

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

[10 marks] **Part A:** Create a 2D spiral. For each click, the spiral will keep increasing. The outer points will be bigger than the inner points depending on the distance from the center. Note that, you have to send 2D data to the GPU from CPU.

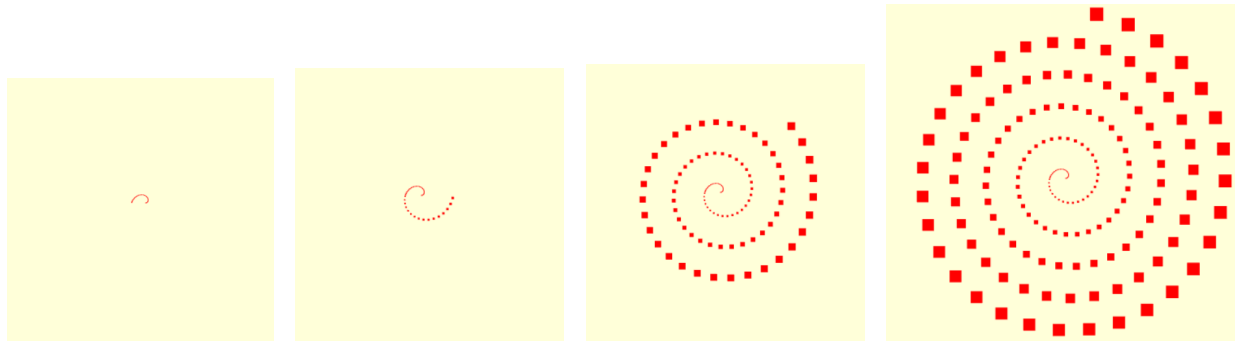


Figure: Situation of the canvas after several mouse clicking (from left to right).

See video: <https://rb.gy/jhpzon>

Hints:

- Use `gl_PointSize` in the vertex shader to fix the size of the point. (Example: https://www.tutorialspoint.com/webgl/webgl_drawing_points.htm)
- Use GLSL `distance()` function to calculate the distance between a vertex and the center in the vertex shader.
- To generate the vertices for a 2D spiral in CPU, you can use JavaScript's `Math` library to apply the formula, e.g. `Math.cos()`. Use `push()` function to build up an array of vertices of the spiral using a loop.
- Apply optimistically while using/ reusing vertex buffer.

[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: **180104001_PartA.html**. Submission is open until the day before the next sessional class.