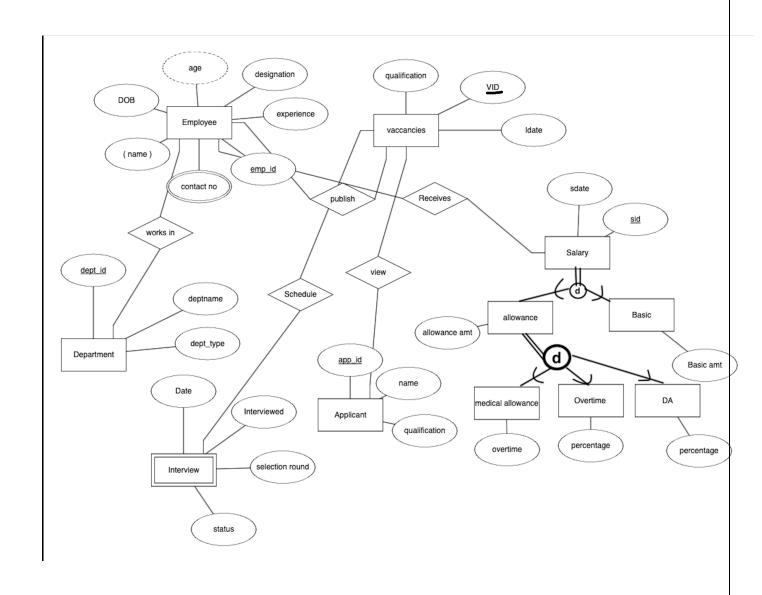# DBMS Project

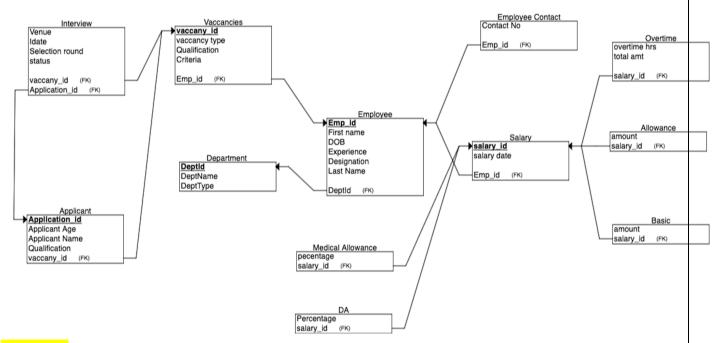## HR DATABASE MANAGEMENT SYSTEM

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About/Description

HR Database Management System (HRDMS) was created to include the best practices for service human resources departments within the company and is the work of all employee's department. The target group of the system that serves the human resource procedures is special for the employees and managers. This system is also classified according to staff branches and departments as it is classified according to the work of multiple systems; In addition to that it is organized in terms of personnel.

Our database is based on Human Resource Management which leads and directs the routine functions of the Human Resources (HR) department including hiring and interviewing staff, administering pay, benefits, and leave, and enforcing company policies and practices. Our database contains Human Resource Inventory which comprehensively lists down the basic information on all the employees, like their education, experience, skills, age, gender, salary related data, job preference and special achievements.

Entity – Relationship Diagram

Relational Schema

Interview
Venue
Idate
Selection round
status

vaccany_id   (FK)
Application_id   (FK)

Vaccancies
vaccany_id
vaccancy type
Qualification
Criteria

Emp_id   (FK)

Employee Contact
Contact No

Emp_id   (FK)

Overtime
overtime hrs
total amt

salary_id   (FK)

Employee
Emp_id
First name
DOB
Experience
Designation
Last Name

DeptId   (FK)

Department
DeptId
DeptName
DeptType

Salary
salary_id
salary date

Emp_id   (FK)

Allowance
amount
salary_id   (FK)

Applicant
Application_id
Applicant Age
Applicant Name
Qualification
vaccany_id   (FK)

Medical Allowance
pecentage
salary_id   (FK)

Basic
amount
salary_id   (FK)

DA
Percentage
salary_id   (FK)

SCHEMA

1.Employee:
CREATE TABLE employee (

->   empid VARCHAR(10) PRIMARY KEY,

->   firstname VARCHAR(20),

->   lastname VARCHAR(20),

->   DOB DATE,

->   experience DATE, -- Assuming experience is a date, you might want to change it to INTEGER if it's supposed to be years of experience

->   designation VARCHAR(15),

->   deptid VARCHAR(10),

->   FOREIGN KEY (deptid) REFERENCES department(deptid)

->);

2.Vacancies
mysql> CREATE TABLE Vacancies (

->   VaccncyId VARCHAR(10) PRIMARY KEY,

->   Vacancy_type VARCHAR(15),

->   Qualification VARCHAR(15),

->   Criteria VARCHAR(25),

->   Idate DATE,

->   empid VARCHAR(10),

->   FOREIGN KEY (empid) REFERENCES Employee(empid)

->);

3.Interview

```
mysql> CREATE TABLE Interview (
    ->    Venue VARCHAR(15),
    ->    Idate DATE,
    ->    Selection_round NUMERIC,
    ->    Status VARCHAR(10),
    ->    vacancyid VARCHAR(10),
    ->    application_id VARCHAR(10),
    ->    FOREIGN KEY (vacancyid) REFERENCES Vacancies(VaccncyId),
    ->    FOREIGN KEY (application_id) REFERENCES Applicant(Application_Id)
    -> );
```

4.Applicant

```
mysql> CREATE TABLE Applicant (
    ->    Application_Id VARCHAR(10) PRIMARY KEY,
    ->    Applicant_age NUMERIC,
    ->    Applicant_Name VARCHAR(20),
    ->    Qualification VARCHAR(15),
    ->    vacancyid VARCHAR(10),
    ->    FOREIGN KEY (vacancyid) REFERENCES Vacancies(VaccncyId)
    -> );
```

5.Salary
```
mysql> CREATE TABLE Salary (
    ->    SalaryId VARCHAR(10) PRIMARY KEY,
    ->    Salary_date DATE,
    ->    empid VARCHAR(10),
    ->    FOREIGN KEY (empid) REFERENCES Employee(EmpID)
    -> );
```

6.Employee Contact

```
mysql> CREATE TABLE EmployeeContact (
    ->    Contact_No NUMERIC,
    ->    empid VARCHAR(10),
    ->    FOREIGN KEY (empid) REFERENCES Employee(EmpID)
    -> );
```

7.Overtime

```
mysql> CREATE TABLE Overtime (
    ->    Overtime_hours NUMERIC,
    ->    Total_oamt NUMERIC,
    ->    salaryid VARCHAR(10),
    ->    FOREIGN KEY (salaryid) REFERENCES Salary(SalaryId)
    -> );
```

8.Allowance

```
mysql> CREATE TABLE Allowance (
    ->    Amount NUMERIC,
    ->    salaryid VARCHAR(10),
    ->    FOREIGN KEY (salaryid) REFERENCES Salary(SalaryId)
    -> );
```

9.MedicalAllowance

```
mysql> CREATE TABLE MedicalAllowance (
    ->    Percentage NUMERIC,
    ->    salaryid VARCHAR(10),
    ->    FOREIGN KEY (salaryid) REFERENCES Salary(SalaryId)
    -> );
```

10.DA

```
mysql> CREATE TABLE DA (
    ->    Percentage NUMERIC,
    ->    salaryid VARCHAR(10),
    ->    FOREIGN KEY (salaryid) REFERENCES Salary(SalaryId)
    -> );
```

11.Basic

```
mysql> CREATE TABLE Basic (
    ->    Amount NUMERIC,
    ->    salaryid VARCHAR(10),
    ->    FOREIGN KEY (salaryid) REFERENCES Salary(SalaryId)
    -> );
```

12.Department

```
mysql> CREATE TABLE department (
    ->    deptid VARCHAR(10) PRIMARY KEY,
    ->    deptname VARCHAR(15),
    ->    depttype VARCHAR(15)
    -> );
```

INSERTING DATA VALUES

Employee

```
mysql> select * from employee;
+--------+-----------+----------+------------+------------+----------------+--------+
| empid  | firstname | lastname | DOB        | experience | designation    | deptid |
+--------+-----------+----------+------------+------------+----------------+--------+
| E02    | Kriti     | Sharma   | 1990-08-21 |         10 | Gen Manager    | D2     |
| E03    | Nishita   | Solanki  | 1994-08-24 |          8 | Asst Manager   | D3     |
| E04    | Kriya     | Morabia  | 1990-04-09 |         10 | Vice President | D2     |
| E05    | Ajay      | Yadav    | 1992-12-18 |         11 | President      | D1     |
| E06    | NULL      | NULL     | NULL       |       NULL | NULL           | NULL   |
| E07    | NULL      | NULL     | NULL       |       NULL | NULL           | NULL   |
| E08    | NULL      | NULL     | NULL       |       NULL | NULL           | NULL   |
| E101   | Ansh      | Shah     | 1987-02-22 |         12 | Vice President | D1     |
+--------+-----------+----------+------------+------------+----------------+--------+
8 rows in set (0.00 sec)
```

Employeecontact

```
[mysql> select* from employeecontact;
+------------+-------+
| Contact_No | empid |
+------------+-------+
| 1234567890 | E101  |
| 2134564323 | E02   |
| 6544564323 | E03   |
| 8134564323 | E04   |
| 9204564323 | E05   |
+------------+-------+
5 rows in set (0.00 sec)
```

Salary

```
[mysql> select * from salary;
+----------+-------------+-------+
| SalaryId | Salary_date | empid |
+----------+-------------+-------+
| S01      | 2022-09-27  | E101  |
| S02      | 2022-09-30  | E02   |
| S03      | 2022-09-28  | E03   |
| S04      | 2022-09-26  | E04   |
| S05      | 2022-09-20  | E05   |
+----------+-------------+-------+
5 rows in set (0.00 sec)
```

Basic

```
[mysql> select * from basic
+--------+----------+
| Amount | salaryid |
+--------+----------+
| 500000 | S01      |
| 250000 | S02      |
| 400000 | S03      |
| 450000 | S04      |
| 550000 | S05      |
+--------+----------+
5 rows in set (0.01 sec)
```

Allowance

```
[mysql> select* from allowance;
+--------+----------+
| Amount | salaryid |
+--------+----------+
|   5000 | S01      |
|   2500 | S02      |
|   4000 | S03      |
|   2000 | S04      |
|   3000 | S05      |
+--------+----------+
5 rows in set (0.00 sec)
```

Medicalallowance

```
[mysql> select * from medicalallowance;
+------------+----------+
| Percentage | salaryid |
+------------+----------+
|        100 | S01      |
|         90 | S02      |
|         80 | S03      |
|         70 | S04      |
|         75 | S05      |
+------------+----------+
5 rows in set (0.01 sec)
```

Vacancies

```
[mysql> select*from vacancies;
+-----------+---------------+----------+-------+
| VaccncyId | Qualification | Criteria | empid |
+-----------+---------------+----------+-------+
| V01       | B.Tech        | min 3yr  | E06   |
| V02       | M.Tech        | min 3yr  | E07   |
| V03       | PhD           | min 4yr  | E08   |
+-----------+---------------+----------+-------+
3 rows in set (0.00 sec)
```

Interview

```
[mysql> select* from Interview;
+---------+------------+----------------+----------+-----------+----------------+
| Venue   | Idate      | Selection_round | Status  | vacancyid | application_id |
+---------+------------+----------------+----------+-----------+----------------+
| Room 32 | 2024-06-09 |              1 | rejected | V02       | A02            |
| Room 30 | 2024-06-11 |              2 | selected | V02       | A03            |
| Room 32 | 2024-06-15 |              2 | selected | V01       | A01            |
+---------+------------+----------------+----------+-----------+----------------+
3 rows in set (0.00 sec)
```

Applicant

```
[mysql> select* from applicant;
+----------------+---------------+----------------+---------------+-----------+
| Application_Id | Applicant_age | Applicant_Name | Qualification | vacancyid |
+----------------+---------------+----------------+---------------+-----------+
| A01            |            25 | Vijay          | B.Tech        | V01       |
| A02            |            28 | Ajay           | M.tech        | V02       |
| A03            |            25 | Kiran          | Phd           | V03       |
+----------------+---------------+----------------+---------------+-----------+
3 rows in set (0.00 sec)
```

Department

```
[mysql> select* from department;
+---------+------------+-----------+
| deptid  | deptname   | depttype  |
+---------+------------+-----------+
| D1      | HR         | General   |
| D2      | Production | Technical |
| D3      | Marketing  | Sales     |
+---------+------------+-----------+
3 rows in set (0.01 sec)
```

Overtime

```
[mysql> select* from overtime;
+----------------+------------+----------+
| Overtime_hours | Total_oamt | salaryid |
+----------------+------------+----------+
|              8 |       1000 | S01      |
|              5 |       2000 | S02      |
|             10 |       1500 | S03      |
+----------------+------------+----------+
3 rows in set (0.00 sec)
```

DA

```
[mysql> select* from da;
+------------+----------+
| Percentage | salaryid |
+------------+----------+
|         20 | S01      |
|         20 | S02      |
|         10 | S03      |
|         15 | S04      |
|         10 | S05      |
+------------+----------+
5 rows in set (0.00 sec)
```

QUERIES

1.Display name and designation of all employees having 'i' as the second letter in their names.

```
mysql> select firstname , lastname from employee where firstname like'_i%';
+-----------+----------+
| firstname | lastname |
+-----------+----------+
| Nishita   | Solanki  |
+-----------+----------+
1 row in set (0.01 sec)
```

2. Display applicant name and qualification whose age is between 21 to 26.

```
mysql> select Applicant_age , qualification from applicant where Applicant_age between 21 and 26;
+---------------+---------------+
| Applicant_age | qualification |
+---------------+---------------+
|            25 | B.Tech        |
|            25 | Phd           |
+---------------+---------------+
2 rows in set (0.00 sec)
```

3. Display number of vaccancies according to qualification.

```
mysql> select qualification , count(*) as vacanciesAvailable from vacancies group by qualification;
+---------------+--------------------+
| qualification | vacanciesAvailable |
+---------------+--------------------+
| B.Tech        |                  1 |
| M.Tech        |                  1 |
| PhD           |                  1 |
+---------------+--------------------+
3 rows in set (0.00 sec)
```

4. Display employee details who works in Production department.

```
mysql> SELECT e.empid, e.firstname, e.lastname, e.DOB, e.experience, e.designation, d.deptname
    -> FROM employee e
    -> INNER JOIN department d ON e.deptid = d.deptid
    -> WHERE d.deptname = 'Production';
+-------+-----------+----------+------------+------------+----------------+------------+
| empid | firstname | lastname | DOB        | experience | designation    | deptname   |
+-------+-----------+----------+------------+------------+----------------+------------+
| E02   | Kriti     | Sharma   | 1990-08-21 |         10 | Gen Manager    | Production |
| E04   | Kriya     | Morabia  | 1990-04-09 |         10 | Vice President | Production |
+-------+-----------+----------+------------+------------+----------------+------------+
2 rows in set (0.00 sec)
```

5. Display name of employee getting medical allowance >75%.

```
mysql> SELECT e.firstname, e.lastname
    -> FROM employee e
    -> JOIN salary s ON e.empid = s.empid
    -> JOIN medicalallowance m ON s.salaryid = m.salaryid
    -> WHERE m.Percentage > 75;
+-----------+-----------+
| firstname | lastname  |
+-----------+-----------+
| Ansh      | Shah      |
| Kriti     | Sharma    |
| Nishita   | Solanki   |
+-----------+-----------+
3 rows in set (0.00 sec)
```

ADVANCED CONCEPTS

TRIGGERS

```
mysql>
mysql> CREATE TRIGGER before_insert_basic_amount_check
    -> BEFORE INSERT ON basic
    -> FOR EACH ROW
    -> BEGIN
    ->     IF NEW.amount > 1000 THEN
    ->         SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Basic amount cannot exceed 1000';
    ->     END IF;
    -> END //
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> insert into basic values(9000,'S05');
ERROR 1644 (45000): Basic amount cannot exceed 1000
```

FUNCTIONS

```
mysql> CREATE FUNCTION get_employees_name(exp INT) RETURNS TEXT
    -> DETERMINISTIC
    -> BEGIN
    ->     DECLARE name_text TEXT;
    ->     DECLARE empid_var VARCHAR(10);
    ->     DECLARE firstname_var VARCHAR(20);
    ->     DECLARE lastname_var VARCHAR(20);
    ->     DECLARE deptid_var VARCHAR(10);
    ->     DECLARE experience_var INT;
    ->     DECLARE done INT DEFAULT FALSE;
    ->
    ->     DECLARE cur_emp CURSOR FOR
    ->         SELECT empid, firstname, lastname, deptid, experience FROM employee WHERE experience > exp;
    ->     DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = TRUE;
    ->     OPEN cur_emp;
    ->
    ->     employee_loop: LOOP
    ->         FETCH cur_emp INTO empid_var, firstname_var, lastname_var, deptid_var, experience_var;
    ->         IF done THEN
    ->             LEAVE employee_loop;
    ->         END IF;
    ->
    ->         IF deptid_var = 'D1' THEN
    ->             SET name_text := CONCAT(empid_var, ' ', firstname_var, ' ', lastname_var);
    ->         END IF;
    ->     END LOOP employee_loop;
    ->
    ->     CLOSE cur_emp;
    ->
    ->     RETURN name_text;
    -> END$$
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> DELIMITER ;
mysql> SELECT get_employees_name(5);
+-----------------------+
| get_employees_name(5) |
+-----------------------+
| E101 Ansh Shah        |
+-----------------------+
1 row in set (0.01 sec)
```