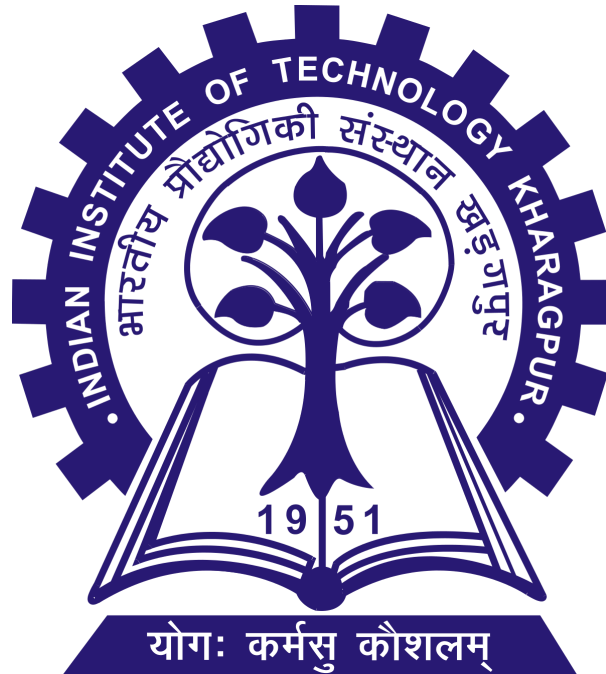


Database Management Systems Laboratory

CS39202



Term Project

Team - The Deep Seekers

1. Ishaan Jain	22CS10032
2. Shivva Sainaga Pranav	22CS10073
3. Krish Debroy	22CS10086
4. More Aayush Babasaheb	22CS30063
5. Devanshu Agrawal	22CS30066

Introduction

This project introduces an interactive graph database-powered tool designed to explore and analyze simulation Twitter networks using Neo4j. The tool leverages the inherent graph structure of social networks to provide actionable insights into user behavior, influence, and community dynamics.

The tool is built on a robust technical stack, with Neo4j as the core graph database, a Python-based backend for data processing, and an interactive frontend for visualization and user interaction. By combining graph algorithms with real-time Twitter data, this tool provides a comprehensive platform for understanding and navigating complex social networks.

Technologies Used:

1. Neo4j (Graph Database Processing):
 - a. Efficiently manages user connections and relationships.
 - b. Supports complex graph queries like shortest path analysis.
2. React (Basic Frontend):
 - a. Provides a dynamic and responsive user interface.
 - b. Handles user interaction and data visualization.
3. Python Flask (For API Calls):
 - a. Manages backend logic and API endpoints.
 - b. Facilitates communication between the frontend and Neo4j database.

Functionalities:

1. **Database:**
 - a. Maintains a database of all connections and potential connections.
 - b. Maintains tweets posted by the users.
2. **Query:**

- a. Allows graph related queries ranging from, but not limited to, counting number of nodes to Shortest path analysis.
- b. Allows based user queries falling along the lines of getting connection, getting all posts, getting potential connections, etc.

SNAP Ego-Twitter Dataset (Stanford):

Description: A social network dataset capturing the ego networks of Twitter users, where nodes represent users and edges represent follower relationships.

Key Features: Contains both the network structure and user attributes. Enables analysis of social influence, community detection, and recommendation systems.

Weekly Work Plan:

1. Week 1:

- a. Getting familiar with Neo4j and other required libraries.
- b. Deciding Schema and deploying an instance of the database.
- c. Complete designing and structuring the frontend.

2. Week 2:

- a. Make all API endpoints and function of query processing.
- b. Complete frontend along with CSS.

3. Week 3:

- a. Writing Unit Test and testing and Debugging for potential.
- b. Finalizing and deployment overall on Vercel.