Real World OCaml

Mike Saunders starts learning his eighth programming language.

O'Reilly doesn't shy away from covering esoteric topics. Few developers have ever dabbled in OCaml, but this object-oriented, functional programming language has a lengthy history behind it, extending Caml (which itself is a dialect of ML, stretching back to the early 70s).

This book describes OCaml as "an industrial-strength programming language designed for expressiveness, safety and speed", and the opening chapters do a good job of setting out the advantages of using the language.

Weirdly, *Real World OCaml* avoids using the language's standard library, instead basing its teaching and examples on the Jane Street Core library, an alternative with more features and syntax extensions. Fair enough – but this Core library isn't yet supported on Windows. Instead, the book recommends that Windows users install Linux in a virtual machine. This isn't a big deal for us Linux

users, but if you're planning to learn OCaml for doing some cross-platform coding, it's worth bearing in mind.

Otherwise, the book is typical O'Reilly fare: 483 pages of minimal presentation and serious text, but it's extremely clear, well written and authoritative. There's no hand-holding here, so if you're completely new to programming you might find the pace too fast. But if you're already well versed in a couple of languages and want to get into OCaml, this is a good choice.

LINUX VOICE VERDICT

Authors Yaron Minsky, Anil Madhavapeddy and Jason Hickey
Publisher O'Reilly
ISBN 978-1-449-32391-2
Price US $39.99

Typical O'Reilly: a no-nonsense, extensive and confidently written guide to all aspects of the language.

★★★★☆
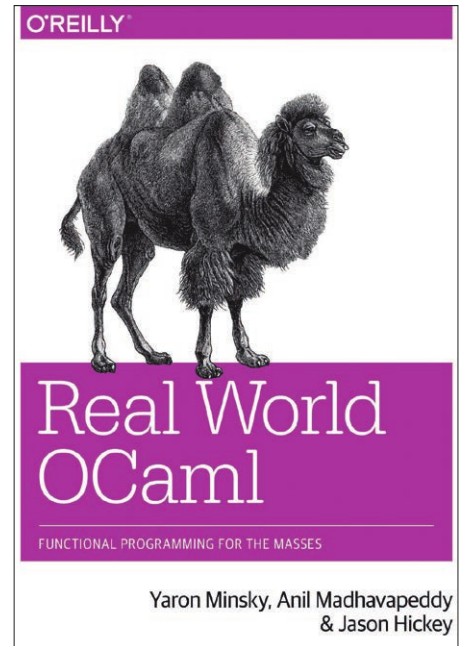
It had to be a camel, of course; but we wonder how Perl will feel about having to share?

Arduino Projects for Dummies

We're not sure how many dummies use Arduino, so **Ben Everard** read it instead.

*Arduino Projects for Dummies* starts with the assumption that the reader knows very little about either electronics or the Arduino, and the first section introduces both of these subjects. The writing's clear and easy to follow as you might expect from an experienced teacher like Brock Craft.

The focus of the book, though, isn't these introductory explanations, but a series of 12 projects that get harder from simple LED controllers to a remote-controlled car and GPS data loggers. The projects are all achievable for someone with limited experience and time. After getting the basic skills from the basic projects, most people should be able to take on even the more advanced projects. The clear writing and clear diagrams make them easy to follow. Because of the ecosystem of Arduino shields and libraries, features like RFID tags and accessing Twitter are easily achievable and this book introduces them in a fun way.

The book does cover building projects well, and looks at a number of common shields and simple components. However, it completely passes by some things that

you'd need if you wish to take things further by yourself. For example, I2C gets just one paragraph, but this is still better than SPI, which merits only a single sentence.

It would be unfair to heavily criticise the book for these omissions though, because it doesn't claim to be an all-encompassing guide to the platform, but a projects book to help the reader quickly and easily get started with fun builds. It does this admirably. In this context, then, the focus on just what you need to know, rather than getting bogged down in excessive detail, is a point in its favour rather than a downside.
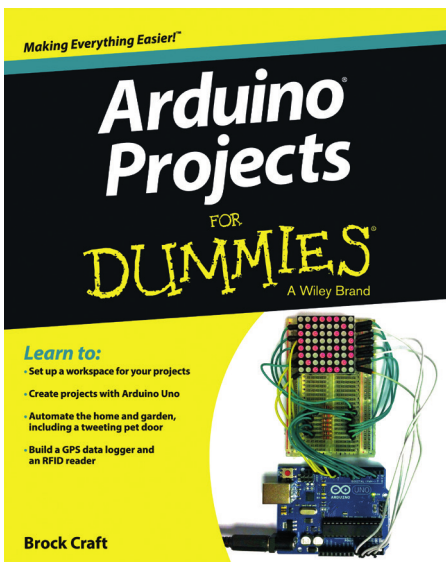
LINUX VOICE VERDICT

Author Brock Craft
Publisher John Wiley & Sons
ISBN 978-1118551479
Price £17.99

Some useful projects to help you get started with the Arduino Uno.

★★★★☆

Culture & Empire: Digital Revolution

Andrew Gregory gets out his tin foil hat, then puts it away again.

Culture & Empire: Digital Revolution, by Pieter Hintjens, is a remarkably clear-sighted overview of how mass connectivity leads to social change and provides an examination of why some forces are resisting this change

Hintjens' analysis is part sociology, part free-market economics, part Marxist theory, but it coalesces into a convincing argument (admittedly with the odd digression). If you've looked around you at state surveillance, SOPA and David Cameron's Porn Filter™ with growing unease, this book is unlikely to make you feel more comfortable; instead it clarifies exactly why your gut feeling is right and helps intellectualise the reasons why the powers that be want to control us.

If that sounds abstract and academic, it isn't. For a work of social theory there's very little of the made-up nonsense words that usually pervade the subject; instead, the writing is clear, explaining complex ideas in simple terms that make you think without having to work on your

Culture & Empire is licensed CC-BY-SA-3.0, so the author is practising what he preaches.

vocabulary. This book is the serious work that this serious subject deserves.

LINUX VOICE VERDICT

Author Pieter Hintjens
Publisher iMatix Global Services
ISBN 978-1492999775
Price £14.93 print
£1.90 (Kindle)
PDF download Free

Goes on occasional flights of fancy, but retains throughout a core of truth. Highly recommended.

★★★★⯪

Mediaeval technology & social change

Can **Graham Morrison** learn anything from Mediaeval tech?

This book was recommended to us by Robert 'r0ml' Lefkowitz when we spoke to him last year. It was published in 1962, but r0ml had us enraptured by its principle argument – that the appearance of the horse stirrup in medieval Europe was a precursor to feudalism. The book's thesis explains that this form of combat, where a knight wields heavy weapons while remaining in full control of his steed, altered the structure of society because it was such an effective form of combat. Those knights were bribed into service by offers of land which, in turn, was farmed by peasants pledged to serve their master in battle.

r0ml was working on a theory that used some of these ideas, replacing the stirrup with the computer and pondering feudal emancipation. It's all about resources, and as long as open source exists and everyone is taught how to code, we'll be free from bondage forever – huzzah! Or something like that. Later chapters aren't quite so interesting, unless you're
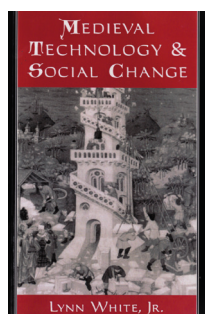
What can we learn from the tech shifts of 1,200 years ago? Quite a bit, actually...

interested in the northward shift in European powerplay. Regardless, it's a fascinating book that's easier to read than you might imagine for an old title devoted to constructing an academic thesis.
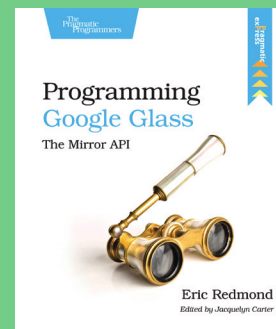
LINUX VOICE VERDICT

Author Lynn White, Jr
Publisher Oxford University Press
ISBN 978-0195002669
Price £13

The perfect excuse to raid every second-hand bookshop you see.
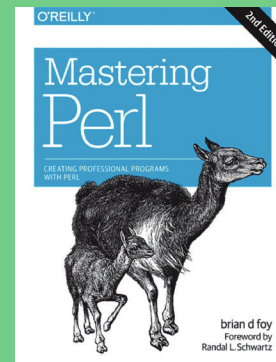
★★★★☆

ALSO RELEASED...

Get ahead of the curve by coding Glass apps today.

Programming Google Glass
Even if Bruce Sterling isn't a fan, there's no doubt that Google's wearable tech has already had a huge impact. You could probably use this book to write your own inane bird physics game and take over the world.

perl -n -e 'tr/[a-z]/[A-Z]/;print'

Mastering Perl, 2nd Edition
The definitive tome on Perl programming gets an upgrade. This is not light reading for the bath. It's not even heavy reading. It's about Perl, and so exists on its own plane.
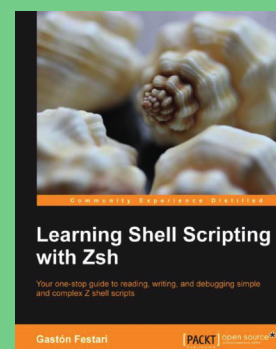
The cool kids don't use Bash. They use Zsh.

Learning Shell Scripting with Zsh
Zsh is awesome – you don't know it yet. It can do so many cool things that Bash can't, and also makes you look more l337 at conferences and LUG meetings. This book should tell you everything you need to know.