

## fractals.py

```
318 class SerpinskyTriangle(Scene):
319     def construct(self):
320         t1 = Triangle(color = WHITE, stroke_width = 0.75, fill_color = WHITE, fill_opacity =
0.75).scale(4.5)
321         gNow = VGroup()
322         gPrev = VGroup(t1)
323         self.add(t1)
324         self.wait()
325
326         maxIter = 8
327
328         for i in range(maxIter):
329             gNow = VGroup()
330             for t in gPrev:
331                 verts = t.get_vertices()
332                 sideLen = np.linalg.norm(verts[0]- verts[1])
333                 t2 = t.copy().scale(1/2).shift(np.sqrt(3)/8*sideLen*UP)
334                 t3 = t.copy().scale(1/2).shift(np.sqrt(3)/8*sideLen*DOWN + sideLen/4*LEFT)
335                 t4 = t.copy().scale(1/2).shift(np.sqrt(3)/8*sideLen*DOWN + sideLen/4*RIGHT)
336
337                 gNow.add(t2, t3, t4)
338
339             self.clear()
340             self.add(gNow)
341             self.wait()
342             gPrev = gNow
```