Assignment: 2

Aim:

Design at least 10 SQL queries for suitable database application using SQL DML statements: Insert, Select, Update, Delete Clauses using distinct, count, aggregation on Client-Data sever(three tier).

Theory:

a. Select .

The select statement is used to select data from database..

Syntax :

SELECT column_name (*) from table_name;

E.g.

SELECT name_id from col;

b. Insert info.

The insert into statement is used to add or insert new records in table.It is possible to write to INSERT statement in 2 forms.It is only used to write to add new record in database table.

Syntax:

INSERT into table_name VALUES(valu1,value2,value3);

OR

INSERT into table_name(colo1,col2,…..) VALUES(value1,value2,….);

E.g.

INSERT into emp(name,id) VALUES(„Akash‟,83);

c. Delete

The delete from statement is used to delete records in table.

Syntax:

DELETE from table_name WHERE some_column=some_value;

Notice the where clause in the delete syntax.. The where clause specifies which record or records that should be deleted.

If you omit the where clause , all records will be deleted.

E.g.

DELETE from emp WHERE dept=30;

d. Update

The update statement is used to update existing records in a table.

Syntax:

UPDATE table_name SET col_name=value WHERE some_column=some value

The where clause specifies which record or records that should be updated. If you omit the WHERE clause all records will be updated.

E.g.

UPDATE emp SET sal=1000 WHERE dept_no=30;

e. Order By:

The ORDER BY keyword is used to sort the result-set by one or more columns.

The ORDER BY keyword sorts the records in ascending order by default. To sort the records in a descending order, you can use the DESC keyword.

Syntax:

SELECT *column_name*, *column_name* FROM *table_name* ORDER BY *column_name* ASC|DESC, *column_name* ASC|DESC;

E.g.

SELECT * FROM Customers ORDER BY Country;

f. Pattern Matching

MYSQL provides

- Standard SQL pattern matching.
- Regular expression pattern matching.

Similar to these used by UNIX utilities such as vi, grep. & sed.

SQL Pattern matching :

To perform pattern matching use the LIKE or NOT LIKE comparisons. By default pattern are case sensitive SPECIAL CHARACTER.

„-„ used to match any single char.

"%" is used to match an arbitrary number of character.

Syntax:

Select column_name from table_name where condition LIKE/NOT LIKE condition.

E.g.

Select 1name from 1mp where lname LIKE „___d";

g. Aggregate function

These functions operate an multiset of values of a column of relation & return a value.

- AVG() - Returns the average value
- COUNT() - Returns the number of rows
- FIRST() - Returns the first value
- LAST() - Returns the last value
- MAX() - Returns the largest value
- MIN() - Returns the smallest value
- SUM() - Returns the sum

Aggregate Function Group By

The GROUP BY statement is used in conjunction with the aggregate unctions to group the result-set by one or more columns.

Syntax:

SELECT column_name, aggregate_function(column_name) FROM table_name WHERE column_name operator value GROUP BY column_name;

E.g.

SELECT Shippers.ShipperName,COUNT(Orders.OrderID) AS NumberOfOrders FROM Orders LEFT JOIN Shippers ON Orders.ShipperID=Shippers.ShipperID GROUP BY ShipperName;

Aggregate Function Having:

The HAVING clause was added to SQL because the WHERE keyword could not be used with aggregate functions.

Syntax:

SELECT column_name, aggregate_function(column_name) FROM table_name
WHERE column_name operator value GROUP BY column_name
HAVING aggregate_function(column_name) operator value.

E.g.

SELECT Employees.LastName, COUNT(Orders.OrderID) AS NumberOfOrders FROM (Orders INNER JOIN Employees ON Orders.EmployeeID=Employees.EmployeeID) GROUP BY LastName HAVING COUNT(Orders.OrderID) > 10;

Conclusion:

We have studied Data Manipulation Language and Functions related to it.

Use the Emp and Dept tables in Oracle. Solve the following queries. **T.E. Comp II – ALL**

Solve the queries and store the result in a notepad. Submit as assignment.

QUERIES

1. List all the information about departments in DEPT table.
2. List all the information about employee who is working in dept. 10
3. Select name & salary of all the employees who are clerks.
4. List name,job,salary of employees hired in December 17,1980.
5. List dept. name & deptno for departments with numbers greater then 20
6. List all the name & salary whose salary between 1000 & 2000
7. Display the names, monthly salary & hourly salary for employees.
8. Display names of all employees whose name have ‘th’ & ‘ll”
9. List the employee whose name not end with ‘s’
10. Select emp details working in 20,30,40 departments.

Use the Emp and Dept tables in Oracle. Solve the following queries. **T.E. Comp II – ALL**

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QUERIES

11. List all the employees who have at least one person reporting to them.

select * from emp where empno IN(select mgr from emp group by mgr having count(*)>=1)

12. List the employee details if and only if more than 5 employees are present in department no 10

select * from emp where dname IN(select dname from emp group by deptno having count(*)>=5)

13. List the name of the employees with their immediate higher authority.
14. List all the employees who do not manage any one.
15. List the employee details whose salary is greater than the lowest salary of an employee belonging to deptno 20.

select * from emp where deptno=20 and sal >(select min(sal) from emp)

16. List the details of the employee earning more than the highest paid manager.
17. List the highest salary paid for each job.

(select job ,max(sal) from emp group by job)

18. Find the most recently hired employee in each department.

select * from emp where hiredate in (select max(hiredate) from emp)

19. In which year did most people join the company? Display the year and the number of employees.

20. Which department has the highest annual remuneration bill?
21. Write a query to display a '*' against the row of the most recently hired employee.
22. Write a correlated sub-query to list out the employees who earn more than the average salary of their department.
23. Find the nth maximum salary.
24. Select the duplicate records (Records, which are inserted, that already exist) in the EMP table.
25. Write a query to list the length of service of the employees (of the form n years and m months).