

Gizmo3D Scene Graph Technology



GizmoSDK

Gizmo3D Scene Graph What is it ?

- A Saab Training System product
- Visualize all kind of 3D data like normal 3D geometry, environmental effects and 3D sounds
- Complete solution for Military and Gaming “Vis-Sim” community. (A 3D Engine)
- State of the art technology and performance



What is a Scene Graph ?

- A hierarchical structure for data storage
- Hierarchical logics for data traversal
- Helps a system to optimize data for fast rendering
- Allows expansion of new hierarchy types and features (C++)



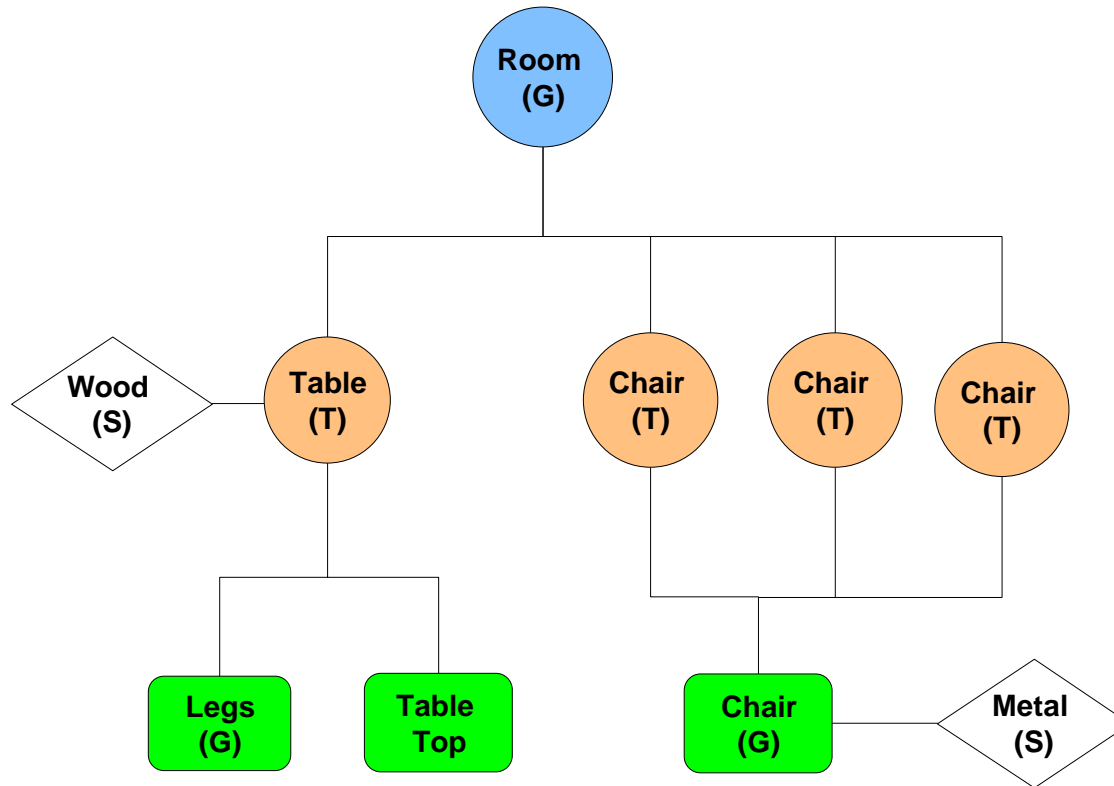


Gizmo3D in action



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Scene Graph Hierarchical Structured Data



Hierarchical Logics

- Discard data outside view (culling)
- Selects level of detail of rendered data
- Transforming a parent transforms all children
- Features can be controlled through the Scene Graph API



Optimizing Data

- Simplifies geometry
- Concatenate similar resources to be shared (less memory)
- Sort data for faster rendering
- Run time compilation of scene graph



Expansion of features & Behaviors

- C++ object oriented allows deriving new features and behavior
- OpenGL immediate mode implementation (GAL) (use OpenGL on DirectX)
- Extend old features with custom features

Scene Graph Data

- Encapsulate object rendering and behaviours
- Allows user to add readers/writers for various formats like Quake, VRML etc.
- Allows dynamic modification of data in real time
- Allows expansion of new hierarchy types
- Prepared for most common formats like OpenFlight, 3D Studio, Performer and other bitmap and vector formats
- An extensive set of already made features for a complete vis sim application



Performance

- One of the fastest Scene Graphs as compared with Vega, VTree, OSG and Performer
- Allows large data sets with dynamic loading/unloading (80 GByte terrain!)
- New features not found in other tools to solve extreme visualization tasks
- A modern object oriented framework
- Easy to use and to integrate with your application



Supported Platforms

- Win32 (OpenGL, Directx)
- Irix
- Linux
- Mac OS X
- PocketPC 2002 (GAPI)
- *Xbox & PS2 (future implementation)*



Features

- Super fast geometry
- Real time shadows
- Particles
- Recursive Structures (Trees etc)
- CLOD,APARS,CAT
- Scene Graph Queries
- Shaders
- Animation (IK) & Bone Systems
- Environment



Future Features (Roadmap)

- Image Based Rendering nodes (IBR)
- Realistic micro environment (Forrest/Trees/Grass/Leaves)
- Realistic Weather Environment
- Full GL Shader Language support
- Integrated Editor in 3D Studio
- Integrated scene graph physics/triggers and dynamics (Meqon)



Gizmo3D development @ Saab Training Systems



- Some of the best 3D programmers in Sweden
- Located in Huskvarna (near Jönköping)
- Provides solutions for framework development
- Customer driven development and support
- Integrated with STS software development



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