

## Website\js\linechart.js

```

1  function init() {
2      const link_string = window.location.pathname;
3
4      if (link_string.includes("Smoke")) { //Tobacco web page
5          get_CSV_data("csv/SmokePerCapita.csv",1)
6      } else if (link_string.includes("Alcohol")) { //Alcohol web page
7          get_CSV_data("csv/AlcoholPerCapita.csv",1)
8      }
9  }
10
11 function get_CSV_data(csv_link,chart_number) {
12     d3.csv(csv_link).then(function(data) {
13         total_data = [];
14
15         Total = Object.keys(data[0])[1]; //get the dictionary key
16         data.forEach(d => {
17             d.Year = +d.Year;
18             d.Total = +d[Total];
19
20             total_data.push(parseInt(d[Total])); //bar chart (invisible, only for hovering
purposes)
21         });
22
23         lineChart(data,chart_number,total_data,Total);
24     })
25 }
26
27 function lineChart(dataset, chart_number, total_data, yText) {
28     var w = 750;
29     var h = 500;
30     var padding = 50;
31
32     var svg = d3.select(`#chart${chart_number}`)
33         .append("svg")
34         .attr("width",w + padding)
35         .attr("height",h + padding);
36
37     //line chart x scale
38     xScale = d3.scaleLinear()
39         .domain(d3.extent(dataset, d => d.Year))
40         .range([padding, w]);
41
42     //line chart y scale
43     yScale = d3.scaleLinear()
44         .domain([0,d3.max(dataset,function(d) {
45             return d.Total;
46         })
47         ])
48         .range([h-padding,0]);
49
50     //line position
51     line = d3.line()
52         .x(function(d) {
53             return xScale(d.Year);

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54     })
55     .y(function(d) {
56         return yScale(d.Total);
57     });
58
59 //line chart x axis
60 xAxis = d3.axisBottom()
61     .ticks(5)
62     .tickFormat(d3.format("d")) //remove , in year (eg. 2,011 to 2011)
63     .scale(xScale);
64
65 //line chart y axis
66 yAxis = d3.axisLeft()
67     .ticks(10)
68     .scale(yScale);
69
70 //bar chart (invisible, only for hovering purposes)
71 xBScale = d3.scaleBand() //ordinal scale
72     .domain(d3.range(total_data.length)) //calculate the range of the domain
73     .rangeRound([0,w]); //range + round numbers
74
75 //bar chart (invisible, only for hovering purposes)
76 yBScale = d3.scaleLinear() //quantitative
77     .domain([0,d3.max(total_data)])
78     .range([0,h]);
79
80 //line chart
81 svg.append("path")
82     .datum(dataset)
83     .attr("class","line")
84     .attr("stroke","#88ccee")
85     .style("stroke-width", "0.2em")
86     .attr("transform","translate("+ padding/4 +","+ padding/2 +)")
87     .attr("d",line);
88
89 //bar chart (invisible, only for hovering purposes)
90 svg.selectAll("rect")
91     .data(total_data)
92     .enter()
93     .append("rect")
94     .attr("x",function(d,i) {
95         return xBScale(i)+padding/2+(2*i);
96     })
97     .attr("y",function(d) {
98         return h - yBScale(d) - padding;
99     })
100     .attr("width", xBScale.bandwidth())
101     .attr("height",function() {
102         return padding*4; //area for hovering
103     })
104     .on("mouseover",function(d,i) {
105         var xPosition = parseFloat(d3.select(this).attr("x")) + xBScale.bandwidth() / 2 -
padding/6;
106         var yPosition = parseFloat(d3.select(this).attr("y")) + padding*2.5;
107
108         //tooltip label

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109         svg.append("text")
110             .attr("id", "tooltip")
111             .attr("text-anchor", "middle")
112             .attr("x", xPosition)
113             .attr("y", yPosition)
114             .attr("fill", "#88ccee")
115             .style("font-size", "1.5em")
116             .text(` ${dataset[i][yText]} ${yText}`);
117
118         chartSideText(dataset[i].Year, dataset[i][yText], yText);
119     })
120     .on("mouseout", function() {
121         d3.select("#tooltip").remove();
122     })
123     .attr("opacity", 0);
124
125     svg.append("g") //draw X axis
126         .attr("transform", "translate("+ padding/4 +", "+ (h - padding/2) +)")
127         .style("font-size", "1em")
128         .call(xAxis);
129
130     svg.append("g") //draw Y axis
131         .attr("transform", "translate("+ (padding+padding/4) +", "+ padding/2 +)")
132         .style("font-size", "1em")
133         .call(yAxis);
134
135     // X Axis label
136     svg.append("text")
137         .attr("text-anchor", "middle")
138         .attr("x", w/2+padding/2)
139         .attr("y", h+padding/2)
140         .attr("fill", "white")
141         .style("font-weight", "bold")
142         .style("font-size", "1.2em")
143         .text("Year");
144
145     // Y Axis label
146     svg.append("text")
147         .attr("text-anchor", "middle")
148         .attr("transform", "rotate(-90)")
149         .attr("x", -w/3)
150         .attr("y", padding/2)
151         .attr("fill", "white")
152         .style("font-weight", "bold")
153         .style("font-size", "1.2em")
154         .text(yText);
155 }
156
157 function chartSideText(year, total, yText) { //side banner 1 (hover text)
158     //triggers when chart is hovered
159     document.getElementById("chart-side-year").innerHTML = `Year: ${year}`;
160     document.getElementById("chart-side-total").innerHTML = `Total: ${total} ${yText}`;
161 }
162
163 window.onload = init();

```