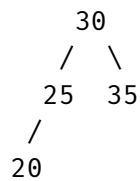


Sample Midterm Questions (& HW 04)

Below are some sample exam questions with which you can test your RAG “Cheat Sheet”.

1. What is the difference between a list where memory is contiguously allocated and a list where linked structures are used?
2. When are linked lists faster than contiguously-allocated lists?
3. Add 23 to the AVL Tree below. What imbalance case is created with inserting 23?



4. Why is a B+ Tree a better than an AVL tree when indexing a large dataset?
5. What is disk-based indexing and why is it important for database systems?
6. In the context of a relational database system, what is a transaction?
7. Succinctly describe the four components of ACID compliant transactions.
8. Why does the CAP principle not make sense when applied to a single-node MongoDB instance?
9. Describe the differences between horizontal and vertical scaling.
10. Briefly describe how a key/value store can be used as a feature store.
11. When was Redis originally released?
12. In Redis, what is the difference between the INC and INCR commands?
13. What are the benefits of BSON over JSON in MongoDB?
14. Write a Mongo query based on the movies data set that returns the titles of all movies released between 2010 and 2015 from the suspense genre?
15. What does the `$nin` operator mean in a Mongo query?