Data Mining and Data Warehousing
Lab-Manual

Practical - 1

AIM
Developing basic database programming skills to handle Relational Database Management System.

OBJECTIVES
1. To study Relational Database Management System : MySQL
2. To study Structured Query Language (SQL).
3. To design and develop SQL queries to demonstrate DDL and DML statements.

PROBLEM STATEMENT
Create following Schema:

Customer (cust_Id, cust_name, age, address, salary)

Queries:

1) List all customers names, address and salary information.
2) Find Customer's whose salary exceeds beyond 22000.
3) List all Customers whose age is between 25 and 40.
4) Update address of customer Dustin to Pune.
5) Add phone number attribute to Customer schema.
6) Remove attribute phone number from Customer schema.
7) Display details of customers whose salary starts with 25 and ends with 0.
8) Remove record of customer Jeremy from Customer schema.
9) Rename name of Customer schema to C_ Customer.

OUTCOME
To develop the ability to learn and implement SQL DDL and DML statements to solve queries using create, insert, select, update, delete ,alter operations.

THEORY
Structured Query Language:

It is a database computer language designed for the storing, retrieving, manipulating and management of data in a relational database. SQL is the standard language for the Relational Database System. It is standardized by ANSI and ISO for use on relational databases. It is a

declarative language, which involves giving broad instructions about what task is to be completed, rather than the specifics on how to complete it. It deals with the results rather than the process, thus focusing less on the finer details of accomplishing each task. SQL commands are instructions, coded into SQL statements, which are used to communicate with the database to perform specific tasks, work, functions and queries with data.

SQL commands are grouped into three major categories depending on their functionality:
- Data Definition Language (DDL)
- Data Manipulation Language (DML)
- Data Manipulation Language (DML)

Data definition Language:
Database schema is specified by a set of definitions expressed by a special language called a data-definition language (DDL). It is used to define the database structure or schema. These SQL commands are used for creating, modifying, and dropping the structure or schema of database objects.
DDL Commands:
CREATE - Create objects in the database.
DROP - Delete objects from the database.
ALTER - Modifies an structure of objects , that exists within database
TRUNCATE - Deletes complete data from an existing table.
RENAME - Renames database instances.

Data Manipulation Language:
A data-manipulation language (DML) is a language that enables users to access or manipulate data as organized by the appropriate data model. It is used for managing data within schema objects. These SQL commands are used for storing, retrieving, modifying, and deleting data in the database.
DML Commands:
SELECT - Retrieves data from the database.
INSERT - Inserts data into a table.
UPDATE - Updates existing data within a table.
DELETE - Deletes existing rows.

IMPLEMENTATION

CONCLUSION

Thus, we have successfully executed SQL queries using DDL and DML commands.

Problem Statement:

Create following Schema:

Customer (c_id, c_name, c_age, c_address, C_Salary)

Syntax:

```
create Table Customer (
 c_id varchar(20),
 c_name varchar(20),
 c_age int(20),
 c_address varchar(20),
 c_salary decimal(10,2)
  );
```

Insertion of data:

Syntax:

```
insert into customer
 values ('1', 'tom', 23, 'hadapsar', 45600),
   ('2', 'max', 23, 'katraj', 45040),
   ('3', 'dustin', 25, 'koregaon', 25000),
   ('4', 'jeremy', 27, 'Hyderabad', 25300),
   ('5', 'justin', 24, 'pune', 26000),
   ('6', 'krishna', 30, 'mumbai', 29500),
   ('7', 'kartik', 42, 'gujrat', 27000),
   ('8', 'tony', 33, 'Koregaon', 49000),
   ('9', 'bamer', 25, 'bihar', 45000),
   ('10', 'pratt', 44, 'Pune', 32000);
```

Queries :

Query 1 :-
List all customers names, address and Salary information.

Syntax:
```
Select c_name, c_address, c_salary
from customer;
```

Query 2 :-
Find customers whose Salary exceeds beyond 22000.

Syntax:
```
Select c_name, c_salary
from customer
where c_salary > 22000;
```

Query 3 :-
List all customers whose age is between 25 and 40.

Syntax:
```
Select c_name, c_age
from customer
where c_age between 25 and 40;
```

Query 4:-
Update address of customer Dustin to pune.
Syntax:
```
update customer
Set c_address = 'Pune'
where c_name = 'Dustin';
```

Query 5:-
Add phone number attribute to customer Schema.
Syntax:
```
alter table customer
add column c_phone varchar(20);
```

Query 6:-
Remove attribute phone number from customer Schema.
Syntax:
```
alter table customer
  drop c_phone;
```

Query 7:-
Display details of customery whose salary starts with 25 and ends with 0.
Syntax:
```
Select c_name, c_salary
from customer
where c_salary like '25%0';
```

Query 7A :-
Display details of cultomers whose Salary starts with 45.
Syntax:
Select c_name, c_salary
from customer
where c_salary like '45%';

Query 7B :-
Display details of customer whose salary starts with 45 and second last digit being 4.
Syntax:
Select c_name, c_salary
from customer
where c_salary like '45%4_.00';

Query 7C :-
Display details of customer whose Salary contains 5 on second digit.
Syntax:
Select c_name, c_salary
from customer
where c_salary like '_5%';

Query 7D :-
Display details of customer whose salary contains 5 on the second digit.

Syntax:

```
Select c_name, c_salary
 from customer
where c_salary like '_5____.00';
```

Query 7E :-
Display details of customer whose Salary starts with 25 & end with 0.

Syntax:

```
Select c_name, C_salary
from customer
where c_salary like '25%0';
```

Query 8 :-
Remove record of customer Jeremy from Customer Schema.

Syntax:

```
delete
from customer
where cname = 'Jeremy';
```

Query 9 :-
Rename name of Customer Schema to C_Customer.
Syntax:
alter table customer
rename C_customer;

Conclusion:
Thus, we have successfully executed SQL queries using DDL and DML commands.

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PROBLEM STATEMENT: (IMPLEMENTATION)

QUERY 1:

	c_name	c_address	c_salary
▶	tom	hadapsar	45600.00
	max	katraj	45040.00
	dustin	koregaon	25000.00
	jeremy	hyderabad	25300.00
	justin	pune	26000.00
	krishna	mumbai	29500.00
	kartik	gujrat	27000.00
	tony	koregaon	49000.00
	banner	bihar	45000.00
	pratt	pune	32000.00

QUERY 2:

	c_name	c_salary
▶	tom	45600.00
	max	45040.00
	dustin	25000.00
	jeremy	25300.00
	justin	26000.00
	krishna	29500.00
	kartik	27000.00
	tony	49000.00
	banner	45000.00
	pratt	32000.00

QUERY 3:

	c_name	c_age
▶	dustin	25
	jeremy	27
	krishna	30
	tony	33
	banner	25

QUERY 4:

	c_id	c_name	c_age	c_address	c_salary
	2	max	23	katraj	45040.00
	3	dustin	25	Pune	25000.00
	4	jeremy	27	hyderabad	25300.00
	5	justin	24	pune	26000.00
	6	krishna	30	mumbai	29500.00
	7	kartik	42	gujrat	27000.00
	8	tony	33	koregaon	49000.00
	9	banner	25	bihar	45000.00
	10	pratt	44	pune	32000.00

QUERY 5:

	c_id	c_name	c_age	c_address	c_salary	c_phone
▶	1	tom	23	hadapsar	45600.00	NULL
	2	max	23	katraj	45040.00	NULL
	3	dustin	25	Pune	25000.00	NULL
	4	jeremy	27	hyderabad	25300.00	NULL
	5	justin	24	pune	26000.00	NULL
	6	krishna	30	mumbai	29500.00	NULL
	7	kartik	42	gujrat	27000.00	NULL
	8	tony	33	koregaon	49000.00	NULL
	9	banner	25	bihar	45000.00	NULL
	10	pratt	44	pune	32000.00	NULL

QUERY 6:

	c_id	c_name	c_age	c_address	c_salary
▶	1	tom	23	hadapsar	45600.00
	2	max	23	katraj	45040.00
	3	dustin	25	Pune	25000.00
	4	jeremy	27	hyderabad	25300.00
	5	justin	24	pune	26000.00
	6	krishna	30	mumbai	29500.00
	7	kartik	42	gujrat	27000.00
	8	tony	33	koregaon	49000.00
	9	banner	25	bihar	45000.00
	10	pratt	44	pune	32000.00

QUERY 7:

	c_name	c_salary
▶	dustin	25000.00
	jeremy	25300.00

QUERY 7A:

	c_name	c_salary
▶	tom	45600.00
	max	45040.00
	banner	45000.00

QUERY 7B:

	c_name	c_salary
▶	max	45040.00

QUERY 7C:

	c_name	c_salary
▶	tom	45600.00
	max	45040.00
	dustin	25000.00
	jeremy	25300.00
	banner	45000.00

QUERY 7D:

	c_name	c_salary
▶	tom	45600.00
	max	45040.00
	dustin	25000.00
	jeremy	25300.00
	banner	45000.00

QUERY 7E:

	c_name	c_salary
▶	dustin	25000.00
	jeremy	25300.00

QUERY 8:

	c_id	c_name	c_age	c_address	c_salary
▶	1	tom	23	hadapsar	45600.00
	2	max	23	katraj	45040.00
	3	dustin	25	Pune	25000.00
	5	justin	24	pune	26000.00
	6	krishna	30	mumbai	29500.00
	7	kartik	42	gujrat	27000.00
	8	tony	33	koregaon	49000.00
	9	banner	25	bihar	45000.00
	10	pratt	44	pune	32000.00

QUERY 9:

	Tables_in_b3practical2
▶	c_customer
	student