

```
1  var d3refresh = function () {
2      var testData = []
3      for (let i = 0; i < 5; i++) {
4          testData.push({
5              "id": i,
6              "value": Math.floor(Math.random() * 50+ 20),
7              "xPos": Math.floor(Math.random() * 400),
8              "yPos": Math.floor(Math.random() * 400)
9          });
10     }
11     console.log(testData)
12     var svg = d3.select("#chart");
13     width = parseInt(svg.style("width"));
14     height = parseInt(svg.style("height"))
15     counter = 5
16
17     function translate(d) {
18         return "translate(" + d.xPos + "," + d.yPos + ")";
19     }
20
21     var enterFun = function(d3Array){
22         const grp = d3Array.enter()
23         .append("svg")
24         .append("g")
25         .attr("class","nodedata")
26         grp
27         .attr("transform",translate)
28         .append("circle")
29         .on("click", function () {
30             console.log("clicked")
31             d3.select(this).attr("fill", "green")
32         })
33         .attr("fill", "tomato")
34         .attr("stroke", "black")
35         .transition().duration(1000)
36         .attr("r", d => d.value)
37         grp
38         .append("text")
39         .text(d=>d.id)
40     }
41     var exitFun = function(d3Array){
42         d3Array.exit().select("text").remove()
43         d3Array.exit()
44         .select("circle")
45         .transition()
46         .duration(1000)
47         .attr("r", 0)
48         .remove()
49     }
50     var mergeFun = function(d3Array){
51         d3Array.merge(d3Array)
52         .transition().duration(1000)
53         .attr("transform",translate)
54         //.select("circle").attr("fill", "yellow")
55
56     }
57 }
```

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58
59
60     var update = function (svg, gData) {
61         const circles = svg.selectAll("g").filter(".nodedata").data(gData, (d) => d.id);
62         exitFun(circles);
63         enterFun(circles);
64         mergeFun(circles);
65     }
66
67     update(svg, testData)
68     document.getElementById("btnRemove").onclick = function () {
69         testData.splice(3, 1)
70         console.log(testData)
71         update(svg, testData)
72     }
73     document.getElementById("btnAdd").onclick = function () {
74         randomNum = Math.round(Math.random() * 50); // 0 to 100
75         console.log(randomNum);
76         counter++
77         testData.push({
78             "id": counter,
79             "value": Math.floor(Math.random() * 50 + 20),
80             "xPos": Math.floor(Math.random() * 400),
81             "yPos": Math.floor(Math.random() * 400)
82         })
83         update(svg, testData)
84     }
85     document.getElementById("btnChange").onclick = function () {
86         testData.forEach(function (d) {
87             d.xPos = Math.floor(Math.random() * 400);
88             d.yPos = Math.floor(Math.random() * 400);
89         })
90         update(svg, testData)
91     }
92 }
```