**1, Explore the Houdini UI**

**Box**

Creates a cube or six-sided rectangular box.

**Polygon extrude**

Extrudes polygonal faces and edges.

**Subdivide**

Subdivides polygons into smoother, higher-resolution polygons.

**2, Adding the Soccerball Geometry**

**Platonic Solid**

柏拉图式固体：四面体，Cube，八面体，十六面体，足球，茶壶。

**3, Create a Realistic Soccerball**

**Ray**

Projects one surface onto another.

**Sphere**

球体

**AttributeCreate**

Adds or edits user defined attributes.

**4, The For-Each Node**

**Foreach Named Primitive**

循环，由foreach\_begin和foreach\_end组成。

**Fuse**

愈合，将每一个片连接成一个多边形。

Merges or snaps points.

**5,Setting up UVs**

**UV Quickshade**

添加UV贴图，辅助修改UV坐标。

Applies an image file as a textured shader to a surface.

**UV Flatten**

按块设置UV。

Creates flattened pieces in texture space from 3D geometry.

**6, Layout: Cameras and Lights**

**Match Size**

Resizes and recenters the geometry according to reference geometry.

**Null**

Does nothing.

**Scene Import**

Solaris模式下，导入场景和物体。

Imports models, materials, and lights from the Object level into the LOP network.

**SOP Create**

Lets you create geometry in a SOP subnetwork inside this node, so you can create geometry in-place in the LOP network instead of needing a separate SOP network.

**Grid**

Creates planar geometry.

**Bend**

Applies deformations to captured geometry such as bend, twist, taper, and squash/stretch.

**Camera**

Adds a USD camera to the scene.

**Dome Light**

环境光

**Point Light**

点光源

**Light**

灯光

**Light mixer**

光源管理

Lets you interactively edit USD properties for multiple lights.

**7,Lookdev:Materials**

**Material Library**

材质库

Authors USD material primitives from shader VOP nodes.

**Principled Shader**

创建材质

An artist-friendly shader that can model a large number of materials realistically.

**Assign Material**

设置材质

Assigns a material to one or more USD primitives. You can use also programmatically assign materials using VEX, programmatically override material settings for each assignment, and programmatically assign materials to geometry subsets.

**Edit**

保存编辑数据，方便取消

**UV Project**

快速设置UV

Assigns texture coordinates based on the specified projection type.

**Krama**

Krama渲染。

**8,Rig the Soccerball**

**Null object node**

Serves as a place-holder in the scene, usually for parenting. this object does not render.

**Transform**

变换

**9, Animate a Bouncing Ball**

**10,Add motion FX**

**CHOP Nextwork**

Chop

**Noise**

Makes an irregular wave that never repeats, with values approximately in the range -1 to +1.

**Channel**

Creates channels from the value of its parameters.

**Math**

Perform a variety of arithmetic operations on and between channels.

**Limit**

Provides a variety of functions to limit and quantize the input channels.

**11,Lights,Camera,Action!**

**Object Merge**

从选中的物体或组件创建一个新的物体。

Merges geometry from multiple sources and allows you to define the manner in which they are grouped together and transformed.

**USD Export**

导出USD文件。

**Sublayer**

Imports from USD files or other LOP node chains into as sublayers, or removes / replaces / reorders existing sublayers.

**12,Set up a Rigid Body Simulation**

**Mountain**

Displaces points along their normals based on fractal noise.

**Copy to Points**

Copies geometry in the first input onto the points of the second input.

**RBD Bullet Solver**

Runs a dynamic Bullet simulation.