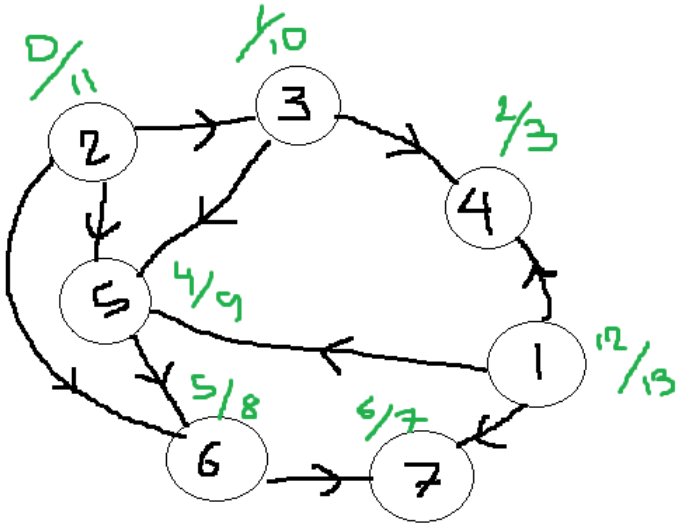
Topological Sort

By now I am pretty sure you are quite clear about undirected and directed graphs, BFS and DFS and few of their applications. In this lecture we are going to look at another application of DFS which is called the topological sort.
Topological sort is the sorting of the vertices according to the departure time in descending order (largest ending time to the smallest ending time) . Through topological sort, we can vertices in such a way that all every edge goes from left to right. Topological sort can be implemented only Directed Acyclic Graph(DAG). It means the graph has to be directed and there cannot be any cycle.

The graph below is an DAG with starting and ending times.



If the ending times are arranged in decreasing manner we will get the ordering of the vertices as shown below.

Ending Time	13	11	10	9	8	7	3
Corresponding Vertices	1	2	3	5	6	7	4

A directed graph can have multiple topological sorts.
The time complexity is O(V + E) which is linear.