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| **Name:** WASIMA QAYYUMUDDIN SHAIKH  **RollNo:**6220071  **Class:** T.E.I.T  **Sem:** V  **Subject:** ADVACE DEVOPS LAB **(Addevops**)  **EXPERIMENT NO: 07**  **Q1. What is NO SQL, Key value Databases?**  **No SQL database.**  SQL databases are purpose built for specific data models and have flexible schemas for building modern applications. NoSQL databases are widely recognized for their ease of development, functionality, and performance at scale. This page includes resources to help you better understand NoSQL databases and to get started.    NoSQL databases are used in Bigdata to process large volume of information. NoSQL databases are also known as Not only SQL as may also support SQL like query languages. Any database that is modeled in means other than the tabular relations used in relational databases are called No SQL database.  NoSQL databases are a great fit for many modern applications such as mobile, web, and gaming that require flexible, scalable, high-performance, and highly functional databases to provide great user experiences.   * Flexibility: NoSQL databases generally provide flexible schemas that enable faster and more iterative development. The flexible data model makes NoSQL databases ideal for semi-structured and unstructured data. * Scalability: NoSQL databases are generally designed to scale out by using distributed clusters of hardware instead of scaling up by adding expensive and robust servers. Some cloud providers handle these operations behind-the-scenes as a fully managed service. * High-performance: NoSQL database are optimized for specific data models and access patterns that enable higher performance than trying to accomplish similar functionality with relational databases. * Highly functional: NoSQL databases provide highly functional APIs and data types that are purpose built for each of their respective data models.   **No SQL key value database.**  NoSQL key-value databases are the least complicated types of NoSQL databases. They store data as a key or attribute name with its value. Each data item has a pointer and a unique key. The key-value pairs are in the form of rows of associative arrays. Key-value databases use arbitrary strings to represent the key and the value could be a document or an image. Unlike, traditional relational databases, key-value stores do not have a specific schema.  Many key-value databases allow users to store persistent copies of data in flash drives, hard drives and other storage devices that can store data permanently. Other key-value databases only store data in memory and are generally known as key-value cache databases. NoSQL key-value cache databases allow users to retrieved data faster than databases that store data in disks. The cache allows users to quickly access data by reading and storing data in memory to facilitate easy retrieval when needed.  NoSQL database can be classified as Key Value Cache, Key Value Store, Key Value Store Eventually Consistent, Key Value Store Ordered, Data Structures server, Tuple Store, Object Database, Document Store, and Wide Columnar Store.   * **Data Storage and Retrieval:**The ability to store data is one of the primary functions of all databases. Key-value databases allow users to apply a key to each data item (value) and facilitate storage for immediate or future use. * **Caching:**NoSQL key-value cache databases include integrated caching capabilities so they can keep frequently-used data in memory. This feature allows database users to quickly access data. In addition to caching objects, this feature allows application nodes to share frequently-used data. * **A Simple Data Structure:**All key-value databases use a simple data structure and this is important because sometimes those extra features are not necessary. Database users can simply add new features when the need arises. The database’s simple associated arrays optimize its performance allowing users to quickly perform data-intensive operations. * **Scalability:**NoSQL key-value databases are easy to scale without disrupting operations. Users can add and remove servers depending on their needs without causing undesirable disruptions.   Some of the benefits include:   * Rapid storage of data and information due to the simple data structure. * High performance because the integrated caching feature allows users to store and retrieve data in the shortest time possible. * Database users can make changes to the system in order to accommodate the changing needs of their organization with minimal disruptions to operations.  ****Top NoSQL Key Value Databases**** Amazon DynamoDB, Oracle NoSQL Database, InfinityDB, Redis, Aerospike, Oracle Berkeley DB, Riak KV, Voldemort  **Q2. Create a Table in DynamoDB , Add items to the table (minimum 10 items) , Query the table .**   1. Log in to AWS Console & Click on DynamoDB: 2. Create table      1. Give the following table name as per your 🡪Click on create table. 2. Table is being successfully created:      1. Now click on item & click on create item:      1. Create the items as shown…..Atleast 10 as per required and   save it:    We can add items In table.           1. After Creating items click on scan and scroll down and click on Query button. 2. Enter the partition key and sort key click on start search      1. Now Scroll down and click on “start search”.      1. Enter only partition key and clich on search. 2. After performing delete table items and table. |