LOD Generator

This guide explains how to use the **VR LOD Generator** in SimLab Composer to optimize large scenes for a smooth, high-performance VR experience.

What is LOD (Level of Detail)?

LOD is a system that swaps a 3D model with lower-polygon versions in real-time to save processing power. The switch between levels is determined by two main criteria:

- **Distance:** How far the user is from the object.
- **Screen Coverage:** How much space the object takes up in the user's field of view.

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1. Pre-LOD Optimization

Before generating LODs, you must reduce "draw calls" (the number of separate objects) and clean up materials.

- **Selection Rule:** Expand groups and **select individual assemblies** (e.g., all separate chairs) rather than just the single top-level parent assembly.
- **Step 1 (Materials):** Merges identical materials and optimizes texture sizes/compression.
- **Step 2 (Merge Objects):** Combines parts within each assembly to reduce complexity while keeping objects distinct from one another.

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2. Identifying "Heavy" Objects

The plugin provides a surgical way to find which objects are taxing performance:

- **Filter:** Set a **Minimum Polygon** count to populate the plugin table with complex objects.
- **Analyze & Zoom:** View exact polygon counts in the table. **Clicking any item in the table** will automatically zoom the camera to that object in the scene for inspection.

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3. Creating & Managing LODs

Define your decimation percentages for each level. Note that **LOD 0** represents the model when the user is closest to it; decimating this level reduces the polygon count of the "original" model itself.

- **LOD 0:** Initial decimation to optimize the model at its closest distance.
- **LOD 1 & 2:** Increasing levels of reduction for mid-to-far distances.
- **LOD 3:** Enable the **Hide** option to completely remove distant objects from the render.
- **Global Settings:** Use this to determine if the system swaps levels based on **Distance** or **Screen Coverage**.

Watch This Tutorial to Learn more

https://www.youtube.com/embed/xg3cLKso8kM

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