CM20219

Viewing and analysing 3d models using webgl

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1 **Draw a simple cube**

For this task, a cube must be drawn onto the screen, it must be centred at the origin with the opposite corner points (–1, –1, –1) and (1, 1, 1), faces orthogonal to x-, y-, z-axes. Orthogonal means that they are at right angles. For the cube to be the right size, I created the geometry using a BoxBufferGeometry which I passed a width, height and depth of 2. The cube is automatically centred at the origin, hence the corner points are 1 unit away from the coordinate axis.

The function createCube() is called from the init() function which is run once at the beginning. The cube mesh is stored as a global variable and can be called from any function in the program. The below code snippet includes loading the texture mapping for requirement 7, for requirement one the material simply set the color to white.



Because the cube is shown by default when you open the application, it is added to the scene in the init() function.



2 **Draw coordinate system axes**

3 **Rotate the cube**

4 **Different render modes**

5 **Translate the camera**

6 **Orbit the camera**

7 **Texture mapping**

8  **Load a mesh model from .obj**

9  **Rotate the mesh, render it in different modes**

10  **Be creative – do something cool!**