# Assignment - 08

Topological Sorting (Hint)

Topological sorting for Directed Acyclic Graph (DAG) is a linear ordering of vertices such that for every directed edge u v, vertex u comes before v in the ordering. Topological Sorting for a graph is not possible if the graph is not a DAG.

For example, a topological sorting of the following graph is "3 2 0 4 5 1". There can be more than one topological sorting for a graph. For example, another topological sorting of the following graph is "2 3 0 4 5 1". The first vertex in topological sorting is always a vertex with in-degree as 0 (a vertex with no incoming edges).
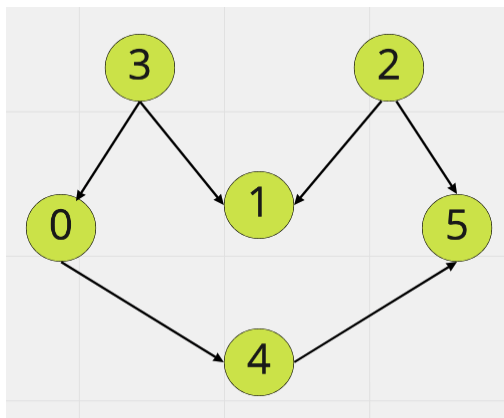
Question 1:

Write a java or python programme that supports the following requirements:

- Create your own programme and submit an implementation of a simple <u>Depth First Search</u> (DFS) for the above graph.

Question 2:

Write a java or python programme that supports the following requirements:

- Create your own programme and submit an implementations of <u>Topological Sorting</u> for the above graph.
- Your programme should give all the possible alternatives of Topological Sorting results which are indicated in the hint part.

Deadline: 16 June 2022, 23:59

Presentation: 17 June 2022, E3-302 (During the Lab Hours / 11:00 - 15:00)