Project C: Shaded and lighted 3D Polygons in the ground
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User's Guide

Goal: Make shaded 3D objects with lights and materials. Users can smoothly control 3D camera positions and aiming direction. Users can drag the head light smoothly.

Users can use DAT.GUI to switch on off the headlight and the lamp.

Users can use DAT.GUI to adjust the R,G,B values for lamp ambient, diffuse and specular light.

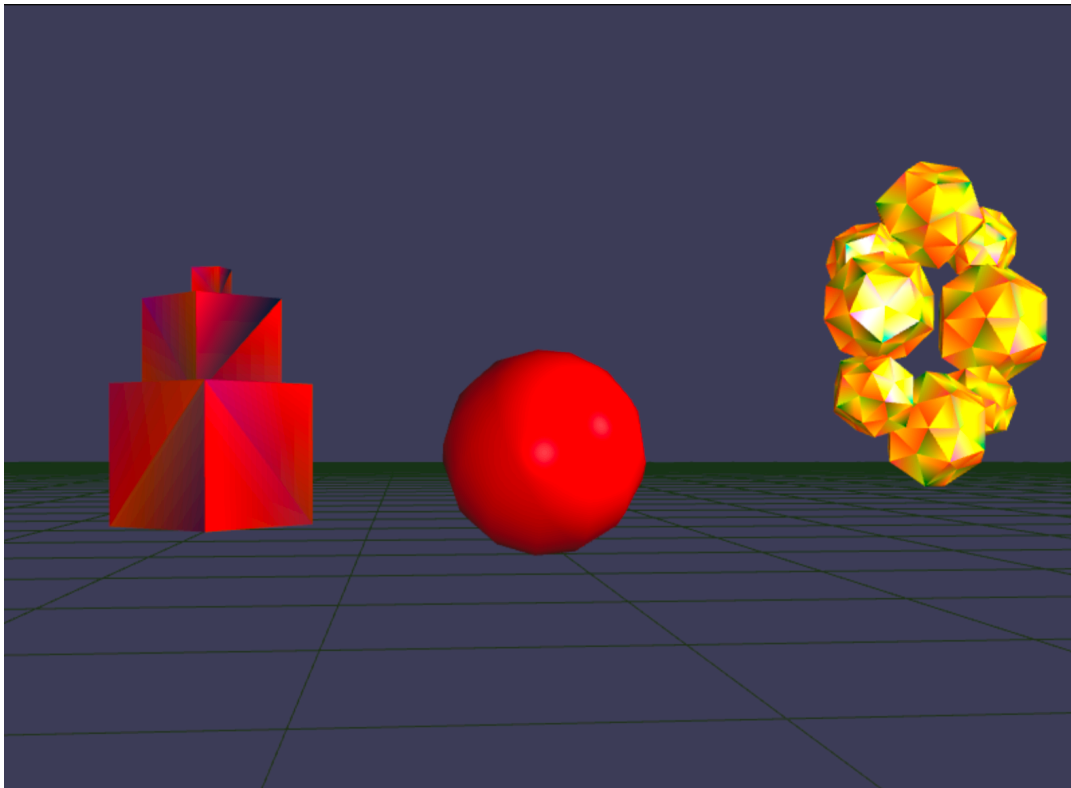Users can hit left, right, up, down arrow to make the camera step around.

Users can hit A D W S keys to change the camera's aiming direction.

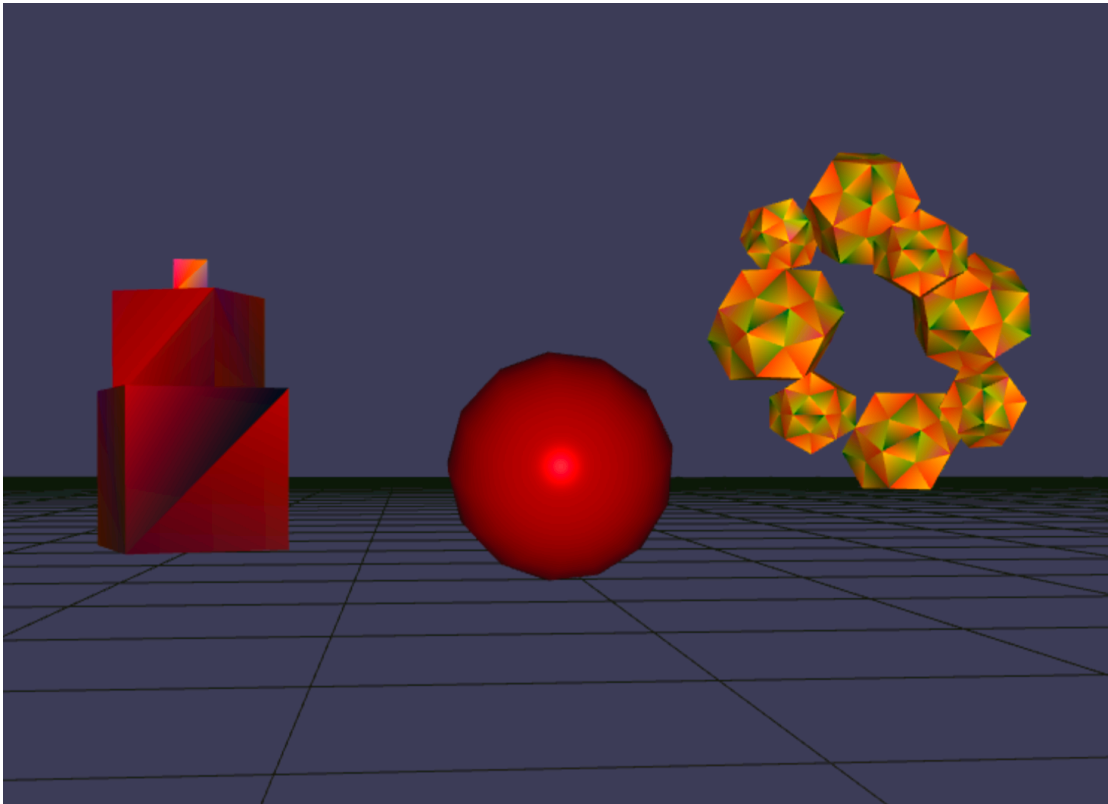Users can switch between lighting and shading methods.

Results

Turn lamp down
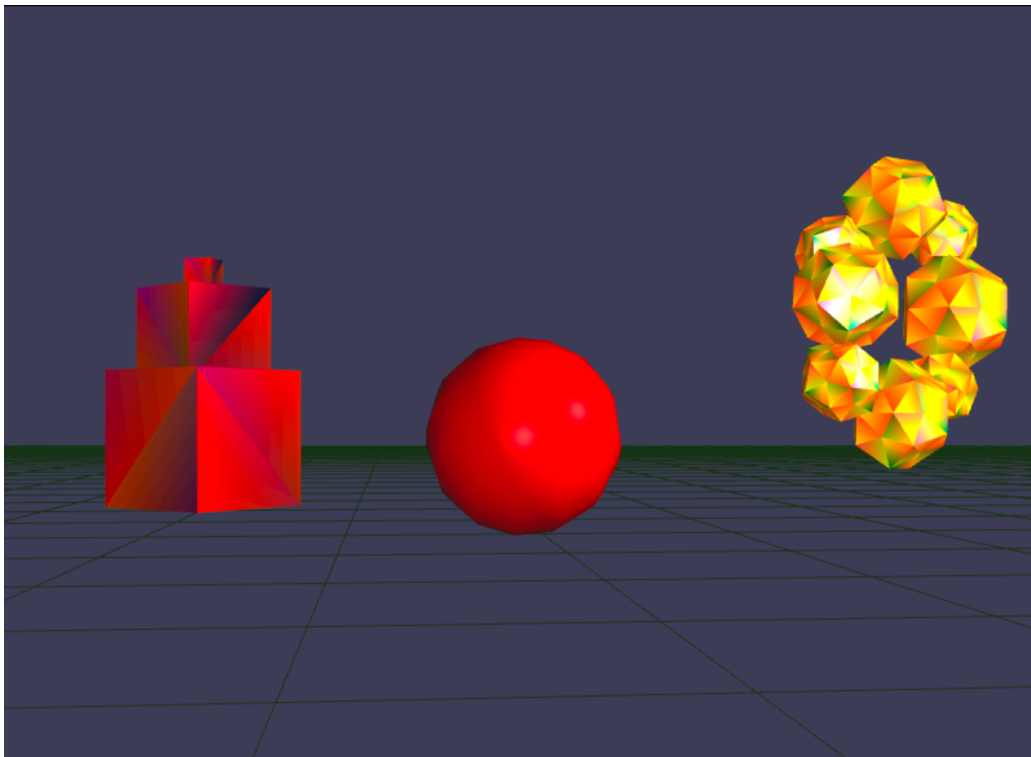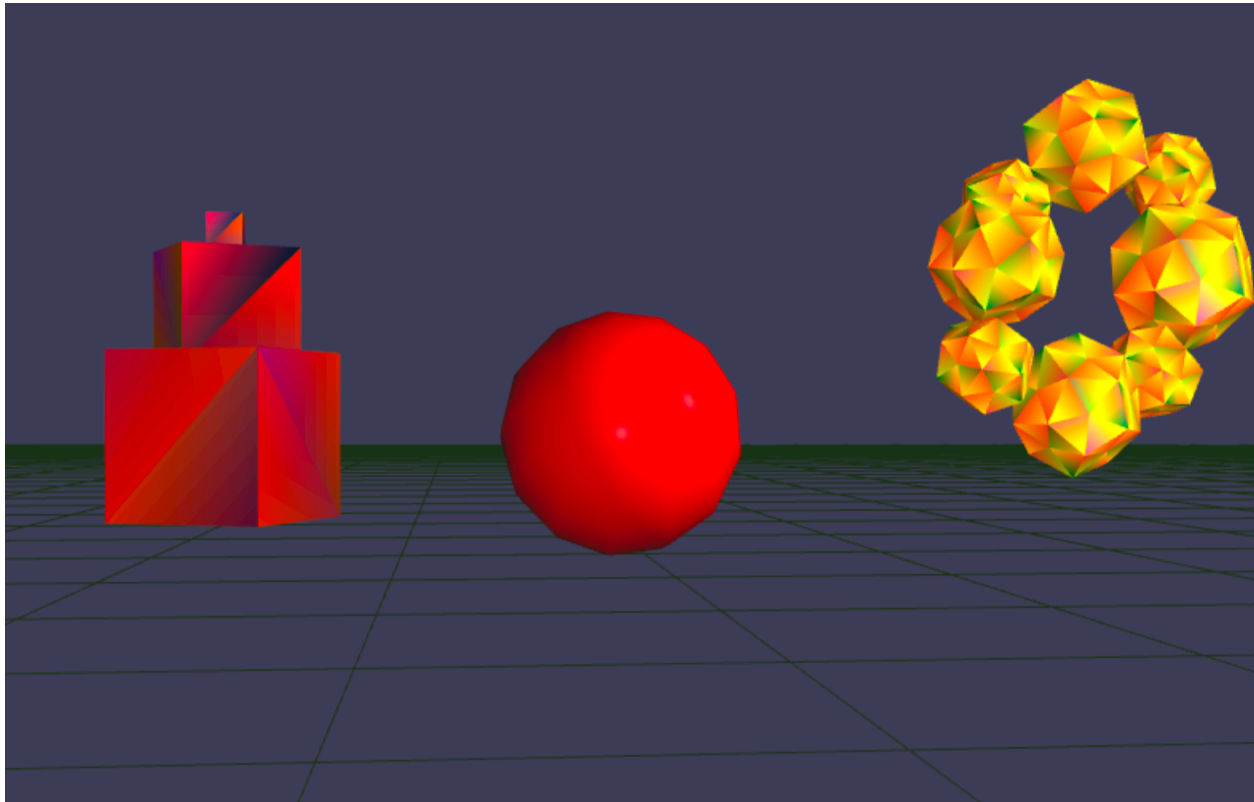User switches the lamp light off.

Before switching

After switching

Switching lighting and shading method:
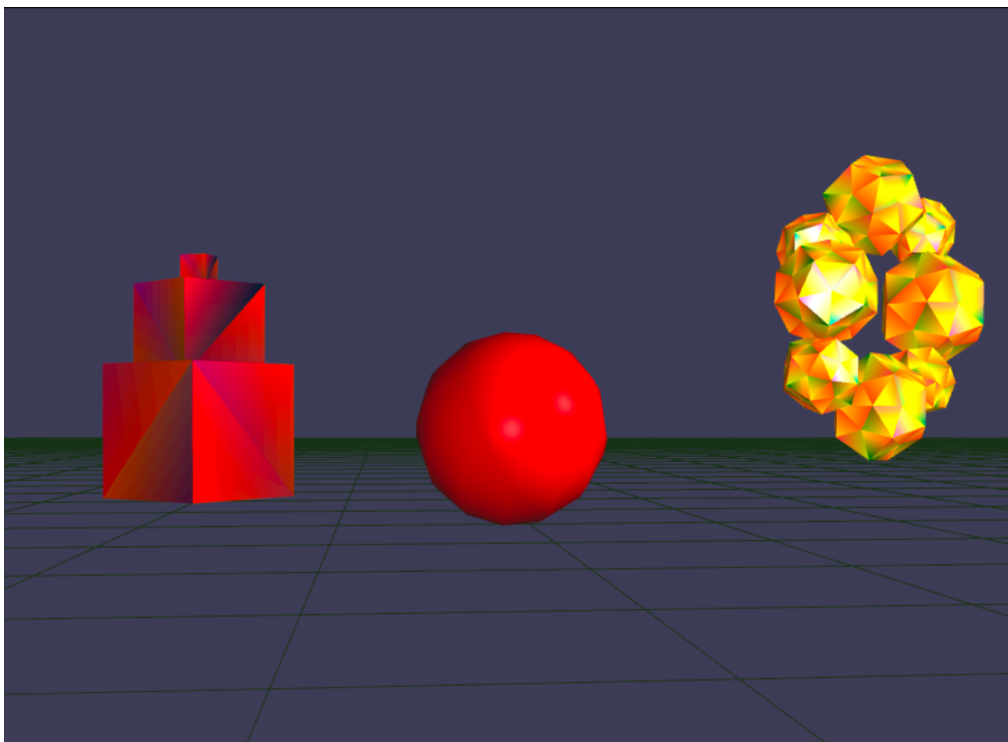Users use DAT.GUI to switch lighting and shading method.

Before switching
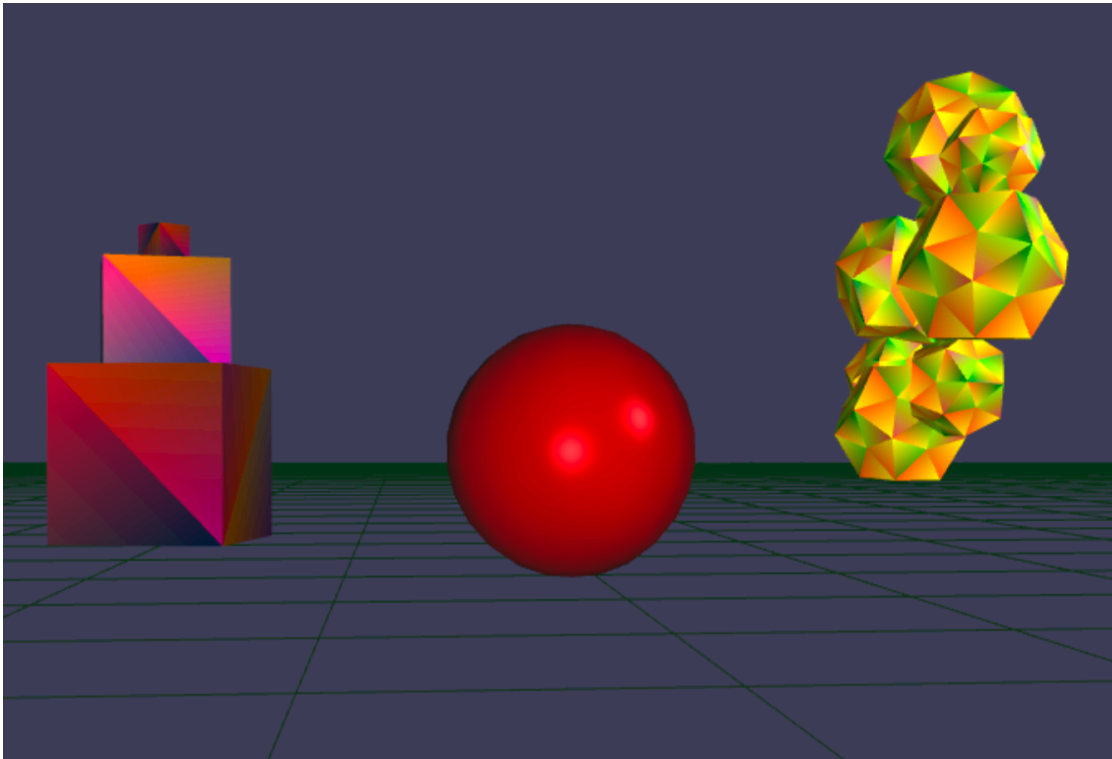
After switching to Phong lighting

Changing lamp ambient and diffuse:
Users use DAT.GUI to change the lamp ambient and diffuse R,G,B.

Before changing

After changing

Scene Graph

HTML-5 Canvas

Viewport

CVV

Projection

CAM

View

World

T0

Group1

T1

Group2

T5

Obj1

T2

Group3

T7

T8

Obj2

Obj3

Obj4

T3

Group4

T9

Obj5

T4

Group5

T17

T16

Obj13

Obj12

T15

Obj11

T14

Obj10

T13

Obj9

T10

T11

T12

Obj6

Obj7

Obj8