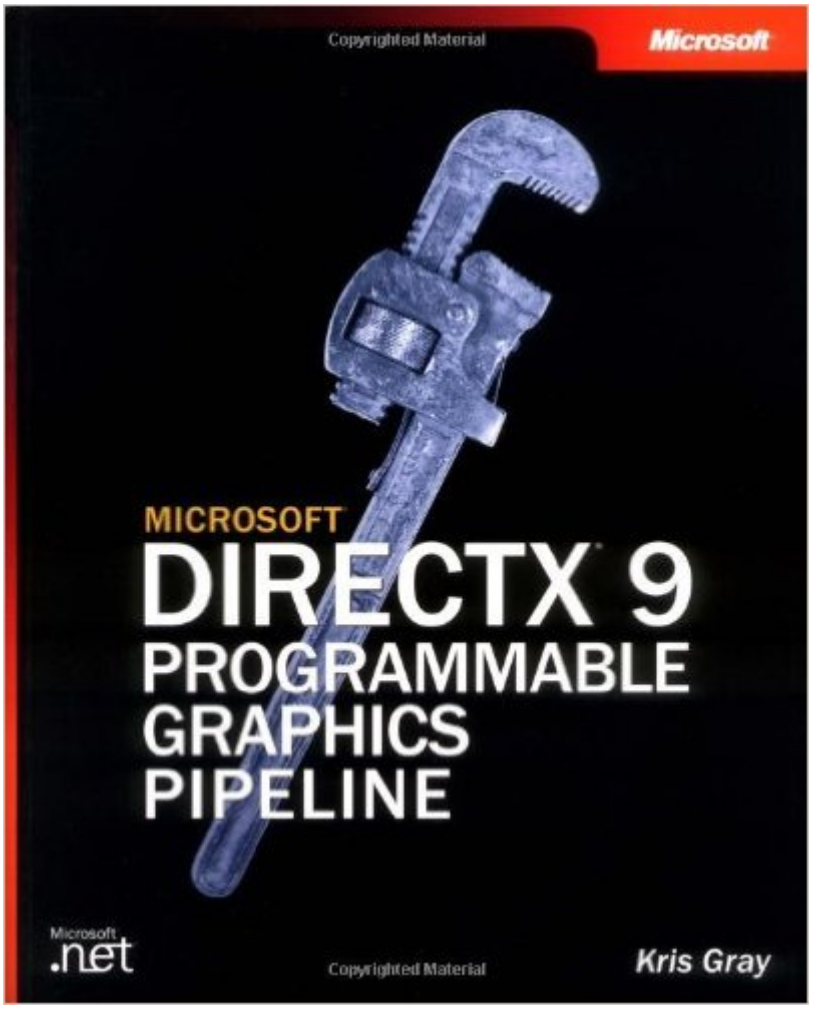
MicrosoftÂ® DirectXÂ® 9 Programmable Graphics Pipeline (Developer Reference)



Synopsis

Learn how to use programmable shaders in the DirectX 9 graphics pipeline—and deliver awesome 3-D graphics to your animations, games, and other multimedia applications. This book distills hundreds of hours of hands-on guidance from the developers on the Microsoft DirectX team—as well as insights from leading-edge video card manufacturers—into step-by-step instruction and best practices for exploiting the programmable pipeline. Youâ ™ll see how to program shaders in assembly-language as well as the new high-level shader language (HLSL)—and you get complete code walk throughs for all the sample programs and the DirectX 9 SDK on CD.Discover how to: Program vertex shaders to create transformations, apply vertex fog, or deform geometry Generate 2-D image effects?such as output color inversion—with pixel shaders Use HLSL to add a semi-transparent glow effect by combining a vertex shader and frame buffer blending Produce a metallic paint effect by combining a vertex shader, a pixel shader, and a texture shader with multilayer texture blending Incorporate reflective surfaces into your 3-D scenes by applying an environment-map effect Experiment with the EffectEdit SDK sample to load and edit effect files and preview results on the fly Package multiple object-rendering techniques into a single effect for simpler pipeline state management CD insideGet code for all the sample programs plus SDKAbout Programmable Shaders. With programmable shaders, you get unprecedented control over rendering options in DirectX 9. You can use vertex shaders to deform geometry, apply procedural textures with pixel and texture shaders, and use effects to encapsulate shader and pipeline state—making code reuse a snap.CD features: Sample programs that demonstrate: Vertex shader transformations, lighting, fog, vertex displacement, and vertex blending Pixel shader texturing, 2-D image processing, and lighting Texture shader generation of procedural textures Encapsulating assembly-language and HLSL shaders into an effect Interactive development of an effect using EffectEdit DirectX 9 SDK Fully searchable eBook A Note Regarding the CD or DVDThe print version of this book ships with a CD or DVD. For those customers purchasing one of the digital formats in which this book is available, we are pleased to offer the CD/DVD content as a free download via O’Reilly Media’s Digital Distribution services. To download this content, please visit O’Reilly’s web site, search for the title of this book to find its catalog page, and click on the link below the cover image (Examples, Companion Content, or Practice Files). Note that while we provide as much of the media content as we are able via free download, we are sometimes limited by licensing restrictions. Please direct any questions or concerns to booktech@oreilly.com.

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Customer Reviews

As of this writing, there doesn't seem to be a real reference manual for HLSL and the shader assembly language. This book makes a good effort at filling that role, however.The graphics programmer is likely to find this very useful. It integrates C application code with shader examples. It also discusses on-the fly compilation, use of resources for shader source code, the relationships between vertex and pixel shaders, texture samplers, and 'techniques' for pulling all the pieces together. Performance programming gets some discussion, but isn't a central topic. Appendices specify the shader language in dryly formal terms, but the descriptive chapters make most language features very clear.The shader programming model is decidedly non-standard. A rendering program does not work at all like a C program. Yes, a C/C++ programmer will be able to follow a shader's internals easily enough. The problem, though, is that a C program is in charge of what data gets handled when. Everything in a rendering program is silently a callback, however. It's invoked by some execution engine that sequences the input and output data, and even synchronizes multiple (and almost invisible) threads of execution. The hardware rendering program also interacts strongly with the application running in the main processor, partly through "semantics", reflective "annotations", and various parameter-setting mechanisms. There is a huge amount of mechanism at work, and it gives the real meaning to the interacting programs on the host and graphics engine. That mechanism is described in a black-box way, what it does rather than how it works. I think I've reverse engineered the workings, enough for my purposes, but this book did not address my needs

directly.Still, it’s the best I’ve found.

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