

Table Of Contents

INTRODUCTION

Chapter 01 – foreword	11
About this book.....	13
Chapter 02 – quickstart	15
Simple face mapping	16
Using 2D applications to map the face.....	20
Chapter 03 – Introduction to 3D and game engines	23
Purpose of This Chapter	23
General Introduction to 3D.....	23
XY axes.....	23
Points	25
Lines	25
Polygons.....	26
3D, the third dimension.....	26
Z axis	26
Points	27
Lines	27
Polygons.....	28
3D computer graphics	29
Terminology.....	29
Triangles, quads	29
Mesh.....	29
Primitives.....	30
Faces.....	30
Materials	31
Textures	31
Viewing 3D space.....	33
Game Engines and Aspects of a Good Game	37
What is a game engine?.....	37
Blender’s game engine — Click and drag game creation.....	37
"True" and "fake" 3D game engines	38
Good games.....	39
Conclusion.....	40
Chapter 04 – Blender Basics	41
The Interface.....	41

Blender's Interface Concept.....	42
Keyboard and mouse	42
General Usage	42
The Window System	43
The default Blender scene.....	44
The Window Header	46
Changing Window Frames	46
Console Window & Error Messages	47
Window types.....	48
Menus.....	50
Panels	51
Buttons and Controls	52
Screens.....	53
Scenes	55
User Preferences	55
Navigating in 3D	56
Selecting of Objects	57
Copying and linking.....	58
Manipulating Objects	60
Edit Mode	61

BEGINNER TUTORIALS

Chapter 05 – Pumpkin Run	67
Modeling an environment	68
Appending an object from an other scene	72
Start your (Game) Engines!	74
Realtime Materials	76
Interactivity	77
More control	80
Real-time Light	81
Object Animation	82
Refining the scene	84
Adding Sound to our scene	85
Last words	87
Chapter 06 – Tube Cleaner	89
Loading the models.....	90
Controls for the base and cannon	91

Upwards Movement.....	92
Shooting.....	94
More control for the gun.....	96
An enemy to shoot at.....	99

INTERMEDIATE TUTORIALS

Chapter 07 – Pinball103

Pinball.....	103
Use of the elements.....	104
Bumpers.....	105
The Sewer.....	106

Chapter 08 – SubRacer 109

Ship setup.....	110
Sensors.....	112
Controllers.....	113
Actuators.....	113
Guns.....	114
Game Objects.....	115
Turbo crate.....	115
Mine.....	116
Gate.....	116
GLSL Mist.....	118

ADVANCED TUTORIALS

Chapter 09 – Blender Basic Network Setup121

Ingredients:.....	122
Server.py.....	122
Client.py.....	127
Appetite for more.....	128

Chapter 10 – Game Character Animation using Armatures129

Preparing the Mesh.....	129
Working with Bones.....	130
Bone Hierarchy and Rest Positions.....	131
Naming Bones.....	131
Parenting Bones.....	132
Basic Layout.....	133

Coordinate System Conventions	133
Mesh Deformation Vertex Groups.....	134
Creating Groups	134
Testing the Skinning	136
Pose Mode.....	136
Weight Editing.....	137
Animation.....	139
Multiple Actions and Fake Users.....	140
Creating an Idle Cycle.....	140
Creating a Walk Cycle	143
Game Logic	146
Chapter 11 – Flying Buddha	149
Flying Buddha Memory Game	149
Accessing game objects	150
Logic Bricks	150
Shuffle Python script.....	151
SPECIAL	
Chapter 12 – "Yo Frankie!" The Open Game Project.....	155
Creative Commons	156
Yo Frankie! Blender Game Engine Logic	156
Logic Sharing	157
States.....	158
Logic Elements	159
Frankie's Camera.....	159
Frankie's States (Simplified).....	160
Level Portals.....	161
Splashing.....	162
Dual-player Split Screen	163
Frankie's Logic	166
Frankie's States.....	167
Frankie's Properties.....	169
Building a simple test level	171
Level Design Physics/Logic	171
Physics Objects.....	172
Materials	172
Properties.....	172
Starting A New Level Using Linked Groups	173
Modify Apricot Files.....	177

REFERENCE

Chapter 13 – The Blender Game Engine Reference	181
Real-time Materials.....	181
Texture Face Materials	182
Blender Multitexture Materials	182
GLSL Materials.....	183
Lamps in the game engine.....	186
UV Texturing	188
Blender's Game Engine.....	201
Options for the game engine	201
Logic Buttons.....	203
Example of some Logic.....	207
The Blender Laws of Physics	208
Soft Bodies by Erwin Coumans	210
Bullet Game Engine Features	213
Bullet Physics Tips and FAQ.....	213
Rigid Body Joints	216
Sound Buttons.....	218
Performance and design issues	219
Game Logic Bricks.....	220
Sensors.....	220
Controllers.....	235
Simple Logical Controllers	236
State System	238
Actuators	241
Game Engine Python	270

APPENDIX

Chapter 14 – Appendix	295
Getting Blender	295
Installation of Blender	295
Getting Support	296
Blender Foundation and Institute	296
Goals.....	296
Organization.....	296
Blender Community, Books, Websites	297
Books and CDROMs.....	297
Glossary	297