

# **Houdini Workshop**

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# Welcome!

## Overview

- What is Houdini?
- Basics of UI
- Basics of Houdini's Approach to 3D
- Modelling
- Procedural Generation
- Output

# What is Houdini?

- SideFX, the people who make Houdini, describe it as:
  - “...an advanced procedural modelling, animation, effects, simulation rendering and compositing package”

<https://www.sidefx.com/docs/houdini/basics/intro.html>

# What is Houdini?

- OK, so it can do a lot of stuff, but what does this mean? Why is it better/different to other 3D packages such as Blender or Maya?
- The key is that Houdini is procedural. This means that you are creating a series of instructions on how to complete a task (e.g. model a sphere), rather than doing it directly
- The reason this is powerful is because you can then step back through the instructions and change parameters and have the subsequent instructions recreate the output with the new data
- It's tangentially similar to the difference between vector drawing packages and bitmap drawing packages

# Basic UI - Demo

# First Project

File Edit Render Windows Assets Help

Create Modify Model Poly... Deform Text... Riggi... Char... Anim... Hair Groo... +

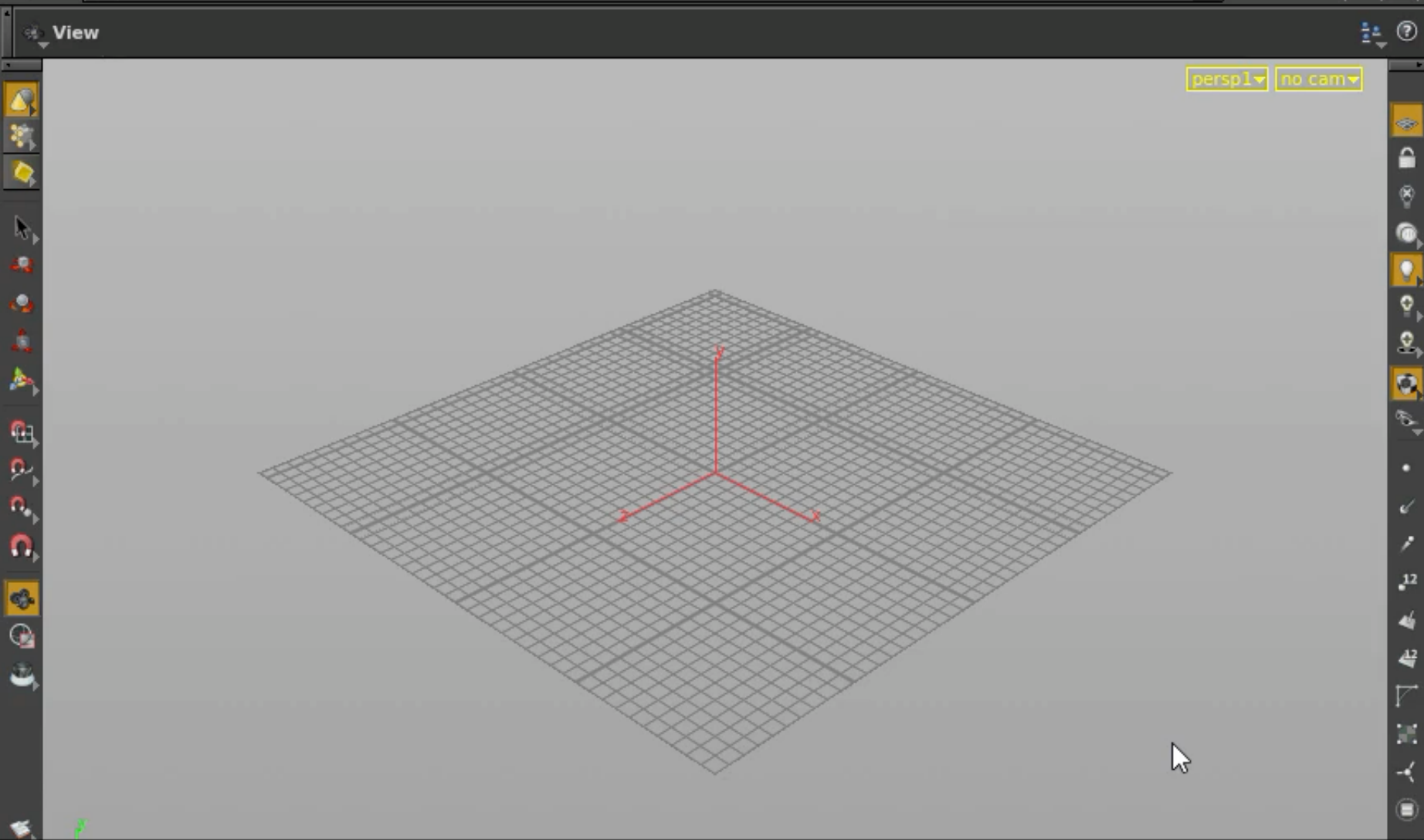
Lights... Particles Grains Rigid... Partic... Ocean FX Fluid... Popula... Contai... Pyro FX Cloth Solid Wires Crowds Drive... +

Box Sphere Tube Torus Grid Metab... LSyst... Platomic Sol... Curve Draw Cur... Spray Pa... Circle Font

Cam... Point LI... Spot Lig... Area LI... Geometry L... Volume LI... Distant LI... Environme... Sky LI... GI LI... Caustic Lig... Portal LI... Ambient LI... Stereo Cam... Switch...

Scene View x Animation Editor x Render View x Composite View x Motion FX View x Geometry Spreadsheet x +

obj



Parameters x Take List x Performance Monitor x +

obj

No Operator Selected

/obj x Tree View x Material Palette x Asset Browser x +

obj

Scene

# Houdini's Approach to 3D

- As mentioned previously, Houdini is procedural. That means that some elements of the 3D workflow you may be used to are not exactly the same in Houdini compared with something like Blender or Maya
- In Blender or Maya, you usually create objects through the use of polygon tools or sculpting tools (e.g. in something like ZBrush)
- In Houdini, whilst you can do this, it is more usually a set of instructions you are writing in a node graph in order to describe the way the object is constructed - see, for example, this: <https://www.youtube.com/watch?v=fdG0ZD8IDS4>

# Doughnut