

CIS565 Final Project: Procedural Terrain Generation with Vulkan

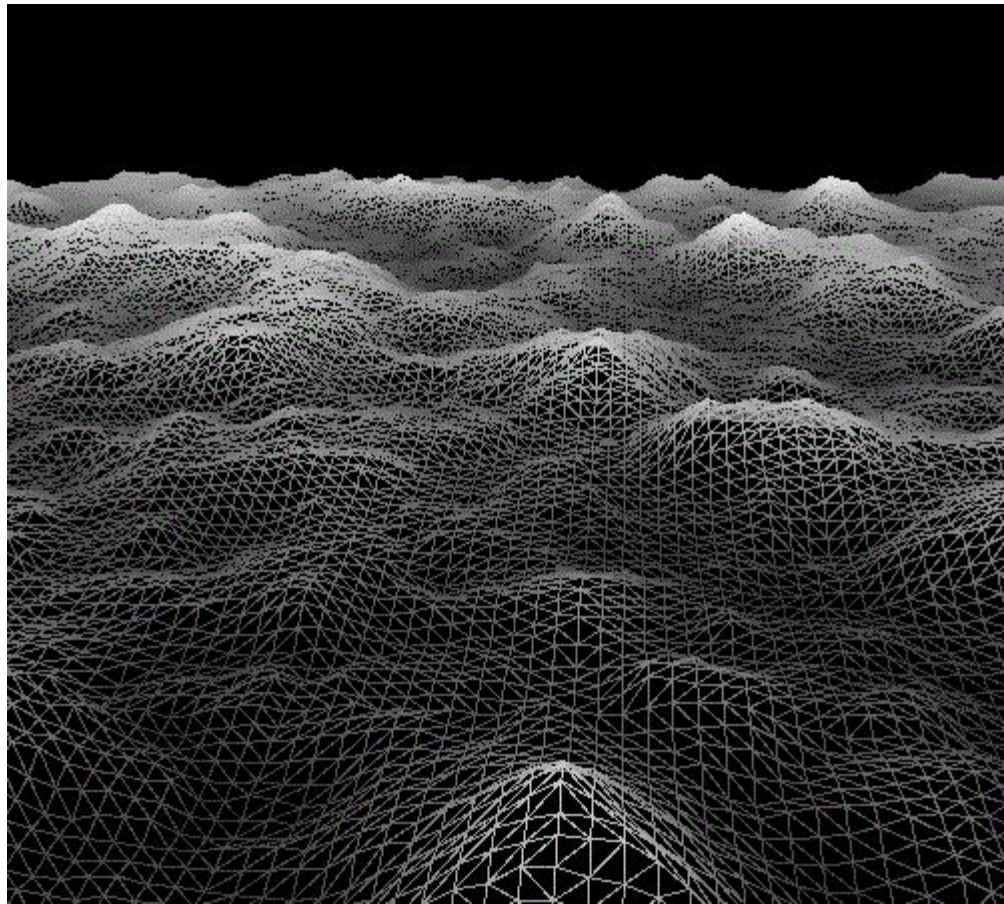
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Project Goals

- Use Vulkan to make efficient procedural terrain generator
 - Leverage compute and tessellation shaders for dynamic tessellation levels (LOD)
- Implement this paper: <http://jcgt.org/published/0002/02/04/>
 - This JCGT paper suggests a modification to the standard deferred pipeline
 - Essentially, even smaller g-buffer
 - Triangle index and Instance ID
 - Saves on texture reads and data transfer costs
 - Question: how does this perform in a tessellation-heavy project?
- Forward and Deferred pipelines for comparison purposes
- Integrate texture mapping (again, for paper analysis)
- Extra aesthetic features (TBD)

Current Progress

- Procedurally generated terrain using Tessellation shader rendered with varying LOD.



Timeline

- 11/27: Add deferred pipeline, add paper's pipeline
- 12/04: Add textures, work on extra aesthetic features
- 12/11: Work on extra aesthetic features, do performance analysis

Possible extra aesthetic features:

- Water simulation
- Shadow mapping
- Support for heightmaps

Thank you!
