

COMP0027 Coursework 1

Qiaohui Liang 22060891

1 Three materials can be rendered using Phong BRDF



Figure 1: Red glass, Blue rubber duck, Jingle bell

	RGB diffuse	RGB specular gloss	n
Red glass	(1.0,0.0,0.0)	(0.9,0.0,0.0)	10
Blue rubber	(0.0,0.2,0.9)	(0.0,0.2,0.8)	10
Jingle bell	(0.9,0.6,0.1)	(1.0,1.0,1.0)	20

Table 1: k_d, k_s, n

Figures above show three different materials in real world and figures below show the rendergraphs with the code using three parameters.

2 Some examples cannot be realized with the code



Figure 2: Complex shadow, Translucent glass

Complex shadow: Look at the figure on the left, especially the area in the green box. The shadow has multiple levels and it includes soft shadow when our code can only handle hard shadow with sharp edges.

Translucent glass: The figure on the right shows the translucent glass. Apart from reflection and refraction, translucent materials also have absorption and it needs an coefficient k_a represents the probability that light is absorbed per unit distance traveled in the medium.