

Submission 4 – Group 5 – Zombie Walk

Our libraries:

- GLFW: <https://www.glfw.org/download.html>
- Glad: <https://glad.dav1d.de/>
- Glew: <https://glew.sourceforge.net/>
- Glm: <https://github.com/g-truc/glm/tags>
- Assimp: <https://github.com/assimp/assimp/releases>
- IrrKlang: <https://www.ambiera.com/irrklang/>

The graphic cards we use are Nvidia Geforce 1660ti and Nvidia Geforce 3060ti.

Changes from Submission 2:

- We added the GPU particle systems effect and Screen Space Ambient Occlusion effect. Additionally, we added shadows to our scene, to enhance the realism of our environment.
- We also put more cars and trees into the scene and an additional zombie into the building. We created a new ground and sky for our demo, which fit better with the other elements in the scene.
- To create a overall more beautiful demo, we also added background music and zombie sound effects.
- We added lights to the street lamps, which flicker randomly, to look like the power around the building is not functioning well anymore.
- Now the camera is moving around automatically, starting within the building and going all around it to end on the street with the zombie.

Effects:

We implemented following effects:

- **GPU particle systems:** We implemented this effect to make the scene more realistic and added smoke to the cars and the building. We didn't just use normal particles (spheres), but we used textures in order to get a realistic looking smoke effect.
- **Screen-Space Ambient Occlusion:** We used this effect to primarily improve the insides of our building and get realistic shadows in corners etc. To enable/disable the SSAO the button 'H' can be pressed.
- **Vertex Skinning:** We took this effect from our Computergraphics course, where we had already implemented Vertex Skinning, to give more life to

our scene. Now the zombie runs towards the camera in the building and another zombie will walk alongside the camera at the end of the demo.

- **Shadows:** We implemented a shadow map for our directional light source, to make the scene even more realistic.

The exe file is in bin->Zombie_Walk->Zombie_Walk->Zombie_Walk.exe!

Changes from submission 3:

We created a settings file and implemented some toggles.

To enable/disable effects, three buttons can be used:

F: enable/disable automatic camera

G: enable/disable gamma

H: enable/disable ambient occlusion

In the folder assets, there is the file “settings.ini” to change settings for the demo (fullscreen, volume, gamma, ...)