

Progress Report

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A Procedural, Minimal Input, Natural Terrain Plug-in for Blender

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1 Previous Short Term Objectives:

1.1 Reading:

Read [2] and determine whether it would provide any extra features if incorporated with [1].

1.2 Website:

Expand on it.

1.3 Blender:

Start to implement simple terrain generation detailed [1].

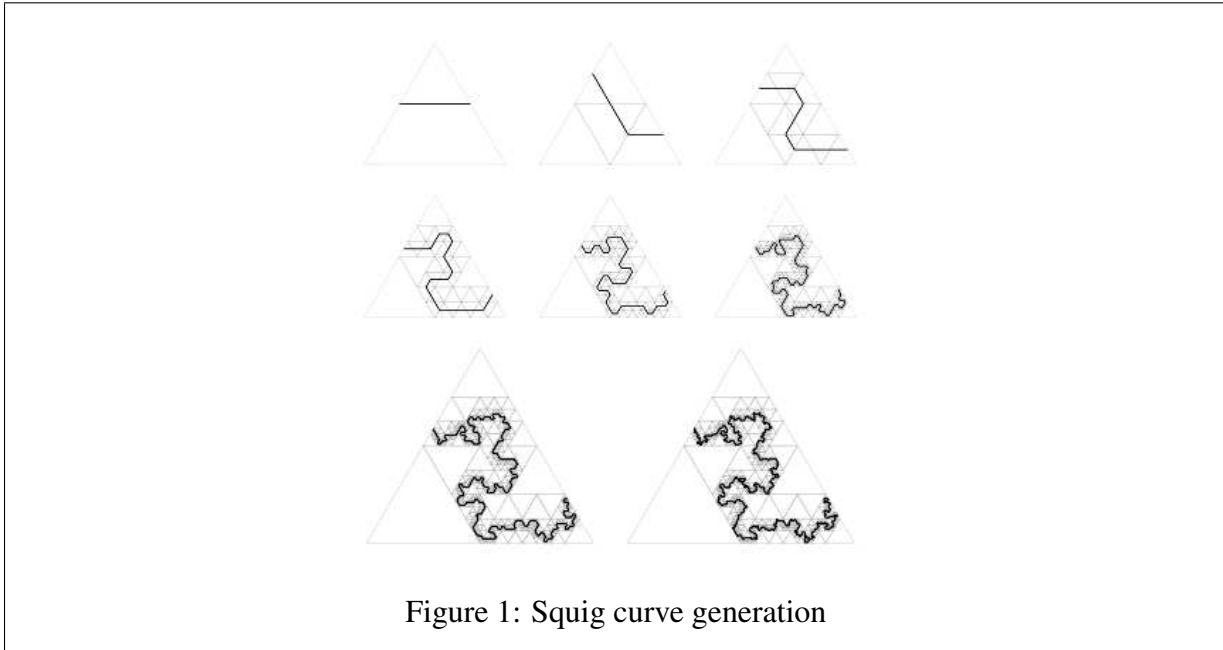
2 Progress:

2.1 Proposal:

Presented the project proposal as a seminar to the Computer Science department.

2.2 Website:

A little work was done to use frames and as such makes adding extra content easier.



2.3 Papers:

[2] was read. It contains a creative method called squig curvers for river generation and suggests a method of integration with terrain geometry to add rivers into the landscape. The idea behind squig curves is demonstrated in figure 1: edges of a triangle are selected as in and out, and subdivided and the process applied again, which generates a general path from start to finish in a random-typed arrangement, which creates believable rivers.

2.4 Blender:

Some initial work rendering terrain has been accomplished using Blender, which conveniently supplies a method for creating Fractional Brownian Motion (fBm) points. Two preliminary screenshots have been provided: figures 2,3. Also started moving objects in the scene using the script so as to have a good scene setup as soon as the script finishes, which can then be extended to rendering automatically too. The work done in this regard includes removing the standard cube that is present when Blender starts up, and moving the camera.

3 Problems:

The fBm generator is pretty badly documented in the Python references, and it is unclear what exactly they mean by some of the parameters.

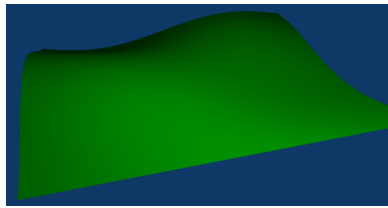


Figure 2: Blender screenshot of simple terrain

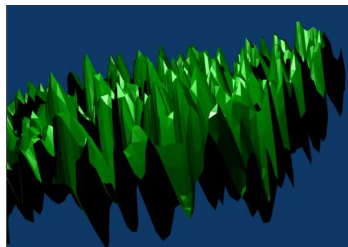


Figure 3: Blender screenshot of jagged terrain

4 Objectives For Next Week:

4.1 Website:

Include links to references, the project proposal in both textual and PowerPoint formats, and weekly progress reports.

4.2 Blender:

Set up the scene in an efficient manner, and create more realistic looking terrain, by figuring out how the fBm generator works.

References

- [1] F. K. Musgrave, C. E. Kolb, and R. S. Mace. The synthesis and rendering of eroded fractal terrains. In *Proceedings of the 16th annual conference on Computer graphics and interactive techniques*, pages 41–50. ACM Press, 1989.
- [2] Przemyslaw Prusinkiewicz and Mark Hammel. A fractal model of mountains with rivers. In *Proceeding of Graphics Interface '93*, pages 174–180, Toronto, Ontario, May 1993.