

### Assignment 3

#### 1) Code Structure

The code is in a file called cg03. Go into that file and that is where the makefile is located. My project also uses glm which is included in the folder already.

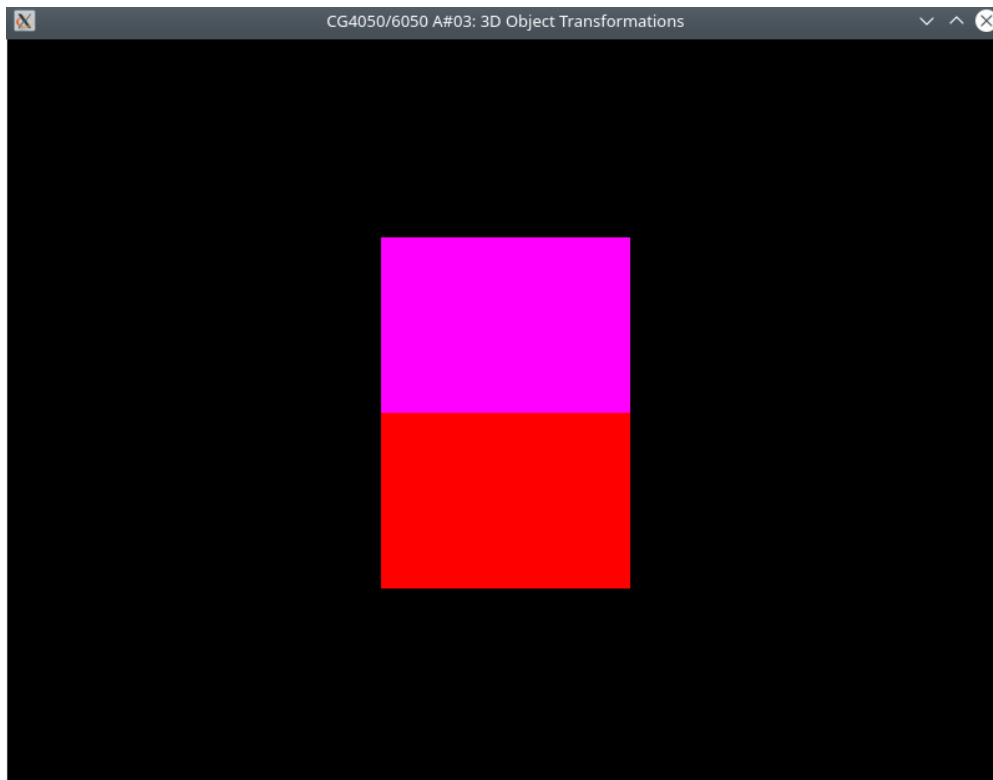
#### 2) Inputs

Below is a table of all of the different keyboard inputs all of the letters in the table are lower case.

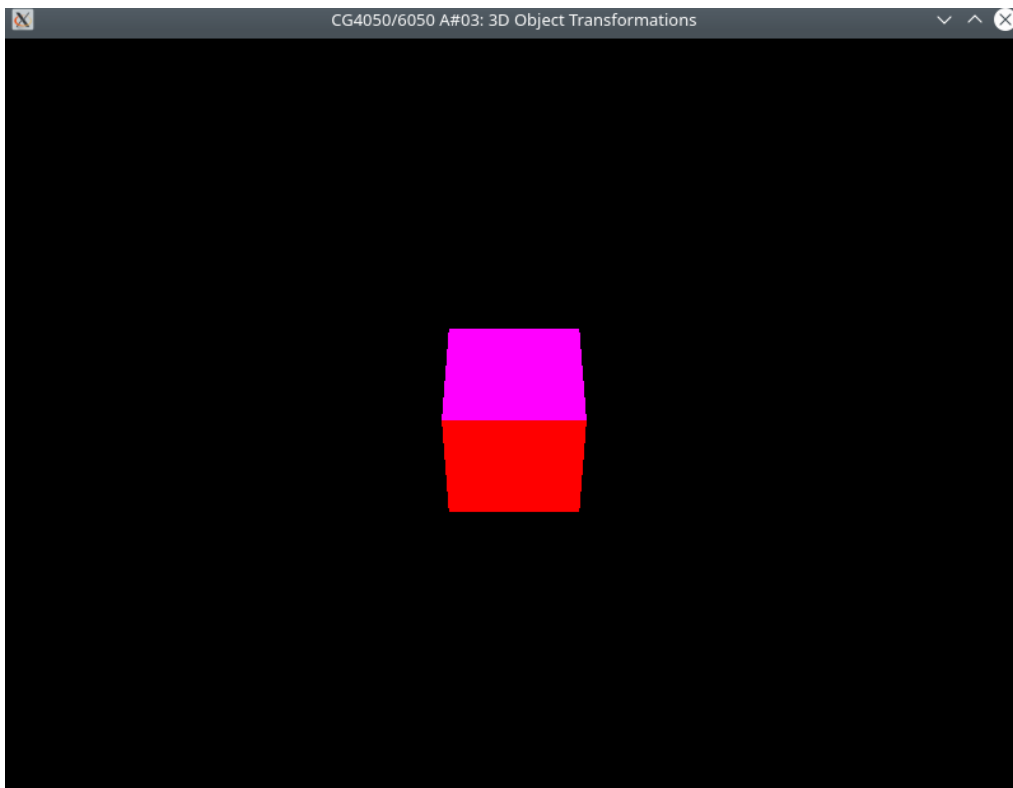
| #  | Operation        | Detail                                           | Key             |
|----|------------------|--------------------------------------------------|-----------------|
| 1  | Reset Display    | Remove all transformations                       | r               |
| 2  | Translate        | Left                                             | left arrow key  |
| 3  | Translate        | Right                                            | right arrow key |
| 4  | Translate        | Up                                               | up arrow key    |
| 5  | Translate        | Down                                             | down arrow key  |
| 6  | Translate        | Closer to Screen                                 | o               |
| 7  | Translate        | Away from Screen                                 | l               |
| 8  | Rotate           | Around X                                         | q               |
| 9  | Rotate           | Around Y                                         | a               |
| 10 | Rotate           | Around Z                                         | z               |
| 11 | Scale            | Along X, decrease                                | w               |
| 12 | Scale            | Along X, increase                                | e               |
| 13 | Scale            | Along Y, decrease                                | s               |
| 14 | Scale            | Along Y, increase                                | d               |
| 15 | Scale            | Along Z, decrease                                | x               |
| 16 | Scale            | Along Z, increase                                | c               |
| 17 | Toggle view      | Between orthographic and perspective projections | f               |
| 18 | Switch Object to | Cube                                             | v               |
| 19 | Switch Object to | Cylinder                                         | g               |
| 20 | Switch Object to | Sphere                                           | t               |
| 21 | Translate Camera | Left                                             | k               |
| 22 | Translate Camera | Right                                            | h               |
| 23 | Translate Camera | Up                                               | u               |
| 24 | Translate Camera | Down                                             | j               |
| 25 | Translate Camera | Along Z axis, closer to Origin                   | i               |
| 26 | Translate Camera | Along Z axis, away from Origin                   | y               |

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### 3) Create Window and Draw Cube

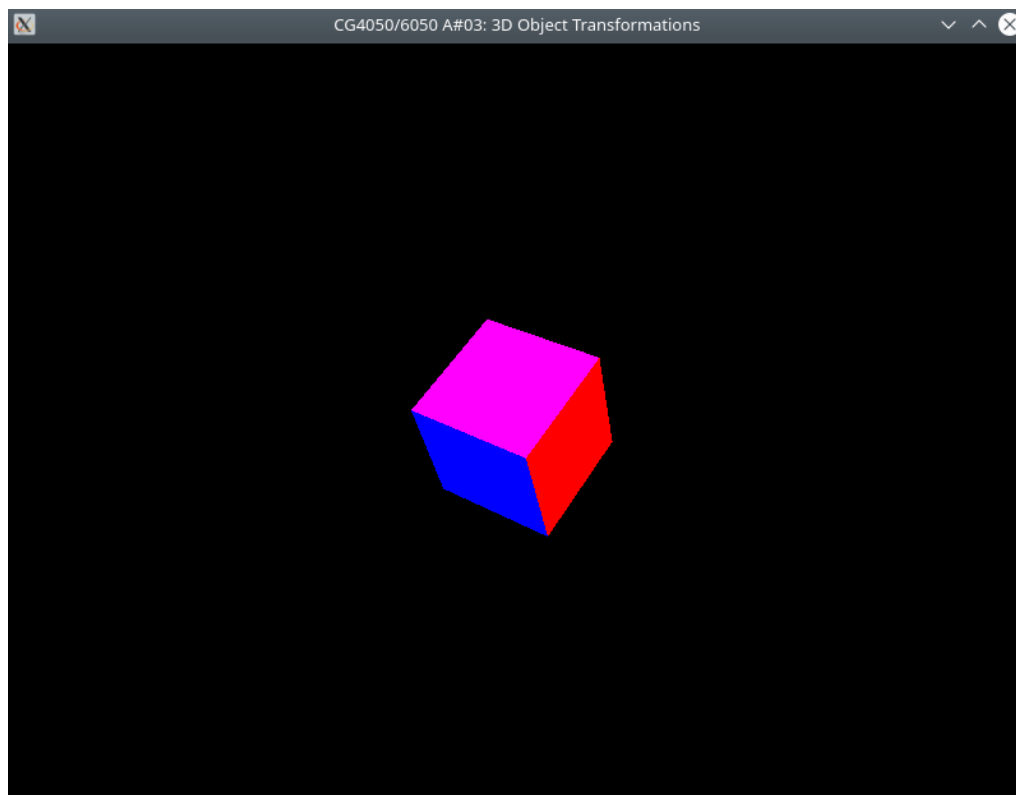
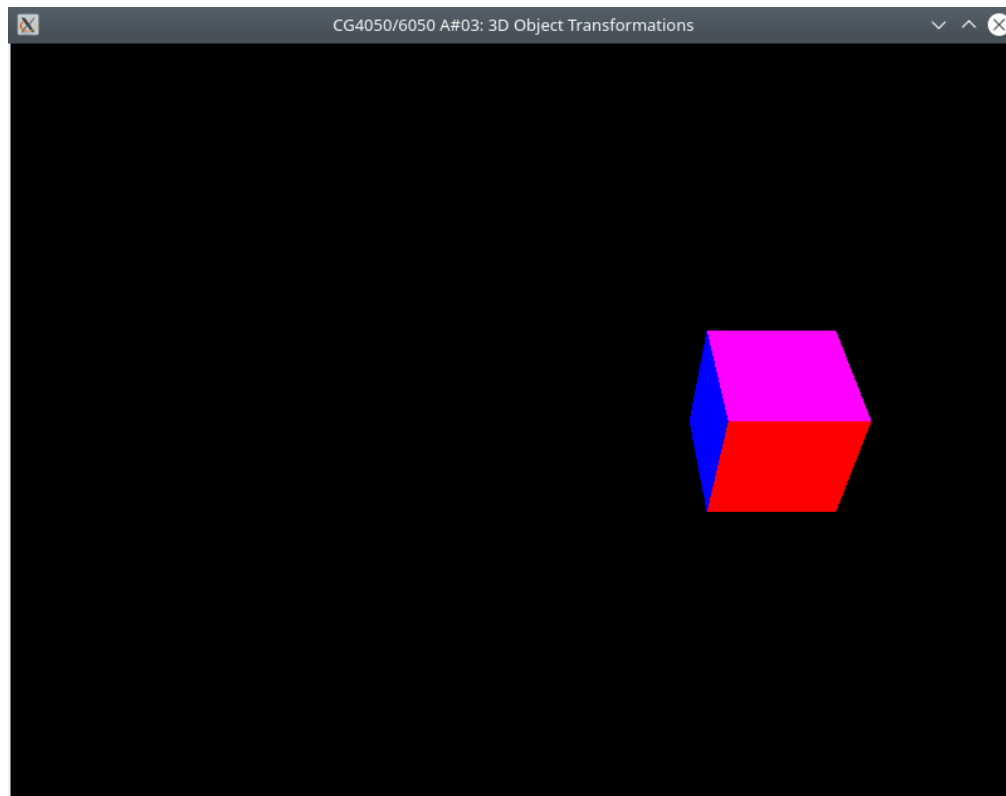


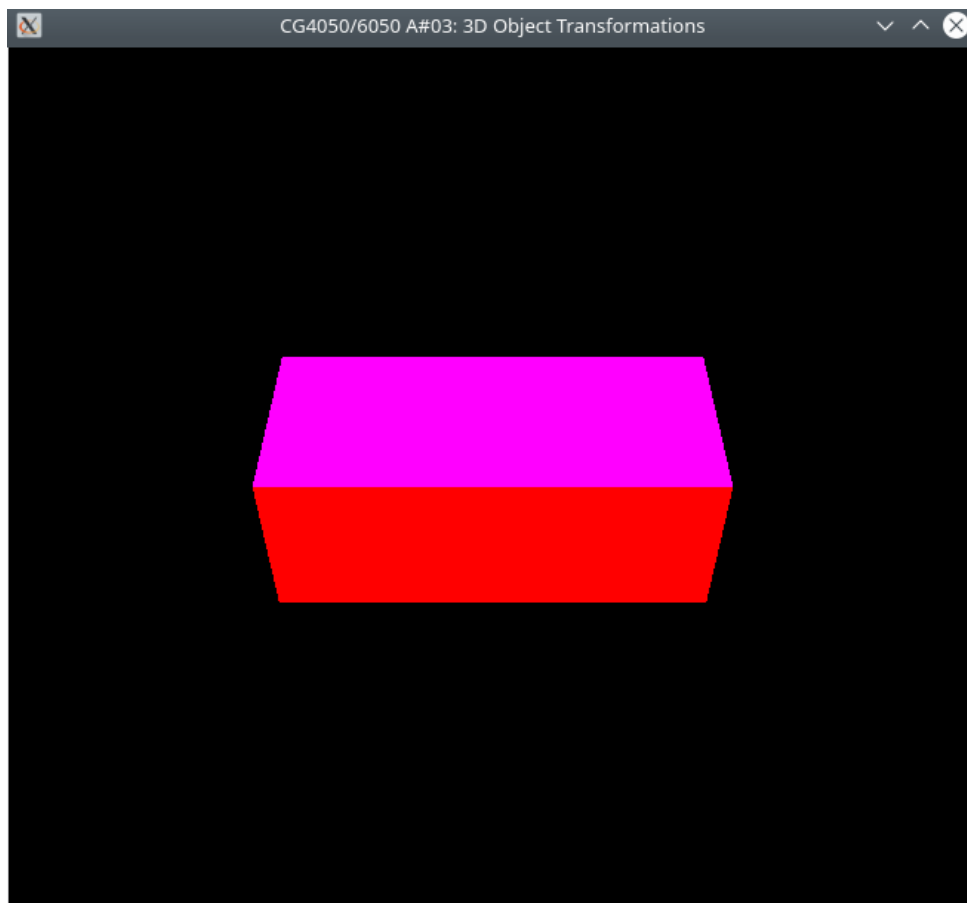
### 4) Toggle Perspective View



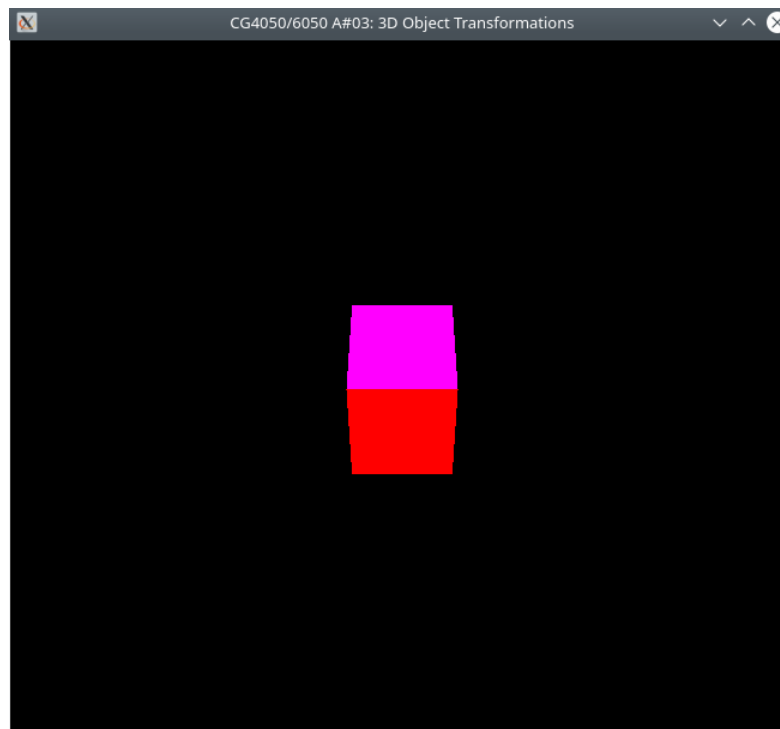
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## 5) Translate, Rotate, and Scale



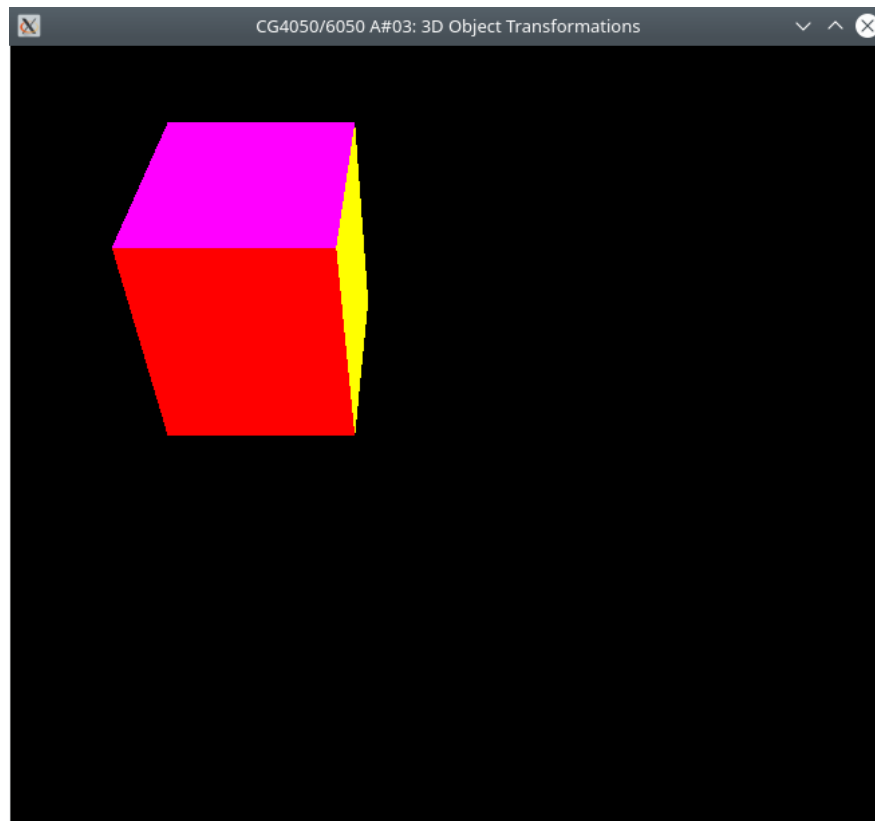


## 9) Clear Out Transformations



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## 10) Translate Camera



## 11) Change Shape to Cylinder/Sphere

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