Shader Preview Requirements

**Acceptance Criteria**

* Users can preview and debug shaders efficiently, with a fast and powerful workflow.

**Functional Requirements**

1. **Shader Loading and Rendering**
   * Load shaders from external files.
   * Render multiple shaders simultaneously.
   * Support 3D shaders.
2. **Custom Assets**
   * Allow users to load custom 3D models and materials.
   * Apply shaders to primitives and custom objects.
3. **Shader Editing and Hot Reload**
   * Hot reload shaders on file save without overwriting uniform values.
   * Edit uniforms through the software UI.
   * Support GLSL and HLSL parsing.
   * Built-in file editor integration (e.g., [E-Code](https://github.com/SpartanJ/eepp/tree/develop/src/tools/ecode?utm_source=chatgpt.com)
4. **Debugging and Analysis Tools**
   * Stepping through shader execution with breakpoints and single-step capability
   * Draw boundaries for visual debugging
   * Value dumping for variables/uniforms
   * Overdraw and execution frequency heatmaps

**Non-functional Requirements**

* + High performance; responsive and snappy UI
  + Runs natively on local machines with a GUI
  + Cross-platform compatibility
  + Easily modifiable and maintainable
  + Testable with automated and manual test workflows.