

Assignment 1, CG (Report)

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1. In C.2.a, primitives are immutable while in C.2.b the primitives are mutable. Therefore, in C.2.a, we can just avoid the usage of the multiple transformation matrices. values of primitives and have a single transformation matrix whereas in method 2 we have to maintain multiple transformation matrices.
2. Move Event API is critical in the implementation of “picking” using the mouse click button.
3. Instead of translating pixel-wise, just use mouse click and move the primitive will reduce the number of key click events.
4. Centroid is the point by which we will transform a particular set of widgets. In mode 2, we take the centroid of whole figure and in mode 1, we take centroid of the widget which is at a minimum distance from the mouse click. In rotation and scaling we need to translate the origin to centroid and perform scaling and rotating and translate back.

References :

- (a) [WebGL tutorial](#)
- (b) [Youtube playlist by Indigo Code](#)
- (c) [gl-matrix documentation](#)
- (d) [Github Repo of Amit Tomar \(example 5\)](#)
- (e) [WebGL Fundamentals](#)