Seminar Topic Summary Report

Tentative Cover Page

Institution Name: Basaveshwar Engineering College, Bagalkot

Department of Computer Applications (M.C.A)

Course: MCA

Seminar Topic : MongoDB

Submitted by:

Semester: II

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1. Introduction

In the current digital era, managing massive amounts of data efficiently is crucial for organizations. As businesses move toward scalable and flexible architectures, NoSQL databases like MongoDB have become increasingly important. This seminar explores MongoDB, a popular NoSQL database designed for high performance, high availability, and easy scalability. Choosing MongoDB as a seminar topic is relevant due to its widespread use in web applications, real-time analytics, and cloud computing. Understanding MongoDB provides insights into handling unstructured data, which is a vital skill in today's tech industry.

2. Seminar Topic Details

Title of the Topic: MongoDB
Area/Domain: Database Management, NoSQL, Big Data
Keywords: NoSQL, Document Database, JSON, MongoDB, Big Data

3. Topic Summary

MongoDB is an open-source, document-oriented NoSQL database used for storing large volumes of data. Unlike traditional relational databases that store data in tables, MongoDB stores data in flexible, JSON-like documents, making it easier to handle unstructured and semi-structured data. It supports ad-hoc queries, indexing, and real-time aggregation. MongoDB is highly scalable and distributed by design, supporting replication and sharding.
It is used in a wide variety of modern applications including content management, Internet of Things (IoT), and mobile apps. This summary discusses MongoDB's architecture, advantages over traditional databases, and real-world use cases.

4. Relevance to MCA Curriculum

MongoDB aligns with subjects such as Database Management Systems, Big Data Analytics, and Cloud Computing. The topic introduces students to alternative database architectures beyond traditional RDBMS and is highly relevant in modern development environments. Understanding MongoDB supports practical application of database theory in real-time web and mobile applications, enhancing the student's readiness for industry challenges.

5. Learning Objectives

- Understand the basic concepts and architecture of MongoDB.
- Explore the differences between NoSQL and SQL databases.
- Learn how to perform CRUD operations using MongoDB.
- Analyze use cases where MongoDB is an optimal solution.
- Understand MongoDB's scaling and performance features.
- Gain practical skills by interacting with MongoDB databases.

6. Expected Outcome

Students will gain knowledge of non-relational database systems, especially MongoDB, and will be able to apply this knowledge in developing scalable applications. This understanding will benefit them in both academic projects and future professional roles in areas like software development, data analytics, and cloud-based systems.

7. References

[1] Kristina Chodorow, MongoDB: The Definitive Guide, O'Reilly Media, 2019
[2] MongoDB Inc., Official MongoDB Documentation, https://www.mongodb.com/docs/
[3] Kyle Banker, MongoDB in Action, Manning Publications, 2016

Coordinator Signature **HOD Signature**