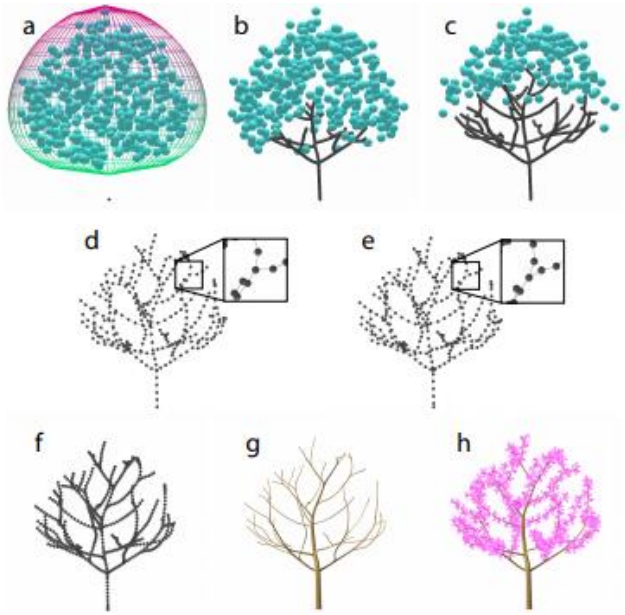
**Final Project: Implement a tree with a space colonization algorithm.**

Input: A set of parameters representing the shape of the envelope, and another set for attraction points.

Output: A tree grow with space colonization algorithm.




**Checkpoint 1:**

Input: A set of parameters representing the shape of the envelope, and another set for attraction points.

Output: A graphic framework displaying the 3D envelope of tree crown with user-controlled attraction points fed.

1. A good framework that support rendering both low-level primitives (attraction points) and high-level mesh models (envelope of tree crown). (a)
2. Other modules to help testing. E.g., camera, time, transform with hierarchy (relative position/rotation/scale, matrix4x4…).

**Checkpoint 2:**

Input: A set of parameters representing the shape of the envelope, and another set for attraction points.

Output: Tree skeleton.

1. Generation of tree skeleton (Structure of nodes & branches).
2. Growth with space colonization. (b), (c)
3. Node decimation (d), node relocation. (e)
4. Node subdivision (forming chain for branch) (f)

**Checkpoint 3:**

Input: A set of parameters representing the shape of the envelope, and another set for attraction points.

Output: A Tree.

1. Construct cylinders for branches. (g)
2. Addition of organs. (h)