fractals.py

```
class MidpointTriangleFractal(MovingCameraScene):
    def construct(self):
        w = 6
        h = 9
        t = Polygon([0,0,0], [0,h,0], [w, 0, 0], color = GREEN, fill_color = GREEN, fill_opacity = 0.75)
        #print([0,0,1]/3+ [1,0,0]/2)
        self.camera.frame.shift(UP*4.25 + RIGHT*1.25).scale(1.25)
        self.add(t)
        self.wait()
        scales = []
        shifts = []

        maxIter = 6
        gNow = VGroup()
        gPrev = VGroup(t)

        for i in range(maxIter):
            self.clear()
            gNow = VGroup()
            for t in gPrev:
                verts = t.get_vertices()
                #print("verts are ",i,  verts[0], verts[1], verts[2])
                midPts = [(verts[0]+ verts[1])/2, (verts[1]+ verts[2])/2, (verts[2]+ verts[0])/2]
                #print("mids are ", i,  midPts[0], midPts[1], midPts[2])
                #print("\n")
                t1 = Polygon(verts[0], midPts[0], midPts[2], color = GREEN, fill_color = GREEN, fill_opacity = 0.75)
                t2 = Polygon(midPts[0], verts[1], midPts[1], color = GREEN, fill_color = GREEN, fill_opacity = 0.75)
                t3 = Polygon(midPts[2], midPts[1], verts[2], color = GREEN, fill_color = GREEN, fill_opacity = 0.75)
                gNow.add(t1, t2, t3)

            self.add(gNow)
            self.wait()
            gPrev = gNow
```