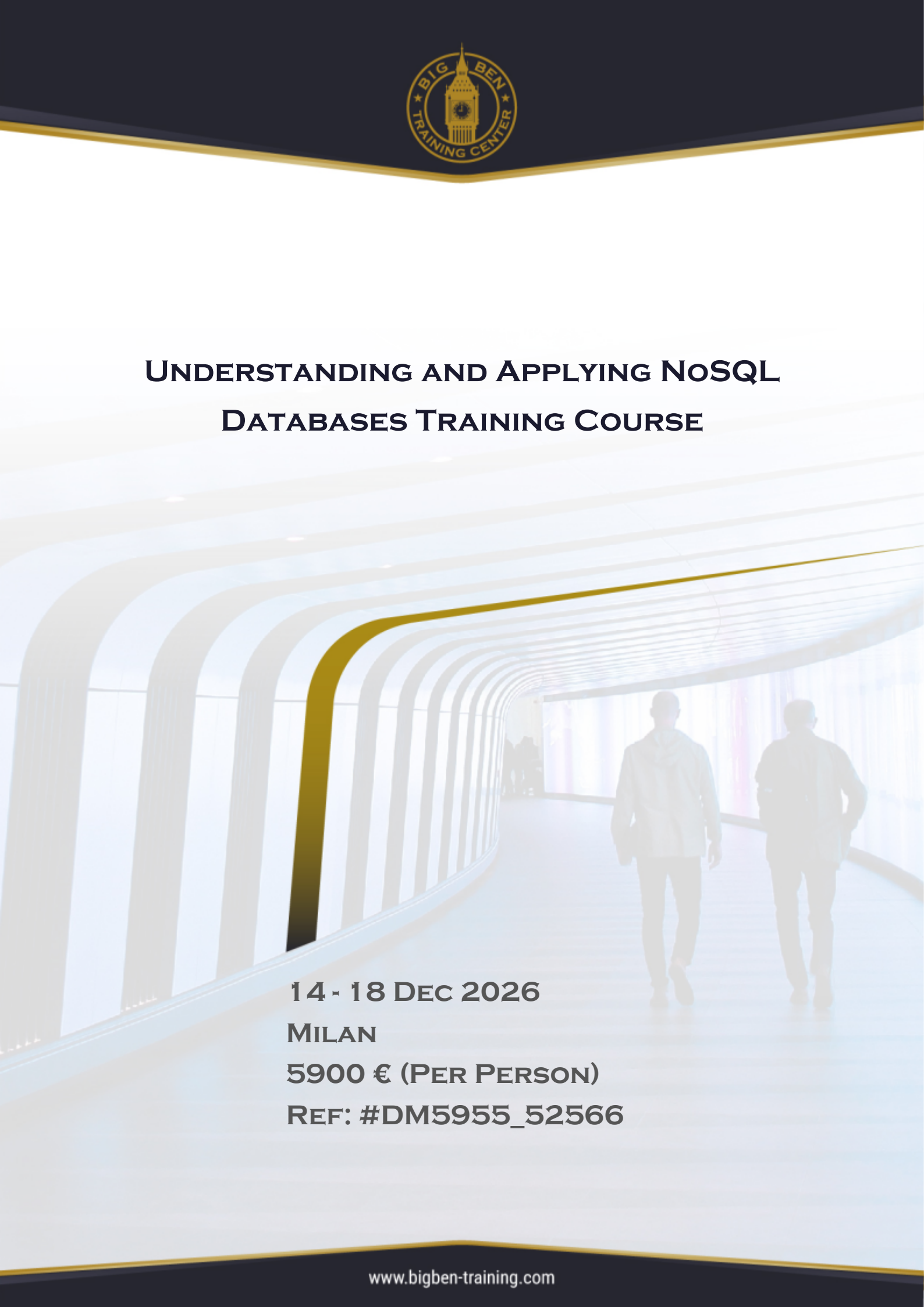
# Understanding and Applying NoSQL Databases Training Course



14 - 18 Dec 2026

Milan

5900 € (Per Person)

Ref: #DM5955_52566

## Course Introduction / Overview:

The world of data is changing rapidly, with traditional relational databases often struggling to handle the massive volumes, velocity, and variety of modern data. This is where NoSQL databases come in, offering flexible and scalable solutions for a wide range of applications. This training course provides a deep dive into the world of NoSQL, exploring the core concepts and practical applications of these powerful database systems. Participants will learn about the different types of NoSQL databases, including key-value, document, column-family, and graph databases. We will cover the specific use cases for each type, helping you choose the right database for your needs. The course also looks at the key differences between NoSQL and SQL databases and how they can be used together in a hybrid environment. As author Pramod Sadalage and Martin Fowler explain in their book, "NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence," understanding NoSQL is essential for any modern data professional. At BIG BEN Training Center, we recognize the importance of staying up to date with emerging technologies. This training course will give participants the knowledge and hands-on experience needed to design, develop, and manage applications using NoSQL databases, giving them a competitive edge in the fast-growing tech industry.

## Target Audience / This training course is suitable for:

- Database administrators and developers.
- Data architects and data modelers.
- Software engineers and application developers.
- System administrators.
- IT managers and project managers.
- Data scientists and analysts.
- Solutions architects.

## Target Sectors and Industries:

- Technology and software development.
- Telecommunications.
- Financial services, including fintech and banking.
- E-commerce and retail.
- Gaming and entertainment.
- Healthcare.
- Government agencies and the public sector.

## Target Organizations Departments:

- IT and Information Systems.
- Software Development.
- Data Engineering and Analytics.
- Research and Development.
- Operations.
- Product Management.

## Course Offerings:

By the end of this course, the participants will have able to:

- Explain the core concepts and characteristics of NoSQL databases.
- Differentiate between different NoSQL database types, such as document, key-value, column-family, and graph.
- Choose the appropriate NoSQL database for specific business use cases.
- Design and implement data models for NoSQL databases.
- Perform basic CRUD operations and queries in various NoSQL environments.
- Understand scalability and performance considerations in NoSQL.
- Recognize the benefits of using a polyglot persistence approach.
- Apply NoSQL database solutions for modern data applications.

## Course Methodology:

This training course is designed to be highly interactive and hands-on, making sure participants gain practical experience. We will use a variety of teaching methods, including engaging presentations, group discussions, and interactive problem-solving exercises. The main focus of this training course will be on case studies that highlight how real companies use NoSQL databases to solve complex challenges. Participants will work in small groups to analyze these case studies and develop their own NoSQL solutions. Our expert trainers will provide personalized feedback and guidance throughout the process, giving you the chance to ask specific questions about your own projects. At BIG BEN Training Center, we believe that the best way to learn is by doing. We have made sure our course content is practical, relevant, and directly applicable to the challenges faced in the modern data landscape.

## Course Agenda (Course Units):

### Unit One: Introduction to the World of NoSQL.

- What is NoSQL and why is it important?
- Comparing NoSQL with traditional relational databases.
- The CAP theorem and its relevance in distributed systems.
- Exploring the different types of NoSQL databases.
- Understanding the rise of unstructured data and big data.
- Use cases and common applications for NoSQL.
- Introduction to the concept of polyglot persistence.

### Unit Two: Deep Dive into NoSQL Database Types.

- Key-value stores: Redis and DynamoDB.
- Document databases: MongoDB and Couchbase.
- Column-family stores: Cassandra and HBase.
- Graph databases: Neo4j and Amazon Neptune.
- When to choose each type for specific data models.
- Hands-on exercises with sample datasets.
- Case studies on each NoSQL database type.

### Unit Three: Designing and Implementing NoSQL Data Models.

- Understanding data modeling in a schema less world.
- Designing flexible schemas for document databases.
- Optimizing data models for performance and scalability.
- Managing relationships without foreign keys.
- Using data normalization and denormalization.
- Best practices for data migration.
- Working with nested data and arrays.

## Unit Four: Querying, Performance, and Security in NoSQL.

- Querying data in NoSQL databases.
- Indexing strategies for faster data retrieval.
- Ensuring data consistency and transactions.
- Best practices for securing NoSQL databases.
- Performance tuning and monitoring.
- Scaling data with sharding and replication.
- Understanding distributed systems.

## Unit Five: NoSQL Ecosystem and Future Trends.

- Integrating NoSQL with other technologies.
- Cloud-based NoSQL services: AWS, Azure, and Google Cloud.
- The future of database technology and hybrid models.
- Data lakes and data pipelines.
- Serverless computing with NoSQL databases.
- Real-world enterprise solutions using NoSQL.
- Final project: designing a complete NoSQL solution.

# FAQ:

### Qualifications required for registering to this course?

There are no requirements.

### How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

## Something to think about:

Given the flexible nature of NoSQL databases and the principle of polyglot persistence, how can a team decide when to move from a traditional relational database to a NoSQL solution, and what are the long-term implications of that choice for data governance and system architecture?

## What unique qualities does this course offer compared to other courses?

This training course stands out by providing a balanced and comprehensive overview of the entire NoSQL ecosystem, rather than focusing on a single database. We do not just teach you how to use a specific tool; we give you the theoretical knowledge and practical experience needed to understand the "why" behind different NoSQL choices. The course includes real-world case studies and hands-on exercises that mirror the challenges faced in a professional setting, from choosing the right database for a use case to designing a data model for scalability. Unlike courses that just focus on syntax and commands, this course emphasizes the strategic thinking needed for database architecture and design. You will not only learn how to perform basic operations, but also how to solve complex problems related to data consistency, performance, and security in a distributed environment. This approach makes sure participants leave with a deep understanding of NoSQL and the ability to apply it effectively in their organizations.