OL3-CESIUM

3D for OpenLayers

https://github.com/openlayers/ol3-cesium

Why, what, how?

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Add 3D to OpenLayers maps
OpenLayers can handle 3D data, Cesium can render it
Easy to learn for OpenLayers users
Federate efforts in one place

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Created in cooperation with KlokanTech and Camptocamp
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Initial release 1 year ago
Camptocamp is actively working on new features
Monthly releases

Adding 3D to your map

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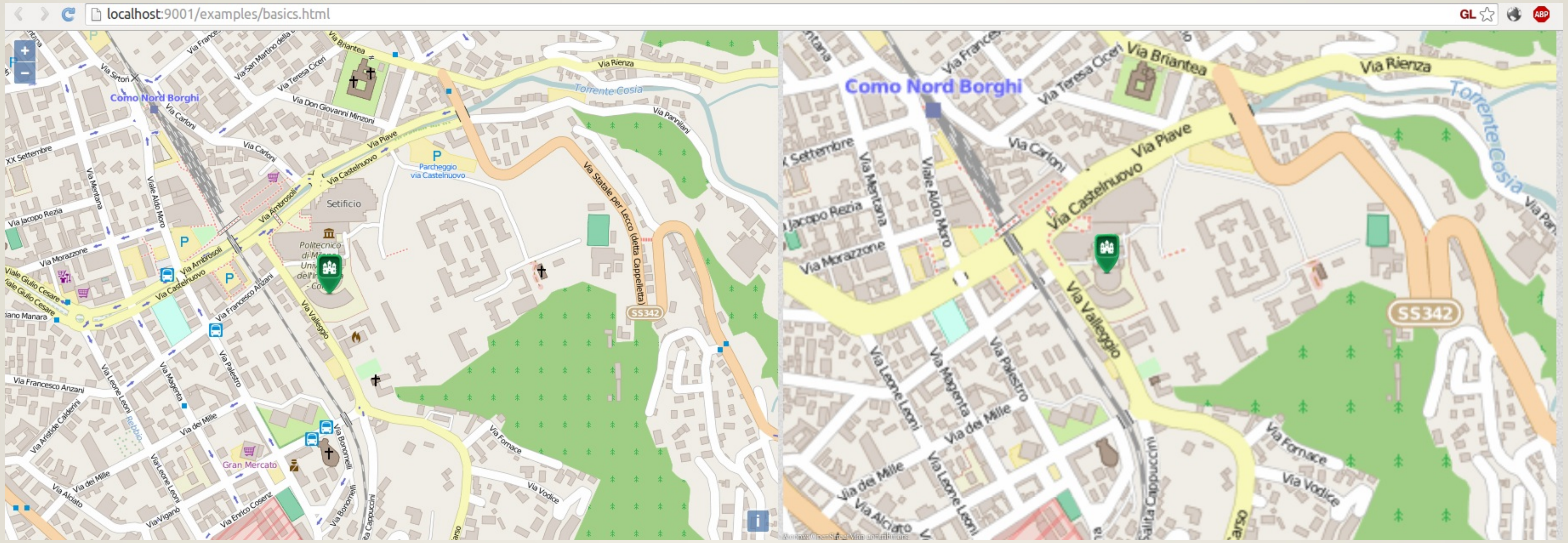
- A Cesium globe is created
- layers and view are kept in sync

Synchronized views



Try it

3D map with terrain

3D map with terrain

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var scene = ol3d.getCesiumScene();
var terrainProvider = new Cesium.CesiumTerrainProvider({
  url: '//cesiumjs.org/stk-terrain/tilesets/world/tiles'
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scene.terrainProvider = terrainProvider;
scene.globe.depthTestAgainstTerrain = true; // optional
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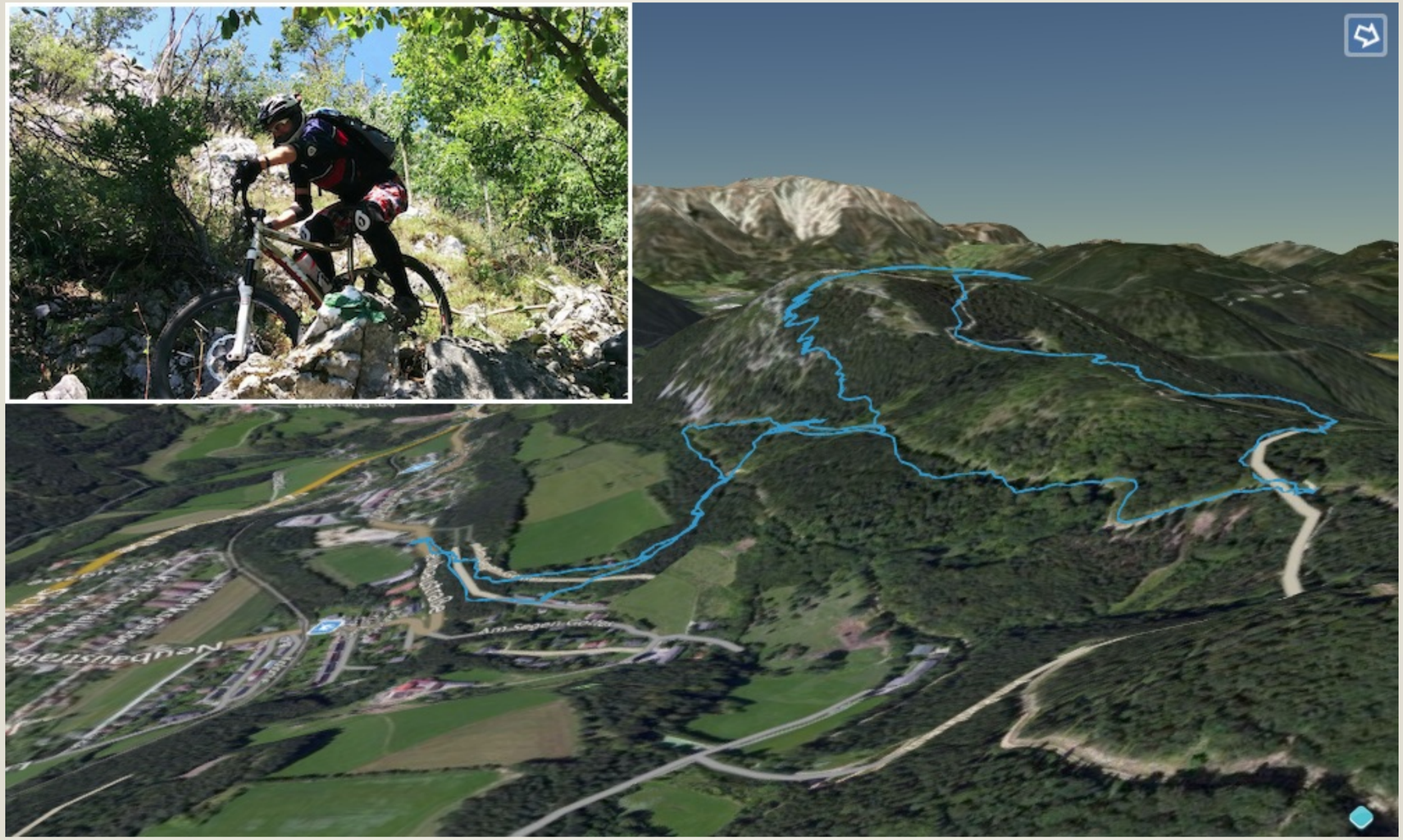
- Raster layers are clamped to ground
- z-coordinates of vector data are used

3D GPS Track



OL3-Cesium – Guillaume Beraudo, Andreas Hocevar Try it

Real life example

SuisseMobile 3d

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Different 2D projection

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- Raster layers must be handled by application
  - No support for client side reprojection (yet?)
  - Require additionnal dataset in EPSG:4326 or EPSG:3857

Vector clustering

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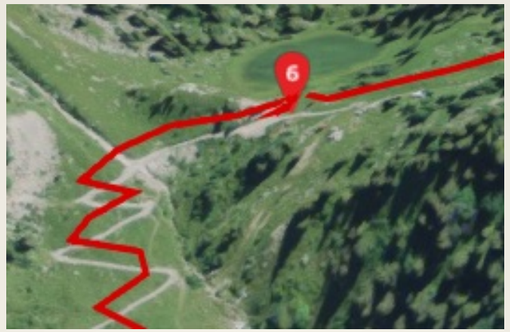
- Pregenerated using a custom OpenLayers3 tool
- Picking: id, children and resolution per feature
- Data only sent once to the GPU, decimation in the shader

3D geometries



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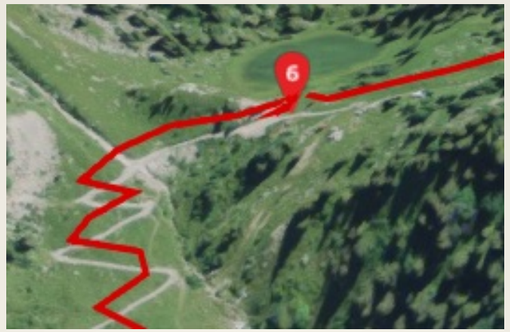
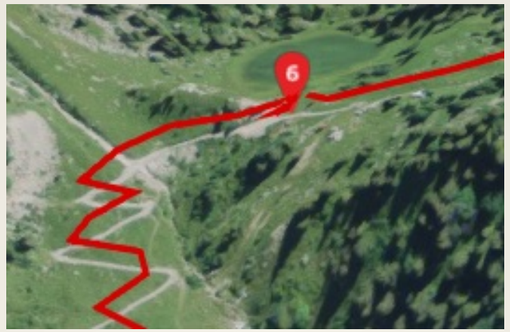


- Static positioning (x, y, z) for all geometries

3D geometries



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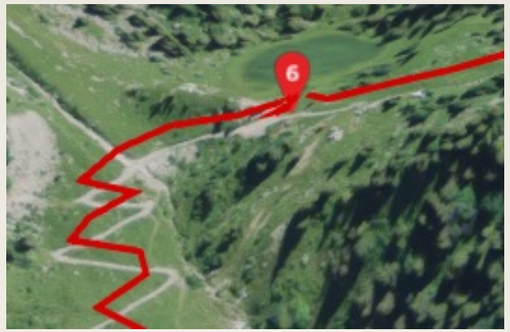
3D geometries



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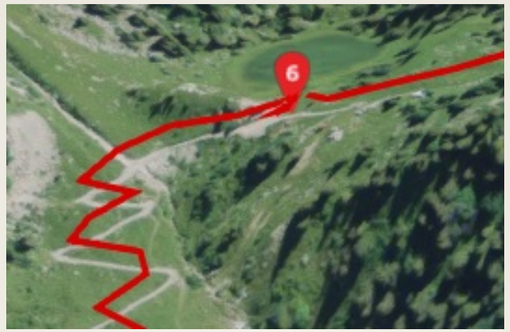
3D geometries



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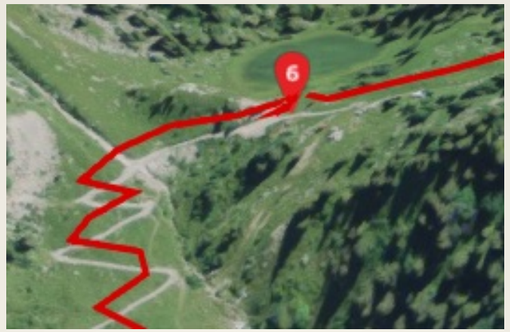

- Static positioning (x, y, z) for all geometries
- Dynamic positioning (altitudeMode = "clampToGround")
  - Points done
  - Polygons coming soon
  - Lines are Work In Progress

Buildings and vector tiles

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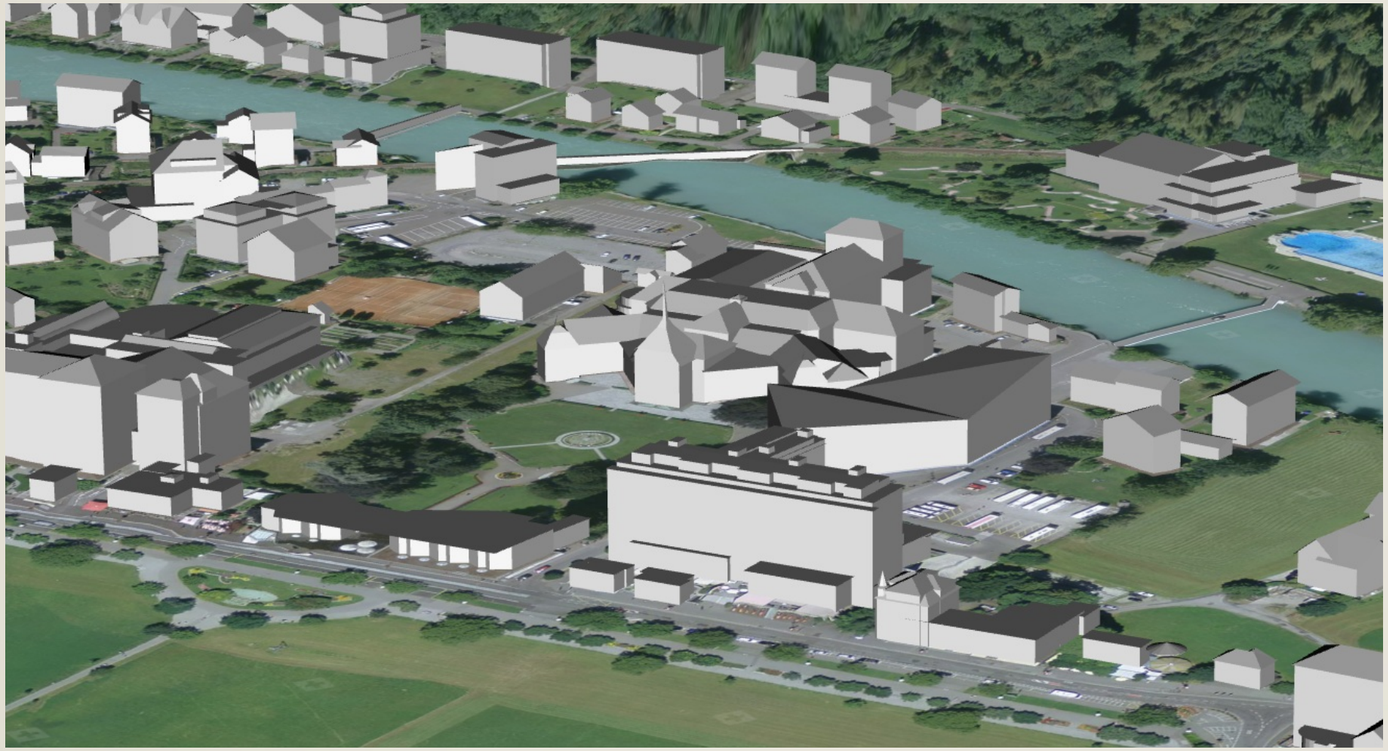
- 3D buildings tile generation POC from CityGML



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- 2.5D extruded polygons of a single "tile" POC

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  - Loading and unloading strategies

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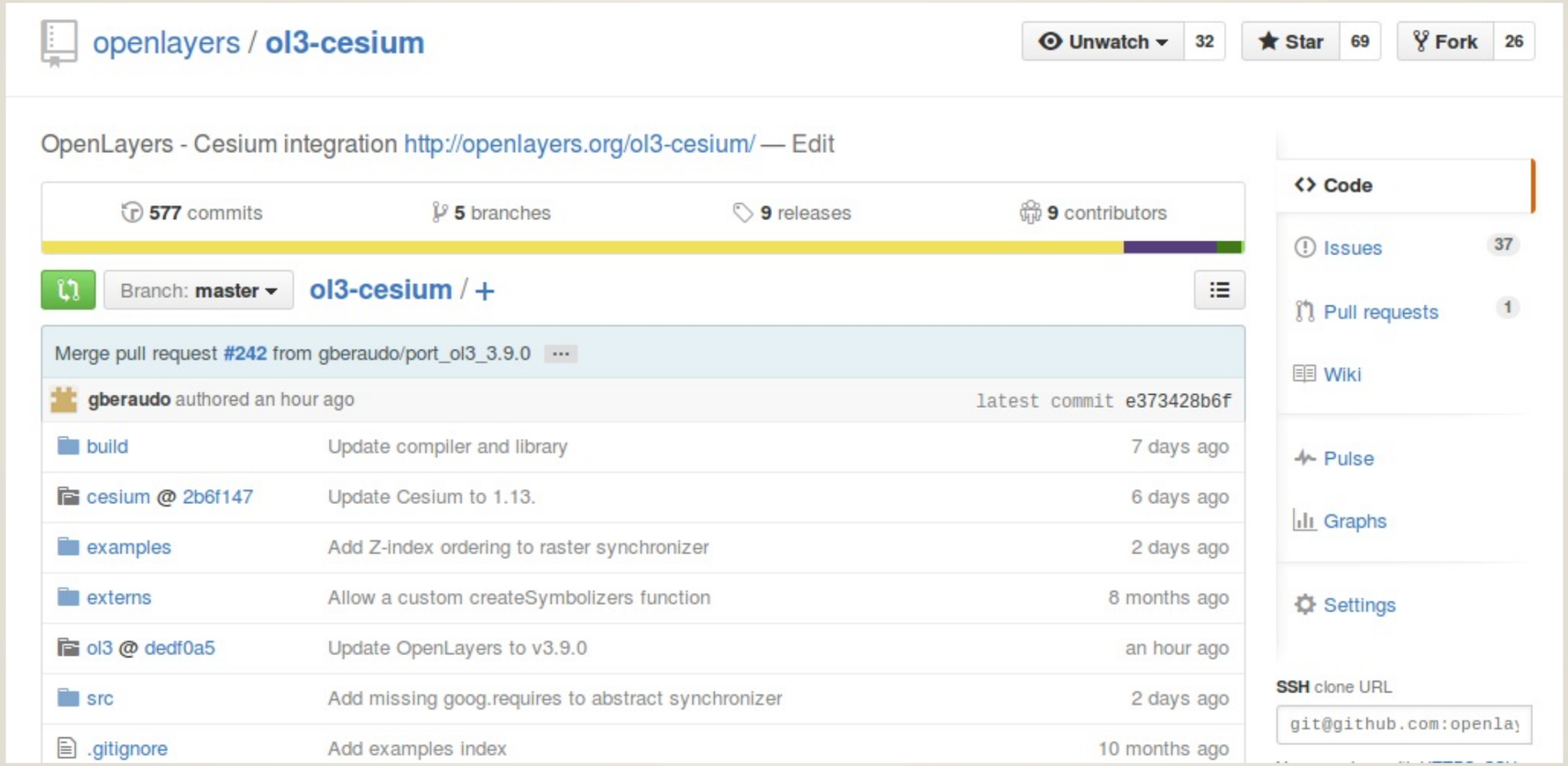
  - Tiling and Levels Of Details
  - Loading and unloading strategies
  - Efficient (GLTF)

Questions?



감사합니다