OLTP and OLAP

Another manner of categorizing databases is through database processing systems (the methods used to create, manage and manipulate databases), of which there are two major ones: **OLTP** and **OLAP**.

OLTP, short for Online Transaction Processing, typically involves managing and processing more atomized transactional data in real-time. It is optimized for rapid and efficient querying and updating of individual data records. OLTP databases are typically used for day-to-day transactional operations such as order processing, financial transactions, and customer relationship management (CRM). AWS services that support OLTP include:

- **Amazon RDS (Relational Database Service)**: Provides managed database services for relational databases like MySQL, PostgreSQL, Oracle, and SQL Server, optimized for OLTP workloads.

- **Amazon DynamoDB**: A fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. It is ideal for applications requiring low-latency data access and high throughput, such as gaming and mobile apps.

OLAP, short for Online Analytical Processing, on the other hand, focuses on processing large volumes of data for complex analytical queries supporting operations such as aggregations, calculations, and data mining to derive insights and make informed business decisions. AWS services that support OLAP include:

- **Amazon Redshift**: A fully managed data warehouse service that allows you to run complex queries across petabytes of structured data. It has built-in integration with Business Intelligence and reporting tools for data visualization and analysis.