

Database Technologies

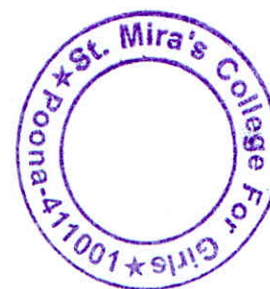
Semester I

Subject Code: MS11903

Learning outcomes:

After completion of this subject, the student shall be able to:

- Understand the core concepts of NoSQL.
- Define, compare and use the four types of NoSQL Databases-Document-oriented, Key Value Pairs, Column-oriented and Graph.
- Demonstrate an understanding of the detailed architecture, define objects, load data, query data and performance tune Column-oriented NoSQL databases.
- Explain the detailed architecture, define objects, load data, query data and performance tune Document-oriented NoSQL databases through the practical assignment.
- Demonstrate an understanding of the detailed architecture, define objects, load data, query data and performance tune Key-Value Pair NoSQL databases through the practical assignment.
- Explain the detailed architecture, define objects, load data, query data and performance tune Graph NoSQL databases through the practical assignment.
- Perform hands-on NoSql database lab assignments that will allow students to use the four MongoDB, Neo4J.



Database Technologies


Semester I	Subject Code: MS11903	Lectures: 60
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Objectives:

The syllabus aims in equipping students with,

- providing an overview of the concept of NoSQL technology.
- providing an insight to the different types of NoSQL databases
- making the student capable of making a choice of what database technologies to use, based on their application needs.

Unit 1: Introduction to NOSQL (Core concepts)	18
Chapter 1 : Why NoSQL	2
Chapter 2 : Aggregate Data Models	3
Chapter 3 : Data modeling details	3
Chapter 4 : Distribution Models	3
Chapter 5 : Consistency	3
Chapter 6 : Version stamps	1
Chapter 7 : Map-Reduce	3

Sr. No.	BOS member		Sign
1	Dr. Reena Bharathi	Subject Expert	
2	Dr. Jyoti Yadav	Subject Expert	
3	Dr. Manisha Bharambe	Subject Expert	
4	Mr. Vishal Salke	Industry Expert	
5	Ms. Amruta Nambiar	Alumni	
6	Prof. Ashwini Kulkarni	Chairman	
7	Prof. Shubhangi Jagtap	Internal Faculty	
8	Prof. Alka Kalhapure	Internal Faculty	



Unit 2: Implementation with NOSQL databases	30
Chapter 8 : Key-Value Databases (Riak)	4
Chapter 9 : Document Databases (Mongodb)	4
Chapter 10 : Column-Family stores (Cassandra)	4
Chapter 11 : Graph databases (Neo4j)	4
Chapter 12: Schema Migrations	5
Chapter 13: Polygot Persistence	5
Chapter 14: Beyond NoSQL	2
Chapter 15: Choosing your database	2





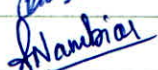

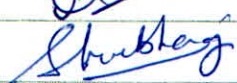
*Contact hours=12

Reference Books:

1. Pramod Sadalage, Martin Fowler, *NoSQL Distilled*, Pearson Education , ISBN-13: 978-0-321-82662-6
2. Charlie Brooks, *Enterprise NoSQL for Dummies*, A Willy Brand, Marklogic Special Edition, ISBN: 978-1-118-83261-5 (ebk)

Reference Link:

1. <http://nosql-database.org>

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