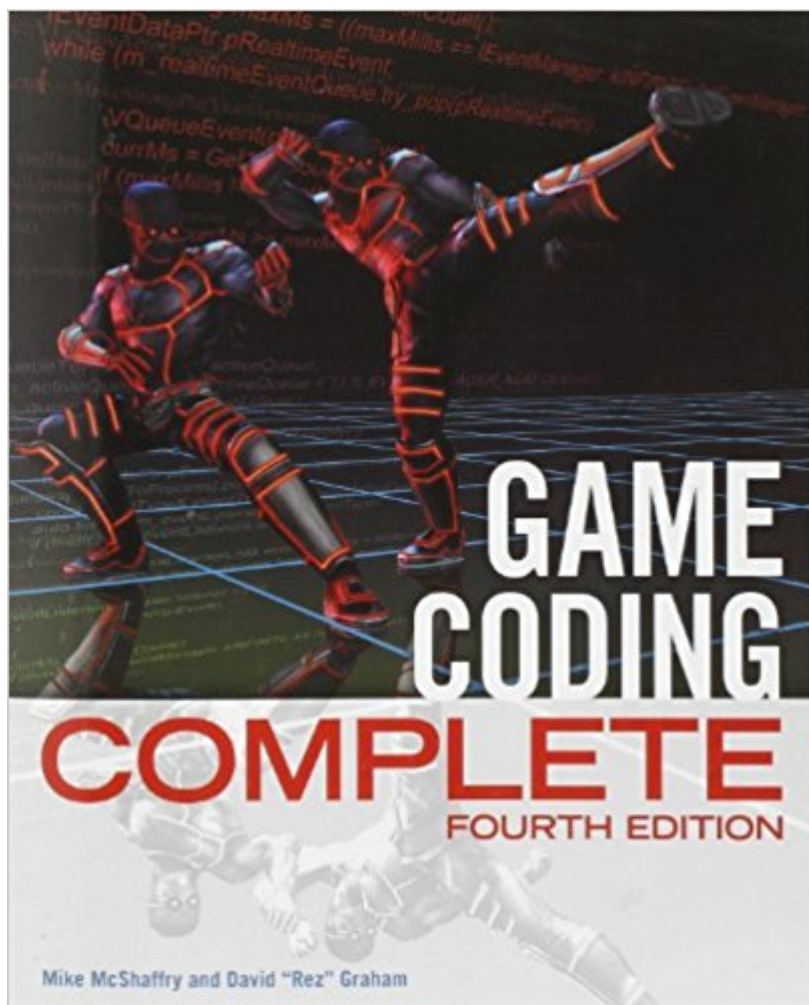# The book was found

Game Coding Complete, Fourth Edition

Synopsis

Welcome to Game Coding Complete, Fourth Edition, the newest edition of the essential, hands-on guide to developing commercial-quality games. Written by two veteran game programmers, the book examines the entire game development process and all the unique challenges associated with creating a game. In this excellent introduction to game architecture, you'll explore all the major subsystems of modern game engines and learn professional techniques used in actual games, as well as Teapot Wars, a game created specifically for this book. This updated fourth edition uses the latest versions of DirectX and Visual Studio, and it includes expanded chapter coverage of game actors, AI, shader programming, LUA scripting, the C# editor, and other important updates to every chapter. All the code and examples presented have been tested and used in commercial video games, and the book is full of invaluable best practices, professional tips and tricks, and cautionary advice.

Book Information

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Customer Reviews

I have owned three versions of Game Coding Complete (2,3 and now 4) and have always been impressed by the material found in the book that is neglected in nearly every other text of its nature. While many books focus strictly on a specific topic related to game development, such as a rendering API, physics engines or AI, GCC delves into topics that are not as easily researched either in books or online.While there are a few requisite chapters about rendering, which uses the newest version of DirectX, they are less about teaching you how to use the API and more about

how to structure a renderer for a game engine. This is a topic that is all to often overlooked except in game engine books, many of which are of questionable quality. Fortunately, GCC is written in a far more structured manner and these chapters, as well as all of the others, don't feel as though the authors wrote the first solution that came into their minds and the result is a much higher quality book.While the first few chapters are basic introductions and a bit of design theory, the heart of the book begins in chapter 5. What follows is nearly twenty chapters of topics discussed with a fair amount of detail on subjects that are often missed entirely. This part of the books begins with a lengthly discussion on how to properly start up and shut down your game or game engine. While many books choose to miss any kind of discussion on how to do this in an elegant way, GCC gives it the attention it deserves and it may just be the best chapter in the entire book. Chapters on game actors, input devices (including game pads as well as keyboards/mice) and scripting have seen extensive rewrites from the third edition in order to modernize the code. There are a couple of fine introductory chapters to cover audio, user interface and game event management before the three chapters on rendering begin. After the rendering chapters, we are treated to topics including collision and rudimentary physics, AI, networking and multithreading. While none of these can possibly be discussed to exhaustion (each are deserving of an entire book and those books can be found), they do introduce the material in a significant way that will help you as you move into more advanced topics. All game development books feel the need to wrap everything up into a little game at the end and GCC4 is no exception. The Teapot Wars game does an adequate job of employing the techniques in the previous chapter and shows you how everything comes together. While most books would end at this point, GCC continues with three excellent chapters on building a level editor, debugging/profiling and some end of development cycle issues.While the book did not release with source code available on the author's website, I believe this was a testament to ensuring that the code base was mature enough to be released. In the couple of weeks since the book's release, the source code has become available from the books site at [...]. The code, if you have never owned a GCC book before and are jaded by the lack of good code in other development books, is of surprisingly high quality. The authors have rewritten large portions of it along that match the associated rewritten chapters for the books fourth edition. It maintains the same level of quality we have come to expect, a particularly important point since the books original author handed over several chapters of GCC4 to his co-author. While a few chapters of GCC's third edition were authored by someone other than Mike McShaffry (including one by the fourth editions co-author David Graham), McShaffry did the lions share of the work. In edition 4, Graham has done admirably well in continuing McShaffry's work and ultimately delivers the same high quality content we have

come to expect from the series.While no programming book can ever truly be complete, GCC does a remarkable job of highlighting the issues few other books dare to address. The website offers direct support from both authors who seem to respond to any questions promptly as well as community support from other GCC forum members. In GCC, you will get a book that at a minimum you will pick up a few coding and design tricks from. Many will find a great deal more that may prompt radical changes to how they design games and game engines. Overall, even the most experienced of game programmers owe it to themselves to pick up a copy of one of the better game development texts.

Short story: If you want to work as a game programmer in the industry, you absolutely should understand the information in this book 100%. However, it is truly an advanced book, and if you are just getting into C++ usage, this should probably be your second or third book (at least).Long story: There are few textbooks required by the Digipen Institute, one of the best game programming schools in the country. It emphasizes working together with your classmates to actually learn how to create games, so there is not a lot of actual book work to be done. This is one of those few books required. That alone should be enough to convince you it is worthwhile.Let's go into a bit further though. The game industry has been alive for decades now, and that has led to standards and styles of programming that proves more effective than other methods. It is accepted that C++, and object-oriented programming in general, is the way to go. Event-driven programming is common in large titles. Resource management is a common theme in a game with gigs of data that needs to be continually streamed in. Multiple controller schemes need to be supported.The authors of this book have worked in the industry, and this book is their offering to help teach you how modern games are made. Other books will manually load in individual resources, or will read the state of the keyboard directly in their examples. This is fine when you are first learning DirectX, for instance. But if you plan to work with a team, and you have tens of thousands of lines of code to debug, much of which you may not have actually written yourself, you need a better structure supporting your game, or it will become top-heavy and impossible to finish. This is what they are focusing on getting across.As good as the book is, even more valuable is the sample game that has been built and evolved since the first edition of this book. Teapot Wars is freely available on Google Code, and it is a working example of everything they are trying to get across. It actually has more complex examples of the topics discussed in the book, and internally it is a basic version of a AAA title. Understand its structure and you will have a massive leg up in your quest to become a game programmer.So this should be the book to buy right? Just understand it and you will be good to go, right?Well.... yes and

no. This book assumes several things, without really saying them outright. It assumes you have proficiency in object-oriented programming, especially in C++ programming. They assume you are comfortable with the concepts of inheritance, using abstract interface classes, overloading, encapsulation, and all those fun names you see thrown around in the Wikipedia definition of OOP. They build some fairly complex abstract factories and just throw them at you in the book. It took me months upon months of carefully reading C++ books and going through their code to finally really start to get it. I bought this book right when it came out, and I only now feel comfortable to write this review.So this absolutely should NOT be your first book. You must study OOP and C++ first. Another book that Digipen uses, C++ for Game Programmers by Noel Llopis, may be a good start. I went through Thinking in C++ by Bruce Eckel years ago, as it is freely available online, and it's a great start too.This book uses the DXUT framework, which has been deprecated by Microsoft and stripped from their MSDN online documentation. No big deal, it still works fine, but the main function may seem tricky to you because of it. They do not use DirectInput which is good, as Microsoft is no longer supporting it and it doesn't seem to work in 64-bit code. It assumes you understand how DirectX works when you get to the graphics chapters, so understanding the graphics pipeline is a good idea.So you see, this is not the kind of book that says it's the only resource you need. In fact, it's probably the third or fourth resource you probably need. There's a steep learning curve, though kudos are due to the authors for being extremely available on their forum at [...] Seriously, they respond within 24 hours to any question anyone has.However, if you understand everything in this book (a process that could easily take a year or more), you will have a clear idea of how a modern AAA game is created. It's just a framework, but you will probably be ready to start taking on major game programming projects. And that is a compliment that no other book on the market likely can boast of.So in conclusion, I think any budding game programming will be doing themselves a HUGE advantage by making sure they understand everything this book is talking about. It is the more Complete book I have ever read on game programming, and is 100% essential to anyone taking themselves seriously. Just make sure you understanding object-oriented programming in and out before you begin, or you will be very lost very quickly.

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