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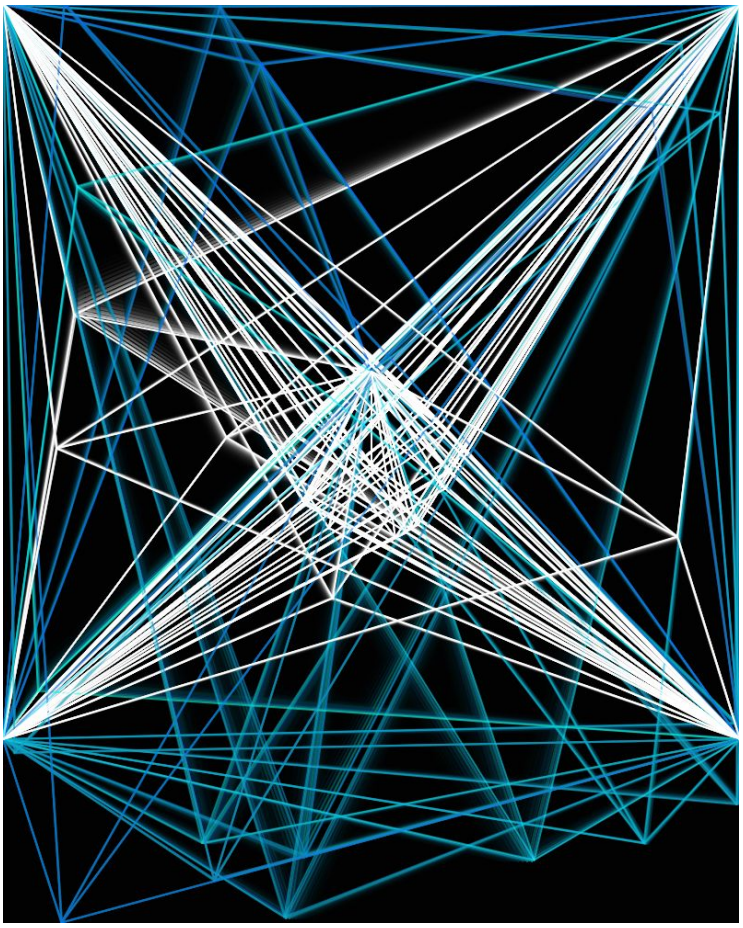
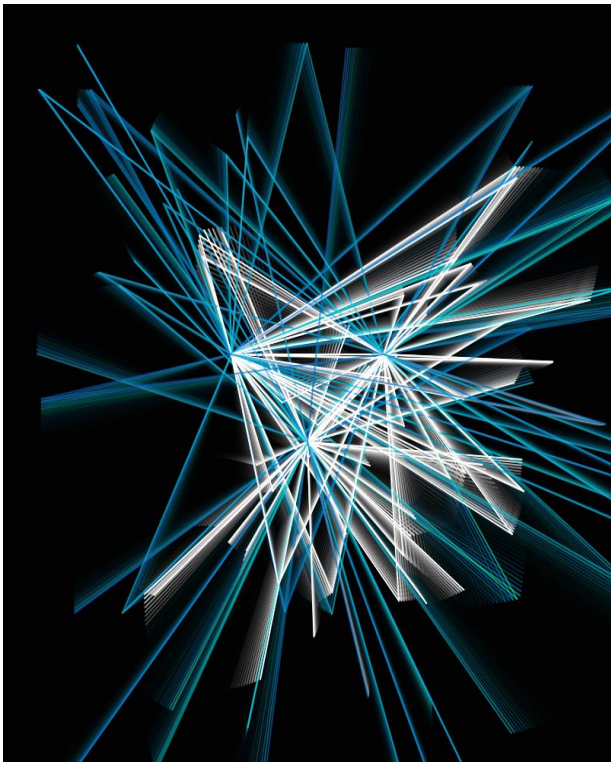
AP CS Principles

Rule 1: So I took my repulsion and acceleration, and changed the render function to draw lines from the balls location to various points on the canvas.



```
  this.render = function(){
    var d = this.loc.dist(b1.loc);
  if(d<400){
stroke(255,255,255);
strokeWeight(2);
}  else {stroke(random(0, 30),
random(100, 255), random(180,
255), 150);
    strokeWeight(2)}
  //line(Balls[i].loc.x, Balls[i].loc.y,
Balls[i].loc.x, Balls[i+1].loc.y, 30);
 line(this.loc.x, this.loc.y, 0, 0, 200);
  line(this.loc.x, this.loc.y, 800, 0);
  line(this.loc.x, this.loc.y, 0, 800);
     line(this.loc.x, this.loc.y, 800, 800,
0);
 line(this.loc.x, this.loc.y, 400, 400,
200);
  }
}
```



Rule 2: So for this I drew lines from a designated big ball to all the small balls 3 times with different rules for each line.

```
  this.render = function(){
    var d = this.loc.dist(b1.loc);
  if(d<300){
stroke(255,255,255);
strokeWeight(2);
}  else {stroke(random(0, 30), random(100, 255),
random(180, 255), 150);
    strokeWeight(2)}
  //line(this.loc.x, this.loc.y, b1.loc.x, b1.loc.y, 0);
//  line(this.loc.x, this.loc.y, 0, 0);
//   line(this.loc.x, this.loc.y, 800, 0);
```

```
  //  line(this.loc.x, this.loc.y, 0, 800);
//      line(this.loc.x, this.loc.y, 800, 800, 0);
  line(this.loc.x, this.loc.y, b1.loc.x, b1.loc.y);
  line(b1.loc.y, b1.loc.x, this.loc.y, this.loc.x);
    line(b1.loc.y-200, b1.loc.x, this.loc.y, this.loc.x);
  //  line(Balls[i+1].loc.x, Balls[i+1].loc.y, this.loc.x, this.loc.y);
  }
}
```

Rule 3: For this one, I drew a line from the position of a small ball to the distance between the small and big ball.

```
this.render = function(){
    var d = this.loc.dist(b1.loc);
  if(d<300){
stroke(255,255,255);
strokeWeight(2);
}
    else {stroke(random(0, 30), random(100, 255),
random(180, 255), 150);
    strokeWeight(2)}
  //line(this.loc.x, this.loc.y, b1.loc.x, b1.loc.y, 0);
//  line(this.loc.x, this.loc.y, 0, 0);
//   line(this.loc.x, this.loc.y, 800, 0);
  //  line(this.loc.x, this.loc.y, 0, 800);
  //    line(this.loc.x, this.loc.y, 800, 800, 0);
  //line(this.loc.x, this.loc.y, b1.loc.x, b1.loc.y);
  line(this.loc.y, this.loc.x, d, d)
//  line(b1.loc.y, b1.loc.x, this.loc.y, this.loc.x);
//    line(b1.loc.y-200, b1.loc.x, this.loc.y, this.loc.x);
  //  line(Balls[i+1].loc.x, Balls[i+1].loc.y, this.loc.x,
this.loc.y);
  }
}
```