**Exercise 1:**

<!DOCTYPE html>

<head>

<title>

My Visual Portfolio

</title>

<style type="text/css">

h1 {

color:#79CCCD;

}

.important\_text {

font-weight: bold;

}

</style>

</head>

<body>

<h1>My <span class="important\_text">Visual</span> Portfolio</h1>

<p>Welcome to my portfolio, I'm a <span class="important\_text">PhD student</span> at <a href="https://icme.stanford.edu/"><img src="https://sites.stanford.edu/jse-icme/sites/default/files/icme\_full\_logo\_no\_background\_high\_res.gif" width="60" height="20"/></a>, where I study <span class="important\_text">transportation networks</span>.</p>

</body>

**Exercise 2:**

<!DOCTYPE html>

<head>

<title>

My Visual Portfolio

</title>

<style type="text/css">

h1 {

color:#79CCCD;

}

.important\_text {

font-weight: bold;

}

</style>

<script type="text/javascript">

var on = false;

function turnOn(){

document.getElementById('bulb').src = "pic\_bulbon.gif"

on = true;

}

function turnOff(){

document.getElementById('bulb').src = "pic\_bulboff.gif"

on = false;

}

function change(){

if (on){

turnOff();

} else {

turnOn();

}

}

</script>

</head>

<body>

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<h1> Turning on the Lights </h1>

<img src="pic\_bulboff.gif" onmouseover="turnOn()" onmouseout="turnOff()" id="bulb">

<button onclick="change()"> Switch </button>

</body>

**Exercise 3:**

<!DOCTYPE html>

<head>

<title>

My Visual Portfolio

</title>

<style type="text/css">

h1 {

color:#79CCCD;

}

.important-text {

font-weight: bold;

}

.red-circle {

fill:#F16664;

}

#blue-border {

stroke:#007D8C;

stroke-width:4;

}

</style>

<script type="text/javascript">

var on = false;

function turnOn(){

document.getElementById('bulb').src = "pic\_bulbon.gif"

on = true;

}

function turnOff(){

document.getElementById('bulb').src = "pic\_bulboff.gif"

on = false;

}

function change(){

if (on){

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<button onclick="change()"> Switch </button>

<h1> Graphical Elements in SVG</h1>

<svg width="400" height="100">

<circle cx="50" cy="50" r="30" class="red-circle" id="blue-border" opacity="0.8"></circle>

<circle cx="150" cy="50" r="40" class="red-circle" opacity="0.8"></circle>

<circle cx="250" cy="50" r="45" class="red-circle" opacity="0.8"></circle>

</svg>

</body>

**Exercise 4:**

<!DOCTYPE html>

<head>

<title>

My Visual Portfolio

</title>

<style type="text/css">

h1 {

color:#79CCCD;

}

.important-text {

font-weight: bold;

}

.red-circle {

fill:#F16664;

}

#blue-border {

stroke:#007D8C;

stroke-width:4;

}

</style>

<script type="text/javascript" src="https://d3js.org/d3.v5.js"></script>

<script type="text/javascript">

var on = false;

function turnOn(){

document.getElementById('bulb').src = "pic\_bulbon.gif"

on = true;

}

function turnOff(){

document.getElementById('bulb').src = "pic\_bulboff.gif"

on = false;

}

function change(){

if (on){

turnOff();

} else {

turnOn();

}

}

</script>

</head>

<body>

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<circle cx="150" cy="50" r="40" class="red-circle" opacity="0.8"></circle>

<circle cx="250" cy="50" r="45" class="red-circle" opacity="0.8"></circle>

</svg>

<h1> My Fruit Collection </h1>

<p> Apple </p>

<div id="collection">

</div>

<script type="text/javascript">

var dataset;

d3.select("body")

.append("p")

.text("Orange");

d3.csv("fruits.csv").then( function(data){

dataset = data;

console.log(data);

d3.select("#collection")

.selectAll("p")

.data(dataset)

.enter()

.append("p")

.text(function(d){return d.Fruit})

.style("color",function(d){return d.Color});

});

</script>

</body>

**Exercise 5:**

<!DOCTYPE html>

<head>

<script src="https://d3js.org/d3.v5.min.js"></script>

</head>

<body>

<script type="text/javascript">

var w = 800;

var h = 200;

svg = d3.select("body")

.append("svg")

.attr("width", w)

.attr("height", h);

var bardata = [];

for (var i = 0; i < 25; i++) {

var newNumber = Math.floor(Math.random()\*100);

bardata.push(newNumber);

}

/\*

svg.append("rect")

.attr("x", 0)

.attr("y",0)

.attr("height", 100)

.attr("width", 20);\*/

/\*svg.selectAll("rect")

.data(bardata)

.enter()

.append("rect")

.attr("x", function(d,i){

return i\*w/bardata.length;

})

.attr("y", 0)

.attr("width", 20)

.attr("height", 100);\*/

/\*var padding = 1;

svg.selectAll("rect")

.data(bardata)

.enter()

.append("rect")

.attr("x", function(d,i){

return i\*w/bardata.length;

})

.attr("y", 0)

.attr("width", w/bardata.length - padding)

.attr("height", function(d){return d \* 2;});\*/

/\*var padding = 1;

svg.selectAll("rect")

.data(bardata)

.enter()

.append("rect")

.attr("x", function(d,i){

return i\*w/bardata.length;

})

.attr("y", function(d){return h-d\*2;})

.attr("width", w/bardata.length - padding)

.attr("height", function(d){return d\*2;});\*/

/\*var padding = 1;

svg.selectAll("rect")

.data(bardata)

.enter()

.append("rect")

.attr("x", function(d,i){

return i\*w/bardata.length;

})

.attr("y", function(d){return h-d\*2;})

.attr("width", w/bardata.length - padding)

.attr("height", function(d){return d\*2;})

.attr("fill", function(d) {

return "rgb(0,0, "+(d\*3)+")";

});\*/

var padding = 1;

var yScale = d3.scaleLinear()

.domain([0, 100])

.range([h, 0]);

var colorScale = d3.scaleLinear()

.domain([0, 100])

.range(["black", "blue"]);

var xScale = d3.scaleBand()

.domain(d3.range(bardata.length))

.range([0,w])

.padding(0.05);

svg.selectAll("rect")

.data(bardata)

.enter()

.append("rect")

.attr("x", function(d,i){

return xScale(i);

})

.attr("y", function(d){return yScale(d);})

.attr("width", xScale.bandwidth())

.attr("height", function(d){return h - yScale(d);})

.attr("fill", function(d) {

return colorScale(d);

});

svg.selectAll("text")

.data(bardata)

.enter()

.append("text")

.text(function(d){return d;})

.attr("x", function(d,i){

return xScale(i) + xScale.bandwidth() / 2;

})

.attr("y", function(d){return yScale(d) + 15;})

.attr("font-size", "14px")

.attr("fill", "white")

.attr("text-anchor", "middle");

</script>

</body>

**Exercise 6:**

<!DOCTYPE html>

<head>

<script src="https://d3js.org/d3.v5.min.js"></script>

</head>

<body>

<script type="text/javascript">

var w = 800;

var h = 200;

svg = d3.select('body')

.append("svg")

.attr("width", w)

.attr("height", h);

var bardata = [];

for (var i = 0; i < 25; i++) {

var newNumber = Math.floor(Math.random()\*100);

bardata.push(newNumber);

}

var padding = 1;

var yScale = d3.scaleLinear()

.domain([0, 100])

.range([h, 0]);

var colorScale = d3.scaleLinear()

.domain([0, 100])

.range(["black","blue"]);

var xScale = d3.scaleBand()

.domain(d3.range(bardata.length))

.range([0,w])

.padding(0.05);

svg.selectAll("rect")

.data(bardata)

.enter()

.append("rect")

.attr("x", function(d,i){

return xScale(i);

})

.attr("y", function(d){return yScale(d);})

.attr("width", xScale.bandwidth())

.attr("height", function(d){return h - yScale(d);})

.attr("fill", function(d) {

return colorScale(d);

})

.on("click", function(){

alert("Hey don't click that")

})

.on("mouseover",function(){

d3.select(this)

//.transition()

//.duration(250)

.attr("fill","orange");

})

.on("mouseout", function(d){

d3.select(this)

.transition()

.duration(250)

.attr("fill", function(d) {

return colorScale(d);

});

});

svg.selectAll("rect")

.on("click", function(){

var bardata = [];

for (var i = 0; i < 25; i++) {

var newNumber = Math.floor(Math.random()\*100);

bardata.push(newNumber);

}

svg.selectAll("rect")

.data(bardata)

.transition()

.duration(500)

.delay(function(d,i){

return i\*20;

})

.attr("x", function(d,i){

return xScale(i);

})

.attr("y", function(d){return yScale(d);})

.attr("width", xScale.bandwidth())

.attr("height", function(d){return h - yScale(d);})

.attr("fill", function(d) {

return colorScale(d);

});

});

d3.select("body").append("br");

var add = d3.select("body")

.append("button")

.text("Add Data")

.style("float","left");

d3.select("body").append("br");

var remove = d3.select("body")

.append("button")

.text("Remove Data")

.style("float","left");

add.on("click", function(){

bardata.push(Math.floor(Math.random() \* 100));

svg.selectAll("rect")

.data(bardata)

.enter()

.append("rect")

.attr("x", w)

.attr("y", function(d){return yScale(d);})

.attr("width", xScale.bandwidth())

.attr("height", function(d){return h - yScale(d);})

.attr("fill", function(d) {

return colorScale(d);

});

xScale.domain(d3.range(bardata.length));

svg.selectAll("rect")

.transition()

.attr("x", function(d,i){

return xScale(i);

})

.attr("width", xScale.bandwidth());

});

remove.on("click", function(){

bardata.shift();

svg.selectAll("rect")

.data(bardata)

.exit()

.remove()

xScale.domain(d3.range(bardata.length));

svg.selectAll("rect")

.transition()

.attr("x", function(d,i){

return xScale(i);

})

.attr("width", xScale.bandwidth());

});

</script>

</body>

**Exercise 7:**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="utf-8">

<title>Mapas USA</title>

<script type="text/javascript" src="https://d3js.org/d3.v5.min.js"></script>

<style type="text/css">

.state:hover{

fill:yellow;

}

</style>

</head>

<body>

<script type="text/javascript">

var w = 500;

var h = 300;

var svg = d3.select("body")

.append("svg")

.attr("width", w)

.attr("height", h);

// This maps lan-long to x,y in our SVG

var projection = d3.geoAlbersUsa()

.translate([w/2,h/2])

.scale(500);

// This converts GeoJSON to "d" attributes

var path\_helper = d3.geoPath()

.projection(projection);

var geo\_data;

var productivity;

var color;

var cities\_data;

//Load JSON data

d3.json("us-states.json").then( function(json){

d3.csv("us-ag-productivity-2004.csv").then( function(prod){

d3.csv("us-cities.csv").then( function(cities){

geo\_data = json;

productivity = prod;

cities\_data = cities;

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

var state = prod[i].state;

var value = parseFloat(prod[i].value);

for (var j = 0; j<geo\_data.features.length; j++){

var jsonState = geo\_data.features[j].properties.name;

if (jsonState == state){

geo\_data.features[j].properties.value = value;

break;

}

}

}

color = d3.scaleQuantize()

.range(["#feedde","#fdbe85","#fd8d3c","#e6550d","#a63603"])

.domain([d3.min(prod,function(d){return parseFloat(d.value);}),

d3.max(prod,function(d){return parseFloat(d.value);})]);

//Insert paths into DOM

svg.selectAll("path")

.data(geo\_data.features)

.enter()

.append("path")

.attr("d", path\_helper)

.attr("class", "state")

.style("fill", function(d){

var v = d.properties.value;

if (v){

return color(v);

} else {

return "green";

}

});

svg.selectAll("circle")

.data(cities)

.enter()

.append("circle")

.attr("cx",function(d){return projection([d.lon,d.lat])[0];})

.attr("cy",function(d){return projection([d.lon,d.lat])[1];})

.attr("r",function(d){return Math.sqrt(parseFloat(d.population)\* 0.00004) ;})

.style("fill","yellow")

.style("opacity",0.75)

.append("title")

.text(function(d){return d.place});

});

})

});

</script>

</body>

</html>