

URO

Interim Report

Current State of the Game

Functional minimum: completed

- The ball can be controlled and the camera is following it
- There are two players which each of them have a separate camera and screen
- We can display the ball and the shields
- We have an arena

Low target: mostly completed

There are some bugs in this layer, which we are now trying to fix (more on this later). The following points are implemented:

- Basic physics is done, but has some bugs
- The arena is constructed. It's based on an heightmap and has support for normals
- There is some basic menu for the game and also a simplistic HUD for both players
- The notion of fuel and damage have been expressed as "heat" (changing the initial idea)
- The shield mechanism also works
- Simple background music

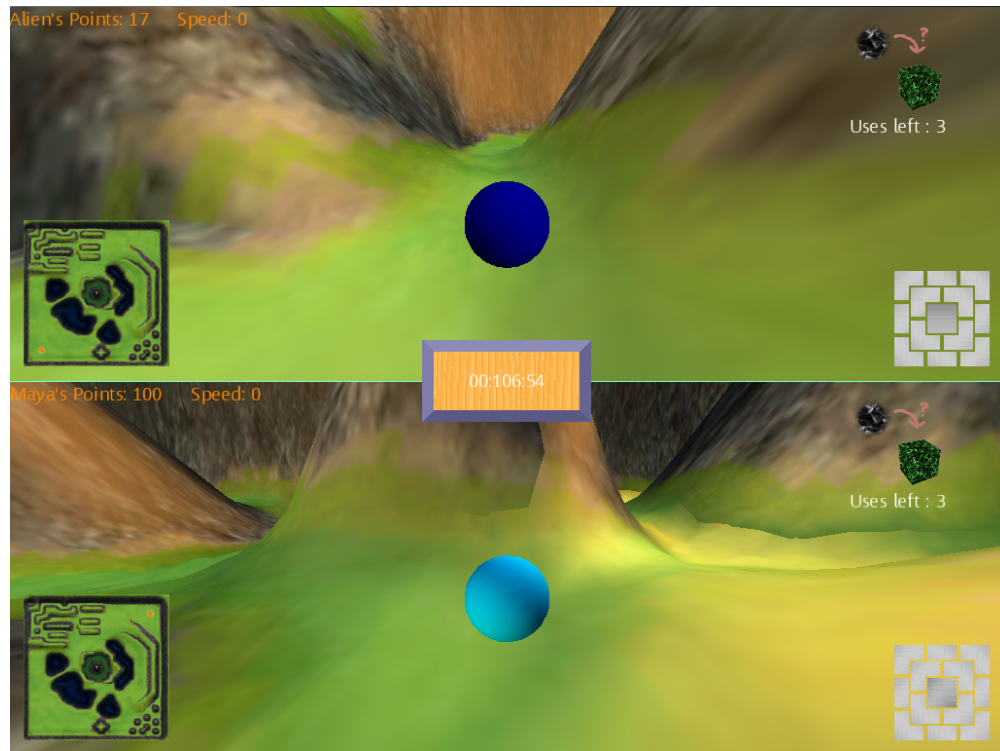
In the low target we need to test some of the parameters (how many points are when generated, how strong should the gravity or the acceleration be, where is the camera placed, etc).

Desired target: In progress

- "Rocket jump"-engine is done (graphics effects missing and also some advanced handling)
- Basic Cubify is done
- We replaced the Simple Radar with a Minimap, as we felt it would be more manageable by the player; this is not final, though

Start of the game:

At the start of the game maya is given 100 points to give alien motivation catch maya in a energy shield and make maya motivation to escape from alien.

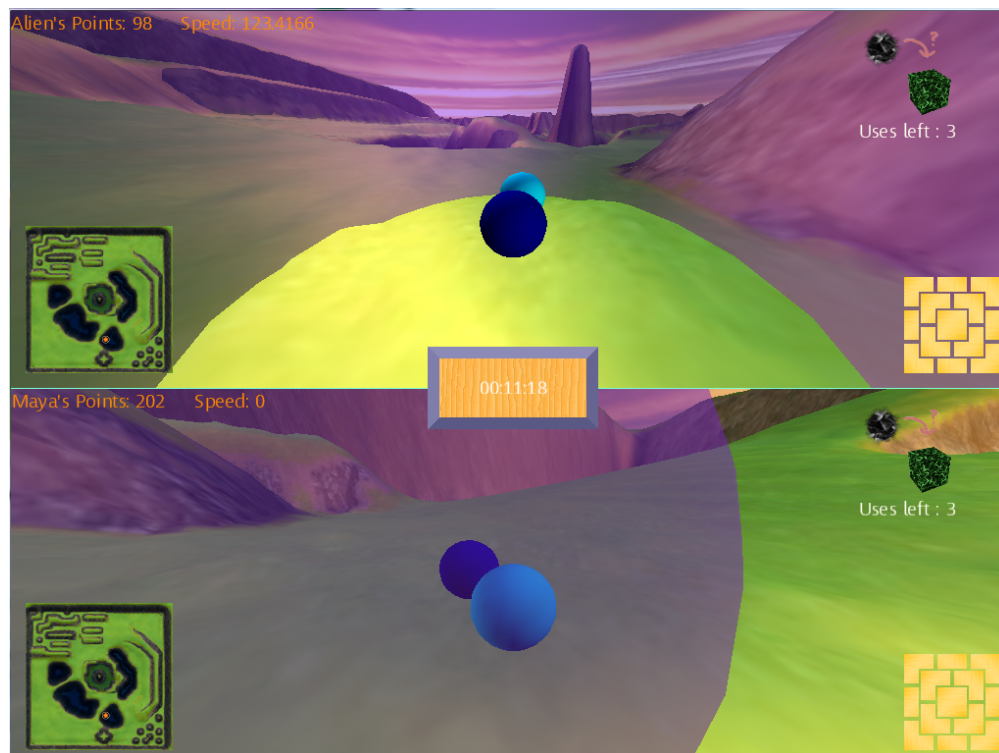


Cubify Power-up: At the beginning each player has 3 cubify power-ups and they can be used by pressing the "A" button. Cubify lasts 5 seconds and during this phase, the "cubified" player:

- 1) has bigger friction - as sliding cube has bigger friction than rolling sphere
- 2) cannot control - it's moving by inertia
- 3) cannot use any power-up.



Shield: Shield is active, while alien holds the "B" button. Activation and maintenance of the shield cost some heat. When the Mayan is inside the shield, he loses 10 point per second and the Alien gains 10 points per second. Points may go to negative. We thought it would be more fair.





Maya is given points if he is within two shield radii from alien, and the amount of points decreases with distance increasing. Additional score are given for either players if they maintain a speed higher than 100 "units" (it's just the square of the actual speed) for 3 seconds.

End of the game - scores and final winner are displayed.

Where we wanted to be

We found ourselves a little behind the prevented schedule:

- Graphical effects (arena, shield, ball, radar, hud)
- Physics (has some bugs)
- Parameter settings:
 - Camera position (where should it be?)
 - Size of the shield
 - Size of the arena
 - Acceleration rate and other forces
- Pyramids are still missing (for performance issues)

Things that don't work as expected

Physics:

The most important bug is in the physics. Sometimes the ball is intersecting with the ground and the gravity does not work as expected, which leads to some flying. There should be a better prediction on when the ball cannot just roll in the direction of the speed (unplanarity of the ground, obstacles). For a first version we just corrected the y-coordinate of the ball to be above the ground. The problem with this approach was, that it did prevent any jumps due to ramps and even to rocket jumps.

Controller:

The player is able to change the direction of the ball by just giving a force from left or right. But if the ball is standing still, this should be just a change of orientation, instead of a acceleration. Maybe we have to adjust here the notion of changing the direction.

Camera:

Sometimes times the camera is too far away to see the "important" part of the arena (especially if the ball is moving fast). This has been "workarounded" by diminishing the maximal speed of the ball. In other situations, the camera is too close. So here the parameters should be well tested and adjusted accordingly. Maybe we will change the camera model from MassSpring to something simpler.

Pyramid:

The drawing of the pyramid needs too much time until now, so we skipped it for the XBox-version in the interim report. The problem is that our Model is composed of too many ModelMesh-es, so the Mesh.Draw() calls overhead is enormous. We're trying to solve this problem with 3DSMax, and will eventually have to code a new content processor to push all the geometry into Vertex/Index Buffers.

What did we change to the initial idea

The two most fundamental changes were:

Heat:

Instead of fuel and damage-tolerance, we introduced the heat. If we accelerate or build the shield, this produces heat. If we do nothing, the heat decreases.

If the heat exceeds some threshold, this causes damage to the engine (which means, the threshold gets smaller), the player loses point and cannot control the ball any more, until the heat is below another threshold. If the ball is damaged due to other reasons (crashes for example), this also reduces the heat-tolerance. There will be a Power Up, which repairs this tolerance.

Effect of the shield:

The first idea was, that the shield slows down the enemy. But this is in contradiction with one of our main goals: High speed.

So we thought to just steal points from the enemy, if he is in shield. Then we tried to motivate the runner to move and not to hide. If the maya is near to the alien, he gets points. If he is too close and the alien builds the shield, he loses some of his points.

The fun part

So, what is exactly the challenge?

As describe in the effect of the shield, the challenge of the game is for the maya to be close to the alien, but prevent being "caught" by the shield.

For the Alien the challenge is to get even closer to the Maya, to catch him in the shield.

If the players move with high speed, they gain extra points. So just hide and not moving is not an option.