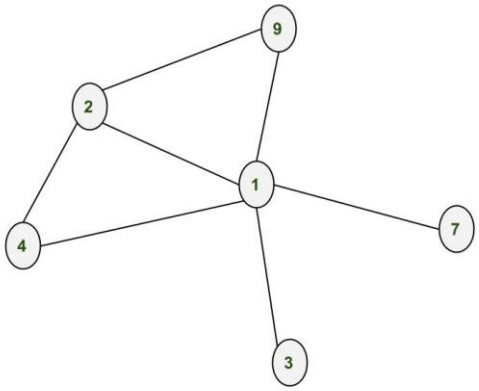
Complex Network Analysis

Assignment 1

1. Create a graph G with 10 nodes.
    a. An edge is to be created between nodes I and j if both are even numbered nodes. 2,4; 6,6; 2,8; 4,10; 4,6; etc.
    b. Count the number of self-loops in the graph
    c. Count the number of edges in the graph
    d. Print the adjacency list of the graph G
    e. Add weights to the edges in G. Weight of edge(i,j) is i+j
2. Create following graph



    b. Add attributes to each node that is name of the people. The edge represents their friendship
    c. For a given 2 nodes I and J in the above graph, check if I and J are present in the graph. If present, then check if I is adjacent to J.

        Input : Piper and William
        Output : yes

        Input : robin and William
        Output : No

    d. Find the node/nodes with maximum number of edges
    e. Add the attributes to each edge
    f. Remove node 9 and corresponding edges

3. Create one adjacency list file. Based on this file, create a graph. Find the nodes with maximum number of edges. Color that node red. Remaining nodes can be colored blue.

4. Create a graph from a numpy matrix with 10 nodes and edges created randomly

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