

# Database and Datamodeling

## Day 1: Assignment 1

### 1. Inventory Management System

- It uses relational database like SQL\Postgre for maintaining the inventory.
- SQL is a perfect fit for this use case since inventory required structured data and many attributes are inter-related to each other.
- For any updation of stock, the product quantity has to be updated promptly and there should not be any loss of transaction..

### 2. Real-Time GPS tracking

- It uses in memory database (IMDB) for storing the location of the user.
- IMDB is the only logical fit seeing that the real time tracking requires continuous rewriting of location coordinates into the memory...traditional disk-based databases would easily crash under this situation. IMDB stores the location in the cache memory and then rewrites it in microseconds...making it ideal for real time location tracking.

### 3. Amazon Sale cart control

- It uses NoSQL since during the sale-time the traffic is huge and speed is required for this.
- In the case of Amazon, it uses DynamoDB for this purpose since it is able to manage large amount of unstructured data in milliseconds.
- Consider being a customer at the time of Prime Day Sale, you are one of the million customers that are buying stuffs from the platform...and it has to be quick too since if there is even a bit of lag, the items you ought to purchase may go out of stock. For this purpose, NoSQL database is a perfect fit helping you shop without worrying about the lag in cart updation.