Glasscrack: Documentation

Computergrafik UE SS2021

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Gameplay Features

You have to survive and achieve as many levels as possible. You jump over breaking- or non breaking platforms to the other side of the abyss. Starting from level 1 (= 1 platform). How far can you get with 5 lives?

The character movement is a simple WASD control + jumping on spacebar. With the mouse you have a intutive control over the camera. Additionally you can always close the game with ESC.

As light sources we used a directional- + point-light.

The collision detection with the environment + platforms was implemented via Bullet.

Heads-Up Display gives the player an overview over current level + remaining lives.

Effects

- CPU Particle System: after every finished level particles float over the character [1]
- Procedural Texture: platforms are rendered that way (shows that they might can break) [2]
- Bloom / Glow: water reflection + starts + particles outshine the darker areas oft he game [1]
- Vertex Shader Animation: abyss animated with this effect [1]

Additional Libraries

- Assimp: model loading [3]
- Bullet: collision detection [4]
- Free Type: HUD [5]
- GLFW
- GLEW

References

[1] https://learnopengl.com/
[2] https://levelup.gitconnected.com/how-to-create-instanced-particles-in-opengl-24cb089911e2
[3] https://github.com/assimp/assimp
[4] https://github.com/bulletphysics/bullet3
[5] https://freetype.org/download.html