Approach

I started implementing Textured Normal Mapping using examples from presentations and lectures. An HLSL shader was created that accepts a normal map, and a CustomEffectModel class was prepared that loads the model, texture, and effect, and passes the parameters to the shader. I tried binding the normal map via the rocks parameter, using BasicModelObject, and adding the object to TestScene.

Challenges

The main problems arose when trying to render the model with the new effect. Despite the correct loading of the shader and model, the cube either did not display at all, or errors were thrown. I changed the code in BasicModelObject and TestScene, but this did not help - the scene either did not render the cube, or crashed. There were also difficulties with normals - they were distorted or ignored, which led to incorrect lighting. Attempts to simplify the shader or use basic settings did not work.

Most Difficult Part

The most difficult part was integrating the HLSL shader with normal mapping in CustomEffectModel. The problems arose both in the logic of passing parameters to the shader and in the operation of the scene itself. Despite attempts to simplify the code, it was not possible to achieve a working display of the cube with a normal map. I plan to separately work out this effect in a simplified environment and gradually integrate it into the engine.