Project C Report

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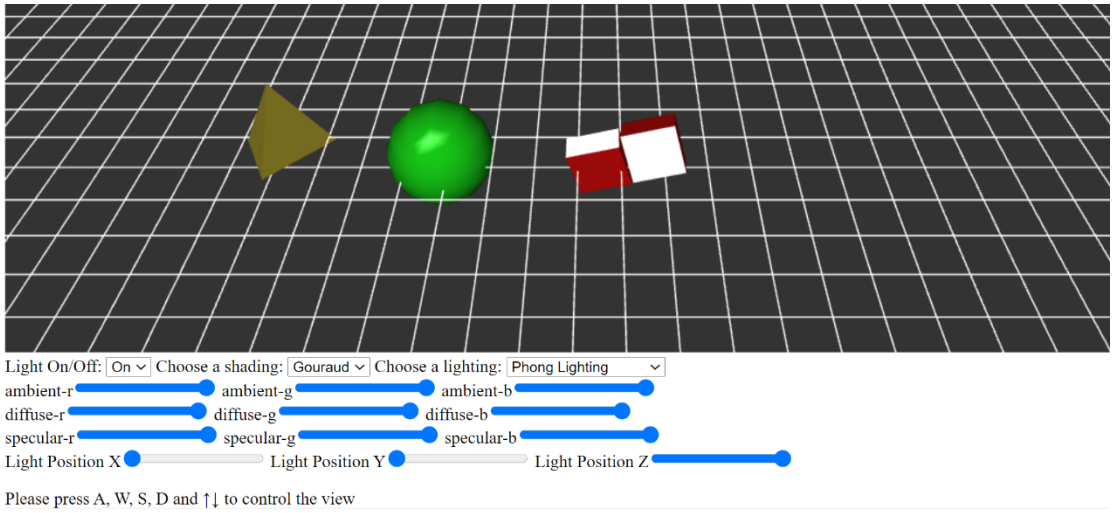
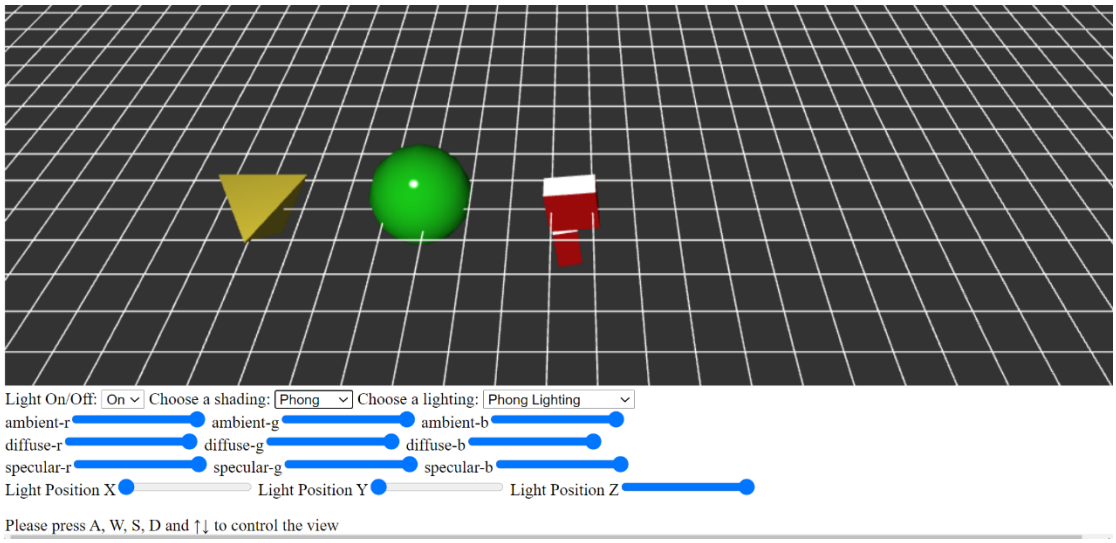
Goal: This project aims to get used to techniques of lighting and shading methods in WebGL.

User Guide: There are several slider bars and selecting boxes on screen, each with a name at the left side telling users about its usage. Users are able to switch light on/off, shading methods, lighting methods, ambient / diffuse / specular components, light positions, and view positions. Three materials are being used. They are emerald, gold and ruby. One for each shape.

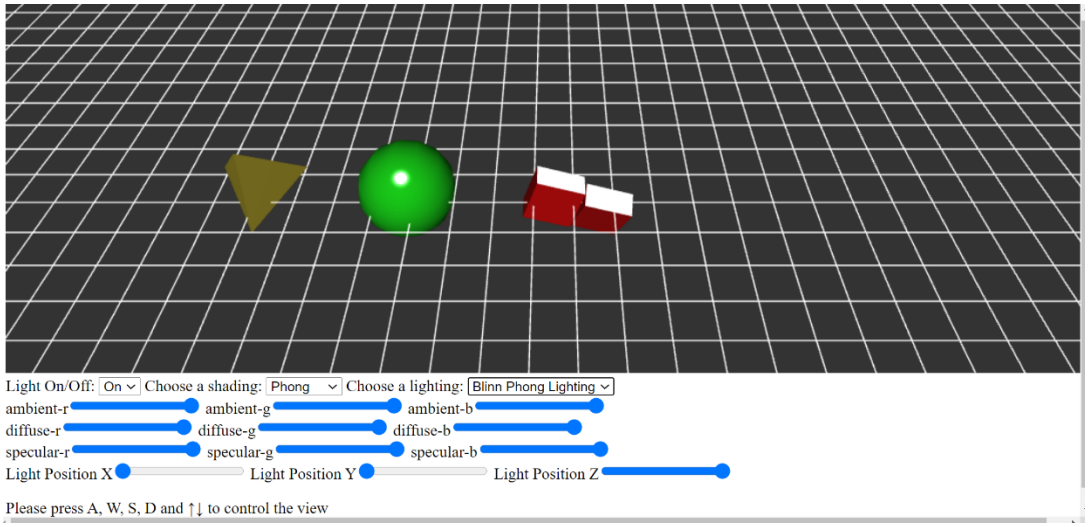
Gouraud Shading:



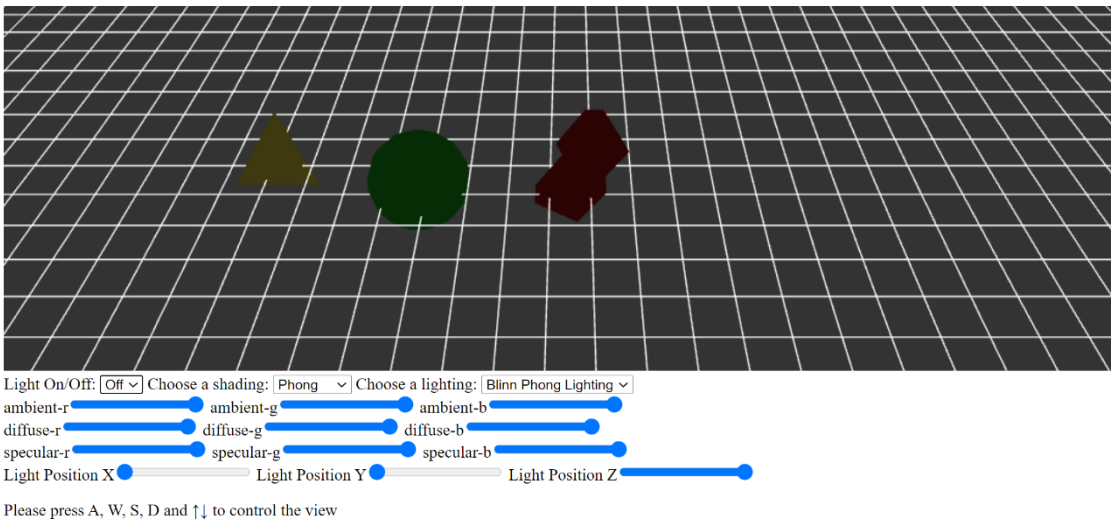
Phong Shading with Phong Lighting:



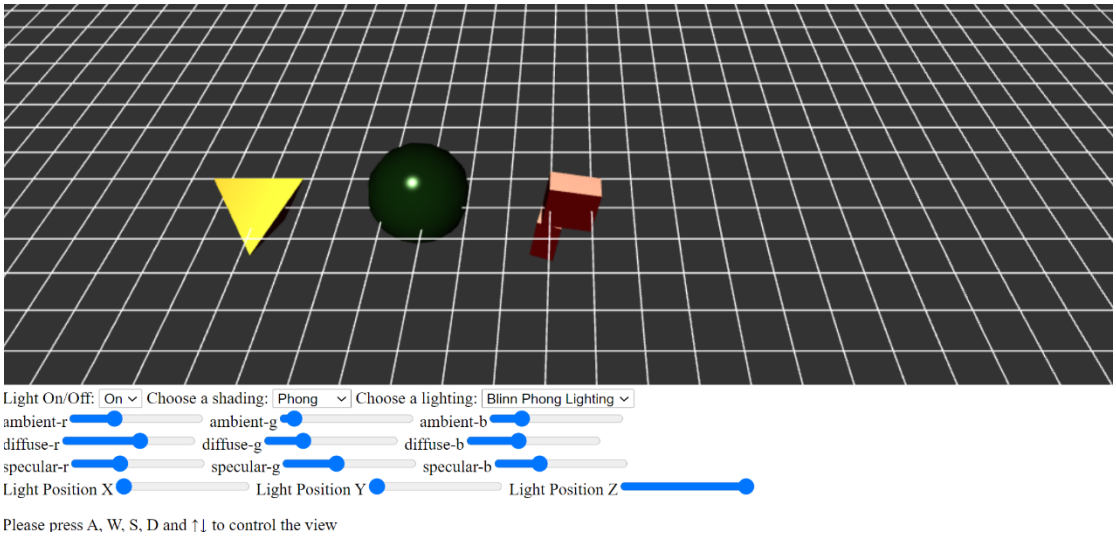
Phong Shading with Blinn Phong Lighting



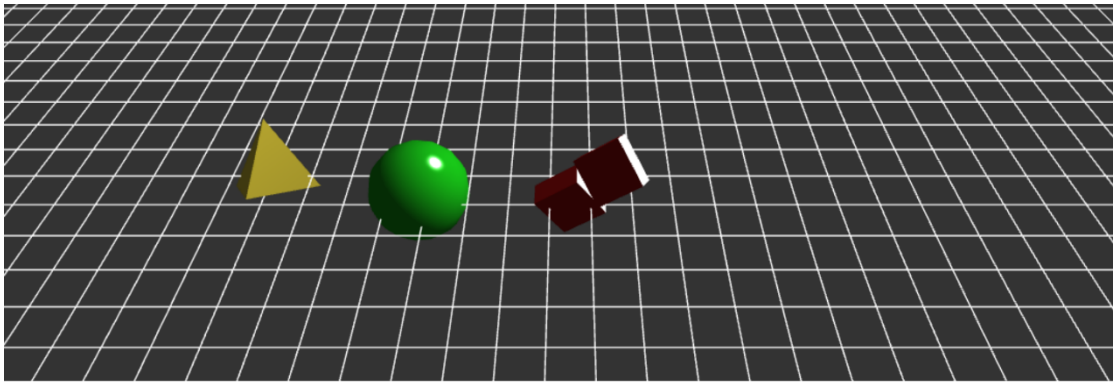
Light turned off:



Switched the ambient, diffuse and specular rgb components:



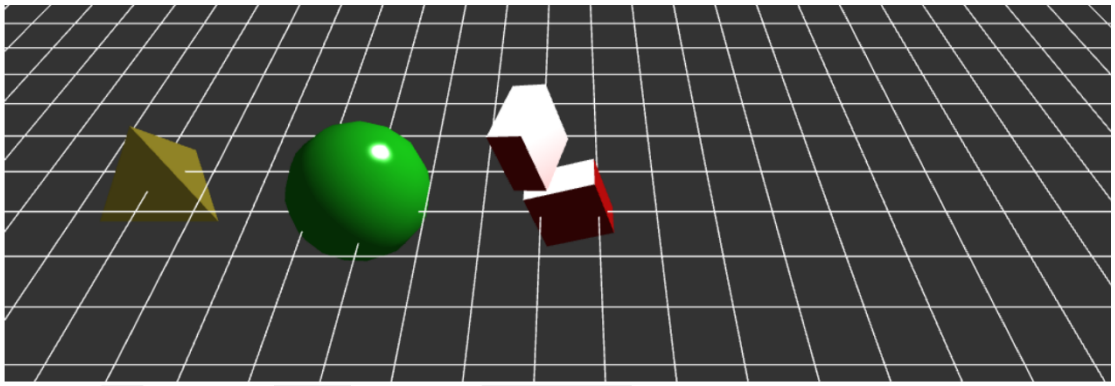
Switched the light position:



Light On/Off: On Choose a shading: Phong Choose a lighting: Blinn Phong Lighting
ambient-r ambient-g ambient-b
diffuse-r diffuse-g diffuse-b
specular-r specular-g specular-b
Light Position X Light Position Y Light Position Z

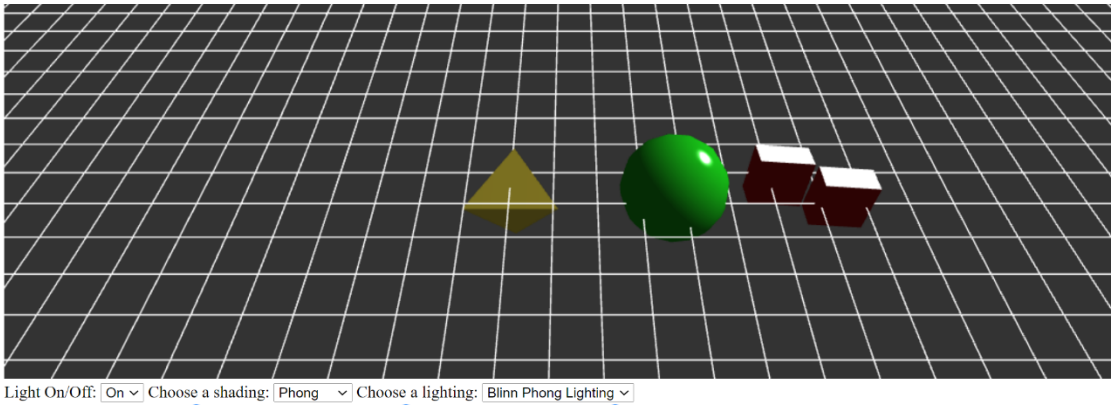
Please press A, W, S, D and ↑↓ to control the view

Changed the view position:



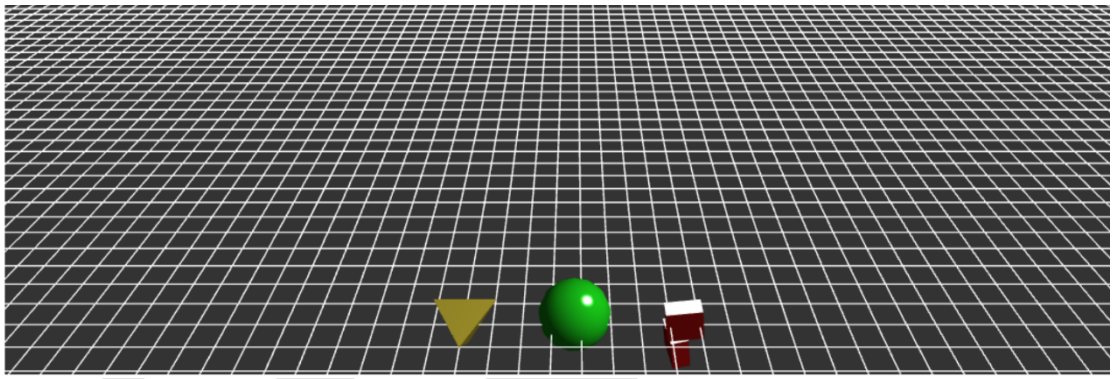
Light On/Off: On Choose a shading: Phong Choose a lighting: Blinn Phong Lighting
ambient-r ambient-g ambient-b
diffuse-r diffuse-g diffuse-b
specular-r specular-g specular-b
Light Position X Light Position Y Light Position Z

Please press A, W, S, D and ↑↓ to control the view

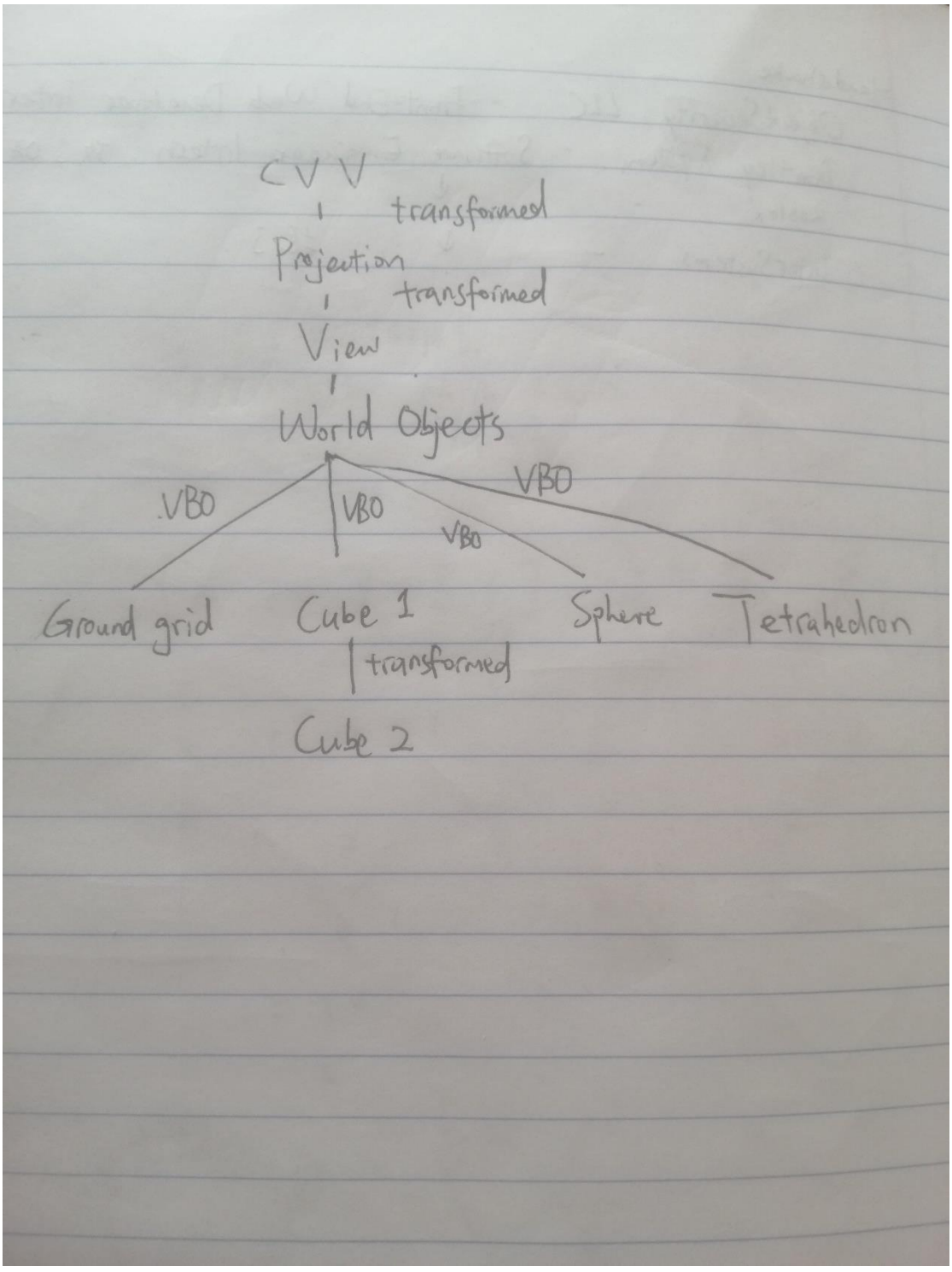


Light On/Off: On Choose a shading: Phong Choose a lighting: Blinn Phong Lighting
ambient-r ambient-g ambient-b
diffuse-r diffuse-g diffuse-b
specular-r specular-g specular-b
Light Position X Light Position Y Light Position Z

Please press A, W, S, D and ↑↓ to control the view


Light On/Off: On
Choose a shading: Phong
Choose a lighting: Blinn Phong Lighting
ambient-r
ambient-g
ambient-b
diffuse-r
diffuse-g
diffuse-b
specular-r
specular-g
specular-b
Light Position X
Light Position Y
Light Position Z
Please press A, W, S, D and ↑↓ to control the view

Scene Graph:


CVV
transformed
Projection
transformed
View
World Objects
VBO
VBO
VBO
VBO
Ground grid
Cube 1
Sphere
Tetrahedron
transformed
Cube 2