Game Development Essentials

Jeannie Novak

GAME
DEVELOPMENT
ESSENTIALS:
AN INTRODUCTION

Jeannie Novak

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DELMAR LEARNING

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NOTICE TO THE READER

Introduction

Game Development:
a new era in entertainment—
and in education

When asked if he could change one aspect of the game industry, Richard "Lord British" Garriott responded, "Education—I really wish schools would catch up and support our industry, by teaching more aspects of interactive game design."

This book was written to help fulfill a wish—one that many game industry professionals and educators have had: to help students become better prepared for careers in the game industry by providing them with a thorough background in all aspects of the game industry and the game development and interactive design process.

Game industry revenues, which some have estimated exceed $30 billion per year worldwide, have now surpassed film box office and music concert revenues in the United States alone—making games the fastest-growing segment of the entertainment market, and an excellent field for career advancement. According to a recent industry impact study conducted by the International Game Developers Association (IGDA), in several countries, exports from game sales represent one of the highest exports—and well over 100,000 people are employed worldwide in the game industry.

In response to this rapid growth, hundreds of colleges and universities in the United States have launched accredited game development programs in the last few years—and textbooks providing support to these programs are in great demand. I wrote this book to satisfy the need for a comprehensive introductory text on game development for the educational and trade markets. *Game Development Essentials* also represents the launch of a new series of the same name—which is intended to help provide educators with a logical sequence of topics that might be taught in a game development curriculum.

As more schools continue to launch game programs, this book—and the companion books in this series—will become even more *essential* to game education and careers. Not limited to the education market, this series is also appropriate for the trade market, and for those who have a general interest in the game industry.

Introducing the
Game Development Essentials
Series

Game Development Essentials is just the beginning of a series that is the first of its kind: one that focuses on providing game studies, development, and design students with a complete education in all aspects of the game industry.

Upcoming books in the series will be on topics as varied as: story and character development, project management, interface design, level design, gameplay, audio, artificial intelligence, player communities, online games, mobile games, and the history of game development. All of these topics are covered in this introductory book—which is intended to be used in all introductory game development and design courses. However, this book is versatile enough that it can be used across several courses that cover the book's many topics.

About this Text

This introductory book provides an overview of the game development process—complete with a historical framework, content creation strategies, production techniques, and future predictions.

This book contains the following unique features:

- Key chapter questions that are clearly stated at the beginning of each chapter
- Coverage that surveys the topics of planning, production, prototyping, playtesting, marketing, and management of player communities
- Thought-provoking review and study questions appearing at the end of each chapter that are suitable for students and professionals alike to help promote critical thinking and problem-solving skills
- A wealth of case studies, quotations from leading professionals, and profiles of game developers that feature concise tips and problem-solving exercises to help readers focus in on issues specific to game development
- Discussions that go beyond general game development topics into emerging areas such as online and mobile game development—and non-entertainment applications for education, business, and government
- An abundance of full-color images throughout that help illustrate the concepts and techniques discussed in the book

There are several general themes associated with this book that are emphasized throughout, including:

- Differences between games and other entertainment media (such as film)
- Usability and player control as primary aspects of game development
- "Gameplay" as a new form of storytelling
- Widening game market demographics and content features
- Disappearance of the "games as violent entertainment" stigma
- Uniqueness of game development team roles

who should read this book?

This book is not limited to the education market. If you found this book on a shelf at the bookstore and picked it up out of curiosity, this book is for you, too!

The audience for this book includes students, industry professionals, and the general interest consumer market. The style is informal and accessible, with a concentration on theory and practice—geared toward both students and professionals.

Students that might benefit from this book include:

- College students in game development, interactive design, entertainment studies, communication, and emerging technologies programs
- Art, design and programming students who are taking introductory game development courses
- Professional students in college-level programs who are taking game development overview courses
- First-year game development students at universities

The audience of industry professionals for this book include:

- Graphic designers, animators, and Web developers who are interested in becoming game artists
- Programmers and Web developers who are interested in becoming game programmers
- Music composers, sound designers, and voice actors who are interested in becoming involved in this industry
- Professionals in other arts and entertainment media—including film, television, and music—who are interested in transferring their skills to the game development industry. These professionals might include writers, producers, artists, and designers.

how is this book organized?

This book consists of three parts—focusing on industry background, content creation, and production/business cycles.

Part I   Setup: Building the Foundation—Focuses on providing a historical and structural context to game development. Chapters in this section include:

- **Chapter 1   Historical Elements: How Did We Get Here?**—a history of electronic game development, from the arcade era to the online multiplayer games of today

- **Chapter 2   Player Elements: Who Plays and Why?**—explores player motivation, geographics, demographics, and psychographics
- **Chapter 3   Game Elements: What Are the Possibilities?**—reviews game goals, platforms, and genres

Part II   Scenarios: Creating Compelling Content—Focuses on how game developers create compelling content. Chapters in this section include:

- **Chapter 4   Storytelling: Creating the Narrative**—focuses on story structure, backstory, synopsis, setting, non-linear storytelling, and collaborative storytelling
- **Chapter 5   Character: Creating the Identity**—explores visual and verbal character development, point-of-view, and archetypes
- **Chapter 6   Gameplay: Creating the Experience**—introduces game theory, challenges, strategies, interactivity modes, balance, and economies
- **Chapter 7   Levels: Creating the World**—reviews structure, environmental design, perspective, style, temporal and spatial features
- **Chapter 8   Interface: Creating the Connection**—discusses player control, manual and visual interface design, and usability
- **Chapter 9   Audio: Creating the Atmosphere**—explores music, sound design, and dialogue production

Part III: Strategy (Team, Process & Community)—Focuses on project management and the development/business cycles. Chapters in this section include:

- **Chapter 10   Roles & Responsibilities: Developing the Team**—highlights the roles and responsibilities of companies and development team members, along with associated tools
- **Chapter 11   Production & Management: Developing the Process**—outlines phases in the game development cycle (including planning, production, prototyping, and playtesting), along with project management and game documentation
- **Chapter 12   Marketing & Maintenance: Developing the Community**—focuses on marketing, advertising, public relations, sales, and promotion—along with the role of player communities (including fan-produced content, modding, and fan sites)

The book concludes with **The Future: Where Are We Going?**—which presents diverse views and predictions of the future of the game industry from experts profiled in the book—followed by a **Resources** section, which includes a list of game development news sources, guides, directories, conferences, articles, and books related to topics discussed in this text.

How To Use This Text

The sections that follow describe text elements found throughout the book and how they are intended to be used.
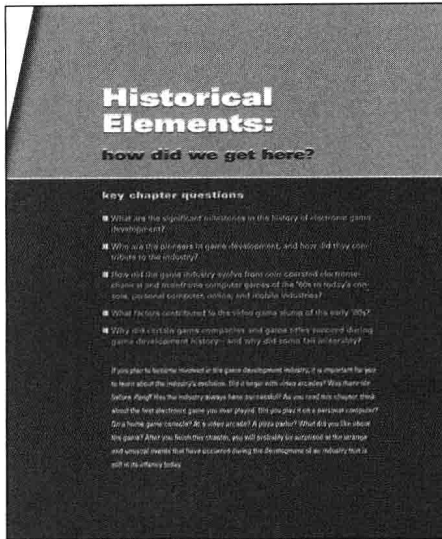
key chapter questions

Key chapter questions are learning objectives in the form of overview questions that start off each chapter. Readers should be able to answer the questions upon understanding the chapter material.

sidebars

Sidebars offer in-depth information from the author on specific topics—accompanied by associated images.

tips

Tips provide advice and inspiration from industry professionals and educators, as well as practical techniques and tips of the trade.

profiles

Profiles provide bios, photos and in-depth commentary from industry professionals and educators.

quotes

Quotes contain short, insightful thoughts from players, students, and industry observers.

case studies

Case studies contain anecdotes from industry professionals (accompanied by game screenshots) on their experiences developing specific game titles.

notes

Notes contain thought-provoking ideas provided by the author that are intended to help the readers think critically about the book's topics.
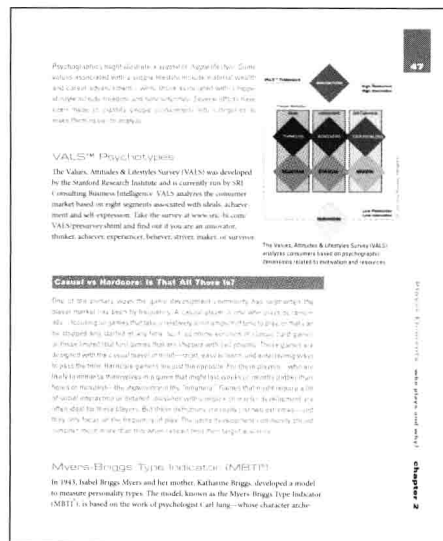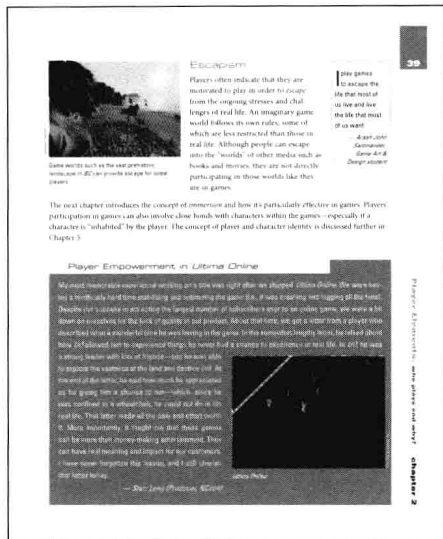
chapter review

A *chapter review* section at the end of each chapter contains a combination of questions and exercises, which allow readers to apply what they've learned.
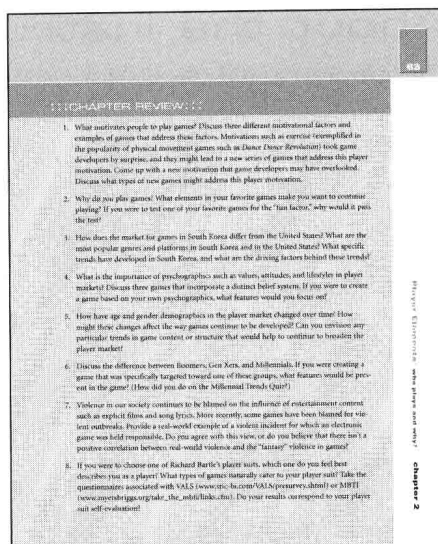
About the Companion CD

The companion CD contains the following game engine and level editing software, game documentation samples, game demos, and links to trial and full versions of key software programs, including:

- Torque game engine (GarageGames)
- Gamemaker game engine (Mark Overmars)
- Unreal Developer Network (Epic Games)
- Valve Hammer Editor (Valve Software)
- *Orbz* game demo (21-6 Productions/GarageGames)
- *Marble Blast* game demo (GarageGames)
- *Think Tanks* game demo (BraveTree Productions/GarageGames)
- *The Lord of the Rings: The Battle for Middle-earth* game demo (Electronic Arts)
- *Call of Duty* game demo (Infinity Ward/Activision)
- Maya (Alias/Wavefront) software trial
- 3D Studio Max (Discreet) software trial
- Game design document template (Chris Taylor/Gas Powered Games)
- *Sub Hunter* game design document (Michael Black/Torn Space)
- Game design document reference site (Christian Lynaes)
- Aurora Toolset Resources (Bioware)
- CryENGINE (Crytek) tech video and software demo
- The Games Factory (Clickteam) game engine

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About the Instructor's Guide

The instructor's guide (available on CD format) was developed to assist instructors in planning and implementing their instructional programs. It includes sample syllabi (for using the text in either an 11 or 16 week course), test questions (with solutions), assignments and projects, lecture slides highlighting main topics and providing a framework for discussion, and other valuable instructional resources.

Order Number: 1-4018-6272-1

About the Author

Jeannie Novak is the founder of Indiespace (www.indiespace.com), one of the first companies to promote and distribute interactive entertainment online. Jeannie is also a subject matter expert and instructor for the Game Art & Design program at the Art Institute Online—and she teaches at UCLA Extension, Art Center College of Design, and the Academy of Entertainment and Technology at Santa Monica College. Jeannie has spoken extensively on game development and interactive entertainment at conferences and universities—including Macworld, Internet World, Indie Games Con (IGC), University of Southern California (USC), and University of California, Los Angeles (UCLA). Jeannie is also the co-author of three additional books on the interactive entertainment industry, including *Creating Internet Entertainment.* She is a member of the International Game Developers Association (IGDA) and has served on selection committees for the Academy of Interactive Arts & Sciences (AIAS) and the ALT+CTRL Festival of Independent & Alternative Games at the University of California, Irvine.

Courtesy of: Mark Robert Halper

Jeannie was chosen as one of the 100 most influential people in high-technology by *MicroTimes* magazine—and she has been profiled by CNN, *Billboard Magazine,* Sundance Channel, *Daily Variety,* and the *Los Angeles Times.* She received her M.A. in Communication Management from the University of Southern California (USC) and B.A. in Mass Communication from the University of California, Los Angeles (UCLA)—graduating summa cum laude and Phi Beta Kappa. When she isn't writing and teaching, Jeannie spends most of her time recording, performing and composing music. More information on the author can be found at www.jeannie.com.

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New Line Cinema

21-6 Productions

Sega

THQ

Questions and Feedback

We welcome your questions and feedback. If you have suggestions that you think others
would benefit from, please let us know and we will try to include them in the next edition.

To send us your questions and/or feedback, you can contact the publisher at:

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DEDICATION

This book is dedicated to my family and friends for dealing with my "hibernation," to my students for their enthusiasm and creativity, and to KDS for hanging in there as long as possible—and for always being my game-playing pal.