CSE4204 | Section C1 | Computer Graphics Lab | Assignment – 2

[10 marks] Part A:

Generate circles using the graphical user interface. Initially start with a single circle with a random color. For each mouse click, new circles will be created around the existing circle with different colors. Note that, each circle has an identical shape, but different color. Also, you need to preserve the previous color of the circle while generating the newer ones. All the data needs to be passed to the shader from the CPU.

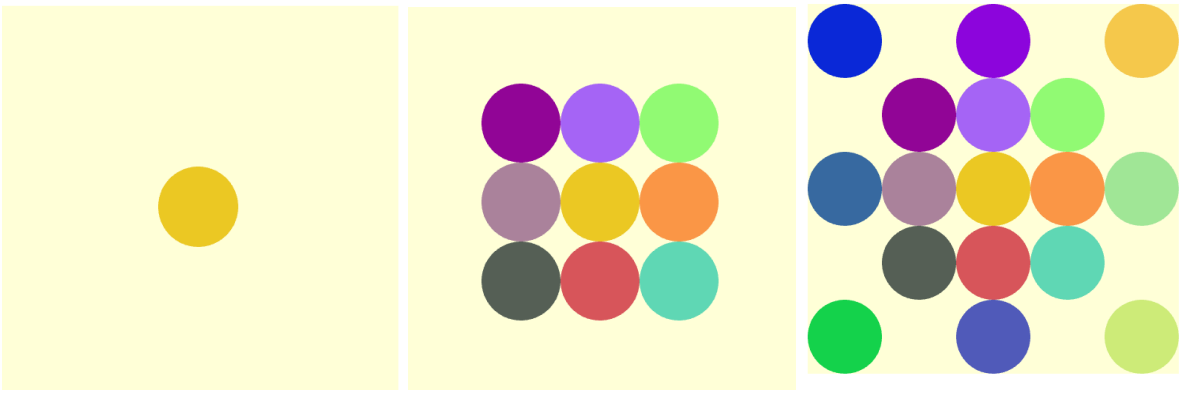

Figure: Situation of the canvas after several mouse clicking (from left to right).
See video: rb.gy/1qgsd

Hints:

- Circle in Math: https://en.wikipedia.org/wiki/Circle
- To generate the vertices for a circle in CPU, you can use JavaScript's `Math` library to apply the parametric equation of a circle, e.g. `Math.cos()`. Use `push()` function to build up an array of vertices for the circle using a loop.
- For keeping the previous color information preserved you need to store previous information in an array and reuse it at each draw call

[10 marks] Part B: Create a 2D scenario (model) using your creativity. The model has to be created using 2D triangle mesh. Apply per-vertex color on your model. Integrate a keyboard interaction having at least one GLSL control statement (and/or built-in function) inside the shader.

Note:

- Your mesh must have at least 45 vertices in total.
- You can use `gl.TRIANGLES` and/or `gl.TRIANGLE_STRIP` and/or `gl.TRIANGLE_FAN`.

Submission Process: You have to follow the coding skeleton provided during the sessional class. Rename your file like this: **`20200104001_PartA.html, 20200104001_PartB.html.`** Submission is open until the day before the next sessional class.