# **📘 Database Design Documentation**

## **This documentation provides a detailed overview of the database schema designed for a system that manages staff, data collectors, AU users, reports, transactions, notifications, and related entities. 🧑‍💼 1. users**

**Purpose**: Stores login credentials and roles for all system users: admin, staff, and data\_collectors.

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| user\_id | INT, Primary Key, Auto Increment | Unique identifier for the user |
| username | VARCHAR(255), Unique, Not Null | Login username |
| password | VARCHAR(255), Not Null | Encrypted user password |
| role | ENUM(admin, staff, data\_collector) | Role-based access management |
| is\_staff | BOOLEAN, Default TRUE | Identifies staff-type users |
| is\_admin | BOOLEAN, Default TRUE | Identifies admin users |
| created\_by | INT, Nullable | The user\_id of the staff who created this user |
| created\_at | TIMESTAMP | Timestamp when created |
| updated\_at | TIMESTAMP | Timestamp when updated |

🔗 **FKs**: created\_by → users(user\_id) (only for data collectors)

## **🧍‍♂️ 2. au\_users**

**Purpose**: AU (Application Unit) users managed by staff or data collectors.

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| id | INT, PK, Auto Increment | Unique AU user ID |
| name | VARCHAR(255), Not Null | Full name of AU user |
| address | TEXT, Not Null | Residential or business address |
| age | INT, Not Null | Age of the AU user |
| phone | VARCHAR(15), Unique | Contact number |
| email | VARCHAR(255), Nullable | Email address |
| product\_id | INT, Not Null | Linked product |
| area\_of\_production | TEXT, Not Null | Description of production area |
| aadhar | VARCHAR(20), Unique | Aadhaar number |
| pan | VARCHAR(20), Unique | PAN number |
| documentary\_proof | TEXT | File path or URL to uploaded document |
| annual\_production | INT | Production amount per year |
| annual\_turnover | INT | Annual turnover value |
| years\_of\_production | INT | Number of years in production |
| association\_id | INT, Not Null | Linked association |
| signature\_uploaded | TEXT | Path to uploaded signature file |
| aadhar\_uploaded | TEXT | Path to uploaded Aadhaar file |
| pan\_uploaded | TEXT | Path to uploaded PAN file |
| updated\_at | DATETIME | Last updated timestamp |

🔗 **FKs**:

* product\_id → products(product\_id)
* association\_id → associations(association\_id)

## **🏭 3. products**

**Purpose**: Lists all available products linked to AU users.

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| product\_id | INT, PK, Auto Increment | Product ID |
| name | VARCHAR(255), Not Null | Product name |

## **🏢 4. associations**

**Purpose**: Represents organizations or cooperatives AU users are associated with.

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| association\_id | INT, PK, Auto Increment | Unique association ID |
| name | VARCHAR(255), Not Null | Association name |

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## **📝 5. report\_templates**

**Purpose**: Templates used for generating reports.

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| id | INT, PK, Auto Increment | Template ID |
| name | VARCHAR(255), Not Null | Template name |
| content | TEXT, Not Null | Report body/content |
| created\_at | TIMESTAMP | Time of template creation |

## **📊 6. report\_logs**

**Purpose**: Tracks reports generated by users (primarily data collectors).

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| id | INT, PK, Auto Increment | Log ID |
| user\_id | INT, Not Null | Creator of the report (data collector) |
| template\_id | INT, Not Null | Template used |
| generated\_at | DATETIME | Report generation timestamp |

🔗 **FKs**:

* user\_id → users(user\_id)
* template\_id → report\_templates(id)

## **🔄 7. transactions**

**Purpose**: Records which user created which AU user and logs the action.

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| id | INT, PK, Auto Increment | Transaction ID |
| user\_id | INT, Not Null | The user (staff or data\_collector) |
| au\_user\_id | INT, Not Null | The AU user being created/modified |
| action | VARCHAR(255) | Type of action (e.g., "create", "update") |
| created\_at | DATE, Default CURRENT\_DATE | Date of transaction |

🔗 **FKs**:

* user\_id → users(user\_id)
* au\_user\_id → au\_users(id)

## **🔔 8. notifications**

**Purpose**: Stores messages/alerts sent to users (staff or data collectors).

| **Field** | **Type** | **Description** |
| --- | --- | --- |
| id | INT, PK, Auto Increment | Notification ID |
| user\_id | INT, Not Null | Recipient user |
| message | TEXT, Not Null | Notification content |
| created\_at | DATETIME | Time notification was created |

🔗 **FK**: user\_id → users(user\_id)

## **📌 Key Relationships & Logic**

* Staff creates data\_collectors (recorded via created\_by in users)
* Data collectors (and staff) create au\_users, recorded in transactions
* Reports are generated by data\_collectors using report\_templates
* Notifications can be sent to both staff and data\_collectors

CREATE TABLE users (

user\_id INT PRIMARY KEY AUTO\_INCREMENT,

username VARCHAR(255) NOT NULL UNIQUE,

password VARCHAR(255) NOT NULL,

role ENUM('admin', 'staff', 'data\_collector') NOT NULL DEFAULT 'staff',

is\_staff BOOLEAN DEFAULT TRUE,

is\_admin BOOLEAN DEFAULT TRUE,

created\_by INT NULL, -- only for data\_collectors created by staff

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

FOREIGN KEY (created\_by) REFERENCES users(user\_id)

);

CREATE TABLE au\_users (

id INT PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(255) NOT NULL,

address TEXT NOT NULL,

age INT NOT NULL,

phone VARCHAR(15) NOT NULL UNIQUE,

email VARCHAR(255),

product\_id INT NOT NULL,

area\_of\_production TEXT NOT NULL,

aadhar VARCHAR(20) NOT NULL UNIQUE,

pan VARCHAR(20) NOT NULL UNIQUE,

documentary\_proof TEXT,

annual\_production INT,

annual\_turnover INT,

years\_of\_production INT,

association\_id INT NOT NULL,

signature\_uploaded TEXT,

aadhar\_uploaded TEXT,

pan\_uploaded TEXT,

updated\_at DATETIME,

FOREIGN KEY (product\_id) REFERENCES products(product\_id),

FOREIGN KEY (association\_id) REFERENCES associations(association\_id)

);

CREATE TABLE products (

product\_id INT PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(255) NOT NULL

);

CREATE TABLE report\_templates (

id INT PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(255) NOT NULL,

content TEXT NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP

);

CREATE TABLE associations (

association\_id INT PRIMARY KEY AUTO\_INCREMENT,

name VARCHAR(255) NOT NULL

);

CREATE TABLE report\_logs (

id INT PRIMARY KEY AUTO\_INCREMENT,

user\_id INT NOT NULL, -- data collector

template\_id INT NOT NULL,

generated\_at DATETIME,

FOREIGN KEY (user\_id) REFERENCES users(user\_id),

FOREIGN KEY (template\_id) REFERENCES report\_templates(id)

);

CREATE TABLE transactions (

id INT PRIMARY KEY AUTO\_INCREMENT,

user\_id INT NOT NULL, -- staff or data\_collector who created the AU user

au\_user\_id INT NOT NULL,

action VARCHAR(255),

created\_at DATE DEFAULT CURRENT\_DATE,

FOREIGN KEY (user\_id) REFERENCES users(user\_id),

FOREIGN KEY (au\_user\_id) REFERENCES au\_users(id)

);

CREATE TABLE notifications (

id INT PRIMARY KEY AUTO\_INCREMENT,

user\_id INT NOT NULL, -- can be staff or data collector

message TEXT NOT NULL,

created\_at DATETIME DEFAULT CURRENT\_TIMESTAMP,

FOREIGN KEY (user\_id) REFERENCES users(user\_id)

);