Lighting Lecture Notes

**Pawn**

3 point lighting

 Key

 Generally shadow casting light

Main light source

 Fill

 Fill in shadows

 Compliment of key usually (color)

Lower intensity than key

 Rim

 Generally higher or equal to key intensity

Shadows, depth map

Lighting the pawn

Key

NAME

Place the light at position (x, y, z) = **(13, 27, 21)**.

The key light is generally placed above the subject and a bit to the left or right of the camera.

Use the **t** key to show the light's target. Place the target inside the pawn.

 In the Attribute Editor, change the Intensity of the light to **1.5** and the color (H, S, V) to **(60, 0.134, 1)**.

**Render**

Set the Cone Angle to **20**, the Penumbra Angle to **25**, and the Dropoff to **0.25**. This will give a nice, soft edge to the Spotlight.

Render

Enable Depth Map Shadows in the Attribute Editor and set the Resolution to **1024**and the Filter Size to **8**.

**Fill**

Place it at (x, y, z) = **(-19, 17, 20)**.

With the light selected, use **Panels → Look Through Selected Camera** to point the light at the pawn.

Set the Intensity to **1.25**, the Cone Angle to **20**, the Penumbra Angle to **70**, the Dropoff to**1.25**,

and the Color (H, S, V) to **(240, 0.388, 0.721)**.

Uncheck the Emit Specular box so that only the key light casts specular highlights on the front of the pawn.

**Rim**

Place the rim light at the position (x, y, z) = **(-4, 14, -25)**

Set the Intensity to **1.8** and the Color (H, S, V) to**(60, 0.366, 1)**.

 Notice that he rim casts a rather harsh cone of light on the ground.

Select the rim light and the background and go to **Lighting/Shading → Break Light Links**.

Light linking editor

Light visibility

Deleting lights (problem)

Room Lighting

Using mental ray and rey trace shadows

Assignment: pick a room

Replicate it to the best of your ability

Take questions,

Demonstrate in pawn maya software and raytracing and metnal rey differences

**SHADOW PROBLEMS**

Types of lights in maya

Spot light

 Cone

Area light



In Maya, area lights are two-dimensional rectangular light sources. Use area lights to simulate the rectangular reflections of windows on surfaces. An area light is initially two units long and one unit wide. Use Maya’s transformation tools to resize and place area lights in the scene.

Compared to other light sources, area lights can take longer to render, but they can produce higher quality light and shadows. Area lights are particularly good for high-quality still images, but less advantageous for longer animations where rendering speed is crucial.

Area lights are physically based—there is no need for a decay option. The angles formed with the area light and the point that is shaded determine the illumination. As the point moves further away from the area light, the angle decreases and illumination decreases, much like decay.

Volume light



A major advantage of using a volume light is that you have a visual representation of the extent of the light (the space within which it is bound).

The falloff of light in the volume can be represented by the color ramp (gradient) attribute in Maya, which prevents the need for various decay parameters, and also provides additional control. The color gradient is also useful for volume fog.

Directional light



Use a directional light to simulate a very distant point light source (for example, the sun as viewed from the surface of the Earth).

A directional light shines evenly in one direction only. Its light rays are parallel to each other, as if emitted perpendicular from an infinitely large plane.

Ambient Light



A Maya ambient light shines in two ways—some of the light shines evenly in all directions from the location of the light (similar to a point light), and some of the light shines evenly in all directions from all directions (as if emitted from the inner surface of an infinitely large sphere).

Use an ambient light to simulate a combination of direct light (for example, a lamp) and indirect light (lamp light reflected off the walls of a room).

Point Light



A point light shines evenly in all directions from an infinitely small point in space. Use a point light to simulate an incandescent light bulb or a star.