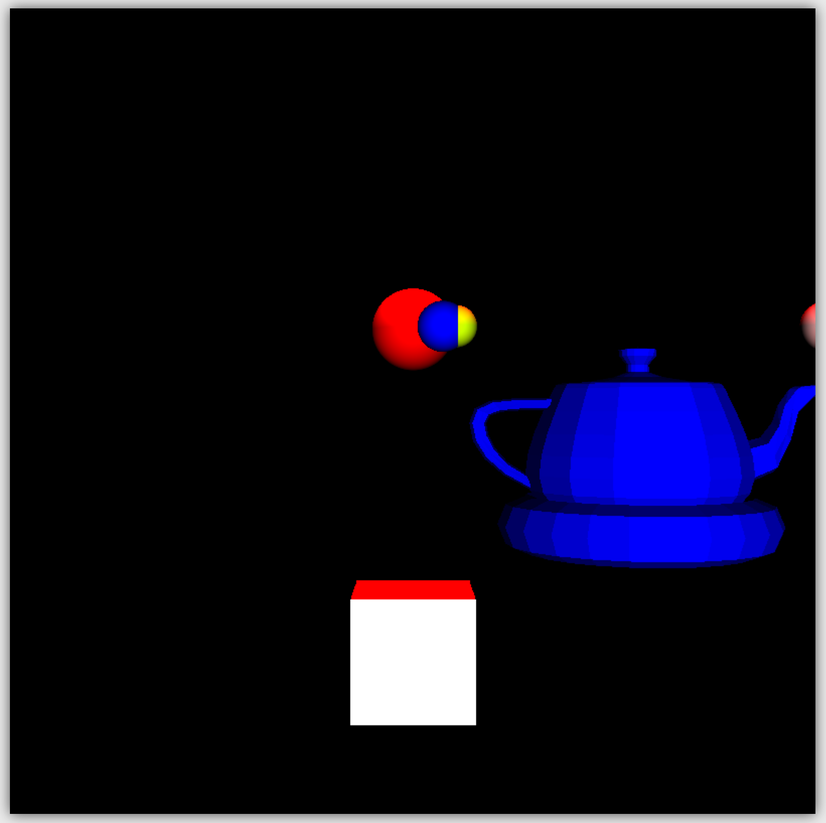
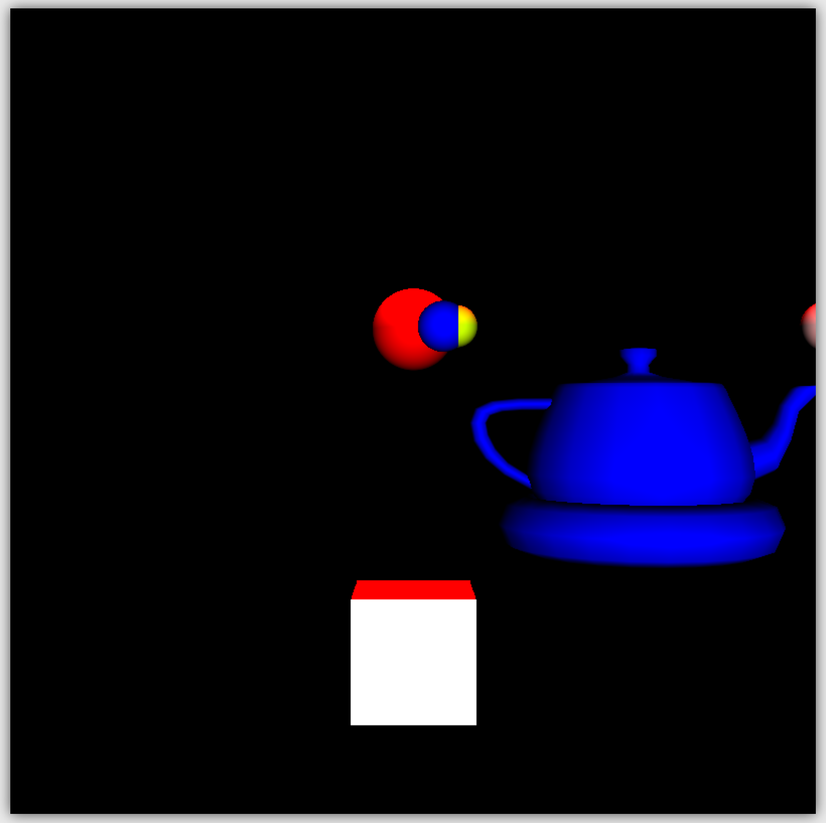
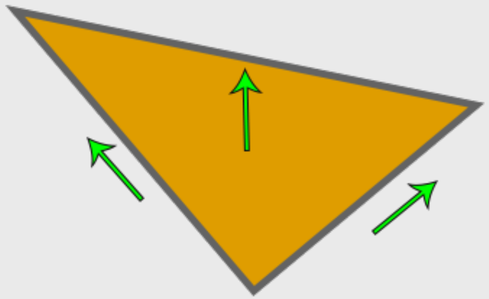
SMOOTH SHADING

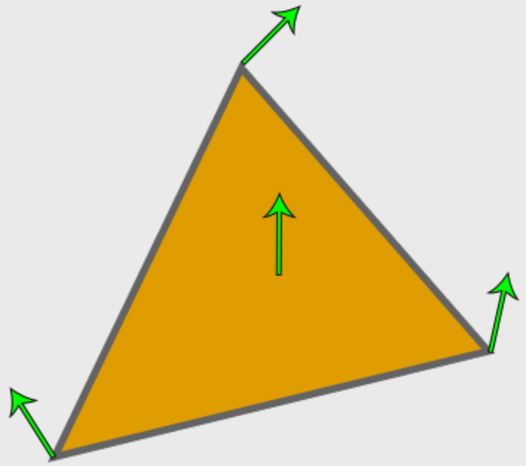




NORMALS

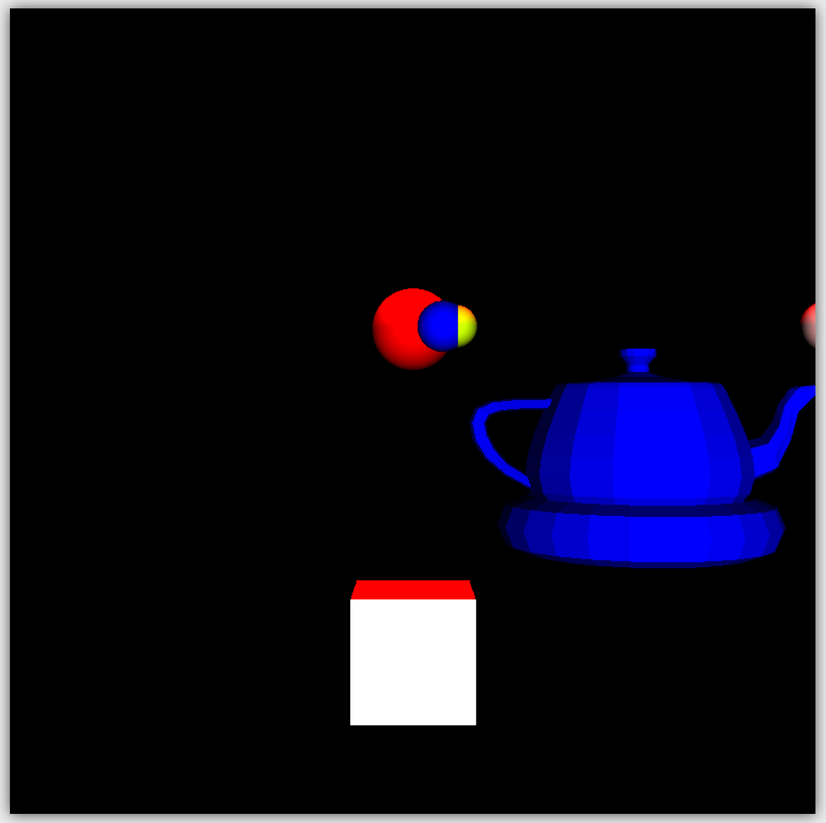


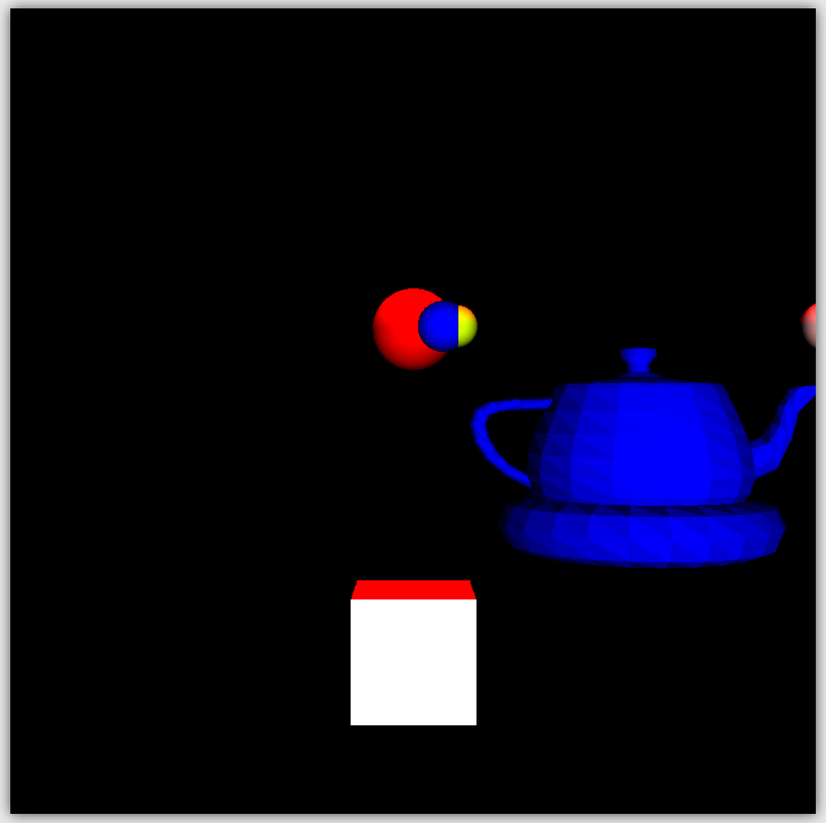
Normal from vertices position



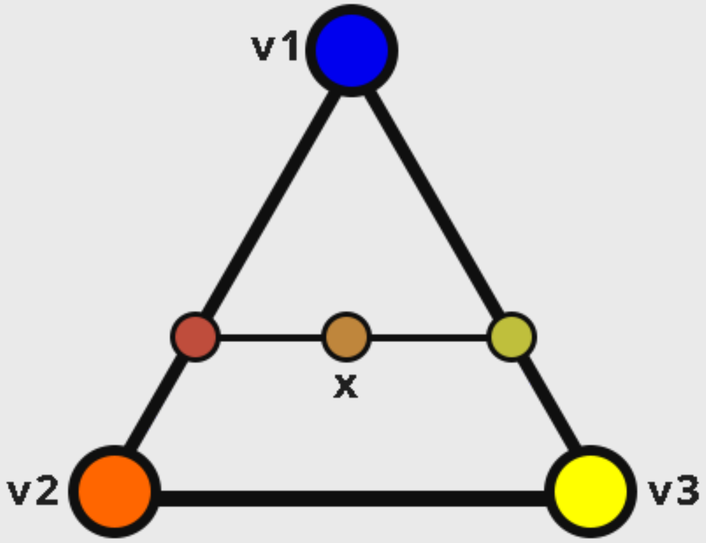
Each vertex has a normal

IMPORTING NORMALS





GOURAUD SHADING

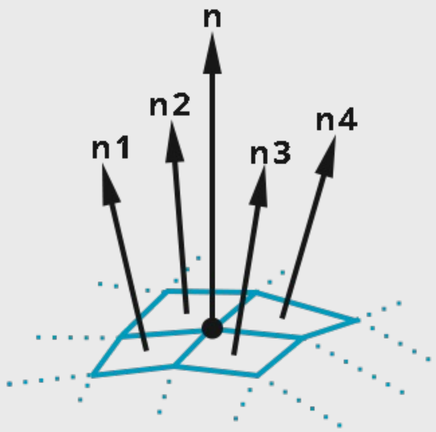


Vertex color interpolation

v1v2 = lerp(v1, v2)

v1v3 = lerp(v1, v3)

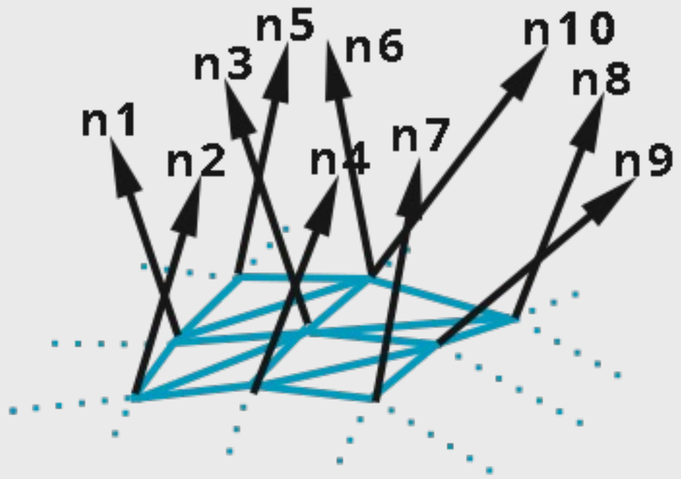
x = lerp(v1v2, v1v3)



Normal interpolation

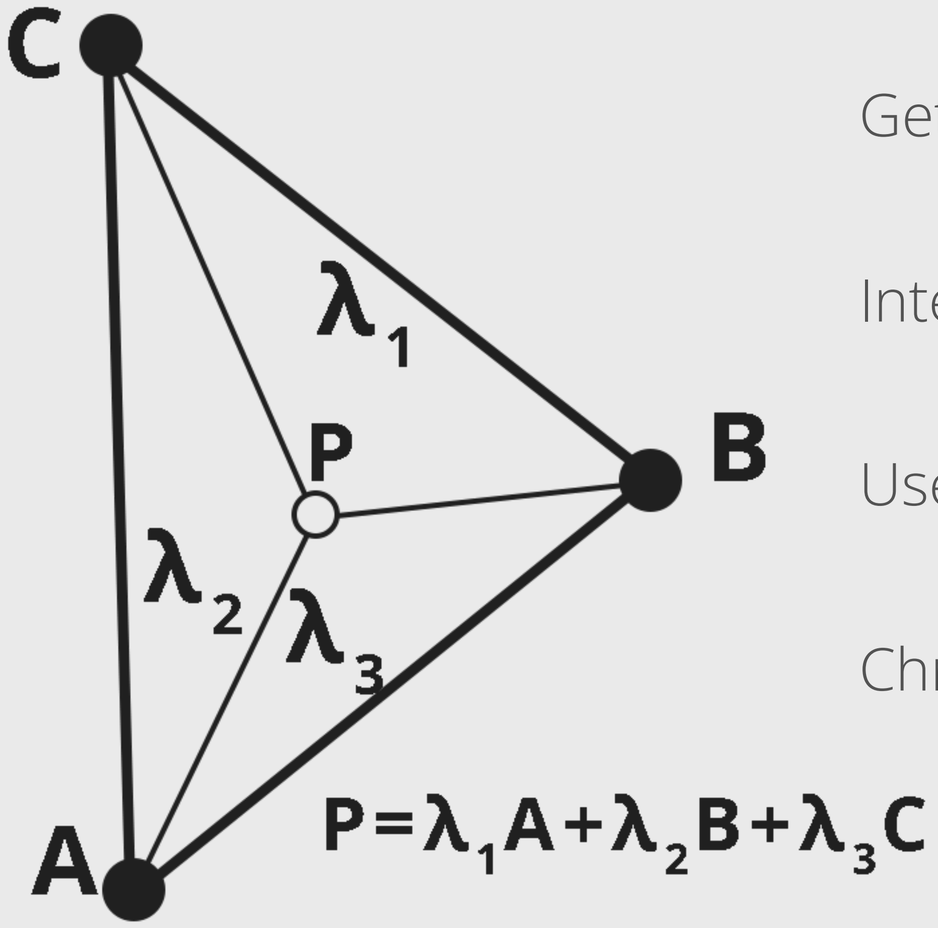
n = (n1+n2+n3+n4) / |n1+n2+n3+n4|

PHONG SHADING



Each vertex has a normal

PHONG SHADING



Get the point where to calculate the normal

Interpolate normals using barycentric coordinates

Use that normal to calculate the illumination

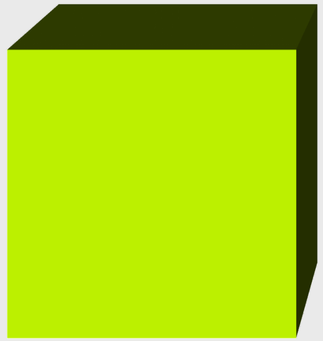
Christer Ericson - Real-Time Collision Detection

NORMALS IN OBJ

S is for smoothing group

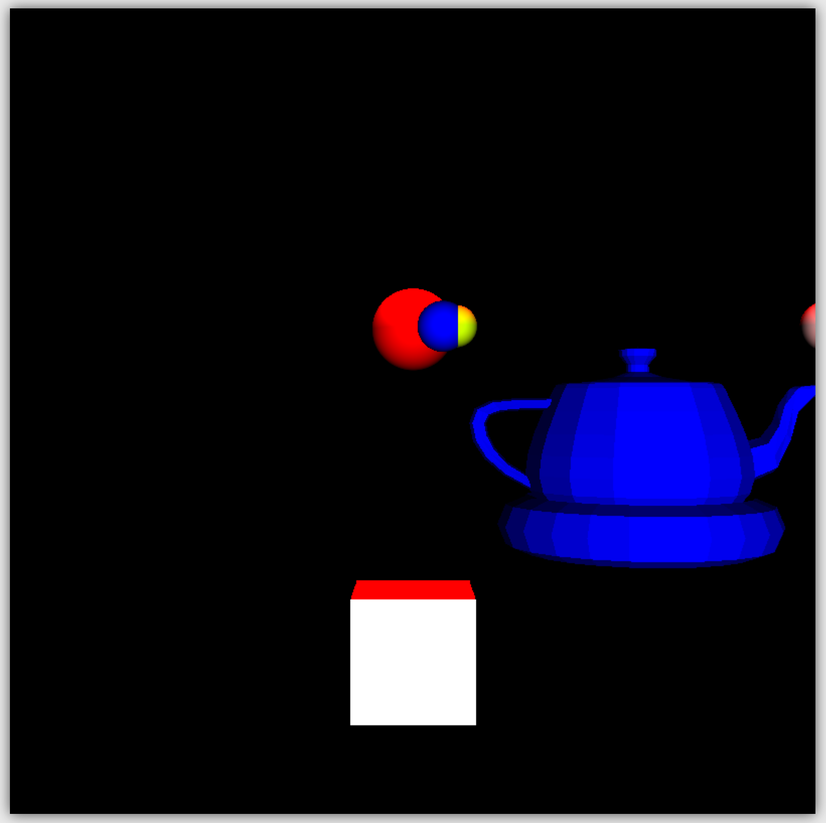
```
o Box001
g Box001
s 2
f 1/1/1 2/2/1 3/3/1
f 3/3/1 4/4/1 1/1/1
s 4
f 5/4/2 6/1/2 7/2/2
f 7/2/2 8/3/2 5/4/2
s 8
f 1/4/3 4/1/3 6/2/3
f 6/2/3 5/3/3 1/4/3
```

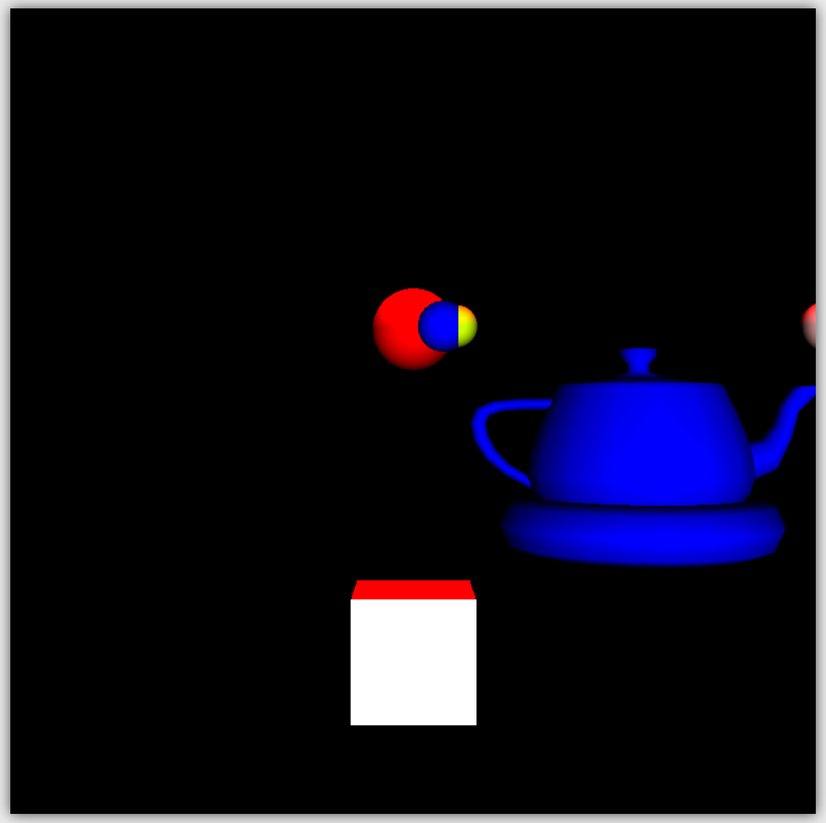
PHONG SHADING



Only interpolate vertices in the same smoothing group

SMOOTH SHADING





Phong Interpolation