Sierpinski Mel Script

Sierpinski Algorithm

1 set four points that define the vertices of a tetrahedron,

2 choose an arbitary location (seed point) within the tetrahedron,

3 pick one vertex of the tetrahedron at random,

4 find the mid point between the random vertex and the seed point,

5 store the mid point in a list.

Below is the python code for creating a Sierpinski mel script. Once I had the script typed out properly, I then ran the script by pressing CTRL + E and /or ALT + E once I saw that there were no errors I copied the mel script path( /home/njones26/mount/stuhome/tech312/python/Sierpinski I/sierpinski.mel).

From there I opened the script editor in Maya were I first typed in the following

source "/home/njones26/mount/stuhome/tech312/python/Sierpinski I/sierpinski.mel"; and then pressed enter, the script was then executed

in Maya and a Sierpinski fractal was created.

Python Code

import random

# Procedure halfstep returns a midpoint between two

# user-defined points

def halfstep(p1, p2):

x = float(p1[0] + p2[0])/2

y = float(p1[1] + p2[1])/2

z = float(p1[2] + p2[2])/2

return [x, y, z]

# Selects a value randomly from the input list

def pickpnt(pnts):

return random.choice(pnts)

#------------------------------------------------

triangle = [ [0,0,1], [1,0,-1], [-1,0,-1], [0,1.5,-0.2] ]

seed\_pnt = [0,0.5,0]

# Open a data file (mel)

f = open('/home/njones26/mount/stuhome/tech312/python/Sierpinski I/sierpinski.mel', 'w')

f.write('particle \n')

for n in range(20000):

vert = pickpnt(triangle)

seed\_pnt = halfstep(vert, seed\_pnt)

f.write(' -p %f %f %f\n' % (seed\_pnt[0],seed\_pnt[1],seed\_pnt[2]))

f.write('; \n')

f.close()