

Due: Thursday, June 6, 2012.

For the final project, select one of the topics from class, significantly expand upon it, or explore it in more depth. You are **highly encouraged** to connect this project to any other projects you may already be working on.

Possible avenues for exploration include:

- **Alternative input modalities:** How can we drive one of the programs from class using a camera, an accelerometer, or a Kinect? More interestingly, how can you modify the underlying algorithm to this new source to generate more interesting patterns?
- **Alternative output modalities:** The programs from class all produce some sort of coherent visual structures. How these be used to create structure in other forms, such as sonification and fabrication?
- **Improved performance:** Many of the programs, such as Newton fractals, can be quite slow. What methods can be used to accelerate them, so that larger resolutions are available for interaction? This type of project should take a step past straightforward micro-optimizations of existing code.
- **Extension to 3D:** All of the programs that we have written have meaningful extensions to 3D which we have not explored. What new structures can be generated with 3D DLA, the Mandelbulb, or a 3D Game of Life? Some of the programs we have explored, such as Newton fractals, do not have immediately apparent 3D versions. How could a third dimension be incorporated?

Note that these are only suggestions. I would **strongly** prefer that you propose something specifically tailored to your interests.

Timeline

- **Preliminary Proposal:** Write up a proposal of your project and send it to both myself and Sahar by midnight on **May 14th**. The proposal should be at least 600 words. Include a weekly timeline of how you will implement what you propose, and what final deliverables you propose to submit upon completion.
- **Progress Reports:** During the **May 21nd** class, everybody will give a 5 minute overview of their proposed project, and show a preliminary result. Be careful to tailor your timeline so that you have something to show by then.
- **Final Presentation:** Everybody will give a 10 minute final presentation during the final class on **June 6th**, and submit their proposed deliverables over email by midnight on the same day. One of your deliverables will a Tumblr posting that summarizes or represents your results. This is due by midnight on the same day.

Grading Breakdown

- Preliminary proposal, including timeline and list of deliverables (20%)
- Progress report, including some sort of working prototype (20%)
- Final presentation (40%)
- Final deliverables (10%)
- Final Tumblr summary (10%)