Graph Basic Practice problems:

Try to solve the following problems for both adjacency matrix and adjacency list representation.

1. Write a function *addVertex ()* that adds a new vertex to the graph.
2. Write a function getNeighbors (int i) that prints all the neighbors of the given node. In Fig. 1 A, C, and D are the neighbors of node B.

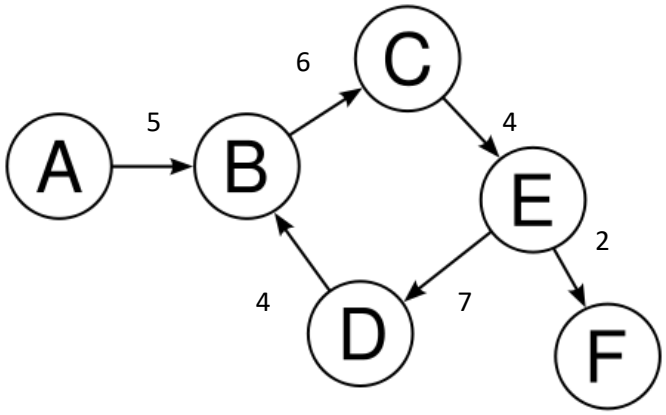

Fig:1

3. Write a function *getHighestDegreeNode (),* that returns the node which has the highest degree.
4. Write a function *getMaxWeightEdge (),* that returns the edge (two incident vertices) that has the maximum weight.
5. Write a function *getInOutEdgeCount (int i),* that returns the number of incoming and outgoing edges incident on the given node. In Fig. 1, B has 1 incoming edge and 2 outgoing edges.