**Big Data Analytics Assignments**

**Assignment #1** (Date: 04-03-24)

1. What is Relation?

2. Why do we create 1 to 1 Relationship?

3. How was SEQUEL converted into SQL? History of it

4. Create an ER diagram of 5 tables and perform JOIN

5. What is Functional Dependency?

**Assignment #2** (Date: 06-03-24)

1. Perform normalization on a table with all three anomalies.

2. What are super keys and candidate keys in the context of functional dependency?

3. Create Facebook tables (users, posts, likes, etc.) and establish relations.

**Assignment #3** (Date: 11-03-24)

1. Modify Example that you have solved for Normalization in context of Functional Dependency

2. What is BCNF?

3. Identify Anomalies in 2NF to 3NF stage

4. Find out the User, Post, Likes, Comments Table Storage Cost if we consider total users are 10^9, Posts and Likes are 100 for each user and Comments are 10 for each user

5. How much time it will take to load Q4 data

6. Now for 1000 user calculate Storage Cost and Time (1GB in 1 sec)

7. Figure out the way to build Facebook Database with 1B user to provide Non Functional Requirements

**Assignment #4** (Date: 21-04-24)

1- Why do we tend to implement heap by the array while for not the other structures?

**Assignment #5** (Date: 21-04-24)

1-Create an Index Statement.

**Assignment #6** (Date: 25-04-24)

1-Create an example finger table for different nodes using Chord DHT.

2-Explain how Chord manages Partition tolerance using Vector Clocks