Assignments - XI

1. Given a directed acyclic graph (DAG) $G = (V, E)$. Write a program to perform topological sorting on G. Print the vertices in the (topologically) sorted order.

2. Given a directed graph $G = (V, E)$. Write a program to find the strongly connected components in G.

3. Given an undirected graph $G = (V, E)$. Write a program to find the connected components in G.

4. Given an undirected graph $G = (V, E)$ and a cut $(S, V - S)$ of G. Write a program to find the set of all edges $A_c \subseteq E$ that crosses the cut.

5. Given an undirected graph $G = (V, E)$ and a cut $(S, V - S)$ of G. Write a program to find the largest set of edges $A \subseteq E$ that the cut $(S, V - S)$ respects.

6. Given an undirected weighted graph $G = (V, E)$ and a cut $(S, V - S)$ of G. Write a program to find the light edge corresponding to the cut $(S, V - S)$.