Inertia Progress Report

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So far, most of our progress has been on individual fronts. Brandon has worked on the renderer and almost completed it, along with most of the physics of the game. Andrew has been creating procedurally generated tracks and environments, with much success through his own algorithm and “greebling.” Chris has been exploring texture mapping the ship and the track. Our progress can be checked on our final project blog, located at <http://brandonwang.net/inertia/>. We are currently working to put the parts together.

When evaluating our progress on our technical challenges, we found that we left a couple challenges out. Here is our revised list and progress.

## Allow the user to turn the ship, maintaining a consistent velocity direction.

Brandon has implemented a system in which velocity and acceleration vectors are maintained in world space, coplanar to the tangent plane, but independent from the tangent vector direction. There currently exists some fine-tuning of the friction/air drag coefficients, camera position, velocity, and to make the function consistent in time across multiple machines. This is about 80% done.

### Procedurally generate the surrounding environment.

Andrew has created randomly generated cityscape using greebling, but they are stretched gray cubes that we hope to texture later. The difficult part of procedural track generation has been completed – the algorithm has successfully produced very interesting tracks, and now Andrew is fine tuning the control points and combining it with Brandon’s renderer. This is about 75% done.

### Implement advanced renderer functions.

Brandon has implemented variance shadow maps and light scattering in the classical rendering pipeline. After the scene and gameplay comes together, Brandon will have to tweak the settings and resolutions of the renderer effects to achieve an acceptable framerate on our target machine. This is about 95% done.

### Create texture mapped models

Brandon created a ship object in Blender last week, and explored making a simple HUD using alpha blending. Chris has been working to texture the ship, as the cylindrical object was in AS8, fixing the normals of faces for backface culling, exploring different textures for the track, and finding a method to export the texture in such a way that the mesh can import it. This is about 60% done.

Pictures and videos of our current progress can be seen on the online version of this progress report at http://brandonwang.net/inertia/?page\_id=159.