

**Subject: Computer Graphics**

**Topic: Reflection**

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# Reflection

**Developmental Decisions: -** Object Selection: Cubes were chosen as the primary objects in the 3D scene because they are straightforward geometric shapes that can be used to depict a variety of real-world things. Cubes are very simple to construct and texture, which makes them appropriate for a low-polygon 3D environment.

**Programming for Functionality:** I created the necessary OpenGL functions to construct and render the cubes, apply rotation transformations, set up the projection matrix, handle window resizing, and allow depth testing for accurate rendering of the 3D scene in order to accomplish the desired functionality.

**User Navigation:** The following input devices can be used by users to move around the 3D scene:

* WASD Keys: The user can move the camera left, right, forward, and backward with the WASD keys.
* QE Keys: The QE keys let the user control the camera's up-and-down movement.
* Mouse Cursor: By swiping the mouse left or right or up or down, the user can alter the camera's orientation.
* Mouse Scroll: The user can modify the speed of the camera's movement by navigating the mouse wheel.

'display()' is one of the custom functions that renders the 3D scene. It uses OpenGL functions to set up the transformations and draw the cubes. It is reusable since it can be used more than once to refresh the scene with different elements or arrangements.

The function "reshape()" When the window is resized, this function is invoked, which modifies the viewport and projection matrix as necessary. It aids in keeping the scene's aspect ratio and perspective accurate.

- `idle()`: In order to update the cubes' rotation angles and produce an animation, this function is continually called. It can be used once again to give additional objects or scene components animation.

The modularity and organization of the code are enhanced by these custom functions, which divide particular functionalities into separate functions. This enhances the readability and maintainability of the code and makes it simpler to modify or expand the programme.