

EMPLOYEE MANAGEMENT SYSTEM

Database Design and ER Diagram

The entities of the Employee management system are:-

1. Employee
2. Department
3. Manager
4. Project
5. Salary
6. Attendance

1. Employee

- Attributes:

EmployeeID (Primary Key)

FullName

Email

Phone

Gender

- Relationships:

One Employee can work in one Department (Many-to-One)

One employee can work on many Projects (many-to-many relationship).

One employee can have one Salary (one-to-one relationship).

One employee can have one Attendance record (one-to-one relationship).

One employee can be a Manager (one-to-one relationship).

2. Department

- Attributes:

DepartmentID (Primary Key)

DepartmentName

ManagerID (Foreign Key)

EmployeeCount

- Relationships:

One department can have many employees (one-to-many relationship).

One department can have exactly one manager (one-to-one relationship).

3. Manager

- Attributes:

ManagerID (Primary Key)
EmployeeID (Foreign key)
DepartmentID (Foreign Key)
ProjectID (Foreign Key)

- Relationships:

One manager can be associated with many departments (one-to-many from manager to department).

One manager can also manage multiple projects (one-to-many relationship).

Each manager is an employee. (one-to-one relationship).

4. Project

- Attributes:

ProjectID (Primary Key)
ProjectName
StartDate
EndDate
Status

- Relationships:

One project can have many employees working on it (one-to-many relationship).

5. Salary

- Attributes:

SalaryID (Primary Key)
EmployeeID (Foreign key)
Salary
Bonus
Overtime

- Relationships:

Each salary record corresponds to exactly one employee (one-to-one relationship).

6. Attendance

- Attributes:

AttendanceID (Primary Key)

EmployeeID (Foreign key)

PresentDays

AbsentDays

- Relationships:

Each attendance record corresponds to exactly one employee. (One-to-one)

Table Structure

1. Employee

```
mysql> desc employee;
```

| Field | Type | Null | Key | Default | Extra |
|----------|---------------------------------|------|-----|---------|-------|
| empID | varchar(10) | NO | PRI | NULL | |
| fullName | varchar(40) | NO | | NULL | |
| phoneNo | bigint unsigned | YES | UNI | NULL | |
| email | varchar(40) | NO | UNI | NULL | |
| gender | enum('Male', 'Female', 'Other') | YES | | NULL | |
| address | varchar(50) | NO | | NULL | |
| deptID | varchar(10) | YES | MUL | NULL | |

2. Department

```
mysql> desc department;
```

| Field | Type | Null | Key | Default | Extra |
|----------------|-------------|------|-----|---------|-------|
| deptID | varchar(10) | NO | PRI | NULL | |
| deptName | varchar(20) | NO | | NULL | |
| managerID | varchar(10) | NO | | NULL | |
| employeesCount | int | NO | | NULL | |

4 rows in set (0.00 sec)

3. Manager

```
mysql> desc manager;
```

| Field | Type | Null | Key | Default | Extra |
|-----------|-------------|------|-----|---------|-------|
| managerID | varchar(10) | NO | PRI | NULL | |
| empID | varchar(10) | YES | MUL | NULL | |
| deptID | varchar(10) | YES | MUL | NULL | |
| projID | varchar(10) | YES | MUL | NULL | |

4 rows in set (0.00 sec)

4. Project

```
mysql> desc project;
```

| Field | Type | Null | Key | Default | Extra |
|-----------|-------------|------|-----|---------|-------|
| projID | varchar(10) | NO | PRI | NULL | |
| projName | varchar(40) | NO | | NULL | |
| managerID | varchar(10) | YES | MUL | NULL | |
| startDate | date | NO | | NULL | |
| endDate | date | YES | | NULL | |
| status | varchar(20) | YES | | NULL | |

6 rows in set (0.00 sec)

5. Salary

```
mysql> desc salary;
```

| Field | Type | Null | Key | Default | Extra |
|----------|-------------|------|-----|---------|-------|
| salaryID | varchar(10) | NO | PRI | NULL | |
| empID | varchar(10) | NO | MUL | NULL | |
| salary | float(15,2) | NO | | NULL | |
| bonus | float(15,2) | YES | | NULL | |
| overtime | float(15,2) | YES | | NULL | |

5 rows in set (0.00 sec)

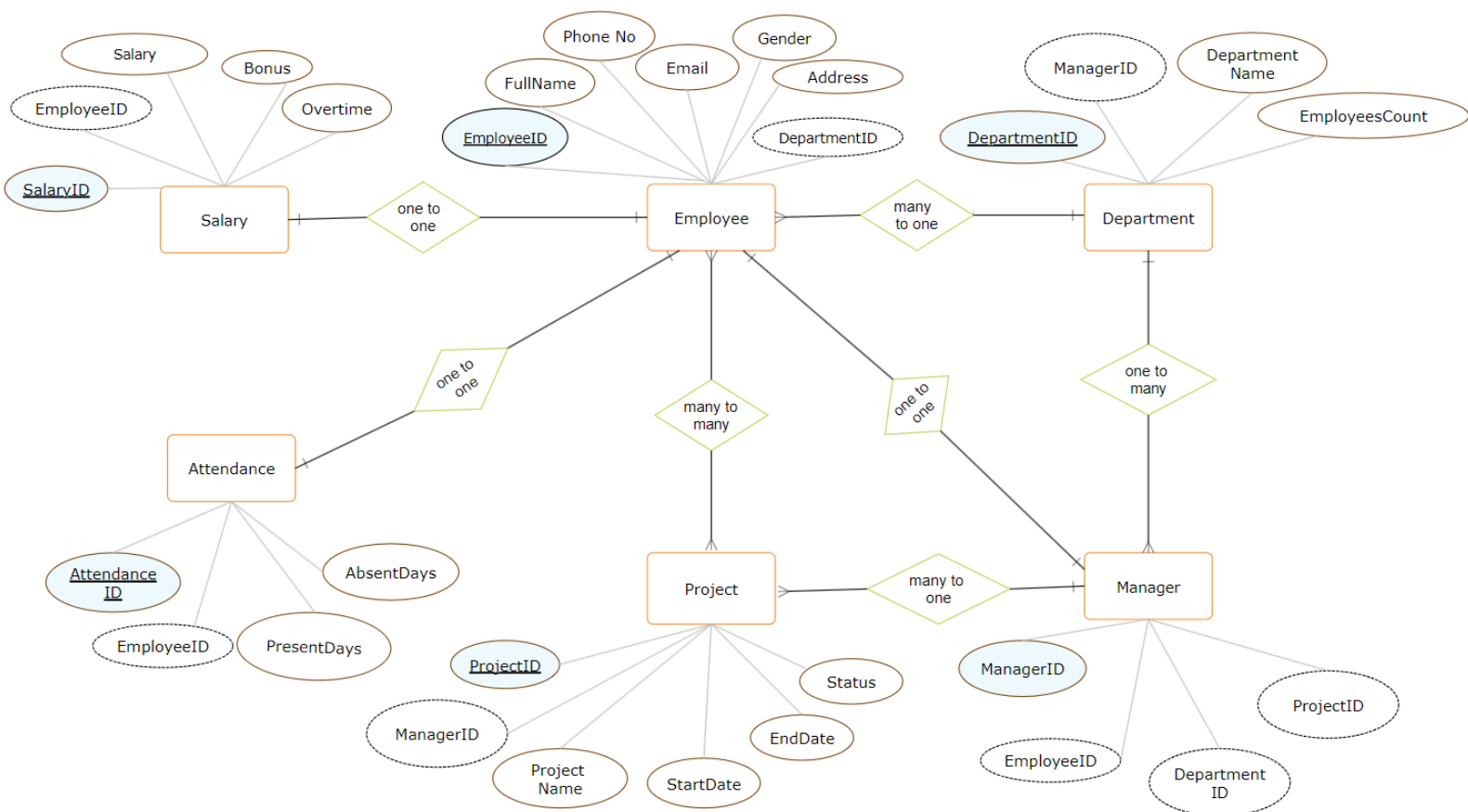
6. Attendance

```
mysql> desc attendance;
```

| Field | Type | Null | Key | Default | Extra |
|-------------|-------------|------|-----|---------|-------|
| attID | varchar(10) | NO | PRI | NULL | |
| empID | varchar(10) | YES | MUL | NULL | |
| presentDays | int | YES | | NULL | |
| absentDays | int | YES | | NULL | |

4 rows in set (0.00 sec)

ER Diagram



Role of Group Members in Development of Project

Two members are involved in development of this project and each member is responsible for developing 3 entities each as per given list:

ANSHUL:-

- 1.Employee
- 2.Salary
- 3.Attendance

AVNEESH KAUSHIK:-

- 1.Department
- 2.Manager
- 3.Project