Battle Tinker - Prototype Chapter

Sandro De Zanet, Fabio Zünd, Marco Rietmann

March 18, 2008

Since BattleTinker's game principle is fairly simple (build ship, simulate ship) and none of the team members had experience in programming with Shockwave or Director, we decided to try to advance far enough in the main project in order to demonstrate a simple ship simulation as the prototype. Unfortunately, we didn't managed to get the physics working properly so far.

1 Main Project

1.1 Game State Management

We used a tutorial on game state management to implement a simple ScreenManager and some GameScreens for menus, arena and editor. A future step will be to refactor the structure in order to allow a Screen to contain up to four splitscreen Screens for multiplayer playing.

Figure 1: Screenshot: Main menu

1.2 Skybox

A skybox tutorial let us implement a skybox for the arena. However, the result is not satisfying. We don't want the stars to enlarge as a player approaches the hull of the arena and therewith the skybox. We tough of two solutions: The easier way would be to scale up the skybox enough in order that the players don't notice the enlarging of the stars. Another solution could be that every player has its own background image (the stars) that is renderer behind all scene objects and that the image translates automatically as the player looks around.

Also, the moon and other planets should move slower than the stars when the player rotates. We intend to place the planets as 2D discs around the arena hull in order to achieve this effect.

1.3 Camera

We started to install the GameCamera from Thomas Oskam [1] into our project. It may be an overkill as our camera in the arena doesn't need collision detection and other fancy functions but we thought that it would still provide some useful features and would ease the development.

1.4 Physics

A big amount of time was devoted to implementing physics. We introduced masses for each structure and could calculate all the needed parameters like angular momentum and moment of inertia. Although the physics should be correct, we have some problems rotating the ship in a consistent way, since we have some strange behavior of the ship.

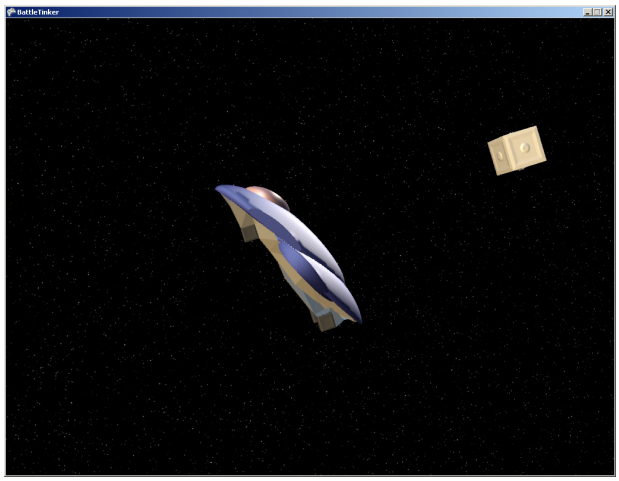

Figure 2: Screenshot: Ship rotating in arena

[1] oskamt@student.ethz.ch

1.5 Shader

We implemented some basic shaders (static and animated) to get the feeling of this technique. Furthermore we have introduced a smoke simulation for the gun shot.

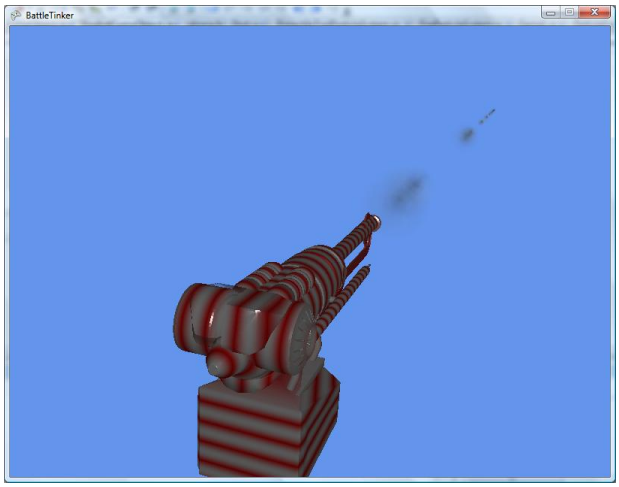

Figure 3: Screenshot: Shooting gun with animated shader

2 Development Schedule

We have achieved the man functionality of the functional minimum but the physic is not working how it should.