Course Objectives and Learning Outcomes (UG Level)

Course Objectives

1. Introduce the fundamentals of database clusters and distributed data management.
2. Enable students to configure, deploy, and manage database clusters using automation tools.
3. Familiarize students with various types of databases (Relational and NoSQL) and their role in cluster environments.
4. Equip students with techniques to monitor cluster performance and troubleshoot connectivity issues.
5. Impart knowledge on database security, encryption methods, and role-based access control.
6. Provide hands-on practice in backup, recovery, and message transfer operations in databases.
7. Develop the ability to configure and manage different cluster architectures like Master-Slave and Multi-Master.
8. Encourage project-based learning to implement practical cluster-based solutions.

Course Learning Outcomes (CLOs)

CLO Code	Learning Outcome	Bloom's Level
CLO1	Define key terms and components related to database clustering and distributed databases.	Remember
CLO2	Explain the processes for deploying, monitoring, and managing database clusters.	Understand
CLO3	Apply CRUD operations, automation tools, and cluster monitoring utilities to manage data and nodes.	Apply
CLO4	Analyze performance metrics and identify solutions to cluster connectivity and latency	Analyze

problems.

CLO5	Evaluate the effectiveness of security mechanisms and backup strategies in a database system.	Evaluate
CLO6	Design and implement cluster configurations and communication architectures for different scenarios.	Create