**ERP System Database Schema Documentation**

**1. Users & Roles (Authentication + RBAC)**

**users**

Stores user account information.

* id (PK) - INT - Unique identifier.
* name - VARCHAR(255) - Full name of the user.
* email - VARCHAR(255) - Unique email address.
* password - VARCHAR(255) - Hashed password.
* phone - VARCHAR(50) - Contact phone number.
* created\_at - DATETIME - Account creation timestamp.

**roles**

Defines user roles.

* id (PK) - INT
* name - VARCHAR(100)
* description - TEXT

**user\_roles**

Mapping table for many-to-many relationship between users and roles.

* id (PK) - INT
* user\_id (FK to users.id) - INT
* role\_id (FK to roles.id) - INT

**features**

Defines individual access-controlled features.

* id (PK) - INT
* name - VARCHAR(100) (e.g. "Inventory.View")
* module - VARCHAR(100) (e.g. "Inventory")
* description - TEXT

**role\_permissions**

Permissions associated with roles and features.

* id (PK) - INT
* role\_id (FK to roles.id) - INT
* feature\_id (FK to features.id) - INT
* can\_read - BIT
* can\_create - BIT
* can\_update - BIT
* can\_delete - BIT

**2. Products & Inventory**

**categories**

Defines product categories.

* id (PK) - INT
* name - VARCHAR(255)
* description - TEXT

**suppliers**

Stores information about product suppliers.

* id (PK) - INT
* company\_name - VARCHAR(255)
* contact\_person\_name - VARCHAR(255)
* phone - VARCHAR(50)
* email - VARCHAR(255)
* address - TEXT

**products**

Product master table.

* id (PK) - INT
* name - VARCHAR(255)
* category\_id (FK to categories.id) - INT
* supplier\_id (FK to suppliers.id) - INT
* sku - VARCHAR(100)
* description - TEXT
* unit - VARCHAR(50)
* price - DECIMAL(12,2)
* created\_at – DATETIME

**inventory**

Tracks inventory levels per product.

* id (PK) - INT
* product\_id (FK to products.id) - INT
* quantity - INT
* reorder\_level – INT (A threshold value — when Quantity drops below this, it flags a low stock alert.)
* last\_updated - DATETIME

**3. Sales Module**

**customers**

Customer master table.

* id (PK) - INT
* name - VARCHAR(255)
* email - VARCHAR(255)
* phone - VARCHAR(50)
* address - TEXT

**sales\_orders**

Tracks sales orders.

* id (PK) - INT
* order\_number - VARCHAR(100)
* customer\_id (FK to customers.id) - INT
* order\_date - DATE
* delivery\_date - DATE
* delivery\_status – ENUM – INT - ('Pending', 'Confirmed', 'Processing', 'Shipped', 'Delivered')
* status – ENUM – INT - ('Open', 'Closed', 'Cancelled')
* notes - TEXT

**sales\_order\_items**

Line items for sales orders.

* id (PK) - INT
* sales\_order\_id (FK to sales\_orders.id) - INT
* product\_id (FK to products.id) - INT
* quantity - INT
* unit\_price - DECIMAL(12,2)
* discount - DECIMAL(12,2)

**invoices**

Tracks invoices linked to sales orders.

* id (PK) - INT
* sales\_order\_id (FK to sales\_orders.id) - INT
* invoice\_date - DATE
* total\_amount - DECIMAL(12,2)
* is\_paid - BIT
* due\_date - DATE

**4. Purchase Module**

**purchase\_orders**

Tracks purchase orders.

* id (PK) - INT
* order\_number - VARCHAR(100)
* supplier\_id (FK to suppliers.id) - INT
* order\_date - DATE
* expected\_delivery\_date - DATE
* delivery\_status - VARCHAR(50)
* notes - TEXT

**purchase\_order\_items**

Line items for purchase orders.

* id (PK) - INT
* purchase\_order\_id (FK to purchase\_orders.id) - INT
* product\_id (FK to products.id) - INT
* quantity - INT
* unit\_price - DECIMAL(12,2)
* discount - DECIMAL(12,2)

**expenses**

Tracks company expenses.

* id (PK) - INT
* purchase\_order\_id (FK to purchase\_orders.id, nullable) - INT
* description - TEXT
* amount - DECIMAL(12,2)
* expense\_date - DATE
* category\_id - INT (FK to an expense\_categories table if defined)

**5. HR & Payroll**

**departments**

Defines employee departments.

* id (PK) - INT
* name - VARCHAR(100)
* description - TEXT

**employees**

Employee records.

* id (PK) - INT
* user\_id (FK to users.id) - INT
* department\_id (FK to departments.id) - INT
* date\_hired - DATE
* salary - DECIMAL(12,2)
* status - ENUM('Active', 'On Leave', 'Terminated')

**attendance**

Tracks daily attendance.

* id (PK) - INT
* employee\_id (FK to employees.id) - INT
* date\_of\_attendance - DATE
* check\_in - TIME
* check\_out - TIME
* status - ENUM('Present', 'Absent', 'Leave')

**payroll**

Salary details per pay period.

* id (PK) - INT
* employee\_id (FK to employees.id) - INT
* period\_start - DATE
* period\_end - DATE
* base\_salary - DECIMAL(12,2)
* deductions - DECIMAL(12,2)
* bonuses - DECIMAL(12,2)
* net\_pay - DECIMAL(12,2)
* paid\_on - DATE

**6. Finance & Accounting**

**accounts**

Chart of accounts.

* id (PK) - INT
* name - VARCHAR(255)
* type - ENUM('Income', 'Expense', 'Asset', 'Liability', 'Equity')

**transactions**

Financial transactions per account.

* id (PK) - INT
* account\_id (FK to accounts.id) - INT
* transaction\_date - DATE
* description - TEXT
* amount - DECIMAL(12,2)
* type - ENUM('Credit', 'Debit')

**ledgers**

Double-entry accounting records.

* id (PK) - INT
* entry\_date - DATE
* description - TEXT
* debit\_account\_id (FK to accounts.id) - INT
* credit\_account\_id (FK to accounts.id) - INT
* amount - DECIMAL(12,2)

**7. Reports, Notifications, Logs**

**reports**

User-generated or system-generated reports.

* id (PK) - INT
* name - VARCHAR(255)
* module - VARCHAR(100)
* created\_by (FK to users.id) - INT
* created\_at - DATETIME
* filters\_json – TEXT (storing filter criteria)

**notifications**

User-targeted alerts.

* id (PK) - INT
* user\_id (FK to users.id) - INT
* title - VARCHAR(255)
* message - TEXT
* is\_read - BIT
* created\_at - DATETIME

**8. System Settings & Company Profile**

**settings**

Key-value settings for global configuration.

* id (PK) - INT
* key - VARCHAR(100)
* value - TEXT
* updated\_at - DATETIME

**company\_profile**

Basic company info.

* id (PK) - INT
* company\_name - VARCHAR(255)
* address - TEXT
* email - VARCHAR(255)
* phone - VARCHAR(50)
* tax\_number - VARCHAR(100)
* logo - TEXT (URL or file path)

**Note:** All foreign key constraints should be enforced for data integrity. Timestamps such as created\_at, updated\_at, and deleted\_at can be added as needed to support audit logging and soft deletes.