**Core User Identity & Role Schema**

**1. Persons – Master table for all users**

CREATE TABLE Persons (

person\_id INT PRIMARY KEY,

full\_name VARCHAR(100),

email VARCHAR(100),

phone VARCHAR(20),

department\_id INT,

company\_id INT,

created\_at DATETIME,

updated\_at DATETIME

);

**2. Roles – Defines system roles**

CREATE TABLE Roles (

role\_id INT PRIMARY KEY,

role\_name VARCHAR(50), -- e.g., 'Buyer', 'Supplier', 'Admin'

description TEXT

);

**3. PersonRoles – Maps users to roles**

CREATE TABLE PersonRoles (

person\_role\_id INT PRIMARY KEY,

person\_id INT,

role\_id INT,

FOREIGN KEY (person\_id) REFERENCES Persons(person\_id),

FOREIGN KEY (role\_id) REFERENCES Roles(role\_id)

);

**Skill-Based Access Control**

**4. Skills – Defines system skills or modules**

CREATE TABLE Skills (

skill\_id INT PRIMARY KEY,

skill\_name VARCHAR(50), -- e.g., 'Create PO', 'Submit Invoice'

description TEXT

);

**5. RoleSkills – Maps roles to allowed skills**

CREATE TABLE RoleSkills (

role\_skill\_id INT PRIMARY KEY,

role\_id INT,

skill\_id INT,

is\_allowed BOOLEAN,

FOREIGN KEY (role\_id) REFERENCES Roles(role\_id),

FOREIGN KEY (skill\_id) REFERENCES Skills(skill\_id)

);

**Department & Company Structure**

**6. Departments**

CREATE TABLE Departments (

department\_id INT PRIMARY KEY,

department\_name VARCHAR(100),

company\_id INT,

FOREIGN KEY (company\_id) REFERENCES Companies(company\_id)

);

**7. Companies**

CREATE TABLE Companies (

company\_id INT PRIMARY KEY,

company\_name VARCHAR(100),

location VARCHAR(100)

);

**Approval Workflow Schema**

**8. ApprovalCriteria – Defines approval rules**

CREATE TABLE ApprovalCriteria (

criteria\_id INT PRIMARY KEY,

department\_id INT,

company\_id INT,

skill\_id INT,

approval\_level INT, -- e.g., 1 = Manager, 2 = Director

approver\_person\_id INT,

FOREIGN KEY (department\_id) REFERENCES Departments(department\_id),

FOREIGN KEY (company\_id) REFERENCES Companies(company\_id),

FOREIGN KEY (skill\_id) REFERENCES Skills(skill\_id),

FOREIGN KEY (approver\_person\_id) REFERENCES Persons(person\_id)

);

**Relationship Summary**

| **Table** | **Related To** | **Purpose** |
| --- | --- | --- |
| Persons | Departments, Companies | User identity and org mapping |
| PersonRoles | Roles, Persons | Assigns roles to users |
| RoleSkills | Roles, Skills | Grants skill-level access per role |
| ApprovalCriteria | Departments, Companies, Skills, Persons | Defines who approves what, where |