Discussion; Choosing a DBMS Architecture for Airline Reservation Systems: A Discussion by louder

A distributed system for managing databases (DBMS) architecture would be my first choice if I were to create a web-based tool for selling tickets and making airline bookings (Bibi, 2021). High availability, expansion, and fault tolerance are three of the most important criteria that a reservation system for airlines must have, and these considerations informed our decision. With a distributed database management system, the system could operate on numerous servers, possibly located in different parts of the world. This configuration is essential for improving the user experience in instantaneous applications for airline bookings since it increases the system's stability and speed by allowing users to engage with a local server, lowering latency and load times.

Airline reservations involve thousands of transactions happening all at once all over the world, and distributed DBMSs are great at handling all that data and transactions. If the system could scale horizontally, by connecting additional servers to the network, it could handle more users and more data without drastically reducing performance.

This application may not benefit as much from other structures, especially a centralized database management system. Since all data exchanges must pass through only one database server, a centralized DBMS runs the risk of becoming a bottleneck. Particularly during times of heavy system traffic, such as during peak travel periods, this can cause delays and performance problems. On top of that, if a server goes down, the whole system could be unreachable, which could result in lost money and unhappy customers.

Also, although an architecture based on clients and servers allows for more scaling than a centrally hosted system, it is still heavily reliant on that server for handling and conserving data (Kumar, 2022). As opposed to a completely distributed system, this configuration can boost the likelihood of downtime and reduce performance. An airline reservation and ticket system are an example of an essential high-demand and geographically varied application that would benefit greatly from a distributed database management system.

References

Bibi, M. (2021). *Efficient Airline Reservation System* (Doctoral dissertation, Quaid I Azam University, Islamabad).

Kumar, R. (2022). Systems for Competitive Reservations. *Message from the Editor-in-Chief*.