

CSE4204 | Section A2 | 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.

1. Generate Circles
2.

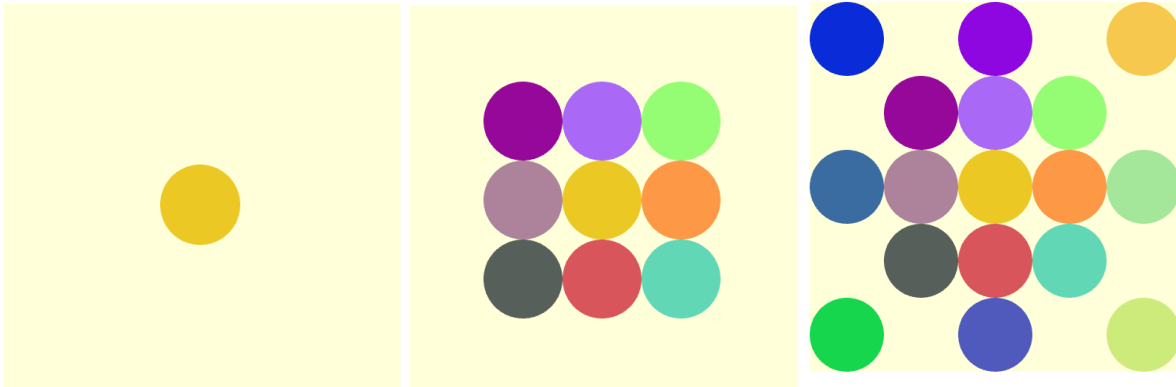


Figure: Situation of the canvas after several mouse clicking (from left to right).

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: **190104001_PartA.html, 190104001_PartB.html.**

Submission is open until the day before the next sessional class.