

Pink Pony

Blossom Battle



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Description

"Pink Pony Blossom Battle" is a Tron-like multiplayer racing-game. You control little ponies that leave a trail of flowers everywhere they step.

Gameplay

Every player controls one pony. These ponies can't stop running and create a line of persistent flowers on their paths. You have to evade these trails und force other ponies into them. The last pony standing has won the game.

The level is a large hilly island. If a pony touches the water, it is out.

If two ponies collide, they are both out, except when they are the last two ponies in the game. In this case the both win!

The ponies can only adjust their speed, but never stop completely. Their speed affect their turn radius, so that they need more space to turn around, when they are faster.

Additionally, there may be certain collectable goodies distributed over the island, that can help a pony to win. (invincibility, turbo, smaller turn radius, pictures of cute baby animals that are pasted on the opponent's screen)

Controls

You control your pony with the arrow keys of your PC-keyboard.

Since PPBB is a split-screen multiplayer game, the different players can use several schemes at once. (arrow keys, WASD, JKLI, Numpad)

You control the pony's speed with the Up and Down keys. You can not completely stop the pony, bat you can accelerate and decelerate it. If a pony runs up or down a slope, it loses or gains speed accordingly.

You can turn your pony with the Right and Left keys. Depending on the speed of your pony, it will turn faster or slower.

Technical details

Types of objects in the scene

All objects in the scene are textured and illuminated.

There are 5 distinct types of objects, that have to be rendered:

- *The ponies – Animated character meshes*
- *The island – A heightmap*
- *The flower trails – Dynamically generated meshes*
- *Power ups – Static meshes*
- *Particles – 2D billboards*

Camera

The screen is split between the players. Each player has his/her own subscreen and camera.

The cameras automatically follow the ponies from several meters distance. The players can not control them.

Illumination

There is one global light-source in the game: the sun. This is a simple parallel light source, that casts shadows. A combination of Lightmaps and Shadowmaps will be used. There may also be hemisphere-lighting or something like that to approximate the ambient illumination of the scene.

Collision detection

Collision detection happens in 2D.

I will use a data-structure that stores the trails of all ponies as a set of 2d line-segments. If a newly added line-segment crosses another segment in the list, we know, that the pony has crossed a trail and has lost.

2D line-intersection is a well understood topic with lots of examples and code-snippets, so implementation should be fairly easy.

Effects

- Colored bloom
- Particle effects
- Shadow mapping
- Light mapping
- Some nice shader effects

Sketches

