

# Application 1

Create a WebGL application to draw a Triangle Bird (A special kind of bird made with only triangles). The size of the Triangle Bird can be arbitrary. But the color needs to be the same as the picture shown below.



## Output



# Application 2

## Part A

Create 2D circles within circles each having a different color and size. Initially, there will be a circle with a bigger radius. For each click, another circle with different color and a smaller radius will be created keeping the previous circles preserved. Note, that you have to send 2D data to the shader from CPU.

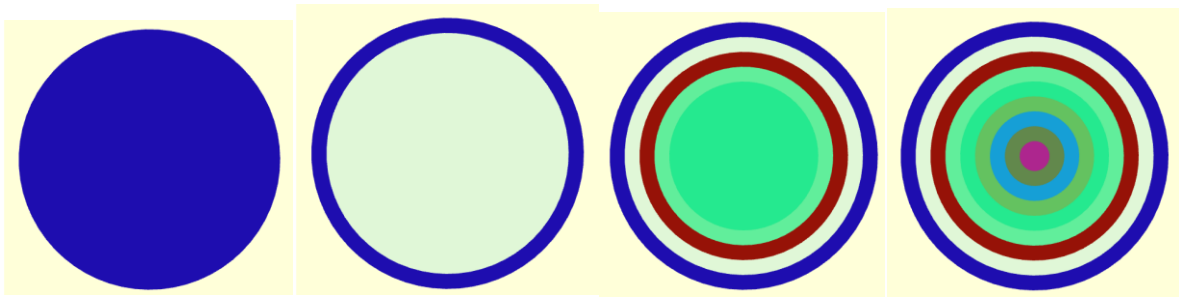


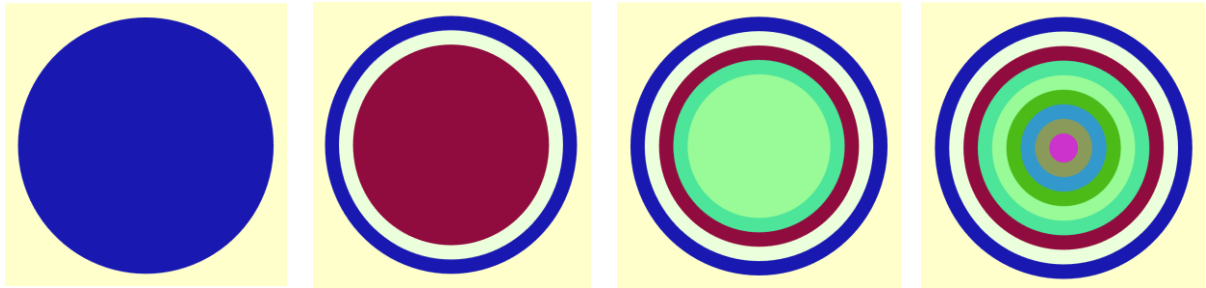
Figure: Situation of the canvas after several mouse clicking (from left to right).

## Part B

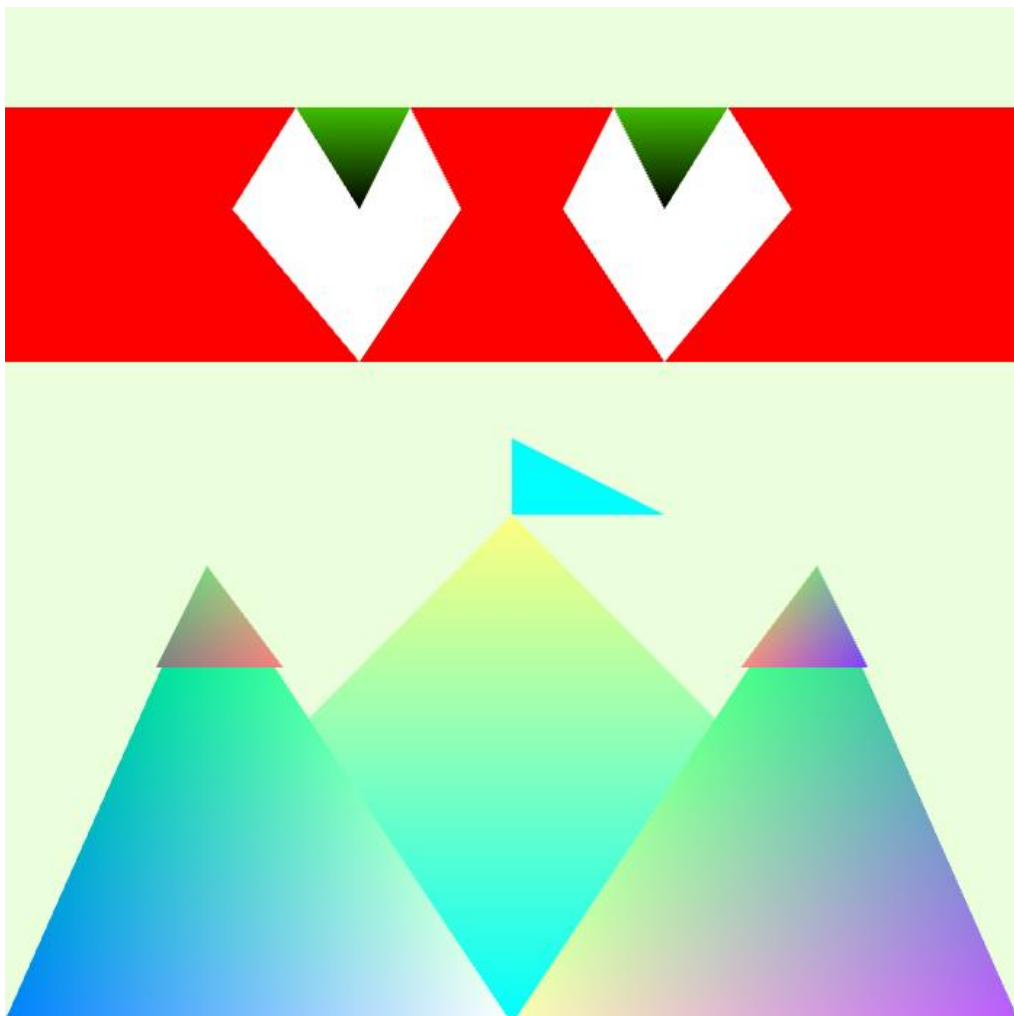
Create a 2D scenario (model) using your creativity. The model has to be created using 2D triangle mesh. Apply per-vertex color on your model. Integrate a keyboard interaction having at least one GLSL control statement (and/or built-in function) inside the shader.

## Output

### Part A



### Part B



# Application 3

Create a 3D cube using index buffer. Provide different colors for different faces. You have to introduce a border for the object as shown in the diagrams below.

For each left click, the cube will be scaled up and for the right click, it will be scaled down. By pressing the right and down arrow keys, the cube will rotate (+ve) along the Y and X axis respectively.

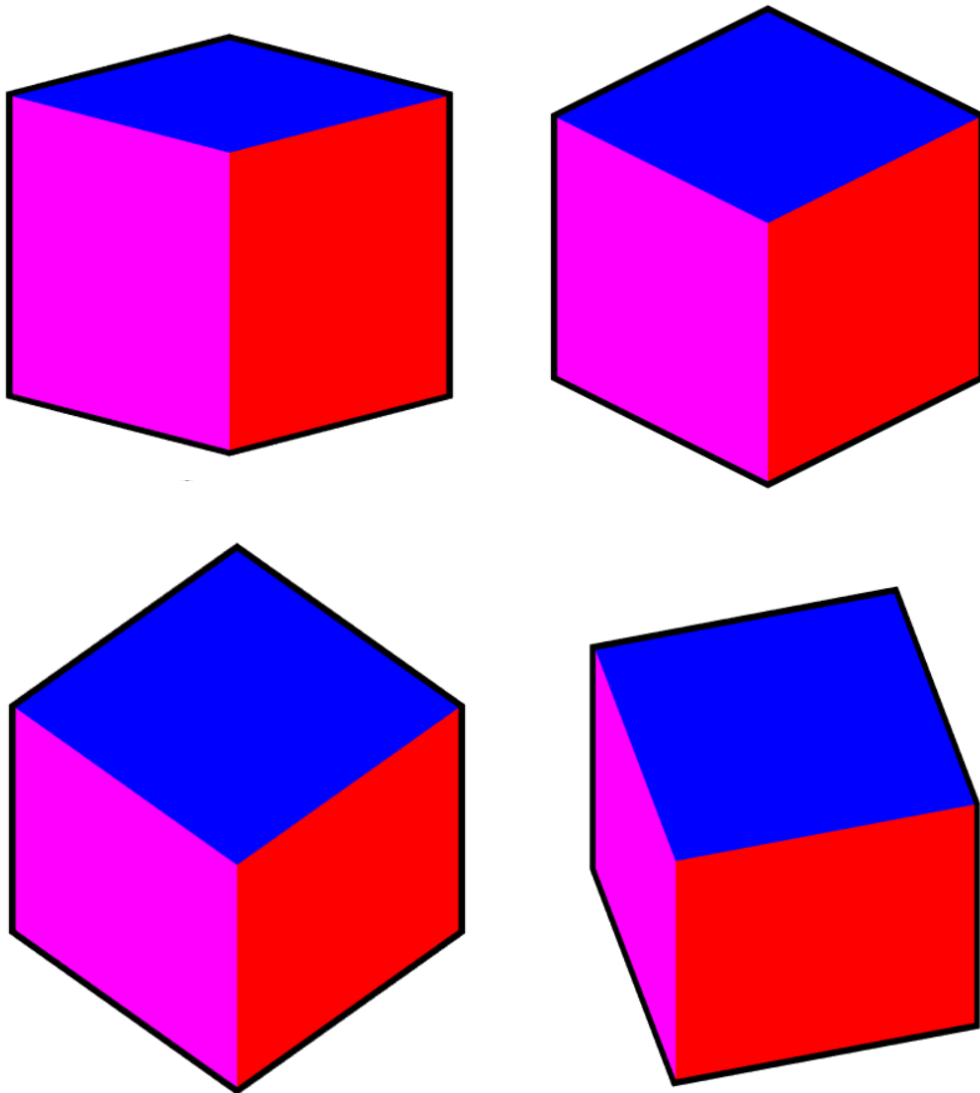


Figure: Different Example States of the 3D Cube

Output

