Database Design Document — Employee Directory System

Objective

Design a robust and future-ready database schema using **PostgreSQL** for an Employee Directory System that supports multiple departments, roles, and employee details.

---

1) Tables Designed

1. `employees`

Stores all core information about employees.

Column Name	Type	Description
id	SERIAL PRIMARY KEY	Unique identifier
name	TEXT	Full name
email	TEXT UNIQUE	Company email
phone_number	TEXT	Contact number
role	`role_enum`	Controlled by HR
department	`department_enum`	Controlled by HR
gender	`gender_enum`	Gender identity
birthdate	DATE	Used for age calculation
age	INTEGER	Auto-calculated

| address | TEXT | Home address |

| employment_status | `employment_status_enum` | Active, on leave, etc. |

| availability_status | `availability_status_enum` | In-office, remote, etc. |

| work_schedule | `work_schedule_enum` | Full-time, shift, hybrid, etc. |

| skills | TEXT[] | List of skills |

| certifications | JSON | Includes certificate file URLs |

| work_experience | JSON | Stores previous job history |

| projects | JSON | Project list (ongoing/completed) |

| achievements | TEXT | Achievements (free text) |

| ratings | JSON | From HR, peers, managers |

| profile_visibility | BOOLEAN | Controls visibility of profile |

| salary_info | JSON | Salary breakdown |

| performance_reviews | JSON | Managerial reviews |

| status_reason | TEXT | HR/Admin-only reason for status |

| status_updated_by | TEXT | Who last updated status |

| status_updated_at | TIMESTAMP | When status was last changed |

| joining_date | DATE | When employee joined company |

| leaving_date | DATE | If/when employee left |

| created_at | TIMESTAMP | Record creation timestamp |

---

2. `departments`

Column Name	Type	Description
id	SERIAL PRIMARY KEY	Unique ID
department_name	TEXT UNIQUE	Name of department
description	TEXT	Purpose of the department
created_at	TIMESTAMP	Record creation time

---

3. `companies`

Column Name	Type	Description
id	SERIAL PRIMARY KEY	Unique ID
company_name	TEXT UNIQUE	Name of the company
description	TEXT	Short about the company

| industry_type | TEXT | E.g., IT, Marketing |

| location | TEXT | HQ Location |

| company_size | TEXT | E.g., 11–50, 100+ |

| website_url | TEXT | Official website |

| contact_email | TEXT | Official contact email |

| contact_phone | TEXT | Contact number |

| logo_url | TEXT | Path to company logo |

| joined_on | DATE DEFAULT CURRENT_DATE | When added to system |

| left_on | DATE | If the company left directory |

| status | TEXT | Active/Removed/Suspended |

| status_reason | TEXT | Reason for leaving or suspension |

| status_updated_by | TEXT | Admin who updated the status |

| status_updated_at | TIMESTAMP | Timestamp of update |

| created_at | TIMESTAMP | Record creation timestamp |

---

2) ENUM Types Used

- `role_enum`: 24 roles across entry to admin level

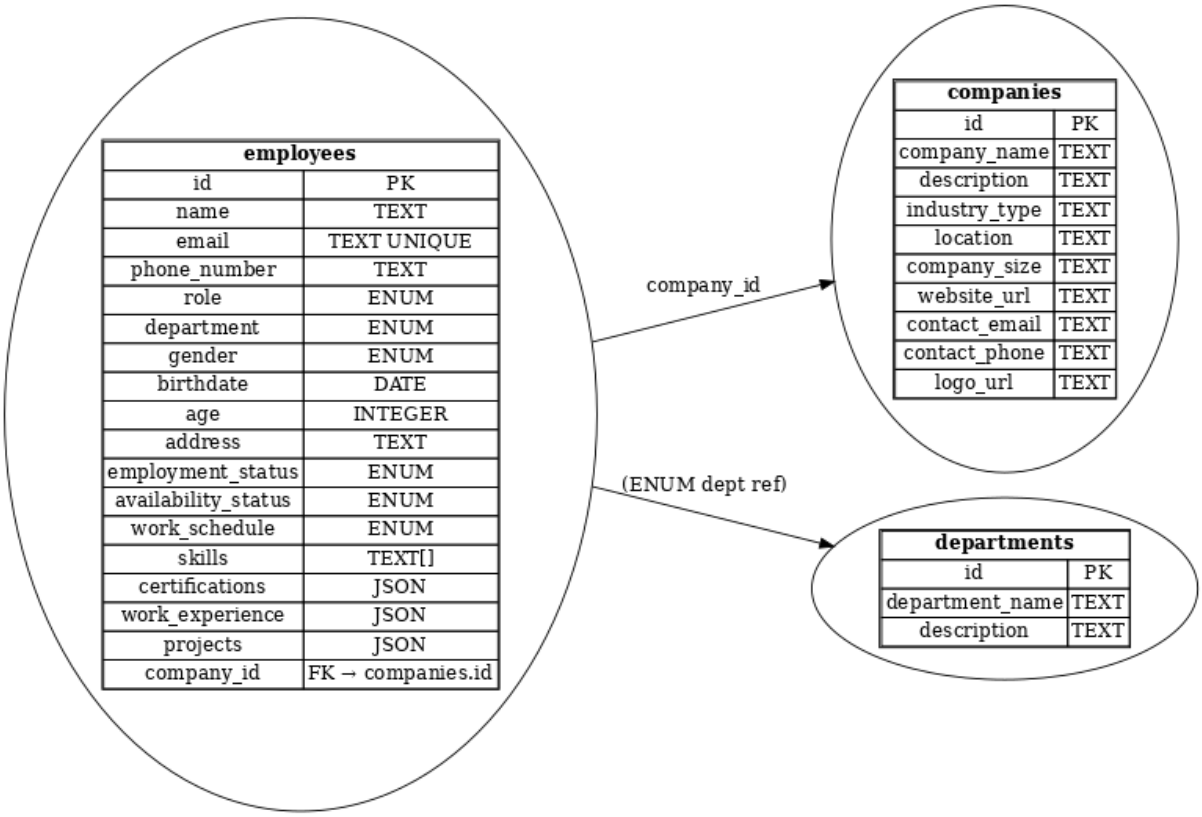
- `department_enum`: 30+ IT industry departments and sub-teams

- `employment_status_enum`: active, retired, on leave, fired, etc.

- `availability_status_enum`: in-office, remote, work from home, etc.
- `work_schedule_enum`: full-time, part-time, hybrid, etc.
- `gender_enum`: male, female

---

3) ERD (Entity Relationship Diagram)



---

4) Access Control Plan

- Employees can only see limited public profile data.

- HR/Admins can view restricted fields like salary, performance, status_reason.

- ENUMs enforce data integrity and limited input options.

---

5) Conclusion

This schema was designed to be **modular**, **future-proof**, and **role-aware**, with all relationships, ENUM types, and data visibility rules considered from Day 1.