

(Almost) Forgotten Worlds

Read the assignment carefully. Most constraints are exercises, which you already finished!



The goal of this project is to create a 2D Shooter inspired by the classic **Forgotten Worlds**. Nonetheless, you are mostly free to modify the gameplay, style, controls, extras, etc. e.g., https://en.wikipedia.org/wiki/Forgotten_Worlds

The game features a flying character who can change its shooting direction with two keys on the keyboard (or alternatively, using the mouse position). Originally the game supported 16 directions around the player, but you can keep it more continuous; the rotation should be implemented with transformation matrices (Exercise 2). The shots/bullets should use this matrix to show the orientation accordingly and should be represented with textured quads (Exercise 3). These can be animated by switching the texture from frame to frame. Also, animate the character/weapon according to the direction.

The background of the game should be a 3D height-field terrain (Exercise 3), which is procedurally generated and lit with a Diffuse Model (Exercise 4). Optimally, you should create the illusion of an infinite mountainscape. Optionally, for each new incoming part, you should compute the cast shadows from a sun (Exercise 3).

The game should also feature a final boss that should consist of several components (e.g., a robot arm or a snake – see screenshot) (Exercise 2). The boss should also have a head in form of a 3D model that you produced with Blender (Exercise 1) and shade with a Phong model (Exercise 3). As a special effect, make the head of the boss loose its vertices when shot; use the simplification algorithm to produce a few precomputed level-of-detail models (Exercise 5). For a bonus, add other effects, such as animated textures, lighting effects, zoom effects, whatever comes to mind.

You are **not** judged on the length of the game, the fun, or the quality, but rather the amount of graphics **techniques** that you used and how well they were applied. In other words, a boring game can still lead to a good grade! Of course, a nice presentation, breath-taking visuals, or fun gameplay are a bonus! Feel free to explore any kind of additional extras, effects, gameplay content, etc. I advise that you work in groups of two-seven people – three is the recommended number.

Important: Any email correspondence should have as a subject "[CGA2016 Project] ..."
Please upload your final project via blackboard before the 16th of June 23:59. You have to also include a short description on the model building, the effects (each illustrated with a figure) – text: 150 words max, figures unlimited. Please prepare a 3-5 min presentation (including a live demo).

Presentation: 17th of June (the last "lecture") at 10:45 (Delft Time) - Hall D@ta