1. **Intro to Algorithm:** What is Algorithms, What's the main Goal.
2. **Introduction to Graphs:** Graph is combinations of **nodes** which are connected with each other by some **edge**. There can also be **self edge.**
3. **Variations Of Graph - 1 :**
   a. Unweighted Graph **:** No information about each Edge
   b. Weighted Graph : Some information about each Edge
   c. UndirectedGraph : There will be no direction in each Edge.
   d. Directed Graph : There will be a specific direction in each Edge.
   Directed Graph can be Weighted Also
   e. Bipartite Graph : Divided by two side. No edge between same side.
   d. Complete Graph : Every Nodes has one Edge with each node.

4. **Variations Of Graph - 2:**
   Trees [Basically Tree as learn from DS] No Cycle. Every Node is connected.
   a. Rooted Tree : root is specific.
   b. Unrooted Tree : root is not specific.

5. **Variations Of Graph - 3 :**
   a. **DAG -** Directed Acyclic Graph
   b. Multi Edge A ≡ B. A -> B & B -> A Edge aren't the same.
   c. Self Loop (self edge) A - A

How Many Edge in Node N for a Complete Graph ?
Ans : `N * (N - 1)`

How Many Edge in Node N for a Tree ?
Ans : `(N - 1)`