Setting up lights using the LightPanel.

A tool to help make it easy to setup lights in Daz.

Introduction

When we are lighting a scene there are a number of useful methods we can employ to make it all go easier and faster. To do this we need more tools than are supplied with Daz out of the box. These tools are tailored to make setting a scene up easier.

Specifically these tools are for lights. Its also useful to have a similar set for cameras, and scene materials.

Lights in Daz
Daz has four types of lights. They all have a lot in common and their names help to explain them.

- PointLights
  - A basic light and, like a lightbulb, it shines in all directions. As of Daz 1.4.16.0 there is also a light falloff parameter that mimics real-world light strength fading off over distance.
- DistantLights
  - These model the way the Sun lights objects. The distance of the sun makes the rays of light seem parallel rather than coming from a single point.
- SpotLights
  - These are more sophisticated lights and come from a point source but also allow us to control their softness and how much they spread out the further away the they are. These are modeling studio lights that have “barn doors” and allow you some control over masking the light so it doesn’t go where you don’t want it.
- ShaderLights
  - These are the most variable because they are hard coded to behave in novel ways using RenderMan shading language. To control these lights well you need to know about the specific ones you are using.

The Plan

For each Light

Its useful to see the following for each light in a scene:

- what it sees
  - This helps us to see where the light is going to fall.
  - This helps to get the right general coverage as well as to see where the shadows will be cast (if turning on shadows)

    - Especially useful if using Gobos because we can see exactly how the gobo's pattern will be projected across objects in the scene.
    - Distant Lights do not have perspective and this can make sorting out what you are looking at quite difficult.
    - Point Lights shine in all directions and so this technique is not so useful here – but it can still be useful to see the scene from the lights position.
- allow for re-aiming, re-positioning
    - include Hitchcock zoom for spotlight spread angle – so user can move light further away but still keep same area (light cone) lit
- adjust all lighting parameters
    - of course
- see test render of this lights contribution to scene only
    - with shadow on and off
- identification color
    - user defines a high saturation color so the effect this light is having on scene can be seen.

Global controls

We want to control as many lights as we can. However there may be too many for a single screen display and we have a lot of controls for the user to use. This will depend on your screen resolution. So we default to 6 to a tab but you may change it to be more or less. Extra tabs are created based on the number of lights in the scene.

Having made so many lights it would be useful to group them in a number of ways so the user can quickly navigate to the desired light.

Useful sort orders are:

- by Type (Distant, Point, Spot)
- by name - alphabetically
- active lights first (inactive at end)
- shadow on/off
- visible lights first

It is also useful to have the notion of a collection so the user can adjust some parameters at the same time on a group of lights.
These operations should operate on all lights, or the current selection:

- scale intensity of current selection,
- toggle shadows on/off
- turn lights in real-time scene on/off,
- toggle off all identification colors

Additionally we need to be able to easily

- get back to the current scene cameras
- short text summary of lights in scene
- Toggle on/off shadows for the scene

Gobos

Gobos should be supported.

- So we need the ability to create them from primitives and to orient them effectively. They should also be able to be turned on and off to speed up testing.
- The create tool should be available per light. As well as special tool to make gobos
    - Choose image to project with choice to invert image
    - Make gobo in front of aim point of light
    - User can scale/translate to position gobo from Lights POV
    - Multiple gobo support (e.g. for leaves in tree motion)

Conclusion:

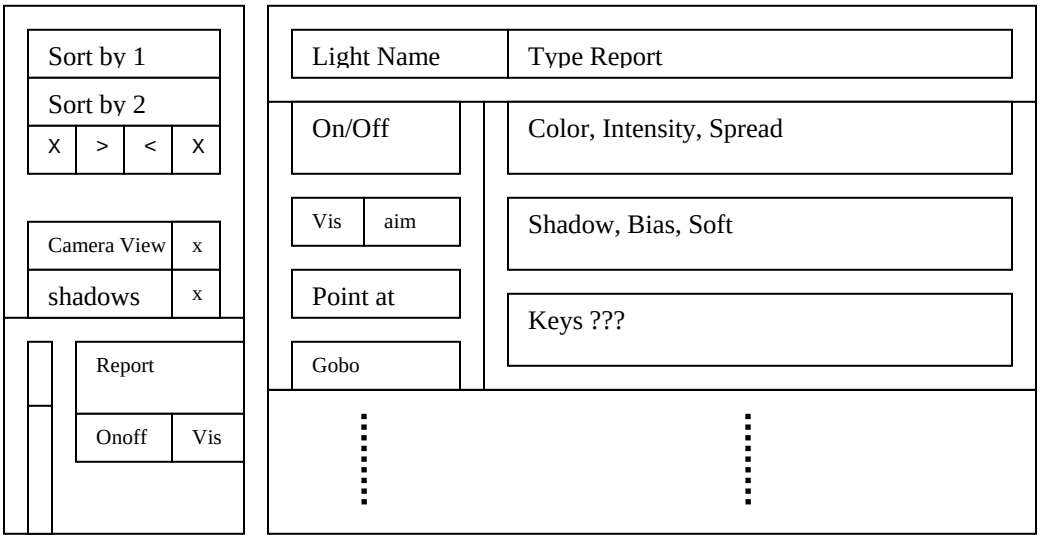
So user would have Global controls:

- Principle camera view (choose from dropdown of cameras)
    - used for getting to and from light positions
    - can be chosen at any time (so user can move between cameras)
    - if camera has an animation track then maybe choose % of move from start to end, or frame number, or hit keys.
- Button to activate camera view
- Light summary
    - how many, what type(DSP), active, visible…
- toggle shadows on/off
- Group ops (checkbox to operate on current group or all lights)
    - scale brightness of grouped lights
    - toggle off identification mode for all lights
- Less used section:
    - On next opening – what is grouping for tab ordering
        - For types – get to group types by Tab (sdp or dps)
        - For alpha – just a list (name in Tab is first light in that Tab)
        - For active – subsort. Active first
        - For shadow – subsort. Shadow first
        - For visible – subsort. Visible first

For each Light:

- In group for group control or not
- visible in scene
- on or off (secular, diffuse, both)
- light params
- shadow params
- if aim – aim at what
- identification color - choose from number of high sat colors
    - button to toggle this on or off
- button to switch to this light’s view

- if keys – enum slider of each key (for aiming and seeing position)
- Add Gobo button - to selected light (or group)
    - Makes Gobo object in front of light
    - Groups under light
    - Prompts for image
    - Sets material



Keys could be an enum slider…

Extras:

Desired features:

- Select Perspective Camera in addition to regular cameras
- Display and use shader light params
- Toggle diffuse and specular settings (for multipass renders)
- Groups of lights
    - Have some controls over groups:
        - Intensity
        - Toggle shadows
        - Diffuse/spec
        - switch lights from mapped to raytraced shadows
- Aim-at parameter added to each light
- Rotate gizmo
- Gobo maker
- add maxlightspertab and sort options to global panel.
    - Sort – Alpha, Group(sub alpha), Type (sub alpha)
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