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AP Computer Science Principles, P. 1

Principles Art Project

1. Describe each of your three rules (30pts)

a) I took my attraction project and changed render. In the this.render function I changed my ellipses to lines with a strokeweight of 5. In addition I changed the velocity and opacity of the lines.

b) I took my attraction project and changed it. In the this.render function I re-added ellipses and in update, reversed the attraction of the ellipses so they would be attached to the lines.

c) I took my attraction project and changed it. In this this.render function I changed the strokeweight of the lines to 0.5 and in the loadballs function adjusted the radius of the balls attached. In the setup function I also changed the framerate of the project.

2. Show code for each rule (30pts)

```
a) this.render = function(){
  stroke(13, 216, 2);
  strokeWeight(2.5);
  line(this.loc.x, this.loc.y, balls[0].loc.x, balls[0].loc.y)
}

b) this.render = function(){
  stroke(209, 209, 209);
  strokeWeight(5);
  line(this.loc.x, this.loc.y, balls[0].loc.x, balls[0].loc.y)
  fill(this.col);
  ellipse(this.loc.x, this.loc.y, this.rad, this.rad);
}

this.update = function(){
  if(this !== b1){
    //if this is less than 250 away from ball
    //attract:: accelerate towards ball
    var d = this.loc.dist(b1.loc)
    if(d < 200){
      var attForce = p5.Vector.sub(b1.loc, this.loc);
      attForce.normalize();
      attForce.mult(.002);
      this.vel.add(attForce)
    }
  }
}

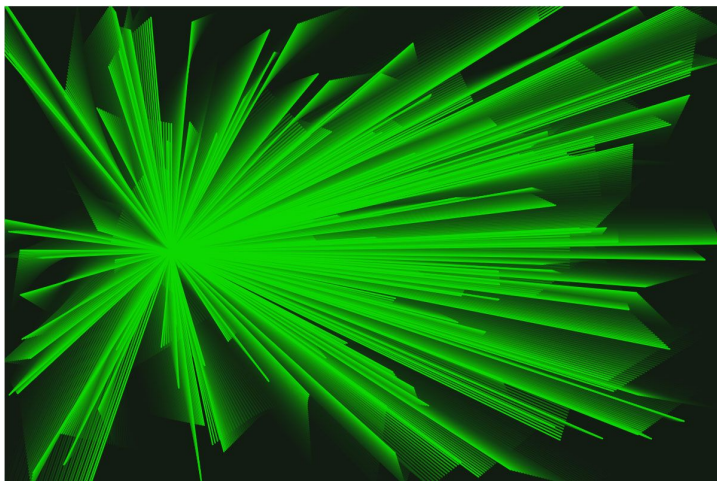
c)function loadBalls(numBalls){
```

```

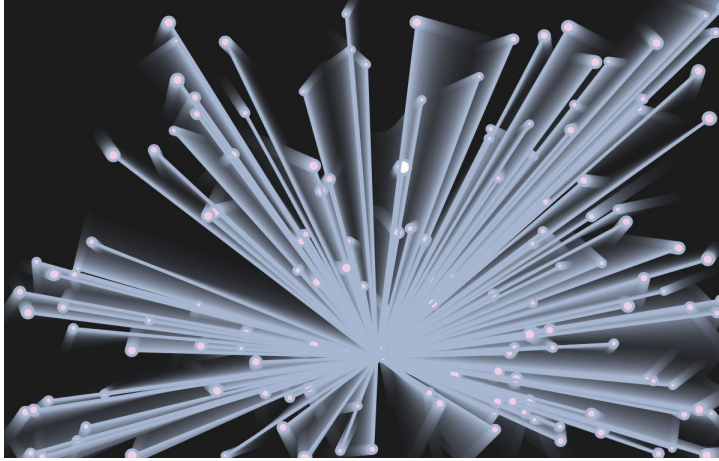
for(var i = 0; i < numBalls; i++){
  var loc = createVector(random(width), random(height));
  var vel = createVector(random(-2,4), random(-2,4));
  var rad = random(200,100);
  var col = color(random(255), random(255), random(255));
  balls.push(new Ball(loc, vel, rad, col));
}
}
this.render = function(){
  stroke(209, 209, 209);
  strokeWeight(.5);
  line(this.loc.x, this.loc.y, balls[0].loc.x, balls[0].loc.y)
  fill(this.col);
  ellipse(this.loc.x, this.loc.y, this.rad, this.rad);
}
}

```

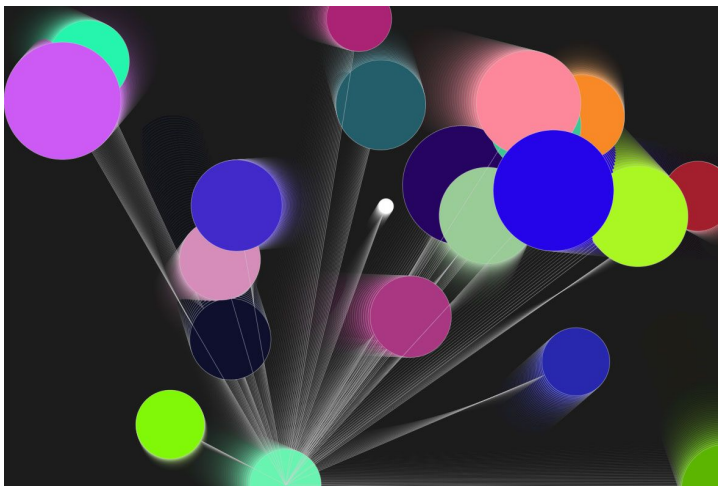
3. Show screen shot for each rule (30pts)



(A)



(B)



(C)

4. Save as PDF and upload to canvas (For credit)