DeepSea

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Our game is set in an underwaterworld environment. The cave is a labyrinth where the player has to search for a key to

open the treasure chest.

Complex Objects:

We have several different complex objects, as an diving skelett, the cave, a key, one treasure chest and an octopus enemy.

Two of those objects ar animated to make the game more vivid (octopus, diver).

Features:

Free movement underwater to get a better underwater feeling. You can dive with no restrictions within the skybox. There are

some bad opponents which can be "fighted" by pointing the spotlight on them. As well there are some objects to fullfill the

game (1. key 2. treasure chest).

Furthermore we want to display a diving mask in font of the screen and display some batteries to "recharge" our spotlight.

View Frustum Culling and Transparency (seen at particles) are also visible when pressing the certain keys.

Effects:

ShadowMap + pcf --> can be seen on each (not skinning) object and within the cave. The shadow map considers the spotlight from your flashlight.

(http://www.opengl-tutorial.org/intermediate-tutorials/tutorial-16-shadow-mapping/)

Particles GPU based + Instancing--> set in an underwaterfountain. By unsing instances we generated the particles. The particles are generated

in a TransformFeedback Buffer.

(http://www.opengl-tutorial.org/intermediate-tutorials/billboards-particles/particles-instancing/)

http://www.mbsoftworks.sk/index.php?page=tutorials&series=1&tutorial=26

Spotlighting -> the spotlight is shown when you pressed the right mousebutton in front of the camera. The "origin" of the spotlight comes from the direction of the

cameras position.

(http://opengl.czweb.org/ch09/293-296.html)

http://ogldev.atspace.co.uk/

VertexSkinning -> is seen when looking at the diver or the octopus. While this process, we transform thevertex position and the normals of

the mesh based on the animated bones and their weights to the certain verteces.

(http://content.gpwiki.org/index.php/OpenGL:Tutorials:Basic_Bones_System,
http://www.3dgep.com/gpu-skinning-of-md5-models-in-opengl-and-cg/,
http://www.spieleprogrammierung.net/2010/09/opengl-3-tutorial-instanced-vertex.html)

Illumination:

Multiple spotlight and directional light, furthermore we implemented a spotlight to give a better feeling for the underwater setting.

Libraries: BulletCollision, BulletDynamics, Assimp, Fmod, FreeImage, OpenGLUT, LinearMath,

Tools for Models:

To create our models we used on the one hand Blender (cave) and on the other hand Maya (all other models).

Flow:

You start above the cave and have to find the entrace (right behind you). After you dived in you will see a passage to your left. Inside you find the key for the chest.

The kraken will move out of your way. Just follow the path to find the treasure and you have won. We plan to implement a battery, that you have to find in order to youse your

flashlight. You will need the flashlight to make the Kraken move away and give way to the chest.