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APCSP, Period 1

3 February 2020

Lab 130: ArtTwo Code

Index

```
<!DOCTYPE html>

<html>

  <head>

    <meta charset="UTF-8">

    <title>Art Two</title>

    <script src="libraries/p5.js"
type="text/javascript"></script>

    <script src="libraries/p5.dom.js"
type="text/javascript"></script>

    <script src="libraries/p5.sound.js"
type="text/javascript"></script>

    <script src="sketch.js" type="text/javascript"></script>

    <script src="boids.js" type="text/javascript"></script>

    <style> body {padding: 0; margin: 0;} canvas
{vertical-align: top;} </style>

  </head>

  <body>
  </body>
</html>
```

Sketch

```
//  Ziggy Sheynin
//   Lab 130- Art Two
//  This is a comment
//  The setup function function is called once when your program
begins
var boids = []; //initializes boids array
function setup() {
  var cnv = createCanvas(800, 800);
  cnv.position((windowWidth-width)/2, 30);
  background(5, 5, 5);
  loadBoids(60); //calls function loadBoids
}
//  The draw function is called @ 30 fps
//  The draw function is called @ 30 fps
function draw() {
runBoids();
}
function loadBoids(n){
  for (var i =0; i< n; i++){
```

```
  boids[i] = new Boid(random(width), random(height),
random(-1,1), random(-1,1), 40); //initializes and declares bid
objects
  }
 }
function runBoids(){
 for (var i =0; i<boids.length; i++){
  boids[i].run();
  }
}//+++++++++++++++++++++++++++++end sketch
```

Boids

```
//Ziggy Sheynin
//Lab 130 Art Two
//This is a comment
//
//
class Boid{
 constructor (x, y, dx, dy, clr){
  this.loc = createVector(x, y);
  this.vel = createVector(dx, dy);
  this.acc = createVector(0, 1);
  this.clr = color(random(255), random(255), random(255));
 } //end Boids constructor
```

```
run(){
  this.render();
  this.checkEdges();
  this.update();
} //end run function
update(){
    this.vel.limit(3);
    this.loc.add(this.vel);
    this.vel.add(this.acc);
}//end update
checkEdges(){ //keeps boids on screen
  if(this.loc.x<0){
    this.loc.x=width;
  }
  if(this.loc.x>width){
    this.loc.x=0;
  }
  if(this.loc.y<0){
     this.loc.y=height;
  }
  if(this.loc.y>height){
     this.loc.y=0;
  }
  }//end checkEdges
//  Either warp or bounce
  render(){
    for (var i=boids.length-1; i >0; i--){ //for loop to
traverse array
      if(this.loc.dist(boids[i].loc)<200){ //checks the distance
between two boids
      stroke(this.clr); //gives the line a color
      line(this.loc.x, this.loc.y, boids[i].loc.x,boids[i].loc.y
); //draws line between two boids
      fill(5); //makes squares and circles black
      rect(this.loc.x, this.loc.y, 20, 20); //draws squares
      ellipse(this.loc.x + 105, this.loc.y +100, 10, 10);
//draws circles
    }
  }
  }//end render
//This method will draw a line between its location and the
location of any other boid object within 200px.
}//+++++++++++++++++++++++++++++++++++End Boid Class
+++++++++++++++++++++++++++++++++++
```