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Provide in writing, each student individually, answers to the following questions:

a) What are the advantages and disadvantages of using graph databases and which are the best and worst scenarios for it?
   - Graph databases offer flexible data modeling, high performance for complex queries, scalability for handling large amounts of data, and easy data integration from multiple sources
   - However, graph databases may be more complex to set up and manage, have limited use cases for simple data storage and retrieval, may store redundant data, and lack standardized query languages and data models for integrating data from multiple sources

b) How would you code in SQL the Cypher statements you developed for your graph algorithms-based query, if the same data was stored in a relational database?
   - If i had a cypher statement that looked like this:

```
CALL gds.degree.stream('GoT')
YIELD nodeId, score
WITH gds.util.asNode(nodeId) AS node, score
RETURN node.id AS id, node.name AS name, score
ORDER BY score DESC
LIMIT 5
```

   I would make a SQL statement that would look something like this:
   Assuming we'd have following tables in my relational database, "Character" and "APPEARS_IN"

```
SELECT c.id, c.name, SUM(appearances.score) AS score
FROM Character c
JOIN APPEARS_IN appearances ON appearances.character_id = c.id
GROUP BY c.id, c.name
ORDER BY score DESC
LIMIT 5;
```

c) How does the DBMS you work with organizes the data storage and the execution of the queries?
   - DBMS(Database Management System) organizes data storage by using a hierarchical structure.
   - We utilize the DBMS by storing and organizing data in a manner that allows for efficient and manageable access. When executing queries, the DBMS processes requests to find and manipulate data by organizing these requests and identifying relevant data based on the request's specifications and then returning the resulting data to the user.

d) Which methods for scaling and clustering of databases are you familiar with so far?
   - Our primary focus in the course so far has been on scalability of relational databases, where we have studied different types of clustering such as

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Windows Clustering technology and availability groups. We have also covered various types of replication including transactional replication, snapshot replication and merge replication.