

# Project #1 - Draw Something Cool in 3D!



For this project, I created a tree using procedural geometry and randomness. I focused heavily on the use of the `Ranf()` function and mathematical formulas to generate and position the tree components. Each distinct part of the tree was implemented as a separate function, and `Ranf()` was used to create multiple instances of these parts with variations in size, rotation, and translation to simulate natural scattering. The tree consists of five main components: the trunk, the bark, the branches, the leaves, and the fallen leaves. The trunk, bark, and branches are constructed as cylindrical tubes, with the bark and branches featuring cone caps to conceal their ends and provide a more organic appearance. The leaves and fallen leaves are formed from circular arrangements of triangles, creating disc-like shapes. I defined variables for minimum and maximum ranges to introduce variability and randomness in the placement and dimensions of each component. These elements are distributed within specified bounds, allowing for a dynamic and realistic tree structure that leverages procedural generation techniques.

[Video Link](#)