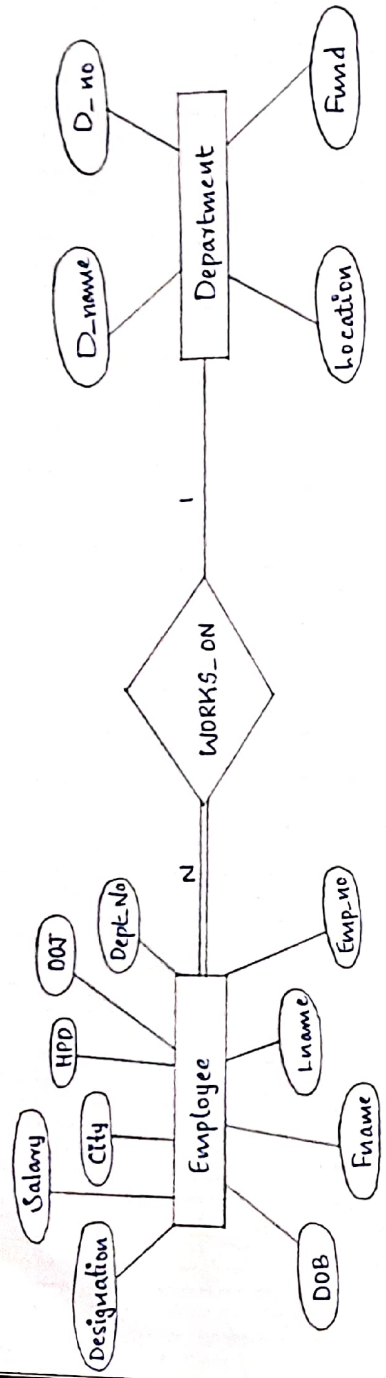

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DATABASE DESIGN USING ER DIAGRAM

AIM:

Design a database schema for an organization Management application with ER Diagram from the problem description given below:

An organization wants to maintain the records of its employees and departments in a database named 'ORGANIZATION'. Each employee can join in any of the departments available in the organization. Each employee should have an Employee number and Each department should have a Department number to uniquely identify each entity respectively. The entity 'Employee' can have attributes like First name, Last name, Date of Birth, native city, Date of Joining, Mobile number, Department number of the department he/she belongs to, Salary, Hours Per Day, and Designation of each employee. Similarly, the entity 'Department' can have attributes like Department number, name of the department, Location and its allowed fund. The relationship between Employee and Department is of type Many-One.

PROCEDURE:

Employee

Emp_no	Fname	Lname	DOB	City	DOJ	Mobile_no	Dept_No	Salary	HPD	Designation

Department

D_no	D_name	Location	Fund

RESULT: Successfully designed a database schema for an Organization Management Application with ER Diagram.

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FAMILIARIZATION OF SQL COMMANDS

SQL Commands are instructions. It is used to communicate with the database. It is also used to perform specific tasks, functions and queries of data.

SQL can perform various tasks like create table, add data to tables, drop the table, modify the table, set permission for users.

There are 5 types of SQL commands: DDL, DML, DCL, TCL, DQL.

Data Definition Language (DDL):

DDL changes the structure of the table like creating a table, deleting a table, altering a table etc.

Commands come under DDL:

1. CREATE : It is used to create a new table in the database.

   Syntax: CREATE TABLE $r(A_1D_1, A_2D_2, \ldots, A_nD_n,$ (Integrity Constraint$_1$), ... (Integrity Constraint$_k$));

   r : name of the relation, A_i: attribute name in the schema of relation r, D_i is the datatype of attribute A_i.

2. ALTER : It is used to alter the structure of the database. This change could be either to modify the characteristics of an existing attribute or probably to add a new attribute.

   Syntax to add new column to the table:

   ALTER TABLE r ADD A D ;

   where A: name of the attribute to be added to relation r and D: domain of A.

   Syntax to chop attributes of a relation using alter table command:

   ALTER TABLE r DROP A ;

3. DROP : It is used to delete both the structure and records stored in the table.

Syntax: DROP TABLE TableName;

Data Manipulation Language (DML):

DML Commands are used to modify the database.

1. INSERT : It is used to insert data into the row of a table.

Syntax: INSERT INTO TableName VALUES (value1, value2, ..., valuen);

2. UPDATE : This command is used to update or modify the value of column in the table.

Syntax: UPDATE TableName SET Column1 = Value1 ....
WHERE condition;

3. DELETE : It is used to remove one or more row from a table.

Syntax: DELETE FROM TableName WHERE Condition;

Data Query Language (DQL):

DQL is used to fetch the data from the database. It uses only one command.

1. SELECT: This is same as the projection operation of relational algebra. It is used to select the attribute based on the condition described by WHERE clause.

Syntax: SELECT column1, column2, ...
FROM TableName;

RESULT:

Successfully familiarized the SQL Commands.

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DATA DEFINITION LANGUAGE COMMANDS AND DATA MANIPULATION LANGUAGE COMMANDS

AIM:

Consider a database for an organization. Write queries for the following and get familiarized with various DDL and DML Commands.

1- Create the following tables, include the necessary constraints:

a. Employee (Emp_no, Fname, Lname, DOB, City, DOJ, Mobileno, Dept_No, Salary, HPD, Designation)

b. Department (D_no, D_name, location, Fund)

NOTE:

- Emp_no is the PK of Employee.
- D_no is the PK of Department.
- Dept_No in Employee is the FK.
- Salary is of datatype float.
- DOJ: Date of Joining
- HPD: Working Hours Per Day.

2. Insert atleast 4 records in each table.

3. Display the first name and Salary of the Employee whose employee number is 101.

4. List the first name and employee number of all the employees whose first name starts with 'A' and salary is less than 5000.

5. Update the Working hours per day of the Managers who joined the organization on 19th July 2022 as 5 hrs.

6. Delete the details of the employee from Employee table whose employee number is 105.

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7. Give a 20% increment in the fund assigned to 'Sales' Department.

8. Display the details of all departments located in either 'Kochi' or 'Calicut'.

9. Display the Employee number, first name, and Salary of all those employees whose salary is in between 5000 and 8000.

10. Add a new column named 'TOJ' (ie, Time of Joining) in the Employee Table.

11. Drop the column 'HPD' from Employee Table.

RESULT:

The database schema was successfully created and various operations were performed using DDL and DML commands respectively. All queries executed successfully and expected results were obtained.