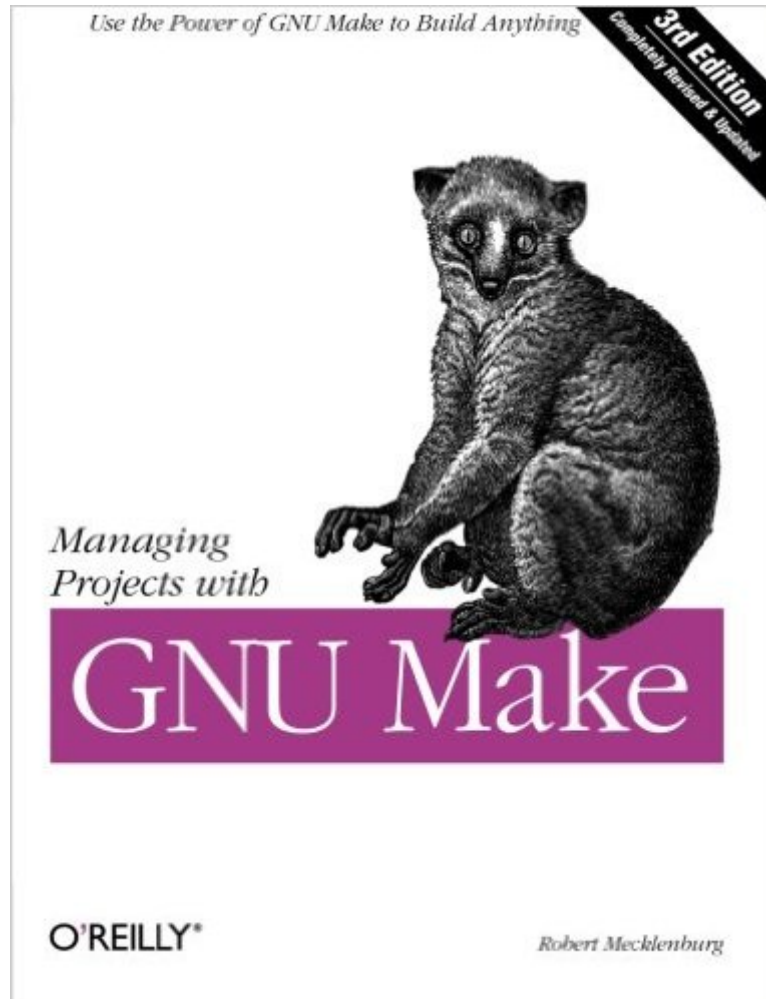


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# Managing Projects With GNU Make (Nutshell Handbooks)



## Synopsis

The utility simply known as make is one of the most enduring features of both Unix and other operating systems. First invented in the 1970s, make still turns up to this day as the central engine in most programming projects; it even builds the Linux kernel. In the third edition of the classic *Managing Projects with GNU make*, readers will learn why this utility continues to hold its top position in project build software, despite many younger competitors. The premise behind make is simple: after you change source files and want to rebuild your program or other output files, make checks timestamps to see what has changed and rebuilds just what you need, without wasting time rebuilding other files. But on top of this simple principle, make layers a rich collection of options that lets you manipulate multiple directories, build different versions of programs for different platforms, and customize your builds in other ways. This edition focuses on the GNU version of make, which has deservedly become the industry standard. GNU make contains powerful extensions that are explored in this book. It is also popular because it is free software and provides a version for almost every platform, including a version for Microsoft Windows as part of the free Cygwin project. *Managing Projects with GNU make*, 3rd Edition provides guidelines on meeting the needs of large, modern projects. Also added are a number of interesting advanced topics such as portability, parallelism, and use with Java. Robert Mecklenburg, author of the third edition, has used make for decades with a variety of platforms and languages. In this book he zealously lays forth how to get your builds to be as efficient as possible, reduce maintenance, avoid errors, and thoroughly understand what make is doing. Chapters on C++ and Java provide makefile entries optimized for projects in those languages. The author even includes a discussion of the makefile used to build the book.

## Book Information

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## Customer Reviews

I write a lot of Makefiles. In fact, I write a lot of Makefiles using GNU Make and finally there's a book to complement the Free Software Foundation's excellent GNU Make user guide. Also, finally, O'Reilly has updated what must have been the worst book in their entire lineup: "Managing Projects with make". Robert Mecklenburg's "Managing Project with GNU Make" is a must have book if you end up writing or maintaining GNU Make Makefiles with more than 100 lines in them. You don't need it if all your Makefiles are created using `./configure`, but every serious Makefile hacker should read this book. That's not to say that the book is perfect. Far from it. I was annoyed while reading the book by the author's frequent, annoying small errors (e.g. on p. 58 the author states that `CURDIR` contains the argument of `--include-dir` when in fact it contains the full path of the directory where GNU Make is looking for Makefiles) and over use of the `$(eval)` (more on `$(eval)` below). In fact, the number of errors in the book were surprising for an O'Reilly tome and it looks like the edition could use a good proof-reading. I've sent in a detailed list to the O'Reilly folks but nothing appears on their Errata web site yet. The section that describes the new `$(eval)` and `$(value)` functions available since GNU Make 3.80 is excellent (pp. 82-86). And the book contains a good discussion of the problems inherent in using recursive `make` (pp. 108-116) and how to implement a non-recursive `make` (pp. 117-123).

I have almost no experience with writing makefiles. All I've done is edit existing makefiles until they work without really knowing what I am doing. I bought this book to fill in my knowledge. There seems to be a lot of information in this book. Unfortunately, there is a lot of information not in the book that makes it difficult to follow his examples. For example, on p. 5 there is text in there that makes up the file `'lexer.l'`, but the author doesn't say this. He simply puts that text on the page, calls it a `'scanner'`, then I see something called `'lexer.l'` in the makefile he is using. It took me a while to figure out that the 10 or so lines of text he called a `'scanner'` was in fact `'lexer.l'`. The author continually does this for at least the first 20 pages, where it took me hours to figure out what files he used and what were supposed to be in the files. This should have only taken me as long as it takes to type the files into the computer. There are supposed to be five files: `counter.h` `lexer.h` `count_words.c` `counter.c` and `lexer.l`. I don't understand why the author cannot simply say "the text below define `*.*`", then write it out, instead of making the reader guess at what he is talking about.

On page 20 he talks about refactoring the 'main' program, but what he really means is creating a new file called 'counter.c' not rewriting the 'main' program in 'count\_words.c'. It's too bad the author has decided to write in such an ambiguous style because his explanations of make features are very good, unfortunately, I can't verify this using his examples because he thinks his readers can read his mind. The frustration caused by this lack of explicitness for his examples is the reason I give this book one star.

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