Department of Computer Science & Engineering National Institute of Technology Srinagar				
Course Title	Database Management Systems Lab	**Semester**	3rd	
Department	Computer Science & Engineering	**Course Code**	CST204	
Credits	01	**L**	**T**	**P**
Course Type	Lab	0	0	2

Course Objectives

To implement the different concepts learned in the theory class of DBMS using embedded SQL and Oracle GUI.

Learning Outcomes

- Design and Implement a database schema
- Devise queries using DDL, DML, DCL and TCL commands.
- Develop application programs using PL/SQL
- Design and implement a project using embedded SQL and GUI.
- Apply modified components for performance tuning in open source software.

Course Synopsis

Familiarization of Oracle RDBMS, SQL*Plus, SQL- query structure, Exception Handling Compilation and Run-time, user-defined, Stored procedures.

Course Outline / Content

Unit	Topics	Week
Lab #1	1) Introduction to SQL, RDBMS. • Visualizing the architecture of RDBMS. • Different data types and its implementation.	1
Lab #2	1) SQL commands: • Implementation of Creating and managing SQL tables. • DDL(Data definition language): Implementation of Create, Alter, drop, rename, truncate, comment.	1
Lab #3	1) Basic Parts of speech in SQL • Implementation of Relational operators. • Implementation of Logical operators (ALL, AND, ANY, BETWEEN, EXISTS, IN, LIKE, NOT, OR, SUM) • SQL functions: (SUM, MAX, AVERAGE, LIKE)	1
Lab #4	1) Changing of Data in tables • DML(Data manipulation Language): Understanding the implementation of Select, Insert, Update, Delete, merge. 2) Retrival of data from the table • Understanding implementation of simple queries on single table only.	1
Lab #5	1) Implementation of constraints: Not null, Primary Key, Unique, Check, Foreign key) 2) Combining Tables and execution of queries on such tables: • Perform Join, inner join, outerjoin, natural join and subtypes of each. • Implementation of Advanced queries, subquery and grouping (Group by and having clause)	1

Lab #6	1) Understanding the dependence in queries, correlated queries using Existential quantifiers 2) Understanding difference in replacing IN with OUTER JOIN, EXISTS and NOT EXISTS.	1
Lab #7	1) Implementation of Security by assigning Privileges to database users DCL: (Data control Language) • Understanding the implementation of Grant, Revoke and views. TCL: (Transaction control Language): • Understanding the implementation of Begin, Commit, Rollback and Save point in transaction	1
Lab#8	1) Lab Project: Students are required to submit a case study	1
Text Books		
1.	James, Paul and Weinberg, Andy Oppel, "SQL: The Complete Reference", Tata McGraw Hill.	
2.	Michael McLaughlin, "Oracle Database 11g PL/SQL Programming", Oracle press.	