



GearVR and Web 3D

Mitch Williams

Samsung / 3d-online

GearVR Software Engineer

August 15, 2018, SIGGRAPH

Vancouver, British Columbia, Canada

Samsung GearVR content development

- Empower developers to create content via multiple means



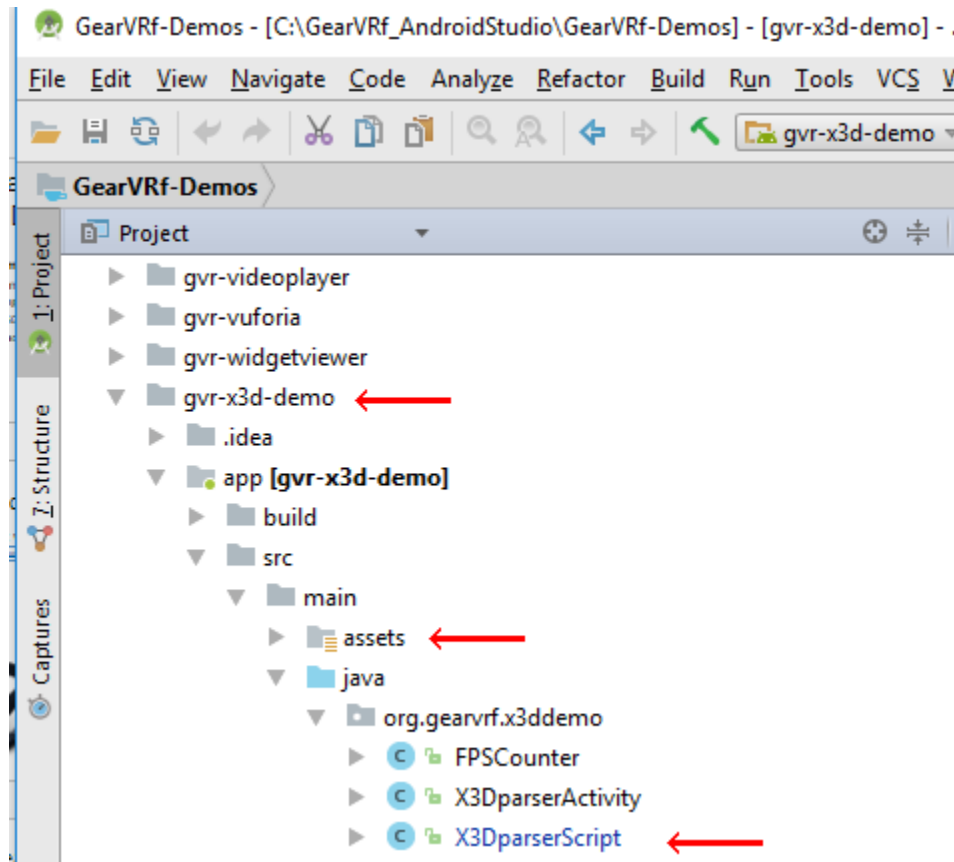


Why implement X3D in GearVR

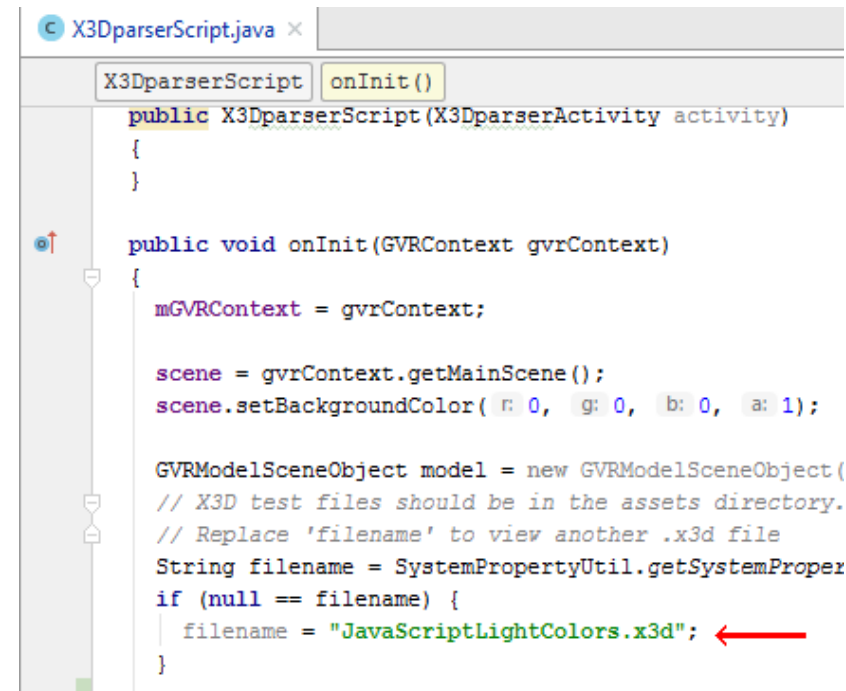
- X3D is a widely supported file format
 - Exported by 3DS Max, Blender, Maya, Moto
 - Or exports VRML and converts to X3D
- No other file format had similar capabilities.
 - Interactivity via JavaScript
 - Declarative format easy to edit / visualize the scene.
- Easy Learning Curve
 - Can build X3D in minutes, compared to learning Unity
- GearVR, X3D apps also run on Google Daydream, Oculus

GearVR apps

- Developed in Google's Android Studio
- Download <https://github.com/gearvrf/GearVRf-Demos>



- Drop your X3D file plus texture maps into the assets folder
- Modify X3DparserScript.java 'filename' to match your new X3D file; then Build the App



Current X3D implementation in Samsung GearVR

- Transform, Group
- Text with ttf Fonts
- Multi-Texture, Movies
- Material: Images; diffuseColor, emissiveColor, specularColor; Texture Transforms
- Lights: Directional, PointLight, SpotLight
- Script /JavaScript, including per-frame scripting
- Animations (w/ Interpolators)
- Sensors: Touch, Plane, Cylinder, Sphere
- Level-of-Detail, Inline, Switch

Conclusions



- X3D benefits to GearVR
 1. X3D Spec. has provided guidance.
 2. Brought us closer to content creators
 3. Internal testing
 1. Quickly edit X3D file for testing and performance
 4. Opening new markets
 1. X3D printing, Web, U.I. development,
- Challenges
 - X3D + VR: AR (augmented reality) extensions
 - More features to come: PROTO, HAnim, X3D Exporter
 - GUI tools to create JavaScript / <SCRIPT> nodes

X3D, GearVR questions

- Gear VR:

- <https://github.com/gearvrf/GearVRf-Tests/>
 - Lots of great examples using X3D
- <https://github.com/gearvrf/GearVRf-Demos/>
- <http://gearvrf.org/>

- Email:

- M1.Williams@partner.Samsung.com
- Mitch.Williams@3d-online.com

*Thanks Web 3D &
SIGGRAPH*