

**Introduction To NoSQL Databases**

**Course Number:** NSQL-100  
**Duration:** 1 day

**Overview**

This live, online Introduction to NoSQL Databases training course teaches attendees how to leverage distributed architecture and features of various non-relational databases. Participants will understand the difference between relational and non-relational databases along with usage patterns and explore document stores, graph databases, column-oriented Databases, and key-value pairs.

**Prerequisites**

Students must have basic programming knowledge, preferably Python, Java, or Scala, and a basic understanding of Databases.

**Materials**

All NoSQL training students will receive comprehensive courseware.

**Software Needed on Each Student PC**

* Computer with Internet connectivity
* Ability to install software on the computer
* Recent 64-bit OS, such as Windows 10, macOS, or Linux

**Objectives**

All students will learn how to:

* Understand the history and evolution of data storage systems
* Understand distributed architecture benefits
* Identify which techniques should be applied for a specific use case
* Leverage Hadoop and HDFS
* Compare SQL and NoSQL databases
* Understand NoSQL databases types
* Understand Cloud-Based Data Storage options
* Identify usage patterns for various NoSQL databases types

**Outline**

* Introduction
* Need of Elasticity
  + Horizontal versus Vertical scalability
  + Parallel Execution
  + Fault tolerance
  + Economic impact
* Cluster and Cloud Option
  + Cluster
  + Cloud options
  + AWS, GCP, and Microsoft Azure
* Non-relational databases
* Evolution of Data Storage
  + History of data stores
  + OLTP versus OLAP
  + Data warehousing concepts
  + Data growth and usage patterns
  + 5Vs of Big Data
  + Hadoop and HDFS
* Relational versus non-relational databases
  + CAP Theorem
  + Comparison of Relational and Non-relational databases
  + NoSQL Databases
  + NoSQL Databases types
  + Document Stores
  + Graph Database
  + Column-Oriented Database
  + Key-value
  + Search
* Document Stores
  + Overview
  + Pros and Cons
  + Usage patterns
  + MongoDB
* Graph Database
  + Overview
  + Pros and Cons
  + Usage patterns
  + Neo4J
* Key-value Data Store
  + Overview
  + Pros and Cons
  + Usage patterns
  + Redis, Dynamo
* Column-Oriented Database
  + Overview
  + Pros and Cons
  + Usage patterns
  + HBase
* Search
  + Overview
  + Pros and Cons
  + Usage patterns
  + Solr, ELK Stack
* Cloud Data Store
  + Overview
  + Pros and Cons
  + Usage patterns
  + S3, AWS Dynamo, Google Cloud SQL, Azure Cosmos Db, Snowflake
  + References and Next steps
* Conclusion