This database contains **six primary tables** and **two additional views** (highlighted in yellow). Each table is related to another through **foreign keys**.

**1. employees**

* Stores personal details of employees.
* emp\_no (Primary Key) – A unique ID for each employee.
* birth\_date – Employee's birthdate.
* first\_name & last\_name – Employee's first and last name.
* gender – Can be **'M'** (Male) or **'F'** (Female).
* hire\_date – The date the employee was hired.

**2. departments**

* Stores department details.
* dept\_no (Primary Key) – A unique department ID (e.g., 'd001', 'd002').
* dept\_name – Name of the department (e.g., 'Finance', 'HR').

**3. dept\_emp (Employee-Department Mapping)**

* Maps employees to departments (many-to-many relationship).
* emp\_no (Foreign Key) – Refers to employees.emp\_no.
* dept\_no (Foreign Key) – Refers to departments.dept\_no.
* from\_date & to\_date – The period during which the employee worked in that department.

**4. dept\_manager (Managers of Departments)**

* Stores which employee is managing which department.
* emp\_no (Foreign Key) – Refers to employees.emp\_no.
* dept\_no (Foreign Key) – Refers to departments.dept\_no.
* from\_date & to\_date – The duration of their managerial role.

**5. salaries**

* Stores employee salary details.
* emp\_no (Foreign Key) – Refers to employees.emp\_no.
* salary – Salary amount.
* from\_date & to\_date – The time period the salary is applicable.

**6. titles**

* Stores job titles of employees.
* emp\_no (Foreign Key) – Refers to employees.emp\_no.
* title – The job title (e.g., 'Engineer', 'Manager').
* from\_date & to\_date – The period during which they held this title.

**Relationships Between Tables**

* **One Employee (employees) can have multiple records** in:
  + titles (different job roles over time)
  + salaries (different salary records)
  + dept\_emp (assigned to multiple departments over time)
  + dept\_manager (if they become a manager)
* **One Department (departments) can have multiple**:
  + Employees (dept\_emp)
  + Managers (dept\_manager)

**Additional Views (Highlighted in Yellow)**

* current\_dept\_e... – Likely a **view** showing employees' current departments.
* dept\_emp\_latest\_d... – Probably a **view** to find the latest department assignment of employees.

**How This Works in a Real-World Scenario**

1. **Hiring an Employee**
   * A new record is added to employees.
   * Their initial salary is stored in salaries.
   * They are assigned a department in dept\_emp.
   * They are given a job title in titles.
2. **Promoting an Employee**
   * A new record is added to titles with the new job title.
   * A new record in salaries if they get a raise.
3. **Transferring an Employee to Another Department**
   * A new entry in dept\_emp is created for the new department.
   * The old department record is marked with an end date (to\_date).

**Key SQL Concepts Used**

* **Primary Key (PK):** Unique identifier for each table row.
* **Foreign Key (FK):** Links data between tables.
* **Many-to-Many Relationships:** Managed using linking tables (dept\_emp, dept\_manager).
* **Normalization:** Avoids data duplication by separating information into multiple tables.