Exercise 1 – Procedural Seashells - VEX/VOP Seashell Generator

DATE DUE: See website

Goals:

Your goal is to create a seashell generator using VEX and VOP. The basic formulas will be discussed in class. The goal is to learn VOP sops as well as VEX code as shown in class to achieve this task as well as produce a sophisticated modeling tool. VEX/VOP can play a large role in procedural effects.

Requirements:

The following are the minimum requirements for this exercise:

Create a seashell generator using VEX and VOPS as outlined in class.

- The design of the seashell should be changeable through high-level parameters
- The parameter names should make sense to someone who has never seen the formula for seashells, but just wants to use the program. Your vop network should be neatly organized. Make it *easy* to see both are capable of producing the same shell (for example, a switch node with the same parameters)
- Show that the generator is able to produce more than one type of seashell.This should be evident in your hip file and/or visual (see below)
- your vex code MUST be commented
- [optional] a render or animation demonstrating results from your seashell tool

Sensible parameter names should be used. There are various ways the general method shown in class could be extended, such as adding the ability to have user defined curves. Your program should have the ability to create several types of shells.

Enhancements to the general modeling tool need not be in vex, you are allowed to use whatever node network you would like.

Considerations:

For Exercise 3, you will create a procedural system for generating seashells. Building of seashells using VEX was demonstrated in class. The shape of seashells and their generation is described in Modeling Seashells Siggraph 92: http://algorithmicbotany.org/papers/shells.sig92.pdf as well as in The Algorithmic Beauty of Sea Shells http://www.amazon.com/gp/product/3540921419/ref=pd_lpo_k2_dp_sr_1?pf_rd_p=486539851&pf_rd

There has long been a fascination of spiral patterns in nature, and in particular seashells. They are a subject of various photographic studies, one of my personal favorites Is Andreas Feininger, famous photographer. His work is inspirational and his compositions of seashells stem from his fascination with their structure. There is a bbc

interview with him from 1983 on youtube.
http://www.youtube.com/watch?v=LXGua_YjiUg

Spiral patterns are seen in nature, and imitated in architecture. For those of you who did the spiral staircase exercise in VSFX 350, here's an extra challenge:

Spiral escalator by Ken Perlin http://mrl.nyu.edu/~perlin/escalator

There are also a wide variety of animations involving seashells. A previous scad student's work will give you an idea of the expectations for this project http://www.youtube.com/watch?v=qZslVFsMac8 The parameter interface demonstration is quite good, however the quality of the image at the end could have used more finessing. The network is zipped through at a rapid pace and should be neater and more well documented. (ie. Stickies, colored nodes, network boxes). It gives you a starting point.

There is also an interesting entry by Stephen Wolfram showing a basic demonstration. http://www.youtube.com/watch?v=yqWN_nrQ-B0&feature=related This demonstration is of the basic concept. What is expected in this class is a more complete demonstration of your generator.

You could imagine using these shells in a project, with waves washing on the beach, and so on.

Submissions:

The project will be submitted as a directory,
W18_V728_E1_LastnameFirstname_Shells/
This directory should contain the following:

- **W18_V728_E1_LastnameFirstname_Shells.hipnc** - this should include a vex sop and a vop sop version. The vex code should be commented. Make it clear that you have created working versions of both – an example using the same parameters with each method.
- **your vex code uses an .otl file – be sure to hand this in or your digital asset will not work**
- **W18_V728_E1_LastnameFirstname_Shells.pdf** breakdown. It should be similar to the information you would provide during an in class presentation and act as a user's manual.
- **[optional but strongly encouraged]** **W18_V728_E1_LastnameFirstname_Shells.png** and/or *QuickTime* movie, **W18_V728_E1_LastnameFirstname_Shells.mov**. This should demonstrate the range of seashells that can be produced.
- Additional information:
    - **textures/** directory containing any texture images used in your project. **Important:** In your SHOPs/Material specifications, when entering file paths for textures, be sure that the paths are relative to the $HIP global variable (e.g., $HIP/textures/filename.rat) and not absolute paths.

Important note: Adherence to these naming and format conventions constitutes 5% of your grade. Failure to comply with naming conventions will also affect your participation grade.

Grading:
As discussed in class. Satisfying the minimum requirements is an 80%, doing less will result in a grade lower, doing more will result in a higher grade. To move your grade above 80% go beyond the specifications, demonstrate exploration, understanding and a visual that is high quality. See rubric.

As always, be creative, have fun.