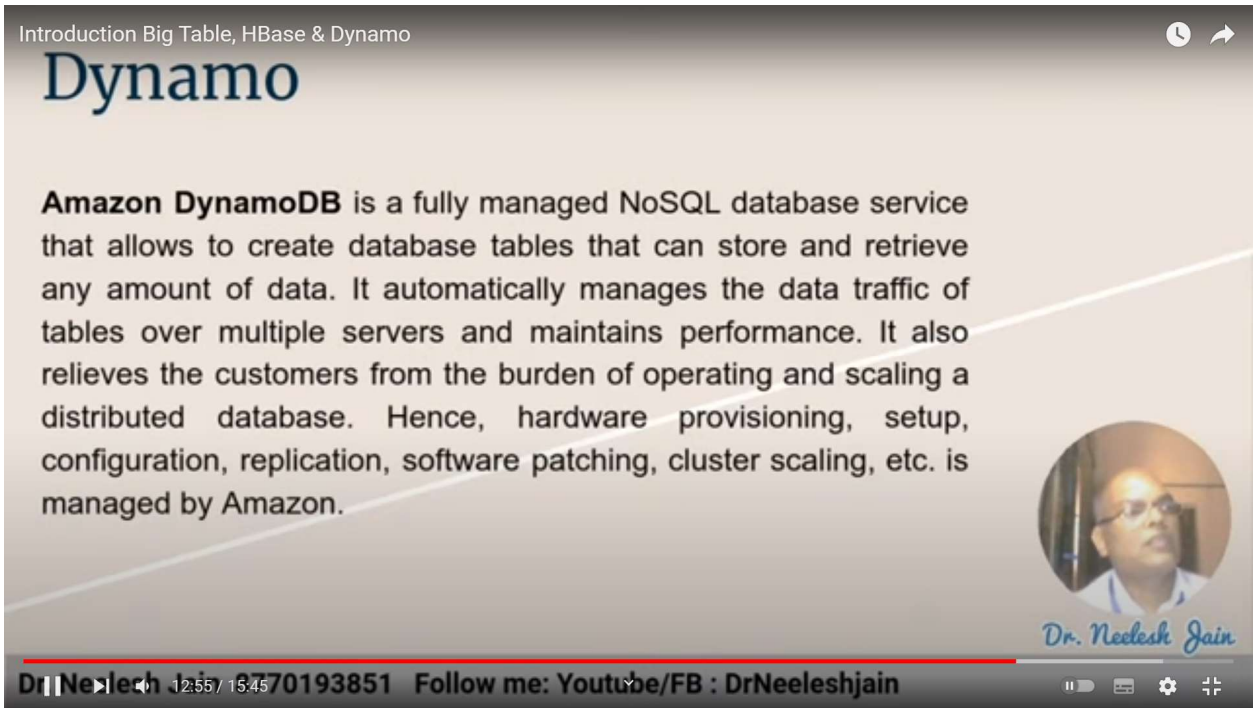
Introduction Big Table, HBase & Dynamo
Dynamo
Amazon DynamoDB is a fully managed NoSQL database service that allows to create database tables that can store and retrieve any amount of data. It automatically manages the data traffic of tables over multiple servers and maintains performance. It also relieves the customers from the burden of operating and scaling a distributed database. Hence, hardware provisioning, setup, configuration, replication, software patching, cluster scaling, etc. is managed by Amazon.
Dr. Neelesh Jain
12:55 / 15:45
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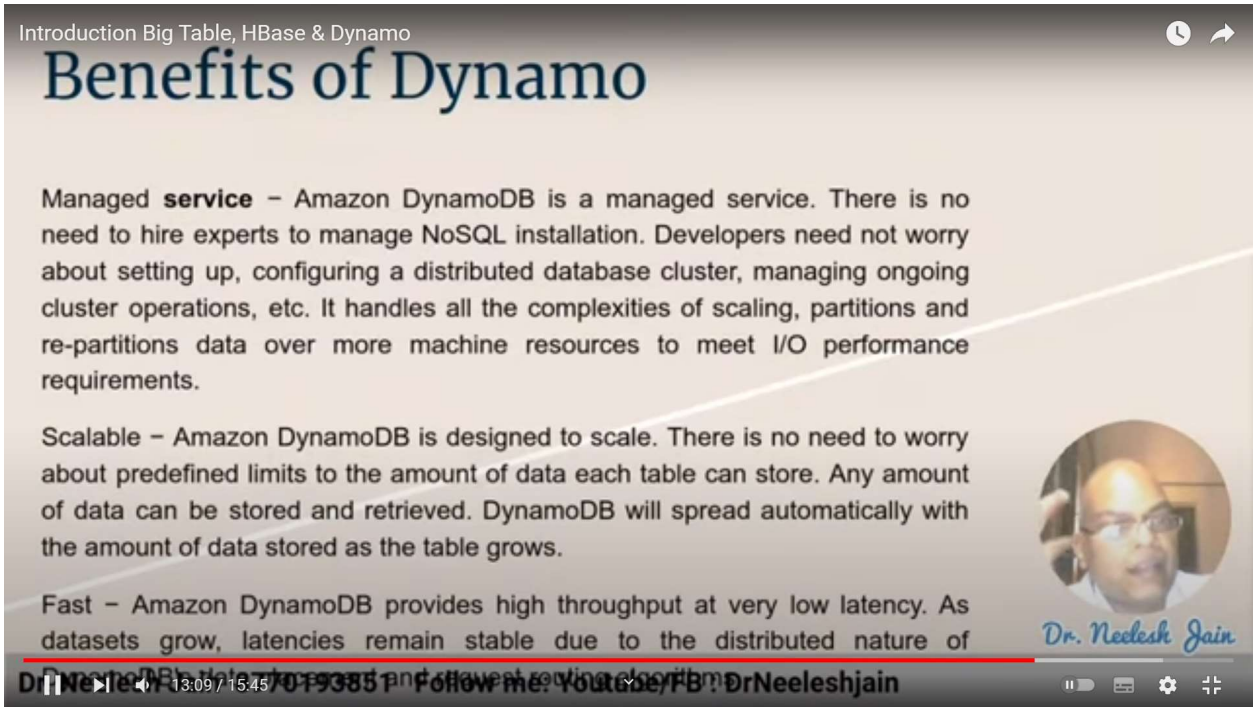
Introduction Big Table, HBase & Dynamo
Benefits of Dynamo
Managed service – Amazon DynamoDB is a managed service. There is no need to hire experts to manage NoSQL installation. Developers need not worry about setting up, configuring a distributed database cluster, managing ongoing cluster operations, etc. It handles all the complexities of scaling, partitions and re-partitions data over more machine resources to meet I/O performance requirements.
Scalable – Amazon DynamoDB is designed to scale. There is no need to worry about predefined limits to the amount of data each table can store. Any amount of data can be stored and retrieved. DynamoDB will spread automatically with the amount of data stored as the table grows.
Fast – Amazon DynamoDB provides high throughput at very low latency. As datasets grow, latencies remain stable due to the distributed nature of
Dr. Neelesh Jain
13:09 / 15:45
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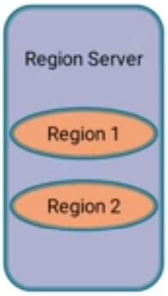
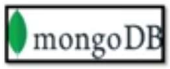
Cloud Data Stores

- **Hadoop Random Access Databases**

  HBase, Cassandra, couchDB, Dynamo, and MongoDB are some of the databases that store huge amounts of data and access the data in a random manner.



- **HBase data store:**
  Like in a Relational Database, data in HBase is stored in Tables and these Tables are stored in Regions.
- When a Table becomes too big, the Table is partitioned into multiple Regions.
- These Regions are assigned to Region Servers across the cluster. Each Region Server hosts roughly the same number of Regions.

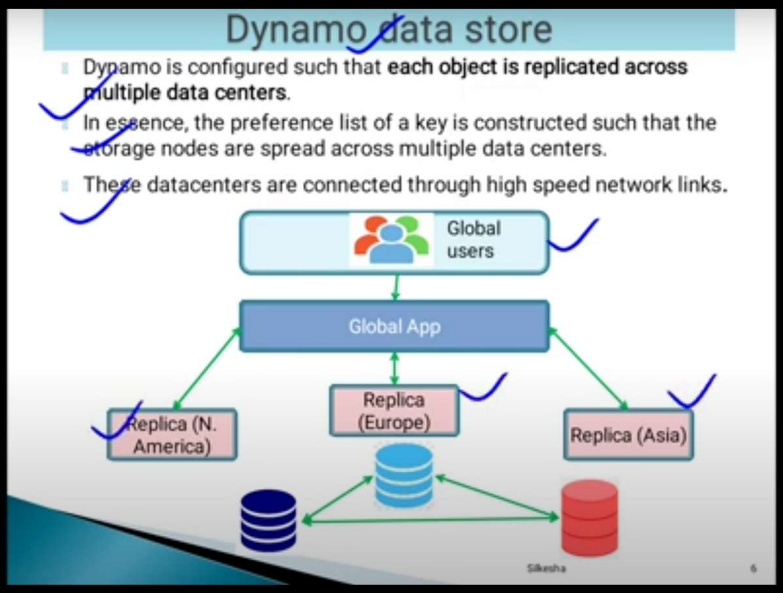


Data stored in HBase

- There are no data types in HBase; **data is stored as byte arrays in the cells of HBase table**.
- The content or the value in cell is versioned by the timestamp when the value is stored in the cell.
- So each cell of an HBase table may contain multiple versions of data.
- HBase is a column-oriented, non-relational database.
- This means that data is stored in individual columns, and indexed by a unique row key.
- This architecture allows for rapid retrieval of individual rows and columns and efficient scans over individual columns within a table.

Refer NoSQL- 81

HBase & Dynamo Lec-101



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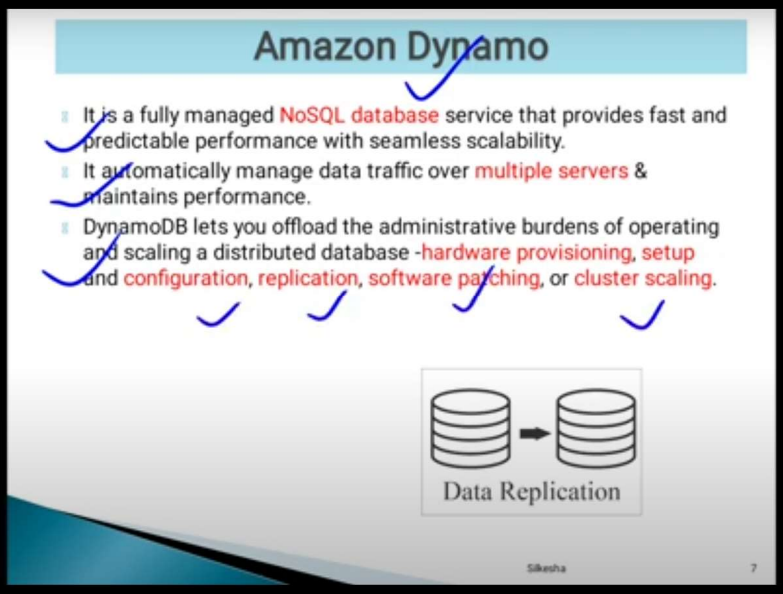
HBase & Dynamo Lec-101



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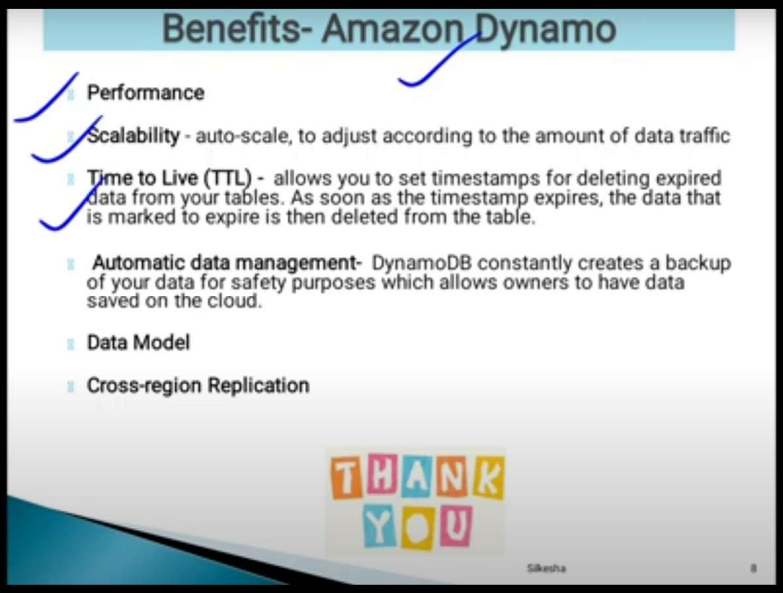
HBase & Dynamo Lec-101



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