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. <u>Employee</u>

- Attributes:

    EmployeeID (Primary Key)

    FullName

    Email

    Phone

    Gender

    Address

- 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).

    Each employee cmanaged by a Manager (many-to-one relationship).

2. <u>Department</u>

- Attributes:

    DepartmentID (Primary Key)

    DepartmentName

    ManagerID (Foreign Key)

    Location

- Relationships:

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

Many department can have one manager (Many-to-one relationship).

3. **Manager**

- Attributes:

    ManagerID (Primary Key)

    ManagerName

    Title

    Email

- Relationships:

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

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

    One manager manages many Employee(one-to-many relationship).

4. **Project**

- Attributes:

    ProjectID (Primary Key)

    ManagerID(Foreign 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 |
+-------------+--------------+------+-----+---------+-------+
| employee_id | varchar(255) | NO   | PRI | NULL    |       |
| address     | varchar(255) | YES  |     | NULL    |       |
| email       | varchar(255) | NO   |     | NULL    |       |
| full_name   | varchar(255) | NO   |     | NULL    |       |
| gender      | varchar(255) | YES  |     | NULL    |       |
| phone_no    | bigint       | NO   |     | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

2. Department

```
mysql> desc department;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| department_id   | varchar(255) | NO   | PRI | NULL    |       |
| department_name | varchar(255) | YES  |     | NULL    |       |
| location        | varchar(255) | YES  |     | NULL    |       |
| manager_id      | varchar(255) | NO   | MUL | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

3. Manager

```
mysql> desc manager;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| manager_id   | varchar(255) | NO   | PRI | NULL    |       |
| email        | varchar(255) | YES  |     | NULL    |       |
| manager_name | varchar(255) | YES  |     | NULL    |       |
| title        | varchar(255) | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

4. Project

```
mysql> desc project;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| project_id   | varchar(255) | NO   | PRI | NULL    |       |
| end_date     | datetime(6)  | YES  |     | NULL    |       |
| project_name | varchar(255) | YES  |     | NULL    |       |
| start_date   | datetime(6)  | YES  |     | NULL    |       |
| status       | varchar(255) | YES  |     | NULL    |       |
| manager_id   | varchar(255) | YES  | MUL | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

5. Salary

```
mysql> desc salary;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| salary_id   | varchar(255) | NO   | PRI | NULL    |       |
| bonus       | double       | YES  |     | NULL    |       |
| overtime    | double       | YES  |     | NULL    |       |
| salary      | double       | YES  |     | NULL    |       |
| employee_id | varchar(255) | YES  | MUL | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

6. Attendance

```
mysql> desc attendance;
+---------------+--------------+------+-----+---------+----------------+
| Field         | Type         | Null | Key | Default | Extra          |
+---------------+--------------+------+-----+---------+----------------+
| attendance_id | int          | NO   | PRI | NULL    | auto_increment |
| absent_days   | int          | YES  |     | NULL    |                |
| present_days  | int          | YES  |     | NULL    |                |
| employee_id   | varchar(255) | YES  | MUL | NULL    |                |
+---------------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

ER Diagram
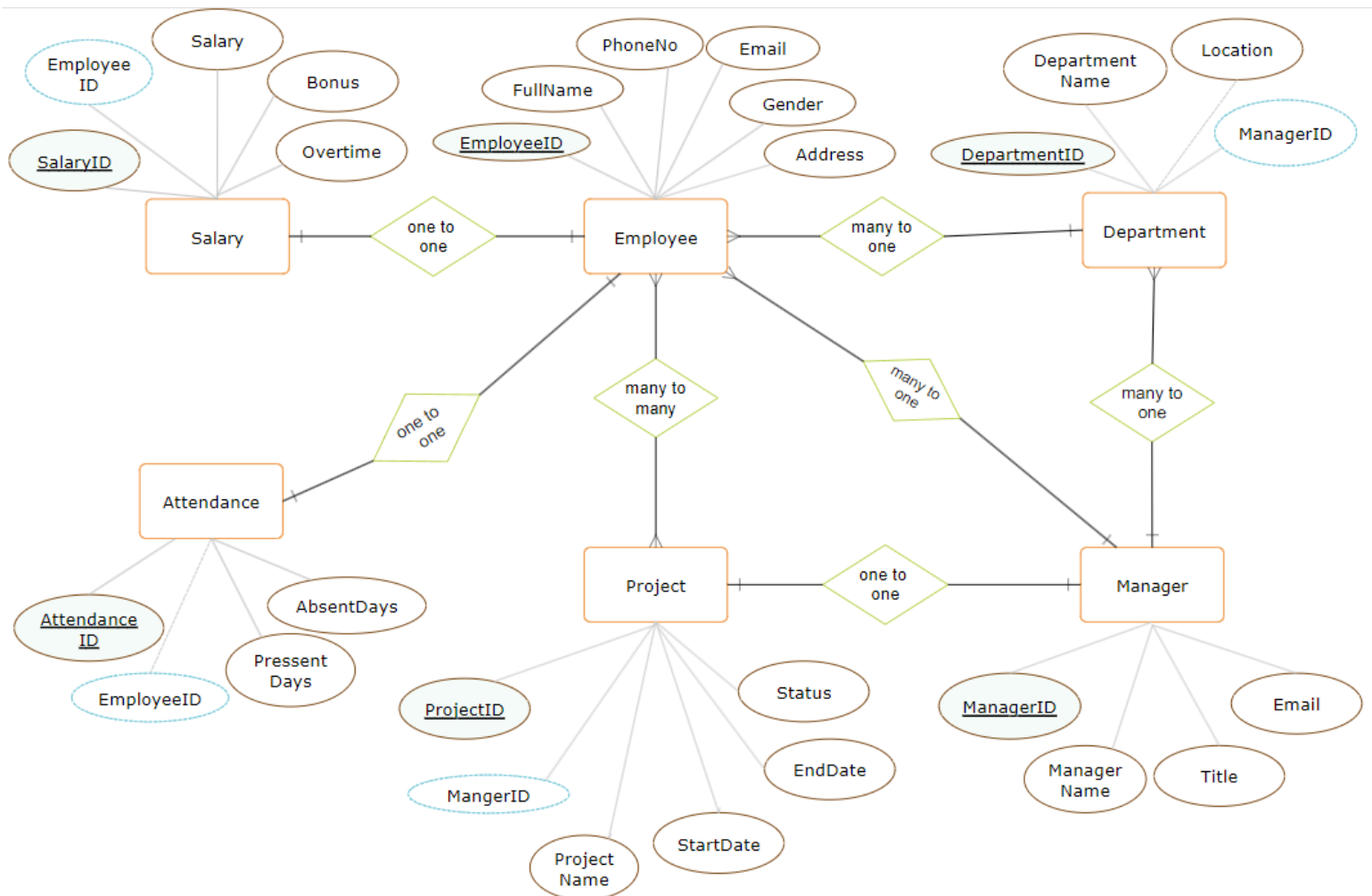
Role of Group Members in Development of Project

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