**The high-level responsibilities of the DB Performance engineer will be as below:**

* Identify performance bottlenecks, resource contention, and areas of inefficiency, and provide actionable insights for improvements.
* Recommend and implement changes to query structures (e.g., indexing strategies, query refactoring) to improve performance.
* Regularly rebuild or reorganize indexes to avoid fragmentation and improve data retrieval efficiency.
* Fine-tune database configurations (e.g., buffer sizes, connection pooling, memory allocation) to maximize resource utilization and ensure optimal performance.
* Analyze current and future database growth patterns and plan for scalability to handle increasing data volume and user loads.
* Implement strategies for vertical and horizontal scaling, including partitioning, sharding, and distributed databases.
* Configure and optimize database replication for fault tolerance and performance, ensuring minimal lag between nodes.
* Conduct root cause analysis (RCA) of recurring performance issues, providing solutions to prevent future occurrences.
* Set up proactive alerts for key performance indicators (KPIs) to identify potential issues before they impact users.
* Work closely with developers to optimize database interactions, improve SQL query efficiency, and establish best practices for database access.
* Collaborate with operations teams to ensure that the database infrastructure (cloud, on-premise, etc.) is aligned with performance requirements and can support future growth.