Computer Graphics Assignment #7

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All the characteristics of each material are realized based on the Phong model but with different coefficients:

$$\begin{aligned} Ref &= DiffuseL + SpecularL + AmbientL \\ &= [\max(k_d, 0) + k_s(H \cdot N)^n + k_a] * (LightColor * Reflectance) \end{aligned} \tag{1}$$

Figure1 shows the result of different material textures.

Chalk: Set $k_s = 0$ to remove the specular reflection. Add noises on the surface.

Brick: Set $k_s = 0$ to remove the specular reflection. Set n to a larger value to make surface rough.

Coin: Set n to a smaller value to show its metal surface.

Metal Cabinet: $SpecularL = K_s(H \cdot N)^n * LightColor$ to make the high light more sharp and show the smooth surface.

White Plastic: $LightColor = IncidentColor$ to make it looks like plastic.

Bamboo: $k_s = 0$ and a moderate k_d to make the surface more like a plant and kind of smooth.

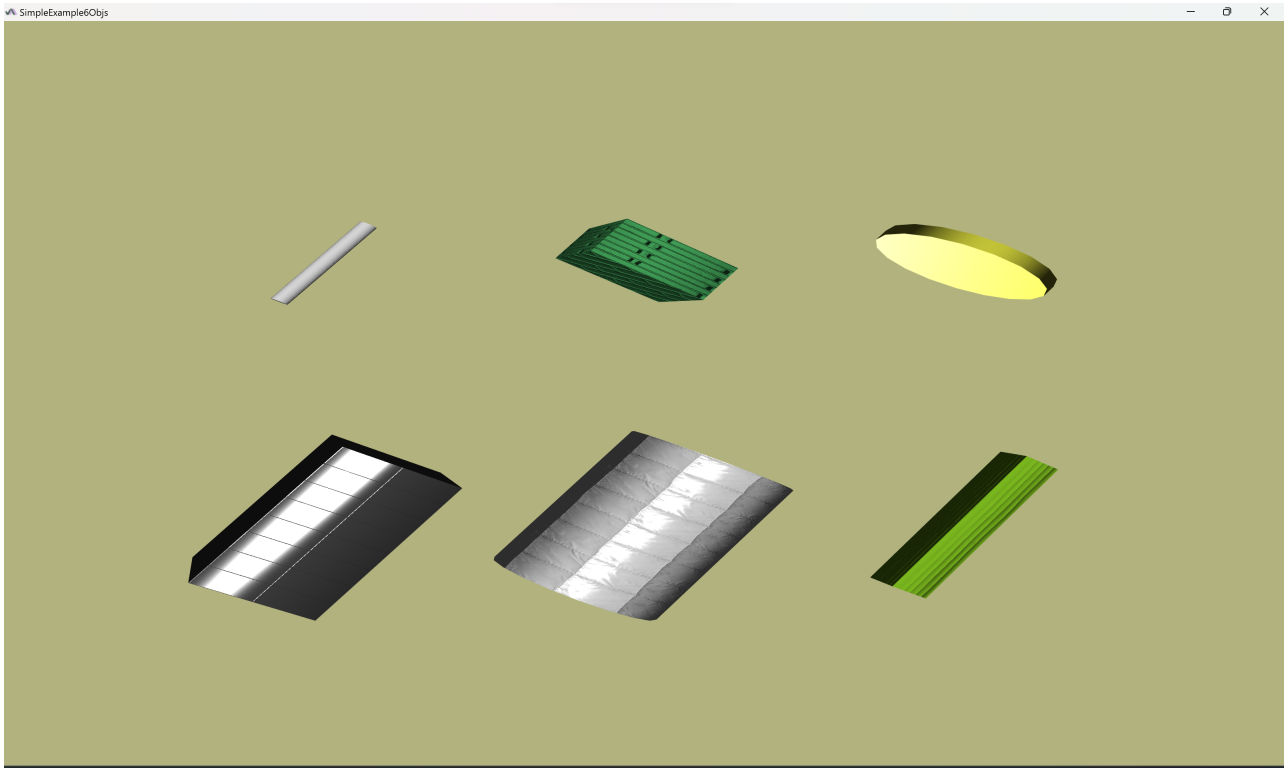

Figure 1: Different material textures

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[1] Source file can be found from here.