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APCS Principles, Period 1

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BarSort

```
// Ziggy Sheynin

// Lab 1023 Animate Sort

// This is a comment

// The setup function is called once when your program begins


class Bar{

  constructor(x,y,w,h,c){

    this.loc=createVector(x,y);

    this.w=w;

    this.h=h;

    this.clr = c;

  }

  run(){//allows me to call all methods in this class

    this.render();

  }

  render(){ //makes bars show up

    fill(this.clr);
```

```
    rect(this.loc.x,this.loc.y,this.w,this.h);
}

set(i){ //creates get-able variable for sketch class
    this.loc.x=i*barWidth;
}

} //+++++end Bars

// Ziggy Sheynin
// Lab 1023 sortBars
// This is a comment
// The setup function function is called once when your program
begins

var bars=[];
var barWidth = 5;

//put setup code here

function setup(){
    var cnv=createCanvas(800,800);
    cnv.position((windowWidth-width)/2,30);
    background(5, 5, 5);
```

```
loadBars(); //puts bars into bars array

frameRate(10); //slows down the speed

for(var i=0; i<bars.length; i++){

    bars[i].run(); //to print the array

}

}

function draw(){ //calls method at 30 fps

    bubbleSort();

    //selectionSort();

}

function update(){ //to allow for animation

    for(var i=0; i<bars.length; i++){

        bars[i].set(i);

    }

    background(5, 5, 5);

    for(var i=0; i<bars.length; i++){

        bars[i].run();

    }

}

function bubbleSort(){ //sorting routine

    for (var j=0; j<bars.length-1; j++){

        if(bars[j].h>bars[j+1].h){

            swap(bars, j, j+1);

        }

    }

}
```

```
        update();
    }
}

}

function loadBars(){ //puts bars into array
    for (var x=0; x<800/5; x++){
        var w=int(random(1,800/5));
        bars[x]= new
Bar(barWidth*x,800-(barWidth*w),barWidth,(barWidth*w), color(34,
56, 120))
    }
}

function swap(list,a,b){ //swapping algorithm
    var temp=list[a];
    list[a]=list[b];
    list[b]=temp;
}
```