A Brain-Friendly Guide

Head First

C#

A Learner's Guide to Real-World Programming with C# and .NET

Boss your data around with LINQ

Discover the secrets of abstraction and inheritance

Build a fully functional retro classic arcade game

Learn how extension methods helped Sue bend the rules in Objectville

See how Jim used generic collections to wrangle his data
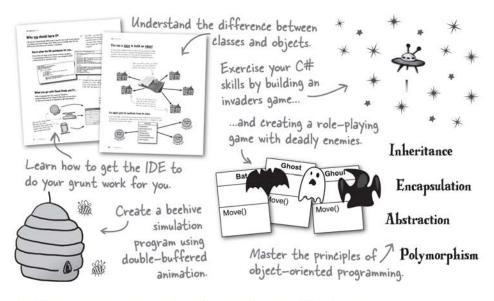
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Andrew Stellman & Jennifer Greene

Head First C#

C#/.NET

What will you learn from this book?

Head First C# is a complete learning experience for object-oriented programming, C#, and the Visual Studio IDE. Built for your brain, this book covers C# 3.0 and Visual Studio 2008, and teaches everything from garbage collection to extension methods to double-buffered animation. You'll also master C#'s hottest and newest syntax, LINQ, for querying your data in .NET collections, SQL databases, and more. By the time you're through, you'll be a proficient C# programmer, designing and coding large-scale applications.

Understand the difference between classes and objects.

Exercise your C# skills by building an invaders game...

...and creating a role-playing game with deadly enemies.

Learn how to get the IDE to do your grunt work for you.

Create a beehive simulation program using double-buffered animation.

Ghost

Bat

Ghoul

Move()

Move()

Move()

Inheritance

Encapsulation

Abstraction

Master the principles of Polymorphism object-oriented programming.

Why does this book look so different?

We think your time is too valuable to spend struggling with new concepts. Using the latest research in cognitive science and learning theory to craft a multi-sensory learning experience, *Head First C#* uses a visually rich format designed for the way your brain works, not a text-heavy approach that puts you to sleep.

Safari Books Online

Free online edition with purchase of this book. Details on last page.

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"I've never read a computer book cover to cover, but this one held my interest from the first page to the last. If you want to learn C# in depth and have fun doing it, this is THE book for you."

> **— Andy Parker, fledgling C# programmer**

"Head First C# is a great book for hobbyist programmers. It provides examples and guidance on a majority of the things [those] programmers are likely to encounter writing applications in C#."

> **—Peter Ritchie, Microsoft MVP (2006-2007), Visual Developer, C#**

"With Head First C#, Andrew and Jenny have presented an excellent tutorial on learning C#. It is very approachable while covering a great amount of detail in a unique style. If you've been turned off by more conventional books on C#, you'll love this one."

> **—Jay Hilyard, Software Developer, co-author of *C# 3.0 Cookbook***

"Head First C# is perfect blend of unique and interesting ways covering most of the concepts of programming. Fun excercises, bullet points, and even comic strips are some of the catchy and awesome works that this book has. The game-based labs are something that you really don't want to miss. [This book is] a great work... the novice as [well as the] well-experienced will love this book. GREAT JOB!"

> **—Aayam Singh, .NET professional**

"Head First C# is a highly enjoyable tutorial, full of memorable examples and entertaining exercises. Its lively style is sure to captivate readers—from the humorously annotated examples, to the Fireside Chats, where the abstract class and interface butt heads in a heated argument! For anyone new to programming, there's no better way to dive in."

> **—Joseph Albahari, C# Design Architect at Egton Medical Information Systems, the UK's largest primary healthcare software supplier, co-author of *C# 3.0 in a Nutshell***

"[Head First C#] was an easy book to read and understand. I will recommend this book to any developer wanting to jump into the C# waters. I will recommend it to the advanced developer that wants to understand better what is happening with their code. [I will recommend it to developers who] want to find a better way to explain how C# works to their less-seasoned developer friends."

> **—Giuseppe Turitto, C# and ASP.NET developer for Cornwall Consulting Group**

"Andrew and Jenny have crafted another stimulating Head First learning experience. Grab a pencil, a computer, and enjoy the ride as you engage your left brain, right brain, and funny bone."

> **—Bill Mietelski, Software Engineer**

"Going through this Head First C# book was a great experience. I have not come across a book series which actually teaches you so well…This is a book I would definitely recommend to people wanting to learn C#"

> **—Krishna Pala, MCP**

Praise for other *Head First books*

"Kathy and Bert's *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're they gonna do next?' experience."

> **—Warren Keuffel, Software Development Magazine**

"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. "

> **—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***

"I feel like a thousand pounds of books have just been lifted off of my head."

> **—Ward Cunningham, inventor of the Wiki and founder of the Hillside Group**

"Just the right tone for the geeked-out, casual-cool guru coder in all of us. The right reference for practical development strategies—gets my brain going without having to slog through a bunch of tired stale professor-speak."

> **—Travis Kalanick, Founder of Scour and Red Swoosh**
> **Member of the MIT TR100**

"There are books you buy, books you keep, books you keep on your desk, and thanks to O'Reilly and the Head First crew, there is the penultimate category, Head First books. They're the ones that are dog-eared, mangled, and carried everywhere. Head First SQL is at the top of my stack. Heck, even the PDF I have for review is tattered and torn."

> **— Bill Sawyer, ATG Curriculum Manager, Oracle**

"This book's admirable clarity, humor and substantial doses of clever make it the sort of book that helps even non-programmers think well about problem-solving."

> **— Cory Doctorow, co-editor of Boing Boing**
> **Author, *Down and Out in the Magic Kingdom***
> **and *Someone Comes to Town, Someone Leaves Town***

"I received the book yesterday and started to read it...and I couldn't stop. This is definitely très 'cool.' It is fun, but they cover a lot of ground and they are right to the point. I'm really impressed."

> **— Erich Gamma, IBM Distinguished Engineer, and co-author of *Design Patterns***

"One of the funniest and smartest books on software design I've ever read."

> **— Aaron LaBerge, VP Technology, ESPN.com**

"What used to be a long trial and error learning process has now been reduced neatly into an engaging paperback."

> **— Mike Davidson, CEO, Newsvine, Inc.**

"Elegant design is at the core of every chapter here, each concept conveyed with equal doses of pragmatism and wit."

> **— Ken Goldstein, Executive Vice President, Disney Online**

"I ♥ Head First HTML with CSS & XHTML—it teaches you everything you need to learn in a 'fun coated' format."

> **— Sally Applin, UI Designer and Artist**

"Usually when reading through a book or article on design patterns, I'd have to occasionally stick myself in the eye with something just to make sure I was paying attention. Not with this book. Odd as it may sound, this book makes learning about design patterns fun.

"While other books on design patterns are saying 'Buehler… Buehler… Buehler…' this book is on the float belting out 'Shake it up, baby!'"

> **— Eric Wuehler**

"I literally love this book. In fact, I kissed this book in front of my wife."

> **— Satish Kumar**