**1/8/18**

Went over “Farmer-Fox-Chicken-and-Grain Problem” Worksheet.

**02-State-Spaces**

Search Trees

* Applying operators to a state, we generate it’s **children** or **successors**
  + **successors** are **descendents**
* ignoring possible equivalent states among descendants, we get a **tree structure**
* **Depth-First Search**: Explore all the descendants of a node before trying any sibling of a node.

How Large is a State Space?

* size of state space changes the amount of time required to search it
* impacts the amount of memory required for search
* often use **combinatorics** to count elements of various kinds of sets.

**combinatorial explosion:** number of states increases with the tree depth.

* this is the reason why a lot of the work in AI is dealing with combinatorial explosion.

**03-Basic-Search-Algorithms**

-- never goes past Breadth-First Search: Iterative Formulation