Project of speciality - Ensimag 2015/2016

Generation, simulation and animation of an ecosystem

Here a badass picture of our project

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Contents

Part I
Introduction

Unleash your power here to deploy the most beautiful man-made introduction.

Briefly explain here the context of the project of speciality, the goal and the content of the project -ie what've sent to the teachers. Then introduce the following parts : environment and boids

Part II
Core part i don't know the title yet

1 A quick introduction to present this part

2 Map generation - a fast method

Present here what's done in [2] : - height map with a noise (might speak about libnoise) (topographical map) - then using a Whittaker diagram to compute the geographical map

Present its advantages (easy to compute) and its drawbacks (cannot control the shape of the map easily)

3 Map generation - our method

Explain here our algorithm (voronoi, height tree that looks like a perlin noise)

also present its advantages (geographical map -> topographical map, informations stored in the voronoi...)

4 Tesselation

Quick passage to explain how the tesselation used works.

Part III
A better title that 'boids'

5 A quick introduction to present this part

References

[1] Red Blob Games. Polygonal map generation for games.

[2] Jean-David Géneveaux, Éric Galin, Éric Guérin, Adrien Peytavie, and Bedrich Benes. Génération procédurale de rivières et de terrains. In *Journées de l'Association Française d'Informatique Graphique*, 2012.

[3] Fernando Bevilacqua. Understanding steering behaviors.

[4] Daniel Shiffman. *The Nature of Code*, chapter 6.

[5] Fernando Bevilacqua. Finite-state machines.

[6] Andreas Kvalsvik Jakobsen. Tessellation based terrain rendering, June 2012.

[7] G. Kim and N. Baek. A height-map based terrain rendering with tessellation hardware. In *IT Convergence and Security (ICITCS), 2014 International Conference on*, pages 1–4, Oct 2014.

[8] Skinned skeletal animation tutorial.

[9] Libnoise library.

[10] Cgal library.

[11] Voro++ library.