**D3 and Bezier** (total points: 100)

Part I

Implement the two buttons below:

* Generate 20 random circles by clicking the ‘generate random circles’ button. Re-clicking the button would have different 20 circles showed up. (20 points)

Chart, scatter chart

Description automatically generated

* Clean all 20 circles by clicking the ‘remove all circles’ button. (10 points)

A picture containing shape

Description automatically generated

Part II

* Build the cubic Bezier curve frame (20 points)
  + 4 control points with coordinate printed around. (10 points)
  + Each pair of control points are connect by a line. (10 points)

Diagram

Description automatically generated

* populate ​*create\_bezier\_curve*​ function (30 points)
  + generate 20 points that on the curve of a cubic Bezier curve. (20 points)
  + the 20 points should be evenly distributed (horizontally) on the curve. (10 points)

Chart, diagram

Description automatically generated

* Make the four control points draggable (20 points)
  + The printed coordinate will be updated if the position of the control point changes, text (printed coordinate) updates as well. (20 points)
  + Each pair of control points is still connected by a line. (**+4 bonus points**)
  + The curve (20 points) updates as well. (**+4 points bonus points**)

Diagram, radar chart

Description automatically generated

**Pay attention**

* You are supposed to use D3 to select svg elements and set attributes
* You are not supposed to hard code the attributes of points
* The curve on the right most is the exact same curve generated by path svg element (to confirm that your curve is correct !)
* Your final output should look as follows

Diagram

Description automatically generated