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Roll: **05-002-08**

Assignment 1:

For developing the Human Resource Management (HRM) database, we need to define the structure of the database using tables that represent the key entities: Company, Department, Employee, Project, Employee project etc.

Tables

Here is a proposed structure for the database:

1.Company Table:

This table will store the company's information.

Column name	Data type	Description
company_id	INT	Primary key
company_name	VARCHAR	Name of the company
company_address	VARCHAR	Address of the company

2. Department Table:

Stores details of each department. Each department can have one manager (an employee).

Coulumn	Data type	Description
Dept_ID	INT(PK)	Unique identifier for department
Dept_name	VARCHAR	Name of dept
Manager_ID	INT(FK)	Employee ID of the manager
Company_ID	INT(FK)	Foreign key referencing CompanyID

3. Employee Table:

This table will hold employee details. Each employee is assigned to a department.

Column	Data type	Description
EmployeeID	INT(PK)	Unique identifier for the employee
FirstName	VARCHAR	Employee's first name
LastName	VARCHAR	Employee's last name
Salary	DECIMAL	Employee's salary
HireDate	DATE	Date employee was hired
DeptID	INT(FK)	Foreign key referencing DeptID
ManagerFlag	BOOLEAN	Indicates if employee is a manager

4. Project Table:

Each project in the company is tracked in this table.

Column	Data type	Description
ProjectID	INT(PK)	Unique identifier for the project
ProjectName	VARCHAR	Name of the project
DeptID	INT(FK)	Foreign key referencing DeptID
StartDate	DATE	Date when the project starts
EndDate	DATE	Date when the project ends

5. Employee_Project Table (Many-to-Many Relationship):

Since employees can work on multiple projects and a project can have multiple employees, we need a join table to represent this relationship.

Column	Data Type	Description
EmployeeID	INT(PK,FK)	Foreign key referencing EmployeeID
ProjectID	INT(PK,FK)	Foreign key referencing ProjectID
Hoursworked	INT	Number of hours worked on the project

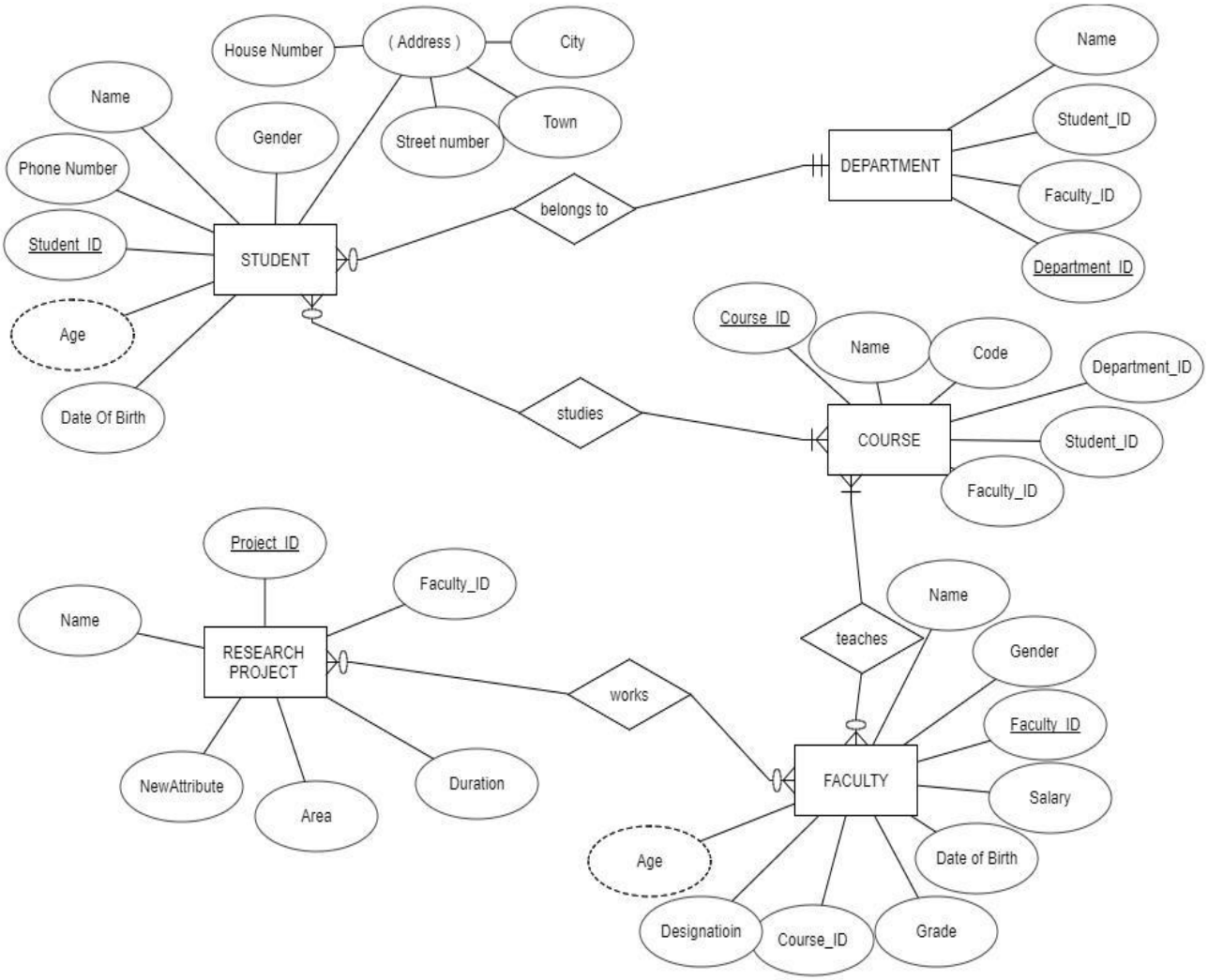
SQL:

```
-- Create Company table
CREATE TABLE Company (
    CompanyID INT PRIMARY KEY,
    Name VARCHAR(255) NOT NULL,
    Address VARCHAR(255),
    EstablishedYear YEAR
);

-- Create Department table
CREATE TABLE Department (
    DeptID INT PRIMARY KEY,
    DeptName VARCHAR(255) NOT NULL,
    ManagerID INT,
    CompanyID INT,
    FOREIGN KEY (CompanyID) REFERENCES Company(CompanyID),
    FOREIGN KEY (ManagerID) REFERENCES Employee(EmployeeID)
);

-- Create Employee table
CREATE TABLE Employee (
    EmployeeID INT PRIMARY KEY,
    FirstName VARCHAR(255) NOT NULL,
    LastName VARCHAR(255) NOT NULL,
    HireDate DATE,
    DeptID INT,
    Salary DECIMAL(10, 2),
    ManagerFlag BOOLEAN DEFAULT FALSE,
```

```
    FOREIGN KEY (DeptID) REFERENCES Department(DeptID)
);

-- Create Project table
CREATE TABLE Project (
    ProjectID INT PRIMARY KEY,
    ProjectName VARCHAR(255) NOT NULL,
    DeptID INT,
    StartDate DATE,
    EndDate DATE,
    FOREIGN KEY (DeptID) REFERENCES Department(DeptID)
);
```

Assignment 2:

ER diagram for University management system:



Assignment 3: ER diagram for car insurance company: