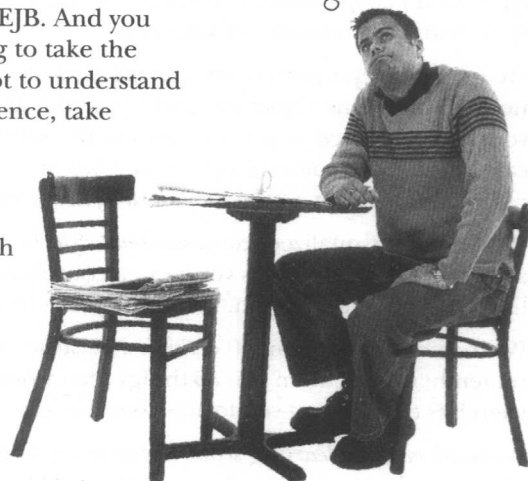
There's the slow, tedious way, or the faster, more effective way. The slow way is about sheer repetition. You obviously know that you *are* able to learn and remember even the dullest of topics, if you keep pounding on the same thing. With enough repetition, your brain says, "This doesn't *feel* important to him, but he keeps looking at the same thing *over* and *over*, so I suppose it must be."

The faster way is to do *anything that increases brain activity*, especially different *types* of brain activity. The things on the previous page are a big part of the solution, and they're all things that have been proven to help your brain work in your favor. For example, studies show that putting words *within* the pictures they describe (as opposed to somewhere else in the page, like a caption or in the body text) causes your brain to try to make sense of how the words and picture relate, and this causes more neurons to fire. More neurons firing = more chances for your brain to *get* that this is something worth paying attention to, and possibly recording.

A conversational style helps because people tend to pay more attention when they perceive that they're in a conversation, since they're expected to follow along and hold up their end. The amazing thing is, your brain doesn't necessarily *care* that the "conversation" is between you and a book! On the other hand, if the writing style is formal and dry, your brain perceives it the same way you experience being lectured to while sitting in a roomful of passive attendees. No need to stay awake.

But pictures and conversational style are just the beginning.

I wonder how I can trick my brain into remembering this stuff...



Here's what WE did:

We used *pictures*, because your brain is tuned for visuals, not text. As far as your brain's concerned, a picture really *is* worth 1024 words. And when text and pictures work together, we embedded the text *in* the pictures because your brain works more effectively when the text is *within* the thing the text refers to, as opposed to in a caption or buried in the text somewhere.

We used *repetition*, saying the same thing in different ways and with different media types, and *multiple senses*, to increase the chance that the content gets coded into more than one area of your brain.

We used concepts and pictures in *unexpected* ways because your brain is tuned for novelty, and we used pictures and ideas with at least *some emotional content*, because your brain is tuned to pay attention to the biochemistry of emotions. That which causes you to *feel* something is more likely to be remembered, even if that feeling is nothing more than a little *humor, surprise, or interest*.

We used a personalized, *conversational style*, because your brain is tuned to pay more attention when it believes you're in a conversation than if it thinks you're passively listening to a presentation. Your brain does this even when you're *reading*.

We included more than 40 *activities*, because your brain is tuned to learn and remember more when you *do* things than when you *read* about things. And we made the exercises challenging-yet-do-able, because that's what most *people* prefer.

We used *multiple learning styles*, because *you* might prefer step-by-step procedures, while someone else wants to understand the big picture first, while someone else just wants to see a code example. But regardless of your own learning preference, *everyone* benefits from seeing the same content represented in multiple ways.

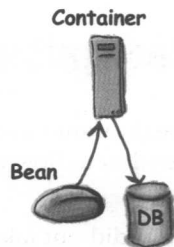
We include content for *both sides of your brain*, because the more of your brain you engage, the more likely you are to learn and remember, and the longer you can stay focused. Since working one side of the brain often means giving the other side a chance to rest, you can be more productive at learning for a longer period of time.

And we included *stories* and exercises that present *more than one point of view*, because your brain is tuned to learn more deeply when it's forced to make evaluations and judgements.

We included *challenges*, with exercises, and by asking *questions* that don't always have a straight answer, because your brain is tuned to learn and remember when it has to *work* at something. Think about it—you can't get your *body* in shape just by *watching* people at the gym. But we did our best to make sure that when you're working hard, it's on the *right* things. That *you're not spending one extra dendrite* processing a hard-to-understand example, or parsing difficult, jargon-laden, or overly terse text.

We used *people*. In stories, examples, pictures, etc. because, well, because *you're* a person. And your brain pays more attention to *people* than it does to *things*.

We used an *80/20* approach. We assume that if you're going for a PhD in EJB, this won't be your only book. So we don't talk about *everything*. Just the stuff you'll actually *need*.



BE the Container

