

Modeling in Computer Graphics

Exercise Course

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Exercise 3

Level of Detail

Add trees to your landscape and display different LOD levels based on the distance to the camera.

Due date **20.06.2018.**

Exercise 3

Level of Detail

- ▶ Load the .obj files using `tiny_obj_loader.h`
- ▶ Place the `tiny_obj_loader.h` in the same directory as your `simple.cpp`

Add the following lines to include the TinyObjLoader.

```
#define TINYOBJLOADER_IMPLEMENTATION
#include "tiny_obj_loader.h"
```

Exercise 3

Level of Detail

- ▶ Create a new VAO and VBO for each LOD representation of the tree and separate branches and leaves using the `material_id`
- ▶ Distribute the trees randomly on the landscape
- ▶ Use the height-map to align the trees with the landscape
- ▶ Set the position of the trees using the uniform of the program
- ▶ Call `draw` for each tree

Exercise 3

Level of Detail

- ▶ Draw the different LOD representations based on the distance between tree and camera.
- ▶ To create more variation add a random scale and rotation to the trees
- ▶ Blend between the LOD levels (optional)
- ▶ Render only those trees that are within the frustum (optional)
- ▶ Use instance rendering (optional)