OVERVIEW:

- This an iOS App developed using Swift and GLSL in Xcode.
- It draws a cuboid with the x,y and z coordinate axes. This cuboid can be translated to any other point on the screen along with the axes.

EXECUTION :

- Open the .xcodeproj file in Xcode.
- Run the project after setting the active scheme as iPhone6
- The can be directed to an actual handset by selecting the connected iPhone as the active scheme.

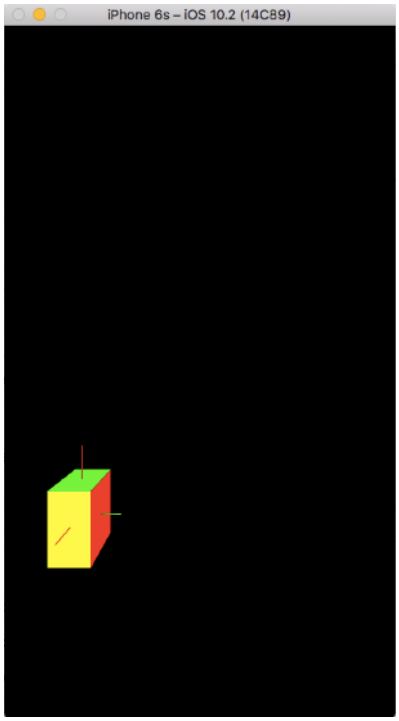
BEHAVIOR:

- When the app launches in simulator, there will be a cuboid on the screen. Any touch moved on the screen will translate the cuboid along with the axis.
- The translations are persistent with subsequent touches.
- All the translations are done at GPU using a modelling matrix which is multiplied with the position attributes in the vertex shader.

THE CODE

- In Xcode go to the GameViewController.swift from the Project Navigator. This file has only the touch-listeners and basic functions like setupGL(), glkView(). The delta x and delta y that moved as a result of touch inputs is passed as uniform variables to the vertex shader.
- The vertex shader forms a translation matrix using these uniform variables which is assigned to the modelling matrix to calculate gl_Position.
- gl_Position is sent to the fragment shader.

SCREENSHOT:



LIMITATIONS:

- In this project no user inputs are taken to customise the modelling in terms of rotation, translation and scaling. It has only one transformation which is translation.
- The model and view matrices are not separate which is not the correct implementation of graphics pipeline. It does not implement camera transformations.
- There is only one pre-drawn object which can be modelled. It doe not have an option of importing new objects or having multiple objects on one screen.

- There is no light source for illumination. These limitations will be overcome in upcoming tasks.

: