1. What is SQL Server Profiler, and how can it be useful in production support?
Answer: (100 % asked SQL Interview Questions for Production Support)

SQL Server Profiler is a tool used to capture and analyze SQL Server events. In production support, it can help identify slow-running queries by capturing query execution times, allowing for performance optimization.

2. Explain the concept of indexing in SQL. Provide an example of when you might need to add an index to improve production performance.
Answer:

Indexing is a database optimization technique. For example, in a scenario where a frequently executed SELECT query filters data based on a specific column (e.g., WHERE status = 'Active'), adding an index on that column can significantly improve query performance.

3. What are deadlocks in SQL, and how can you resolve them?
Answer:

Deadlocks occur when two or more processes are unable to proceed because they're each waiting for a resource held by the other(s). To resolve, you can use techniques like deadlock detection and resolution mechanisms or adjusting isolation levels.

4. Explain the purpose of SQL triggers. Provide a real-world example where triggers are beneficial.
Answer:

SQL triggers are used to automatically perform actions in response to specific database events. For example, in an e-commerce system, a trigger can be used to update inventory levels when a product is purchased.

5. What is a SQL injection attack, and how can it be prevented in a production environment?
Answer: (100 % asked SQL Interview Questions for Production Support)

SQL injection is a security vulnerability where attackers manipulate input data to execute malicious SQL statements. To prevent it, you should use parameterized queries or prepared statements to sanitize user input.

6. Describe the process of SQL backup and recovery. Share a scenario where a backup and recovery strategy saved critical data.
Answer:(100 % asked SQL Interview Questions for Production Support)

SQL backup involves creating copies of the database, and recovery is the process of restoring it to a specific point in time. In a scenario where a hardware failure corrupted data, a recent backup and recovery plan would help restore the database to its last consistent state.

7. What is the purpose of the SQL "JOIN" operation? Provide an example of using different types of joins in a production database query.
Answer:

SQL JOIN is used to combine rows from two or more tables based on a related column. In a retail system, an INNER JOIN can be used to retrieve customer orders matched with product details from separate tables.

8. Explain the concept of database normalization. Share a real-world scenario where normalization improved database performance.

Answer:

Database normalization is the process of organizing data to eliminate redundancy. In a customer management system, by separating customer details into normalized tables (e.g., customers and addresses), storage efficiency and data consistency can be improved.

9. What is an SQL stored procedure, and why might you use one in production support? Provide an example scenario.

Answer:

An SQL stored procedure is a precompiled set of SQL statements. In a financial application, a stored procedure could be used to calculate interest on a savings account periodically, ensuring consistency and accuracy.

10. How do you monitor database performance in a production environment, and what actions would you take if you notice high CPU utilization?

Answer:

Monitoring tools like SQL Server Performance Monitor can be used. In a high CPU utilization scenario, you might investigate queries causing the issue, optimize them, or consider hardware upgrades.

11. Explain the concept of database replication. Provide an example of when database replication is beneficial in a production environment.

Answer:

Database replication involves copying and maintaining data across multiple databases. In an e-commerce system, replicating the customer database to multiple geographic locations ensures data availability and reduces latency for global customers.

12. What is the purpose of SQL indexes, and how do you decide when to add or remove an index in a production database?

Answer:

SQL indexes speed up data retrieval but can slow down data modification. When there's a trade-off between read and write performance, you might add or remove indexes. For example, removing an index on a rarely queried column can improve INSERT performance.

13. Explain the role of the SQL DBA (Database Administrator) in production support. Share an example of a critical situation where a DBA's expertise was crucial.

Answer:

A SQL DBA manages and maintains the database infrastructure. In a situation where the database server experiences sudden downtime due to hardware failure, a DBA's expertise in quickly diagnosing and resolving the issue is critical to minimizing downtime.

14. What are SQL views, and how can they simplify database maintenance and querying? Provide a scenario where views are beneficial.

Answer:

SQL views are virtual tables created from existing tables. In a human resources system, a view could combine employee and department tables, simplifying queries to retrieve employee information along with their department details without needing complex JOINs.

15. Explain the concept of database locking and provide an example of when it's necessary to use locks in a production environment.

Answer:

Database locking ensures data consistency when multiple transactions access the same data concurrently. In a financial application, when two users simultaneously attempt to withdraw money from the same account, database locks prevent overdrawing.

16. What are SQL server roles, and how do they enhance security and access control in a production database? Share a scenario where roles are beneficial.

Answer:

SQL server roles are security groups with specific permissions. In a healthcare system, you can create roles for doctors, nurses, and administrators, granting appropriate permissions to access patient records while maintaining data privacy.

17. Explain the concept of SQL cursors and provide an example of when to use them in a production environment.

Answer:

SQL cursors are used to process rows one at a time. In a logistics system, when processing a large shipment order, cursors can be used to iterate through each item and perform specific actions, such as updating inventory.

18. What is a SQL dump file, and how can it be utilized in database maintenance and recovery? Provide a scenario where a dump file is crucial.

Answer:

A SQL dump file contains a snapshot of a database at a specific point in time. In a scenario where a critical software update causes data corruption, a dump file taken before the update can be used to restore the database to a stable state.

19. Explain the role of SQL transactions in ensuring data integrity. Share a real-world scenario where transactions are vital.

Answer:(100 % asked SQL Interview Questions for Production Support)

SQL transactions group SQL statements into a single unit of work. In a banking system, when transferring money from one account to another, a transaction ensures that both debit and credit operations are completed together, preventing data inconsistencies.

20. What is the purpose of SQL server clustering, and how can it enhance high availability in a production environment?

Answer:

SQL server clustering involves configuring multiple servers to work together as a single system. In an online retail system, clustering can ensure continuous service availability by automatically switching to a backup server if the primary server fails, reducing downtime.