

# NoSQL and Other Database Solutions in AWS



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## DynamoDB

### What is DynamoDB?



**amazon**  
DynamoDB

- Amazon DynamoDB is a **NoSQL database** service
- Unlike RDS, you don't need to stick pre-determined schema. Instead of Schema, DynamoDB uses **flexible tables**.
- Amazon DynamoDB is a **fully-managed** database.
- DynamoDB doesn't **have Join function**.

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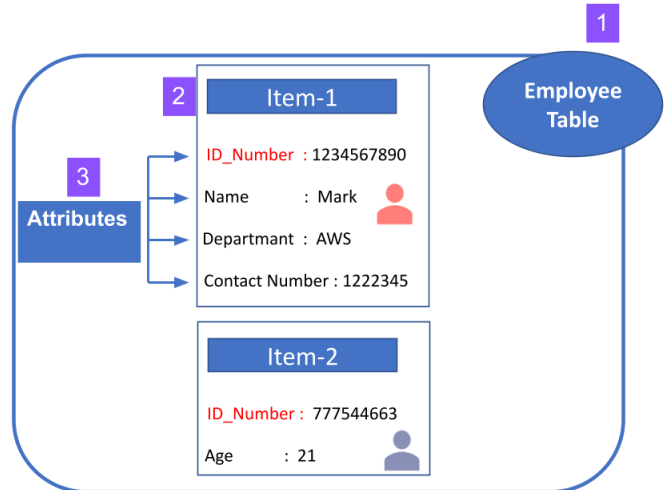
# DynamoDB

## Structure of DynamoDB?

1- **Table** is a collection of data.

2- Each table consist of **items**. In the Picture, **item** represents a **person**.

3- **Attributes** are specific feature of the items.



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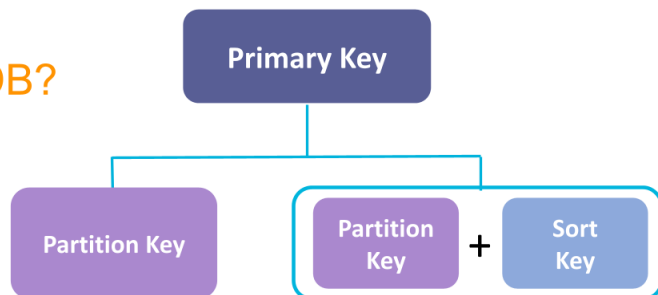
Unlike RDS, you can enter different **attributes** for each **people**.

5



# DynamoDB

## Structure of DynamoDB?



DynamoDB uses **Primary Keys** to **uniquely identify each item** in a table. When you create a table, in addition to the table name, you must specify the primary key of the table.

There are two different kinds of Primary Key model : **Partition Key** and **Partition Key&Sort Key**.

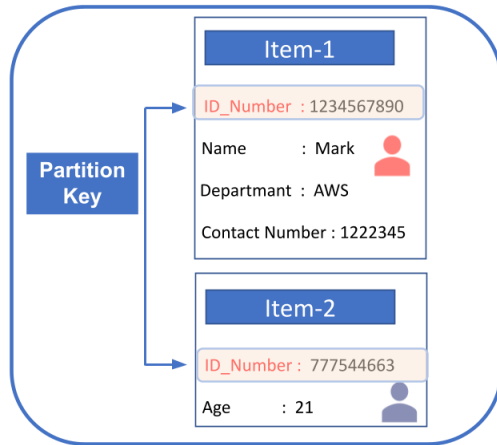
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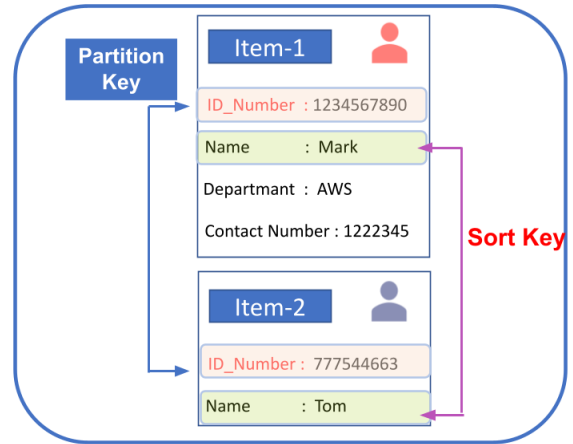


# DynamoDB

## Structure of DynamoDB?



Partition Key



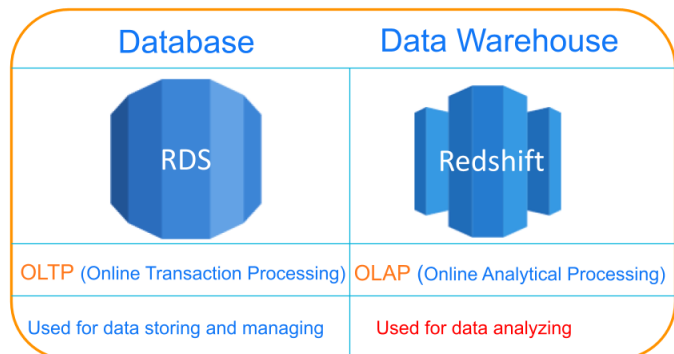
Partition Key&Sort Key

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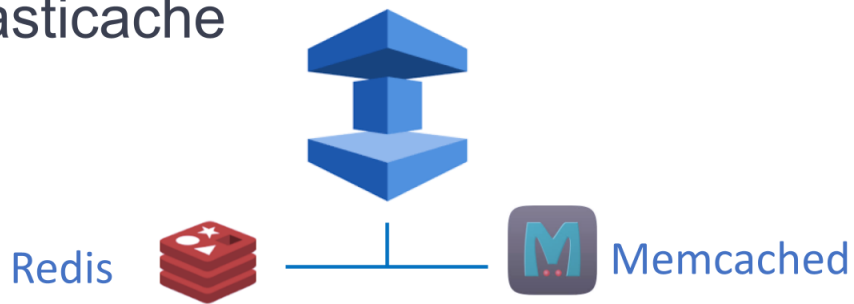


# Amazon Redshift



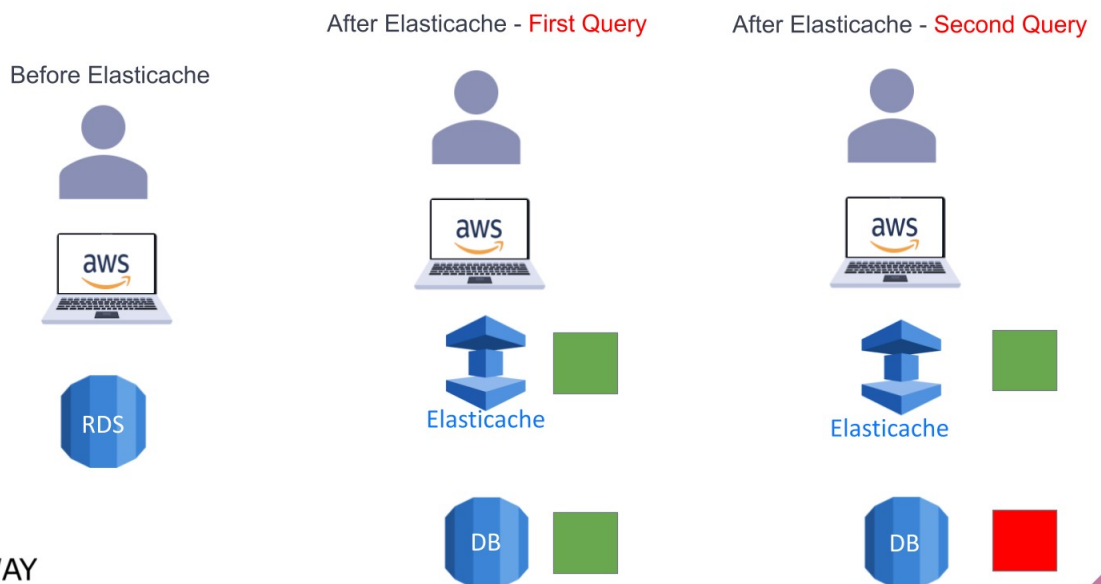
- Since the **analyzing process causes an extra workload on database** we prefer to use data warehouse
- Amazon Redshift is a fully managed, cloud-based, petabyte-scale **data warehouse** service by Amazon Web Services (AWS).
- Amazon Redshift is an efficient solution to **collect and store** all your data to **analyze**.



## AWS ElastiCache



- ElastiCache is an **In-Memory Cache service of AWS**.
- In-Memory Cache is a **temporary and fast** storage component. These components are used to reduce the workload of the main data storage device such as a database.
- AWS offers Redis and Memcached in-memory cache option which are popular in market.

## AWS ElastiCache



Redis 			 Memcached
Sub-millisecond latency	+	+	Sub-millisecond latency
User friendly syntax	+	+	User friendly syntax
It supports many different programming languages C, C++, java, python, etc.	+	+	It supports many different programming languages C, C++, java, python, etc.
Redis supports <b>strings ,lists, sets, sorted sets, hashes, bit arrays, and hyperloglogs.</b>	+	-	Memcached supports <b>only strings</b>
It <b>doesn't support multithreaded</b> architecture	-	+	It <b>supports multithreaded</b> architecture. It means that it has multiple processing cores. This allows you to <b>handle multiple</b>
It <b>supports Snapshot</b>	+	-	<b>operation.</b> It <b>doesn't support Snapshot</b>
It <b>supports Replica</b>	+	-	It <b>doesn't support Replica</b>