**SOCIAL NETWORK ANALYSIS**

**Materials Required:**

* Google Form (To collect the data)
* Dataset

**Content:**

Social networks provide a platform for studying human interactions and social dynamics. In this project, we conduct a comprehensive analysis of a educational system, focusing on the structure of friendships in our class and the dynamics of information propagation.

First, we created a dataset consisting of friendship connections between users by passing a google form among the friends. Through that google form we collected the data and using this data, we construct a graph representation where nodes represent users and edges represent friendships.

The main objective is to provide an introduction about the Network, particularly in relation to the basic aspects of drawing a network diagram. This provides insights about drawing a network diagram. In addition, it is also useful to know and understand the meaning of a network analysis, its importance, applications, limitations, rules and traditions in drawing a network diagram, and the terminologies used in relation to network.

**Keywords:**

1. Network Theory
2. Graph Theory
3. Network Visualization
4. Community Detection
5. Centrality Measures
6. Clustering coefficients
7. Network Dynamics
8. Network Structure
9. Node and edge attributes

**Analysis:**

In our social network analysis project, we encountered a large and complex dataset consisting of 330 rows and 2 columns, representing connections between entities.

Each edge is a new row and for each edge there is a ‘start name’ and an ‘end name’ column where the total number of edges are 328 and nodes are 102.

In this project we addressed that the network structure of the dataset is very complex and the user cannot estimate or interpret the relationship among the nodes.

To simply the analysis of complex social networks we divided the dataset into smaller and more manageable subsets of 10 rows each,with each row showing a connection between two entites.This division makes it easier for users to understand and explore the relationships in the network. By breaking down the dataset into manageable parts, we aim to help users navigate and interpret the social network more effectively.

We used two algorithms and that are **Random Layout Algorithm** and **Spring Layout Algorithm** which is used for visualizing the graph of our network.

To find the correlation among the networks **Centrality Measure Algorithm** and **Clustering Algorithm** is used .