

LEGO® MINDSTORMS® NXT-G Programming Guide



James Floyd Kelly

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For Dan, Belle, Sarah, and Jake—my “Texas family”

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About the Author

■ **JAMES (JIM) FLOYD KELLY** is a freelance technical writer and currently lives in Atlanta, Georgia. With degrees in English and Industrial Engineering, his friends and family often wondered what he was thinking about when he made that decision. Well, he somehow managed to turn his skills into a career where he gets to play with robots, new software, and other technologies. Jim was one of the original Mindstorms Developer Program (MDP) participants selected by LEGO to test the new Mindstorms NXT robotics kit, and he contributes, with other NXT experts, to The NXT Step Blog (<http://www.thenxtstep.com>). He is also a member of the Mindstorms Community Partners (MCP), a group of NXT testers that continues to work with LEGO on the NXT product line.

About the Technical Reviewer

■ **FAY RHODES** is a freelance graphic designer with a love of learning. She's become a great fan of LEGO Mindstorms NXT and is currently the only member of The NXT Step Blog who is a woman. Fay has gifts for building things and problem solving, which are put to good use designing creative, noncompetitive NXT robots.

Acknowledgments

I always read the acknowledgments page when I buy a new book. I like to know a little more about who helped shape a book and how it came to be, so I hope you'll take a second and read a little about the excellent team I got to work with to make the book that you're holding a reality.

A huge *thank you* goes to the team at Apress. You can read a complete list of the names of the persons involved in this book a few pages back, but just know that everyone at Apress has worked hard to bring this book to completion. I do need to point out the three individuals that I was most involved with during the editing of this book—Richard Dal Porto, Laura Cheu, and Heather Lang. The book is much improved as a result of their hard work.

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Introduction

So, you want to learn to write really great programs for your Mindstorms NXT robots, huh? I totally understand. You can build the most awesome robot you and your friends have ever seen, but if all it does is spin around or count from one to three, no one is going to be impressed. What you want is to match the amazing construction of your bot with an amazing program, right? Absolutely! You wouldn't be reading this book if you weren't interested in improving your programming skills.

Let me first tell you that I'm not a programming guru. I've had many computer programming classes in my past, but I don't do this for a living. What I do is enjoy building and programming my own little collection of bots, just figuring out things as I go. I will be the first to admit that many of the programs I write are ugly (meaning they are sometimes quickly thrown together without any planning involved). But some programs I write are extremely elegant (the opposite of ugly—they're well planned, developed, and tested). But whether the program is ugly or elegant, it usually works. It works, because I spend the necessary time figuring out how to use the tools that are provided with the NXT programming language.

And that's the key point I want you to take from this Introduction: *The more familiar you are with the tools available to you in the programming language, the more easily you'll be able to write some powerful programs for your robots.*

This book isn't about the techniques for building robots, although I'm going to give you some building instructions—you can download the instructions for free by going to <http://www.apress.com> and clicking Source Code/Download under Quick Links. This book *is* about programming your bots.

Finally, if you've got any questions or comments about the book, feel free to e-mail me. My e-mail address is jktechwriter@gmail.com, and I'd love to hear from you.

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Atlanta, GA
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