

2/4 B.Tech - SECOND SEMESTER

IT4L1

DATABASE SYSTEMS LAB

Credits:2

Internal assessment: 25 marks

Lab: 3 Periods/week

Semester end examination: 50 marks

Objectives:

- To provide hands on experience on Relational Database Management System ORACLE.
- To provide knowledge on creating databases and retrieving data using SQL queries.
- Develop PL/SQL programs using stored procedures, functions, packages, cursors and triggers.

Outcomes:

Students will be able to

- Construct database schema using DDL commands and to enforce constraints on schema.
- Query and update data from tables.
- Write complex queries to select a subset of the data from the collection of tables.
- Write programming blocks with conditionals, assignments, loops and pl/sql constructs such as exception handling, stored procedures, functions, packages, cursors and triggers in PL/SQL.

Exercises:

- 1) Create, alter and drop tables (DDL statements) and insert data into a table (use constraints while creating tables).
- 2) Queries using aggregate functions (COUNT, SUM, AVG, MAX and MIN), ORDER BY and GROUP BY- HAVING clauses.
- 3) Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOTEXISTS and set operators.
- 4) Queries using JOINS (INNER JOIN, NATURAL JOIN, CROSS JOIN, and LEFT AND RIGHT OUTER JOINS).
- 5) A) Queries using Conversion functions, string functions and date functions.
B) Creation and dropping of views.
- 6) A) Write simple PL/SQL programs using LOOPS and conditional statements.
B) Write simple PL/SQL programs using different Exceptions.
- 7) Write programs using features parameters in a CURSOR.
- 8) Write a simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found)ii) Insert data into student table and use COMMIT, ROLLBACK and SAVEPOINT in PL/SQL block.
- 9) Write PL/SQL programs using procedures.
- 10) Write PL/SQL programs using procedures using functions.
- 11) Develop Programs using triggers.
- 12) Write a program using packages.

Reference Books:

1. Learning Oracle SQL and PL/SQL - A Simplified Guide ,Rajeeb C. Chatterjee
2. Simplified Guide to SQL and PL/SQL by Shah Nilesh.
3. Oracle PL/SQL by Example Benjamin Rosenzweig, Elena Silvestrova, , Third edition, Pearson Education.
4. SQL&PL/SQLforOracle10g,BlackBook,Dr.P.S.Deshpande.