Rapid 3D Game Development in Blender 2.5

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• Introduction to 3D Game Programming
  • Components of Typical 3D Games
• Python 3D Game Development
  • Blender Game Engine
  • Blender 2.5 Basics
• Case Study: A Simple 3D Game
  • Further Reading
(Re)visiting 3D Games
Please wear your glasses now
Genres
Action – FPS
Adventure
RPG
Puzzle
Sims
Sports
Strategy
Game Engine
Game Engine

- Physics engine
- Sound engine
- Scripting engine
- Animation engine
- AI engine
- Networking
- Resource mgmt
- ...
Don’t write your own!
Programming 3D Games in Python
# Python 3D game engines

<table>
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<tr>
<th>Game Engines</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>PyOpenGL</td>
<td>Only Rendering, Not Full Game Engine</td>
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<td>Python-Ogre</td>
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<td>Pyrr</td>
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<td>pyglet</td>
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<tr>
<td><strong>Panda3D</strong></td>
<td>game engine in C++ with python integration</td>
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<td><strong>Soya 3D / PySoy</strong></td>
<td>high level 3D engine for Python</td>
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<td><strong>Blender Game Engine</strong></td>
<td>Game engine, modeler, animator</td>
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<tr>
<td><strong>Sylphis3D</strong></td>
<td>commercial game engine with GPL version</td>
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Blender Game engine (BGE)
Blender Game Engine

- Physics engine
- Sound engine
- Scripting engine
- Animation engine
- AI engine
- Networking
- Resource mgmt

Python
Where has BGE been used?
ColorCube Puzzle game
SAAB-91 Virtual Race
BFight
"A Furry Vendetta", Yo Frankie! Project
Architectural Visualizations
Physics Simulations
What kind of games can be made with BGE?
FPS?
Multiplayer?
Orthographic?
Platform?
All of them
Two ways of making games
1. Code a Game loop
do

get player input

do calculations

repaaint screen

loop while not game over
Yawn!
2. Click and drag game creation (the **Blender** way)
100% Code-free **

** Conditions Apply***: The conditions under which you do not need to write any code are as follows: 1. The game you are trying to build is completely free of any complex logic such as bot AI, path finding, complex simulations. 2. There is no multiplayer requirement. 3. There are no complex collisions outside that can be handled by default bullet engine.

*** All these conditions are fake.
Understanding the way of Logic
Understanding the way of Logic Machines
What is a Machine?
Reacts to Stimulus
Evaluates some logic
Performs an action
Take any Machine

coffee machine | fire alarm | firecracker
Reacts to Stimulus
Evaluates some logic
Performs an action
A Crash Course to Blender 2.5 (Beta)
A Crash Course to Blender 2.5 (Beta)

Yes, it may crash!
What’s new in 2.5?
Major rewrite of Blender API
GUI finally works! (Discover)
New Smoke System
Python Based GUI
What’s new in BGE 2.5?
* Faster!
* New sound system (ogg, mp3, wav...)
  * Real-time external IK targets
* Ability to use raw OpenGL code (GUIs)
  * Dynamic loading/freeing of assets
* Python API improvements
Some BGE concepts
Modeling & Texture mapping
Types of Sensors
Types of Controllers
Types of Actuators
Packaging Your Blender Game
Blender Player
CrystalBlend
GameKit
Pros & Cons of BGE
😊 No code
😊 No Compilation
😊 Out-of-the-box Physics
😊 No Integration Issues
😊 Python 3.1! 1st
😊 Graphical Logic Complexity
😊 Sparse Documentation
😊 Unconventional Approach
😊 Optimisations?
Case Study: Pacman 3D
Learn more

http://www.blender.org/documentation/250PythonDoc/
Thank You

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