**What is AWS DynamoDB?**

* DynamoDB is a fast and flexible NoSQL database designed for applications that need consistent, single-digit millisecond latency at any scale.it is a fully managed database and it supports both document and key value data models.

\* A document-oriented database, or document store, is for storing, retrieving, and managing document-oriented information, which is semi-structured data.. Key- value store is inherit of Document Oriented database. The difference lies in the way the data is processed; in a key-value store the data is considered to be inherently opaque to the database, whereas a document-oriented system relies on internal structure in the document in order to extract metadata that the database engine uses for further optimization.

* It has a very flexible data model. This means that you don't need to define your database schema upfront. It also has reliable performance.

DynamoDB Tables

DynamoDB tables consist of

* Items (Think of a row of data in a table).
* Attributes ((Think of a column of data in a table).
* Supports key-value and document data structures.
* Key= the name of the data.  Value= the data itself.
* Document can be written in JSON, HTML or XML.

DynamoDB- Primary Keys

* DynamoDB stores and retrieves data based on a Primary key
* DynamoDB also uses Partition keys to determine the physical location data is stored.
* If you are using a partition key as your Primary key, then no items will have the same Partition key.
* Composite Keys (Partition Key + Sort Key) can be used in Combination.
* Two items may have the same partition key, but must have a different sort key.
* All items with the same partition key are stored together and then sorted according to the sort key value.
* DynamoDB allows you to store multiple items with the same partition keys.

**Elastic Load Balancing?**

* ELB is a service that automatically distributes incoming application traffic and scale resources to meet traffic demands.
* ELB helps in adjusting capacity according to incoming application and network traffic.
* ELB can be enabled within a single availability zone or across multiple availability zones to maintain consistent application performance.
* ELB offers features like:
* Detection of unhealthy EC2 instances.
* Spreading EC2 instances across healthy channels only.
* Centralized management of SSL certificates.
* Optional public key authentication.
* Support for both IPv4 and IPv6.
* ELB accepts incoming traffic from clients and routes requests to its registered targets.
* When an unhealthy target or instance is detected, ELB stops routing traffic to it and resumes only when the instance is healthy again.
* ELB monitors the health of its registered targets and ensures that the traffic is routed only to healthy instances.
* ELB's are configured to accept incoming traffic by specifying one or more **listeners**. A listener is a process that checks for connection requests.
* Listeners are configured with a protocol and port number from the client to the ELB and vice-versa i.e., back from ELB to the client.
* ELB supports 3 types of load balancers:
  + Application Load Balancers
* Network Load Balancers
* Classic Load Balancers
* Each load balancer is configured differently.
* For Application and Network Load Balancers, you register targets in target groups and route traffic to target groups.
* For Classic Load Balancers, you register instances with the load balancer.
* AWS recommends users to work with Application Load Balancer to use multiple Availability Zones because if one availability zone fails, the load balancer can continue to route traffic to the next available one.
* We can have our load balancer be either internal or internet-facing.
* The nodes of an internet-facing load balancer have Public IP addresses, and the DNS name is publicly resolvable to the Public IP addresses of the nodes.
* Due to the point above, internet-facing load balancers can route requests from clients over the Internet.
* The nodes of an internal load balancer have only Private IP addresses, and the DNS name is publicly resolvable to the Private IP addresses of the nodes.
* Due to the point above, internal load balancers can only route requests from clients with access to the VPC for the load balancer.
* Both internet-facing and internal load balancers route requests to your targets using Private IP addresses.
* Your targets do not need Public IP addresses to receive requests from an internal or an internet-facing load balancer.