

**DATABASE MANAGEMENT SYSTEMS  
LAB**

<b>Course Code</b>	23CS3452	<b>Year</b>	II	<b>Semester</b>	II
<b>Course Category</b>	Professional Core	<b>Branch</b>	CSE	<b>Course Type</b>	Practical
<b>Credits</b>	1.5	<b>L – T – P</b>	0-0-3	<b>Prerequisites</b>	Computer Programming Lab
<b>Continuous Evaluation:</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

<b>Course Outcomes</b>		
Upon successful completion of the course, the student will be able to:		
<b>CO1</b>	Apply database management techniques to solve problems	L2
<b>CO2</b>	Conduct experiments by using modern tools like MYSQL, Oracle	L3
<b>CO3</b>	Develop an effective report based on various constructs implemented.	L3
<b>CO4</b>	Apply technical knowledge for a given problem and express with an effective oral communication	L3
<b>CO5</b>	Analyze outputs of queries for a given problem	L4

<b>Syllabus</b>		
<b>EXP</b>	<b>CONTENTS</b>	<b>Mapped CO</b>
<b>I</b>	Creation, altering and dropping of tables and inserting rows into a table (use constraints while creating tables) using MySQL/PostgreSQL	CO1,CO2,CO3, CO4,CO5
<b>II</b>	Queries using i)DML Commands. INSERT, UPDATE and DELETE ii)DCL Commands: COMMIT , ROLLBACK and SAVEPOINT.	CO1,CO2,CO3, CO4,CO5
<b>III</b>	Queries using i)SELECT statement ii) SELECT statement with where clause(Comparison Operators, AND, OR, NOT, IN, BETWEEN,LIKE) iii) ORDER BY clause(sort by column name) iv) LIMIT clause	CO1,CO2,CO3, CO4,CO5
<b>IV</b>	Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.	CO1,CO2,CO3, CO4,CO5
<b>V</b>	Queries using Conversion functions (to_char, to_number and to_date), string functions (Concatenation, lpad, rpad, ltrim, rtrim, lower, upper, initcap, length, substr and instr), date functions (Sysdate, next_day, add_months, last_day, months_between, least, greatest, trunc, round, to_char, to_date)	CO1,CO2,CO3, CO4,CO5

<b>VI</b>	Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSECT.	CO1,CO2,CO3,CO4,CO5
<b>VII</b>	Queries using Inner join, outer join using USING and NATURAL Keywords.	CO1,CO2,CO3,CO4,CO5
<b>VIII</b>	Programs development using creation of procedures, passing parameters IN and OUT of PROCEDURES.	CO1,CO2,CO3,CO4,CO5
<b>IX</b>	Program development using creation of stored functions, invoke functions in SQL Statements.	CO1,CO2,CO3,CO4,CO5
<b>X</b>	Develop programs using features parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.	CO1,CO2,CO3,CO4,CO5
<b>XI</b>	Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers.	CO1,CO2,CO3,CO4,CO5
<b>XII</b>	Case Study Using Real World Database Applications	CO1,CO2,CO3,CO4,CO5
<b>XIII</b>	i)Write a Java program that connects to a database using JDBC ii)Write a Java program to connect to a database using JDBC and insert values into it iii)Write a Java program to connect to a database using JDBC and delete values from it	CO1,CO2,CO3,CO4,CO5

### Learning Resources

#### Text Books

1. Murach's MySQL by JOEL MURACH, Shroff Publishers & Distributors Pvt.Ltd, June 2012.
2. The Complete Reference MYSQL, Vikram Vaswani, 2017, McGrawHill Education.
3. Learn PostgreSQL - Second Edition-packt
4. Oracle: The Complete Reference by Oracle Press
5. Nilesh Shah, "Database Systems Using Oracle", PHI, 2007
6. Rick F Vander Lans, "Introduction to SQL", Fourth Edition, Pearson Education, 2007