LORENZ ATTRACTOR

CODE WRITTEN IN JAVA

```
1.    float a, b, c;
2.    float dx, dy, dz;
3.    float x, y, z;
4.    float t, deg;
5.    int RGB[] = new int[3];
6.    ArrayList<PVector> points = new ArrayList<PVector>();
7.
8.    void setup()
9.    {
10.        size(800, 600, P3D);
11.        noFill();
12.
13.        //Don't type this it's a comment.
           //Try changing a, b, c once done to
           //see how the attractor reacts.
14.        a = 10.0;
15.        b = 28.0;
16.        c = 8.0/3.0;
17.
18.        x = 0.01;
19.        y = z = 0;
20.        t = 0.01;
21.   }
22.
23.   void draw()
24.   {
25.        background(0);
26.        translate(width / 2, height / 2);
27.        scale(5);
28.        rotateY(deg);
29.        if(mousePressed)
30.             deg +=  0.05;
31.
32.        dx = (a * (y - x)) * t;
33.        dy = (x * (b - z) - y) * t;
34.        dz = (x * y - c * z) * t;
35.
36.        x += dx;
37.        y += dy;
38.        z += dz;
39.        points.add(new PVector(x, y, z));
40.
41.        beginShape();
42.        RGB[0] = 255;
43.        RGB[1] = RGB[2] = 0;
44.        for(PVector v : points)
45.        {
46.             vertex(v.x, v.y, v.z);
47.             update(RGB);
48.             stroke(RGB[0], RGB[1], RGB[2]);
49.        }
50.        endShape();
51.   }
52.
53.   void update(int[] RGB)
54.   {
55.        for(int i = 0; i < 3; ++i)
56.        {
57.             RGB[i] = (RGB[(i+1) % 3] == 0 &&
                  RGB[i] != 255) ? RGB[i] + 1:RGB[i];
58.             RGB[i] = (RGB[(i+1) % 3] == 255 &&
                  RGB[i] != 0) ? RGB[i] - 1:RGB[i];
59.        }
60.   }
```