GURU TEGH BAHADUR INSTITUTE OF TECHNOLOGY
SEMESTER: 4th
BRANCH: IT

SUBJECT CODE: CIC-256

DBMS Lab
List of Practicals

1. Introduction to SQL.

2. To study Basic SQL commands (create database, create table, use , drop, insert) and execute the following queries using these commands:
    - Create a database named ‘ Employee’.
    - Use the database ‘Employee’ and create a table ‘Emp’ with attributes ‘ename’,’ecity’,’salary’,’enumber’,’eaddress’,’depttname’.
    - Create another table ‘Company’ with attributes ‘cname’, ccity’,’empnumber’ in the database ‘Employee’.

3. To study the viewing commands (select , update) and execute the following queries using these commands:
    - Find the names of all employees who live in Delhi.
    - Increase the salary of all employees by Rs. 5,000.
    - Find the company names where the number of employees is greater than 10,000.
    - Change the Company City to Gurgaon where the Company name is ‘TCS’.

4. To study the commands to modify the structure of table (alter, delete) and execute the following queries using these commands:
    - Add an attribute named ‘ Designation’ to the table ‘Emp’.
    - Modify the table ‘Emp’, Change the datatype of ‘salary’ attribute to float.
    - Drop the attribute ‘depttname’ from the table ‘emp’.
    - Delete the entries from the table ‘ Company’ where the number of employees are less than 500.

5. To study the commands that involve compound conditions (and, or, in , not in, between , not between , like , not like) and execute the following queries using these commands:
    - Find the names of all employees who live in ‘ Gurgaon’ and whose salary is between Rs. 20,000 and Rs. 30,000.
    - Find the names of all employees whose names begin with either letter ‘A’ or ‘B’.
    - Find the company names where the company city is ‘Delhi’ and the number of employees is not between 5000 and 10,000.
    - Find the names of all companies that do not end with letter ‘A’.

6. To study the aggregate functions (sum, count, max, min, average) and execute the following queries using these commands:

- Find the sum and average of salaries of all employees in computer science department.
- Find the number of all employees who live in Delhi.
- Find the maximum and the minimum salary in the HR department.

7. To study the grouping commands (group by, order by) and execute the following queries using these commands:

- List all employee names in descending order.
- Find number of employees in each department where number of employees is greater than 5.
- List all the department names where average salary of a department is Rs.10,000.

8. To study the commands involving data constraints and execute the following queries using these commands:

- Alter table 'Emp' and make 'enumber' as the primary key.
- Alter table 'Company' and add the foreign key constraint.
- Add a check constraint in the table 'Emp' such that salary has the value between 0 and Rs.1,00,000.
- Alter table 'Company' and add unique constraint to column cname.
- Add a default constraint to column ccity of table company with the value 'Delhi'.

9. To study the commands for aliasing and renaming and execute the following queries using these commands:

- Rename the name of database to 'Employee1'.
- Rename the name of table 'Emp' to 'Emp1'.
- Change the name of the attribute 'ename' to 'empname'.

10. To study the commands for joins (cross join, inner join, outer join) and execute the following queries using these commands:

- Retrieve the complete record of an employee and its company from both the table using joins.
- List all the employees working in the company 'TCS'.

11. To study the various set operations and execute the following queries using these commands:

- List the enumber of all employees who live in Delhi and whose company is in Gurgaon or if both conditions are true.
- List the enumber of all employees who live in Delhi but whose company is not in Gurgaon.

12. To study the various scalar functions and string functions (power, square, substring, reverse, upper, lower, concatenation) and execute the following queries using these commands:

- Reverse the names of all employees.
- Change the names of company cities to uppercase.
- Concatenate name and city of the employee.

13. To study the commands for views and execute the following queries using these commands:

- Create a view having ename and ecity.
- In the above view change the ecity to ‘Delhi’ where ename is ‘John’.
- Create a view having attributes from both the tables.
- Update the above view and increase the salary of all employees of IT department by Rs.1000.

14. To study the commands involving indexes and execute the following queries:

- Create an index with attribute ename on the table employee.
- Create a composite index with attributes cname and ccity on table company.
- Drop all indexes created on table company.

15. Introduction to PL-SQL.

16. To study the conditional controls and case statement in PL-SQL and execute the following queries:

- Calculate the average salary from table ‘Emp’ and print increase the salary if the average salary is less that 10,000.
- Print the deptno from the employee table using the case statement if the deptname is ‘Technical’ then deptno is 1, if the deptname is ‘HR’ then the deptno is 2 else deptno is 3.

17. To study procedures and triggers in PL-SQL and execute the following queries:

- Create a procedure on table employee to display the details of employee to display the details of employees by providing them value of salaries during execution.
- Create a trigger on table company for deletion where the whole table is displayed when delete operation is performed.

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