Documentation – Heavenly Gifted

Gameplay:

Our Gameplay evolves around jumping between moving platforms, to reach the End Platform, our so called „Heaven". Your goal is to find the right platforms which build your path up to „Heaven".
If anything goes wrong or you notice that you can't reach any other platform, press 'R' and you will be reset to the first platform.

Controls:

The character is controlled with WASD for simple forward-backward and left-right movement. Additionally you can jump with the Spacebar. Press 'F1' to toggle options on the top left corner of the screen. Pressing 'F2' will allow you to see your FPS and 'P' will pause the game.

Effects:

- Shadow-Mapping: Can be seen on the Platforms, when they overlay each other or when the character moves above them. Because of "Peter Panning" the shadow casting object has to be far away from surface. It is toggled with 'F6'.
- Bloom: Can be seen when looking to bright Regions of our scene. Different Blend Modes are enabled with 'F7'.
- Normal-Mapping: Our Platforms represent moving stones which are normal mapped.

Work in Progress:
- Lens-Flares: When looking into the sun, lensflares occur. Toggle with F10.

Complex Objects:

In general we made our Models in Blender excluding the player character and used ASSIMP for importing the models in our framework.

Animated Objects:

Animations are realised with our Platforms moving around each other.

Frustum Culling:

Is implemented with Bounding-Spheres and can be toggled off with 'F8'

Transparency:

We realised transparency with our Lensflares which are essentially textured quads with an alpha-channel that is modified.

Lightsource:

We implemented one global Lightsource which is located at sunset. It is a parallel Lightsource. Everything in our Scene is iluminated with this Lightsource, except our skysphere wich is simply a textured sphere. Our basic illumination model is Blinn-Phong.

Sources:

http://www.youtube.com/user/thecplusplusguy
http://www.opengl-tutorial.org

http://nehe.gamedev.net
http://graphics.stanford.edu/~mdfisher/Shadows.html
http://www-sop.inria.fr/reves/Basilic/2002/SD02/PerspectiveShadowMaps.pdf
http://www.punkuser.net/vsm/vsm_paper.pdf
http://vcg.isti.cnr.it/publications/papers/bumpmapping.pdf
https://lva.cg.tuwien.ac.at/cgue/wiki/lib/exe/fetch.php?
media=students:cgue13_bloom.pdf