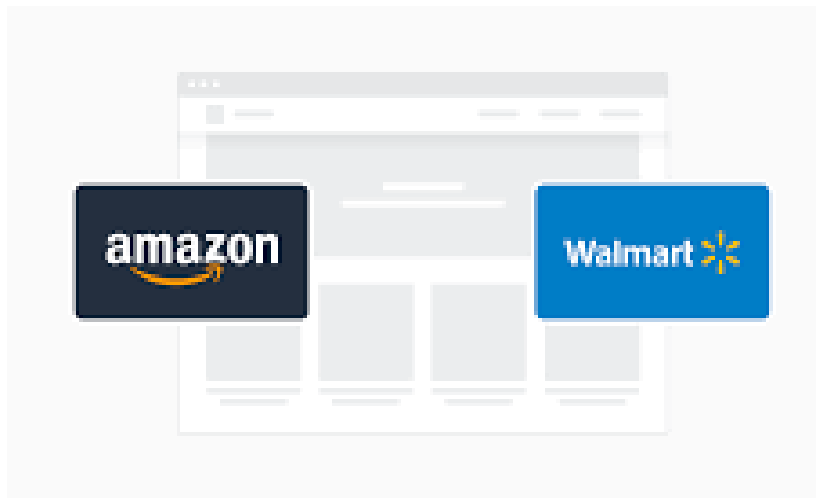


NoSQL Use Cases

1. Retail

Example 1: Amazon

- **Use Case:** Product Recommendations and Personalized Marketing
- **How it works:** Amazon uses DynamoDB, a highly scalable NoSQL database, to store product catalogs, customer preferences, browsing history, and transaction data. This allows for real-time personalized product recommendations and dynamic pricing.
- **Benefit:** Ability to scale horizontally and handle massive amounts of data in real-time for an improved customer experience.



Example 2: Walmart

- **Use Case:** Real-Time Inventory Management
- **How it works:** Walmart uses Cassandra to manage its product inventory across thousands of stores worldwide. With its distributed architecture, Cassandra can handle the high throughput and low latency required for real-time inventory tracking.
- **Benefit:** Ensures accurate stock levels across different locations, reducing stockouts and enabling better supply chain management

2. Banking

Example 1: JPMorgan Chase

- **Use Case:** Real-Time Fraud Detection
- **How it works:** JPMorgan Chase uses Cassandra to process transaction data in real-time for fraud detection. By analyzing patterns in transactional data, they can identify fraudulent activities, alert customers, and take action immediately.
- **Benefit:** Real-time analytics helps in the early detection of fraudulent transactions, reducing financial losses.



Example 2: HSBC

- **Use Case:** Risk Analytics and Customer Insights
- **How it works:** HSBC uses MongoDB to store and analyze large amounts of structured and unstructured customer data. This allows them to perform predictive analytics, assess risks, and offer personalized financial products.
- **Benefit:** Enhanced decision-making capabilities, allowing for better risk management and personalized services for customers.

3. Social Media

Example 1: Facebook

- **Use Case:** Social Graph and News Feed
- **How it works:** Facebook uses Cassandra to manage and scale its social graph, which stores user relationships (friends, followers, groups). Additionally, it powers the real-time feed, ensuring that users' news feeds are updated promptly based on interactions.
- **Benefit:** Horizontal scalability and low-latency data processing for billions of users, ensuring smooth, real-time interactions and content updates.



Example 2: Twitter

- **Use Case:** Tweet Storage and Real-Time Data Streaming
- **How it works:** Twitter uses Manhattan (its internal NoSQL database system) for storing tweets and user data. The system is optimized for handling high-throughput, low-latency reads and writes, allowing Twitter to process millions of tweets per day in real-time.
- **Benefit:** Provides real-time interaction and rapid content retrieval, critical for a social platform like Twitter where timeliness is key.

4. Education

Example 1: Coursera

- **Use Case:** Course Progress Tracking and User Activity
- **How it works:** Coursera uses MongoDB to store course materials, student progress, assignments, and grades. The database supports flexible schemas, allowing the system to handle varied content types and track student interactions with the platform.
- **Benefit:** Scalability to handle a growing user base while ensuring that data about students' progress and activity is stored efficiently.



Example 2: Duolingo

- **Use Case:** User Learning Data and Feedback
- **How it works:** Duolingo uses Cassandra to handle the vast amount of user-generated data, including learning activities, language progress, and feedback. The platform tracks millions of learners and their activities in real time.
- **Benefit:** High scalability and availability, which is crucial for handling a large, active user base and providing real-time feedback during lessons.