PayXpert

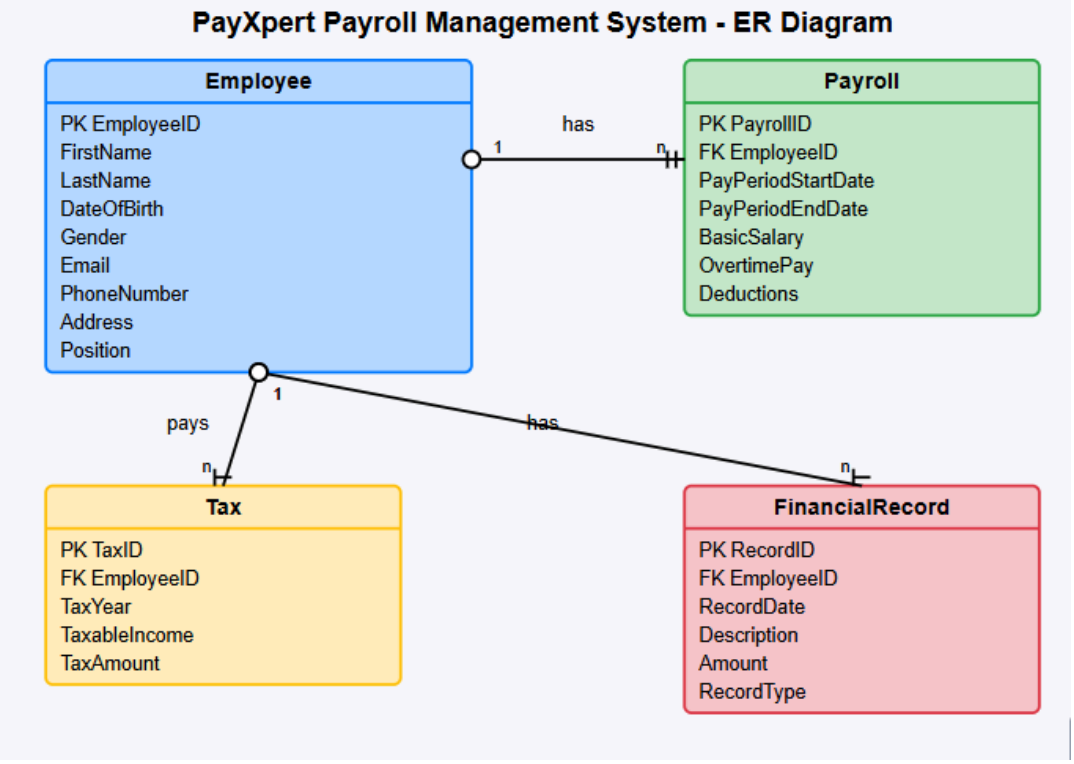
Planning Your Database Step-by-Step

1. Understand the Required Tables

First, familiarize yourself with the four tables required:

- Employee
- Payroll
- Tax
- FinancialRecord

2. ER Diagram



3. Choose Your Database System

Select a database management system i.e. MySQL.

4. Install Database Tools

Install the necessary database tools:

5. Create the Database

Create a new database specifically for the PayXpert system:

```
CREATE DATABASE PayXpert;
USE PayXpert;
```

6. Create the Employee Table

```
CREATE TABLE Employee (EmployeeID INT PRIMARY KEY AUTO_INCREMENT
FirstName VARCHAR(50) NOT NULL,LastName VARCHAR(50) NOT NULL, Dat
Gender VARCHAR(10) NOT NULL,Email VARCHAR(100) NOT NULL,
PhoneNumber VARCHAR(20) NOT NULL,Address VARCHAR(200) NOT NULL,
Position VARCHAR(50) NOT NULL,JoiningDate DATE NOT NULL,
TerminationDate DATE NULL);
```

7. Create the Payroll Table

```
CREATE TABLE Payroll (
PayrollID INT PRIMARY KEY AUTO_INCREMENT,
EmployeeID INT NOT NULL,
PayPeriodStartDate DATE NOT NULL,
PayPeriodEndDate DATE NOT NULL,
BasicSalary DECIMAL(10, 2) NOT NULL,
OvertimePay DECIMAL(10, 2) NOT NULL,
Deductions DECIMAL(10, 2) NOT NULL,
NetSalary DECIMAL(10, 2) NOT NULL,
FOREIGN KEY (EmployeeID) REFERENCES Employee(EmployeeID)
);
```

8. Create the Tax Table

```
CREATE TABLE Tax (
TaxID INT PRIMARY KEY AUTO_INCREMENT,
```

```
EmployeeID INT NOT NULL,
TaxYear INT NOT NULL,
TaxableIncome DECIMAL(10, 2) NOT NULL,
TaxAmount DECIMAL(10, 2) NOT NULL,
FOREIGN KEY (EmployeeID) REFERENCES Employee(EmployeeID)
);
```

9. Create the FinancialRecord Table

```
CREATE TABLE FinancialRecord (
RecordID INT PRIMARY KEY AUTO_INCREMENT,
EmployeeID INT NOT NULL,
RecordDate DATE NOT NULL,
Description VARCHAR(200) NOT NULL,
Amount DECIMAL(10, 2) NOT NULL,
RecordType VARCHAR(50) NOT NULL,
FOREIGN KEY (EmployeeID) REFERENCES Employee(EmployeeID)
);
```

10. Verify the Table Structure

```
DESCRIBE Employee;
DESCRIBE Payroll;
DESCRIBE Tax;
DESCRIBE FinancialRecord;
```

```
mysql> DESCRIBE Employee;
+-----------------+-------------+------+-----+---------+----------------+
| Field           | Type        | Null | Key | Default | Extra          |
+-----------------+-------------+------+-----+---------+----------------+
| EmployeeID      | int         | NO   | PRI | NULL    | auto_increment |
| FirstName       | varchar(50) | NO   |     | NULL    |                |
| LastName        | varchar(50) | NO   |     | NULL    |                |
| DateOfBirth     | date        | NO   |     | NULL    |                |
| Gender          | varchar(10) | NO   |     | NULL    |                |
| Email           | varchar(100)| NO   |     | NULL    |                |
| PhoneNumber     | varchar(20) | NO   |     | NULL    |                |
| Address         | varchar(200)| NO   |     | NULL    |                |
| Position        | varchar(50) | NO   |     | NULL    |                |
| JoiningDate     | date        | NO   |     | NULL    |                |
| TerminationDate | date        | YES  |     | NULL    |                |
+-----------------+-------------+------+-----+---------+----------------+
11 rows in set (0.00 sec)

mysql> DESCRIBE Payroll;
+--------------------+---------------+------+-----+---------+----------------+
| Field              | Type          | Null | Key | Default | Extra          |
+--------------------+---------------+------+-----+---------+----------------+
| PayrollID          | int           | NO   | PRI | NULL    | auto_increment |
| EmployeeID         | int           | NO   | MUL | NULL    |                |
| PayPeriodStartDate | date          | NO   |     | NULL    |                |
| PayPeriodEndDate   | date          | NO   |     | NULL    |                |
| BasicSalary        | decimal(10,2) | NO   |     | NULL    |                |
| OvertimePay        | decimal(10,2) | NO   |     | NULL    |                |
| Deductions         | decimal(10,2) | NO   |     | NULL    |                |
| NetSalary          | decimal(10,2) | NO   |     | NULL    |                |
+--------------------+---------------+------+-----+---------+----------------+
```

```
mysql> DESCRIBE Tax;
+---------------+---------------+------+-----+---------+----------------+
| Field         | Type          | Null | Key | Default | Extra          |
+---------------+---------------+------+-----+---------+----------------+
| TaxID         | int           | NO   | PRI | NULL    | auto_increment |
| EmployeeID    | int           | NO   | MUL | NULL    |                |
| TaxYear       | int           | NO   |     | NULL    |                |
| TaxableIncome | decimal(10,2) | NO   |     | NULL    |                |
| TaxAmount     | decimal(10,2) | NO   |     | NULL    |                |
+---------------+---------------+------+-----+---------+----------------+
5 rows in set (0.01 sec)

mysql> DESCRIBE FinancialRecord;
+-------------+---------------+------+-----+---------+----------------+
| Field       | Type          | Null | Key | Default | Extra          |
+-------------+---------------+------+-----+---------+----------------+
| RecordID    | int           | NO   | PRI | NULL    | auto_increment |
| EmployeeID  | int           | NO   | MUL | NULL    |                |
| RecordDate  | date          | NO   |     | NULL    |                |
| Description | varchar(200)  | NO   |     | NULL    |                |
| Amount      | decimal(10,2) | NO   |     | NULL    |                |
| RecordType  | varchar(50)   | NO   |     | NULL    |                |
+-------------+---------------+------+-----+---------+----------------+
6 rows in set (0.01 sec)
```

11. Insert data

```
--Insert an employee
INSERT INTO Employee (FirstName, LastName, DateOfBirth, Gender, Email, Ph
 Address, Position, JoiningDate)
VALUES ('Samiksha', 'Patil', '2003-10-20', 'Female', 'samikshapatil419@gmail.
 '123-456-7890', 'Kolhapur', 'Developer', '2025-01-01');
```

```
INSERT INTO Employee (FirstName, LastName, DateOfBirth, Gender, Email, Ph
Address, Position, JoiningDate)
VALUES ('John', 'Doe', '1990-01-15', 'Male', 'john.doe@example.com',
'123-456-7890', '123 Main St', 'Developer', '2023-01-01');
```

```
mysql> INSERT INTO Employee (FirstName, LastName, DateOfBirth, Gender, Email, PhoneNumber, Address, Position, JoiningDate)
    -> VALUES ('Samiksha', 'Patil', '2003-10-20', 'Female', 'samikshapatil419@gmail.com', '123-456-7890', 'Kolhapur', 'Developer', '2025-01-01');
Query OK, 1 row affected (0.99 sec)
```

```
- Test that you can retrieve the employee
SELECT * FROM Employee WHERE FirstName = 'Samiksha';
```

```
mysql> SELECT * FROM Employee WHERE FirstName = 'Samiksha';
+------------+-----------+----------+-------------+--------+---------------------------+-------------+----------+----------+-------------+-----------------+
| EmployeeID | FirstName | LastName | DateOfBirth | Gender | Email                     | PhoneNumber | Address  | Position | JoiningDate | TerminationDate |
+------------+-----------+----------+-------------+--------+---------------------------+-------------+----------+----------+-------------+-----------------+
|          2 | Samiksha  | Patil    | 2003-10-20  | Female | samikshapatil419@gmail.com | 123-456-7890 | Kolhapur | Developer | 2025-01-01  | NULL            |
+------------+-----------+----------+-------------+--------+---------------------------+-------------+----------+----------+-------------+-----------------+
1 row in set (0.00 sec)
```

12. To view the data from Employee table:

```
SELECT * FROM Employee;
```

```
mysql> SELECT * FROM Employee;
+------------+-----------+----------+-------------+--------+---------------------------+-------------+-------------+----------+-------------+-----------------+
| EmployeeID | FirstName | LastName | DateOfBirth | Gender | Email                     | PhoneNumber | Address     | Position | JoiningDate | TerminationDate |
+------------+-----------+----------+-------------+--------+---------------------------+-------------+-------------+----------+-------------+-----------------+
|          1 | John      | Doe      | 1990-01-15  | Male   | john.doe@example.com      | 123-456-7890 | 123 Main St | Developer | 2023-01-01  | NULL            |
|          2 | Samiksha  | Patil    | 2003-10-20  | Female | samikshapatil419@gmail.com | 123-456-7890 | Kolhapur    | Developer | 2025-01-01  | NULL            |
+------------+-----------+----------+-------------+--------+---------------------------+-------------+-------------+----------+-------------+-----------------+
2 rows in set (0.00 sec)
```