Houdini – Phyllotactic Pattern Exercise:

For my project I decided to create a flower. The flowers controls are devised into three main sections: Floret Controls, Petal controls, and Stem Controls. This readme file will walk you through the controls and their function

Floret Controls:

Radius: controls the spread of the seeds

Number of Seeds: controls the number of seeds

Size of Seeds: adjusts the size of the seeds

Color Shift: allows the user to manipulate how quickly the seeds transition from yellowish orange to a more brown color

Rotation Constant: this allows the user to control the rotational offset of each seed, by doing so the user is able to create unique patterns and designs

Petal Controls:

Number of Petals: controls the number of petals on the flower

Back offset: controls how much in the Z axis each petal is pushed

Back Rotation: controls how far back each petal is rotated

Petal Twist: applies a twist to the petals, each twist has a random variation compared to the ones around it, however the petal twist slider controls the magnitude of the overall effect

Rotation Constant: this allows the user to control the rotational offset of each seed, by doing so the user is able to create unique patterns and designs

Stem Controls:

Stalk Bend: controls the amount of bending in the stalk (a value of zero would result in a perfectly straight stalk

Stalk height: controls the height of the stalk

(Leafs) Right Side: controls the number of leafs on the right side of the sunflower

(Leafs) Left Side: controls the number of leafs on the Left side of the sunflower

(Leafs) Top Bias: a painted probability map on the sides of the plant determine the chance of a leaf being spawned near the top. this slider controls the amount of control that the painted probability has on the outcome of spawning. (a value of zero would result in no bias, while a value of 1 would result in a very strong bias

Hair Toggle: controls whether Hair is created

(Short/ Long) Hair Length: controls the length of the hair

(Short/ Long) Hair Density: controls the number of the hair created

(Short/ Long) Hair Width: controls the width of the hair

(Short/ Long) Hair Noise: controls the randomization of the hair paths