

**LITMAS DRAFT DATA MODEL DESIGN**

**Release 1.0**

Prepared By Nowa Lubega



Table of Contents

[OVERVIEW 5](#_Toc101290463)

[Document Administration 5](#_Toc101290464)

[Project Information 6](#_Toc101290465)

[Background 7](#_Toc101290466)

[Objective 7](#_Toc101290467)

[Scope 7](#_Toc101290468)

[General Approach 8](#_Toc101290469)

[Reference Documents 8](#_Toc101290470)

[Reference Links 8](#_Toc101290471)

[Acronyms 9](#_Toc101290472)

[STANDARDS 9](#_Toc101290473)

[Naming Conventions 9](#_Toc101290474)

[Primary Key Generation 10](#_Toc101290475)

[Audit Columns 10](#_Toc101290476)

[Timestamp on creation and update (utc standard) 10](#_Toc101290477)

[Username on creation and update 10](#_Toc101290478)

[Lookup Tables 10](#_Toc101290479)

[TABLE COLUMN/DESCRIPTIONS 11](#_Toc101290480)

[Registration Tables 11](#_Toc101290481)

[person 11](#_Toc101290482)

[organisation 13](#_Toc101290483)

[animal 15](#_Toc101290484)

[establishment 17](#_Toc101290485)

[person\_role 19](#_Toc101290486)

[org\_role 20](#_Toc101290487)

[tag 21](#_Toc101290488)

[chip 22](#_Toc101290489)

[animal\_incident 23](#_Toc101290490)

[slaughterhouse 24](#_Toc101290491)

[animal\_type\_slaughter 25](#_Toc101290492)

[tag\_installer 26](#_Toc101290493)

[registration tables erd 27](#_Toc101290494)

[Movement and Tracking tables 28](#_Toc101290495)

[animal\_transfer 28](#_Toc101290496)

[animal\_transfer\_action 30](#_Toc101290497)

[animal\_transfer\_fee 32](#_Toc101290498)

[animal\_transfer\_route\_mgmt 34](#_Toc101290499)

[quarantine\_notice 36](#_Toc101290500)

[quarantine\_animal\_type 38](#_Toc101290501)

[History Log Tables 39](#_Toc101290502)

[person\_physical\_address\_log 39](#_Toc101290503)

[person\_village\_log 40](#_Toc101290504)

[person\_nationality\_log 41](#_Toc101290505)

[person\_marital\_status\_log 42](#_Toc101290506)

[history log tables erd 43](#_Toc101290507)

[Lookup Tables 44](#_Toc101290508)

[animal\_origin 44](#_Toc101290509)

[animal\_status 45](#_Toc101290510)

[animal\_type 46](#_Toc101290511)

[breed 47](#_Toc101290512)

[dom\_skin\_colour 48](#_Toc101290513)

[education\_level\_type 49](#_Toc101290514)

[est\_type 50](#_Toc101290515)

[identity\_doc\_type 51](#_Toc101290516)

[incident\_type 52](#_Toc101290517)

[incident\_priority\_level 53](#_Toc101290518)

[nationality 54](#_Toc101290519)

[next\_of\_kin\_type 55](#_Toc101290520)

[ops\_status 56](#_Toc101290521)

[org\_type 57](#_Toc101290522)

[quarantine\_reason 58](#_Toc101290523)

[quarantine\_status 59](#_Toc101290524)

[role 60](#_Toc101290525)

[sex 61](#_Toc101290526)

[tag\_status 62](#_Toc101290527)

[title 63](#_Toc101290528)

[transfer\_fee\_type 64](#_Toc101290529)

[tribe 65](#_Toc101290530)

[transfer\_status 66](#_Toc101290531)

[transfer\_action\_type 67](#_Toc101290532)

[Location Tables 68](#_Toc101290533)

[region 68](#_Toc101290534)

[district 69](#_Toc101290535)

[county 70](#_Toc101290536)

[subcounty 71](#_Toc101290537)

[parish 71](#_Toc101290538)

[village 72](#_Toc101290539)

[locations erd 74](#_Toc101290540)

[User Access Rights Tables 75](#_Toc101290541)

# OVERVIEW

## Document Administration

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Changes/Amendments** | **Author** | **Date** |
| 1.0 | Initial Draft | Nowa Lubega | April 2021 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**DISTRIBUTION LIST FOR COMMENT ON DRAFT/CHANGES**

This document is to be distributed for comment as set out below.

| Name and Surname | Designation | Organization /Department |
| --- | --- | --- |
| DAVID MUSHABE | Principal Investigator | SMS ONE (U) LTD. |
| HENRY JOE OPIO | Developer | INDEPENDENT CONTRACTOR |
| NOWA LUBEGA | Data Architect/QA | INDEPENDENT CONTRACTOR |
| MWAI | Developer | SMS ONE (U) LTD |

**APPROVAL & ACCEPTANCE LIST**

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Organization | Date | Signature |
|  | MAAIF |  |  |
|  | MAAIF |  |  |
|  | MICT&NG |  |  |
|  |  |  |  |

## Project Information

|  |  |
| --- | --- |
| **Project Name:** | The Design, Supply & Development of the Livestock Information & Traceability Management System (LITMAS) |
| **Project Beneficiary:** | Ministry of Agriculture, Animal Industry & Fisheries (MAAIF) |
| **Procuring Entity** |  |
| **Procurement Ref:** |  |
| **Technical Support:** | SMS ONE (U) LTD. |

## Background

Growing domestic and global demand for animal products and emerging opportunities for exporting animal products have encouraged governments and livestock organizations in many countries to invest in developing infrastructure, processes and traceability systems to track animals and their products.

Animal traceability forms the basis of sanitary control systems in the production of food of animal origin. It constitutes the link between animal health, public health, and food safety and quality.

Uganda is yet to put in place a robust system to enforce identification and traceability for animals and animal products in relation to animal health, veterinary public health, quality and safety of animal products.

## Objective

As part of software engineering quality assurance, this document has been prepared as the database design foundation for the LITMAS.

The objective of this document is to provide software developers and software engineers with the data architecture of the system. This data architecture is the basic “blueprint” on which the system is developed. Having an accurate and complete data model design enables more efficient system development and also increases the time for new hires to come up to speed in the event of worker turnover.

A comprehensive data model design document also provides a clear indication on the quality of the system and its conformity to international standards and software development best practices.

The document will be updated to subsequent versions as the system is improved over its life cycle.

## Scope

This document is primarily geared toward documenting the complete data architecture of the LITMAS. The scope covers all modules of the entire system.

## General Approach

The bulk of the DMD will be divided into sections relating to certain groupings: Registration Tables, Movement and Tracking Tables, History Log Tables, Lookup Tables, Location Tables, User Access Rights Tables.

* Each section has a Table Description and Table/Column listing with column descriptions
* Each table section has associated object descriptions for triggers, referential integrity constraints, check constraints, indices, and domain rules.
* Each table section shall list descriptions of any views (if available)
* Each table section has an ERD of all tables involved
* Table descriptions and column descriptions shall map to comments in the physical postgres database
* Improvements such as database design best practices, best practices conformity, and naming conventions shall be included at all times in the development or upgrade of the data model design.

## Reference Documents

The document has been prepared based on previous work and experiences of the Quality Assurance consultant. It is a document in progress, with contributions from various stakeholders using an iterative approach for refinements and improvements. Information gathered from GOU ICT projects will also feed the improvement of this document. Documents referenced in the preparation of this document include:

* MoICT &NG SOFTWARE DEVELOPMENT STANDARDS AND PROCEDURES Release 1.0
* ISO/IEC/IEEE 90003:2018 Software engineering — Guidelines for the application of ISO 9001:2015 to computer software.
* The Software Engineering Institute Standards (Carnegie Mellon University)
* 10028-2008 **-** IEEE Standard for Software Reviews and Audits
* Software Engineering: A Practitioner's Approach (7th ed.), Pressman, Roger (2009)
* Practical Support for Lean Six Sigma Software Process Definition: Using IEEE Software Engineering Standards, Susan K Land, Douglas B. Smith, John W. Waltz
* The System Development Lifecycle (SDLC), Shirley Radack, National Inst. Of Standards and Technology (NIST)

## Reference Links

|  |  |
| --- | --- |
| Naming Conventions Article | https://launchbylunch.com/posts/2014/Feb/16/sql-naming-conventions/#naming-conventions |
| Commenting on Postgres columns | https://stackoverflow.com/questions/343138/retrieving-comments-from-a-postgresql-db |
| Storage table parameters in Postgres | https://www.postgresql.org/docs/11/sql-createtable.html#SQL-CREATETABLE-STORAGE-PARAMETERS |
| Postgres check constraint syntax | https://www.javatpoint.com/postgresql-check-constraint |
| DJANGO AUDIT MODELLING | https://spapas.github.io/2015/01/21/django-model-auditing/#adding-simple-auditing-functionality-ourselves |

## Acronyms

|  |  |
| --- | --- |
| DMD | Data Model Design |
| LITMAS | Livestock Information & Traceability Management System |
| MAAIF | Ministry of Agriculture, Animal Industry & Fisheries |
| MoICT &NG | Ministry of ICT and National Guidance |
| NITA-U | National Information Technology Authority - Uganda |
|  |  |

# STANDARDS

## Naming Conventions

Database object naming conventions shall follow these rules:

1. All database object names should be in lower case

2. All table names should be in singular form

3. use snake\_case for tables and columns

4. single primary key fields should be named id

5. Foreign Keys should be a combination of the name of

the referenced table and the name of the referenced field. Created in the CREATE TABLE statement e.g. village\_id uuid REFERENCES village(id)

6. Avoid Prefixes and Suffixes

7. Indexes should be explicitly named and include

both the table name and the column names indexed. e.g., CREATE INDEX person\_ix\_first\_name\_last\_name ON person (first\_name, last\_name);

8. Same applies for check constraint names. These should be explicitly named. For example: CREATE TABLE product (

product\_no integer,

name text,

price numeric **CONSTRAINT product\_ck\_price** CHECK (price > 0)

);

9. Autogenerated primary key should be created by create statement as follows: create table facility (id uuid PRIMARY KEY, ………

10. Unique constraints should also be explicitly names as follows:

CREATE TABLE product (

product\_no integer **CONSTRAINT product\_uk\_product\_no** UNIQUE,

name text,

price numeric

);

11. If ORM violates any naming convention rules, explicitly rename what the ORM generates

## Primary Key Generation

All primary keys shall follow the “id” naming convention and shall be created with UUID column type. If there is a good case for using database sequences instead, or using SERIAL/BIGSERIAL then these can be entertained. But the standard should be uniform. Choose one of the methods: UUID, database sequences or SERIAL/BIGSERIAL column types. Not a mixture of primary key generation methods for the system.

## Audit Columns

### Timestamp on creation and update (utc standard)

The time stamp (date and time) on creation and update of each record will be stored as a tag using generic BEFORE INSERT AND AFTER UPDATE database triggers.

### Username on creation and update

To speed up audit trail reports, the username will be stored as tag on each record on creation and update using generic BEFORE INSERT and AFTER UPDATE database triggers.

## Lookup Tables

The name and description columns of look up tables should have data types of varchar(100) and varchar(400) respectively.

# TABLE COLUMN/DESCRIPTIONS

## Registration Tables

### person

This table a stores a person’s biodata and details.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | sex\_id | UUID | NO |  | Foreign key from the Sex table e.g. Male or Female |
| FK | village\_id | UUID | NO |  | Foreign key from the Village table. |
| FK | identity\_doc\_type\_id | UUID | NO |  | Foreign key from the IDENTITY\_DOC\_TYPE table. |
| FK | title\_id | UUID | NO |  | Foreign key from the title table e.g. Mr, Mrs, Ms,Dr etc. |
| FK | tribe\_id | UUID | NO |  | Persons tribe or ethnic group. Foreign key from tribe table |
| FK | nationality\_id | UUID | NO |  | Foreign key from nationality table |
| FK | educ\_level\_id | UUID | NO |  | Foreign key from education\_level table. Highest level of education. |
| FK | next\_of\_kin\_type\_id | UUID | NO |  | Next of kin type e.g. Brother, Father, Mother, Sister, Cousin etc. |
|  | first\_name | VARCHAR(100) | NO |  | First Name |
|  | other\_names | VARCHAR(200) | NO |  | All names that are not the first name or surname, separated by a space. |
|  | last\_name | VARCHAR(100) | NO |  | Surname or last name |
|  | date\_of\_birth | DATE | NO |  | Birth date |
|  | phone | VARCHAR(15) | NO |  | Phone contact |
|  | phone2 | VARCHAR(15) | YES |  | Second phone contact if available |
|  | email | VARCHAR(100) | YES |  | Email address |
|  | nok\_name | VARCHAR(200) | NO |  | Next of kin names separated by a space |
|  | nok\_phone | VHARCHAR(15) | NO |  | Next of kin phone |
|  | nok\_email | VARCHAR(100) | YES |  | Next of kin email |
|  | photo | TEXT | YES |  | For use with the NIRA API. This base 64 encoded string can be decoded into a photo. |
|  | physical\_address | VARCHAR(200) | YES |  | The person’s physical address. |
|  | Identity\_doc\_number | VARCHAR(50) | NO |  | Identity doc number like passport number, NIN, refugee id number. |
|  | disabled | BOOLEAN | NO | False | An indicator on whether the person is disabled. |
|  | is\_alive | BOOLEN | NO | True | An indicator on whether a person is alive |
|  | Is\_married | BOOLEAN |  | True | True if person if married. False if person is not. |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers, and on change triggers to populate address, village, marital status and nationality changes.

**Indices**

On first\_name, last\_name, date\_of\_birth, identity\_doc\_no columns

### organisation

This table stores organisation details. **Look into different organisation structures and hierarchies. And also levels of categorisations.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique UUID number. |
| FK | org\_type\_id | UUID | NO |  | Foreign key from org\_type table. Org type examples: MDA, Farm, etc. ASK if we need to levels of categorizations? |
| FK | person\_id | UUID | YES |  | Contact person or rep of the organisation |
|  | name | VARCHAR(100) | NO |  | Name of the organisation |
|  | tin | VARCHAR(30) | YES |  | Tax Identification Number of the organisation |
|  | pob | VARCHAR(100) | YES |  | Postal address |
|  | physical\_address | VARCHAR(200) | YES |  | Address of the organisation e.g. Plot 53 Apollo Kaggwa Road, Kampala, Uganda |
|  | email | VARCHAR(100) | YES |  | Email contact for the organisation. |
|  | phone | VARCHAR(15) | NO |  | Phone number |
|  | phone2 | VARCHAR(15) | YES |  | Second phone number if available. |
|  | phone3 | VARCHAR(15) | YES |  | Third phone number if available |
|  | phone4 | VARCHAR(15) | YES |  | Fourth phone number if available |
|  | phone5 | VARCHAR(!5) | YES |  | Fith phone number if available |
|  | web\_url | VARCHAR(100) | YES |  | Website url if available. |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name, tin, email columns

### animal

This table stores an animal’s biodata and details.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | sex\_id | UUID | NO |  | Foreign key from the Sex table e.g. Male or Female |
| FK | animal\_type\_id | UUID | NO |  | Foreign key from the animal\_type table |
| FK | breed\_id | UUID | NO |  | Foreign key from the breed table. |
| FK | dominant\_colour\_id | UUID | NO |  | Foreign key from the dominant\_color table depends on animal type and breed |
| FK | origin\_id | UUID | NO |  | Foreign key from animal\_origin table e.g. born at farm, bought, gift |
| FK | status\_id | UUID | NO |  | foreign key from status table e.g. SOLD, STOLEN, GIFTED, DIED |
| FK | person\_id | UUID | YES |  | Foreign key from person table. Designates the owner or custodian of the animal. Owner can be a person or organisation |
| FK | org\_id | UUID | YES |  | Foreign key from organisation table. Designates the owner or custodian of the animal. Owner can be a person or organisation |
| FK | est\_id | UUID | NO |  | Foreign key from the establishment table. Designates the main establishment for the animal |
|  | animal\_id\_number | VARCHAR(30) | NO |  | Unique Animal identification number (AIN). |
|  | name | VARCHAR(100) | NO |  | Nickname or name of the animal. |
|  | date\_of\_birth | DATE | NO |  | Birth date |
|  | date\_obtained | DATE | NO |  | date the animal was obtained |
|  | date\_of\_death | DATE | YES |  | Date the animal died |
|  | description | TEXT | YES |  | Free form text for notes on describing the animal |
|  | front\_photo | VARCHAR(100) | YES |  | Front photo url pointing to file system where photo is stored. |
|  | side\_photo | VARCHAR(100) | YES |  | Side photo url pointing to file system where photo is stored. |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### establishment

Any land, premises or place including any part of land,premises or place where animals are kept

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | est\_type\_id | UUID | NO |  | Foreign key from the est\_type table. e.g farm is a type of establishment |
| FK | person\_id | UUID | NO |  | Foreign key from person table. Designates the owner or custodian of the establishment. Owner can be a person or organisation |
| FK | org\_id | UUID | NO |  | Foreign key from organisation table. Designates the owner or custodian of the establishment. Owner can be a person or organisation |
|  | name | VARCHAR(100) | NO |  | Name of the establishment |
|  | est\_size\_acres | INT | NO |  | Size of the establishment in acres |
|  | year\_est | INT | NO |  | Year establishment was founded |
|  | gps\_lat | DOUBLE |  |  | GPS latitude coordinate |
|  | gps\_long | DOUBLE |  |  | GPS longitude coordinate |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### person\_role

This table stores person's roles. There is a many to many relationship between a person and their roles

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | person\_id | UUID | NO |  | Foreign key from the person table |
| FK | role\_id | UUID | NO |  | Foreign key from the role table |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

None

### org\_role

This table stores organisation's roles. There is a many to many relationship between an organisation and their roles

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | org\_id | UUID | NO |  | Foreign key from the organisation table |
| FK | role\_id | UUID | NO |  | Foreign key from the role table |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

None

### tag

This table stores and animal’s tag information along with the status of the tag. **We need to explore the idea of multiple tags on animals besides the MAAIF assigned tag.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | animal\_id | UUID | NO |  | Foreign key from the animal table. Shows which tag this animal is for |
| FK | status\_id | UUID | NO |  | Foreign key from the tag\_status table e.g. EXPIRED, LOST, STOLEN, BLACKLISTED |
| FK | installed\_by | UUID | YES |  | Foreign key to person table. The person who installed the tag. |
|  | date\_installed | DATE | YES |  | Date the tag was installed. |
|  | rfid | VARCHAR(40) | NO |  | RFID chip serial number. |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Unique index on RFID

### chip

This table stores the RFID chip details. It has a one-to-one relationship with the tag table. **I need help from team and David Mushabe regarding the need for this table.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | tag\_id | UUID | YES |  | Foreign key from the tag table. Shows the tag associated with the chip |
|  | manufacturer | VARCHAR(100) | NO |  | Brand of the chip |
|  | frequency | DOUBLE | NO |  | The chip frequency in HZ |
|  | iso\_standard | VARCHAR(10) | NO |  | The ISO standard number |
|  | configurable | BOOLEAN | NO | False | Is the chip configurable? Yes or No |
|  | uid\_size | INTEGER | NO |  | The uid size in bits |
|  | user\_memory | INTEGER | NO |  | Memory in bits |
|  | write\_protection | BOOLEAN | NO | False | Does the chip have write protection? Yes or No |
|  | access\_key | VARCHAR(200) | YES |  | Access key for the chip |
|  | write\_endurance | INTEGER | NO |  | Number of write cycles |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

**ASK TEAM**

### animal\_incident

Incidents that happen to a particular animal e.g. theft, lost, death, transfer without permit etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | animal\_id | UUID | NO |  | Foreign key from the animal table. This is the particular animal involved in the incident |
| FK | incident\_type\_id | UUID | NO |  | Foreign key from incident\_type table |
| FK | incident\_level\_id | UUID | NO |  | Foreign key from incident\_priority\_level table. e.g. Informational, low, medium, high (can color code these as well) |
|  | description | VARCHAR(500) | NO |  | Incident description |
|  | reporting\_date | DATE | NO |  | Incident reporting date |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### slaughterhouse

Abattoir or slaughtering facility

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | person\_id | UUID | NO |  | Foreign key from person table. Designates the owner or custodian of the slaughtering facility. Owner can be a person or organisation |
| FK | org\_id | UUID | NO |  | Foreign key from organisation table. Designates the owner or custodian of the slaughtering facility. Owner can be a person or organisation |
| FK | operation\_status\_id | UUID | NO |  | Foreign key from the ops\_status table. E.g. CLOSED, ACTIVE, SUSPENDED |
| FK | village\_id | UUID | NO |  | Village where the facility is located |
|  | name | VARCHAR(100) | NO |  | Legal name of the slaughtering facility |
|  | license\_issue\_date | DATE | NO |  | Operational license issue date |
|  | date\_est | DATE | NO |  | Date the facility was established |
|  | gps\_lat | DOUBLE |  |  | GPS latitude coordinate |
|  | gps\_long | DOUBLE |  |  | GPS longitude coordinate |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### animal\_type\_slaughter

This table stores the type of animals that can be slaughtered at a slaughter house. It forms a many-to-many relationship between slaughterhouse and animal\_type

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | slaughter\_id | UUID | NO |  | Foreign key from the slaughterhouse table |
| FK | animal\_type\_id | UUID | NO |  | Foreign key from the animal\_type table |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

None

### tag\_installer

The business (individual or organisation) that installs tags on animals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | person\_id | UUID | NO |  | Foreign key from person table. Designates the owner or custodian of the tag installer. Owner can be a person or organisation |
| FK | org\_id | UUID | NO |  | Foreign key from organisation table. Designates the owner or custodian of the tag installer. Owner can be a person or organisation |
| FK | operation\_status\_id | UUID | NO |  | Foreign key from the ops\_status table. E.g. CLOSED, ACTIVE, SUSPENDED |
| FK | village\_id | UUID | NO |  | Village where the facility is located |
|  | name | VARCHAR(100) | NO |  | Legal name of the tag installer |
|  | license\_issue\_date | DATE | NO |  | Operational license issue date |
|  | date\_est | DATE | NO |  | Date the business was established |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### registration tables erd

Diagram

Description automatically generated

## Movement and Tracking tables

### transfer

Animal Transfer record. A transfer can have one or more animals, but the animals should only be of one type.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated primary key. Will also use it as the transfer tracking number. |
| FK | animal\_id | UUID | NO |  | Foreign key from the animal table. This is the particular animal involved in the incident |
| FK | village\_id | UUID | NO |  | Foreign key from village table, the transfer destination. |
| FK | person\_ben\_id | UUID | YES |  | Foreign key from the people table. Person beneficiary of the transfer. |
| FK | org\_ben\_id | UUID | YES |  | Foreign key from the organisation table. Organisation beneficiary of the transfer. |
| FK | purpose\_id | UUID | NO |  | Foreign key from animal\_transfer\_purpose table e.g. BRIDE PRICE, STOCKING, SLAUGHTER, EXPORT etc. |
| FK | nature\_of\_transfer\_id | UUID | NO |  | Foreign key from the animal\_nature\_of\_transfer table. E.G. INTRA DISTRICT, INTER DISTRICT, OUT OF COUNTRY etc. |
| FK | trans\_status\_id | UUID | NO |  | Foreign key from transfer\_status table. E.g. PENDING, APPROVED, REJECTED, IN TRANSIT, DELIVERED |
| FK | transfer\_initiated\_by | UUID | NO |  | Foreign key from person table. |
| FK | mode\_of\_transport\_id | UUID | NO |  | Foreign key from animal\_mode\_of\_transport table e.g. VEHICLE, BOAT, etc. |
|  | transfer\_date | DATE | NO |  | Date of transfer |
|  | expected\_arrival | DATE | NO |  | Expected arrival date |
|  | permit\_number | VARCHAR(50) | YES |  | Transfer permit number |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### animal\_transfer

This intersection table forms a many-to-many relationship between transfer and animal. Only one animal type can be on a particular transfer at a time.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | animal\_id | UUID | NO |  | Foreign key from the animal table |
| FK | transfer\_id | UUID | NO |  | Foreign key from the transfer table |
|  |  |  |  |  |  |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

None

### vehicle\_transfer

This intersection table forms a many-to-many relationship between transfer and vehicle and driver. A vehicle may cover many transfers, and a transfer may be serviced by one or more vehicles.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | vehicle\_id | UUID | NO |  | Foreign key from the vehicle table |
| FK | transfer\_id | UUID | NO |  | Foreign key from the transfer table |
| FK | vehicle\_driver | UUID | NO |  | Vehicle driver. Foreign key from person table |
|  | driver\_permit\_number | VARCHAR(30) | YES |  | Driver permit number |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

None

### animal\_transfer\_action

This records different actions taken on a transfer e.g. Transfer Approval by owner, or Transfer Approval by DVO at origin.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | trans\_id | UUID | NO |  | Foreign key from the transfer table |
| FK | action\_type\_id | UUID | NO |  | Foreign key from the transfer\_action\_type table |
|  | action\_date | DATE | NO |  | Date action was taken. |
|  | Action\_reason | VARCHAR(400) | NO |  | Action Reason |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the physical address in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the physical address update.

**Indices**

On from\_address, to\_address columns.

### animal\_transfer\_fee

This records transfer fees e.g. STAMP DUTY, LG LEVY. **I NEED HELP WITH THIS TABLE FROM THE TEAM.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key. |
| FK | trans\_id | UUID | NO |  | Foreign key from the transfer table |
| FK | trans\_fee\_type\_id | UUID | NO |  | Foreign key from the transfer\_fee\_type table |
| FK | payment\_mode | UUID | NO |  | Foreign key from the payment mode table i.e. Method of payment – CREDIT CARD, BANK TRANSFER, MM, CHEQUE, CASH |
| FK | payment\_channel | UUID | NO |  | Foreign key from the payment channel table e.g. MTN, AIRTEL, VISA etc the providers |
|  | fee\_amount | DECIMAL | NO |  | Fee amount in Uganda Shillings |
|  | payment\_date | DATE | NO |  | Date payment was made. |
|  | invoice\_number | VARCHAR(60) | NO |  | Invoice number |
|  | invoice\_date | DATE | NO |  | Invoice date |
|  |  |  |  |  |  |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the physical address in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the physical address update.

**Indices**

None

### transfer\_route\_checkpoint

Table stores check points for a particular transfer route.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | trans\_id | UUID | NO |  | Foreign key from the transfer table |
| FK | checkpoint\_location | UUID | NO |  | Foreign key from the village table. |
|  | checkpoint\_order | INTEGER | NO |  | Order of the check point in the order |
|  | Checkpoint\_name | VARCHAR(200) | NO |  | Name of the check point |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the physical address in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the physical address update.

**Indices**

Checkpoint\_name

### transfer\_route\_readerpoint

Table stores reader points for a particular transfer route. Some reader point locations may coincide with check point locations.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | trans\_id | UUID | NO |  | Foreign key from the transfer table |
| FK | readerpoint\_location | UUID | NO |  | Foreign key from the village table. |
|  | readerpoint\_order | INTEGER | NO |  | Order of the check point in the order |
|  | readerpoint\_name | VARCHAR(200) | NO |  | Name of the check point |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the physical address in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the physical address update.

**Indices**

None

### quarantine\_notice

**NEED HELP WITH THIS TABLE. AFFECTED LOCATIONS AT WHAT LEVEL OF DETAIL? VILLAGE?**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | reason\_id | UUID | NO |  | Foreign key from the quarantine\_reason table |
| FK | status\_id | UUID | NO |  | Foreign key from the quarantine\_status table |
|  | Description | VARCHAR(500) | YES |  | Quarantine description |
|  | start\_date | DATE | NO |  | Quarantine start date |
|  | expected\_end\_date | DATE | NO |  | Quarantine expected end date |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the physical address in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the physical address update.

**Indices**

None

### quarantine\_animal\_type

This table stores the type of animals that are under quarantine. It forms a many-to-many relationship between quarantine notice and animal\_type

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | quarantine\_notice\_id | UUID | NO |  | Foreign key from the quarantine\_notice table |
| FK | animal\_type\_id | UUID | NO |  | Foreign key from the animal\_type table |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

None

### vehicle

Vehicle info used on animal transfers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
| FK | vehicle\_make\_id | UUID | YES |  | Foreign key from vehicle make lookup table. E.g. Toyota, Mercedes, Nissan |
| FK | vehicle\_model | UUID | YES |  | Foreign key from vehicle\_model table dependent on the make e.g. HIACE, NOAH, Premio |
|  | vehicle\_plate | VARCHAR(10) | YES |  | Vehicle plate number |
|  | date\_installed | DATE | YES |  | Date the tag was installed. |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Unique index on RFID

## History Log Tables

### person\_physical\_address\_log

This records the history of people’s physical address changes. It should be populated using a database trigger.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | person\_id | SMALLINT | NO |  | Foreign key from the person table |
|  | from\_address | VARCHAR(200) | NO |  | Physical address |
|  | to\_address | VARCHAR(200) | NO |  | Physical address |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the physical address in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the physical address update.

**Indices**

On from\_address, to\_address columns.

### person\_village\_log

This records the history of people’s village location changes. It should be populated using a database trigger.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | person\_id | UUID | NO |  | Foreign key from the person table |
| FK | from\_village | UUID | NO |  | Foreign key from the village table |
| FK | to\_village | UUID | NO |  | Foreign key from the village table |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the village\_id in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the village\_id update.

**Indices**

None

### person\_nationality\_log

This table tracks nationality changes of a person. It should be populated by a database trigger

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | person\_id | UUID | NO |  | Foreign key from the person table |
| FK | from\_nationality | UUID | NO |  | Foreign key from the nationality table |
| FK | to\_nationality | UUID | NO |  | Foreign key from the nationality table |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the nationality\_id in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the village\_id update.

**Indices**

None

### person\_marital\_status\_log

This table tracks married status changes of a person. It should be populated by a database trigger

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | person\_id | UUID | NO |  | Foreign key from the person table |
| FK | from\_is\_married | BOOLEAN | NO |  | True for married, and False for not married |
| FK | to\_is\_married | BOOLEAN | NO |  | True for married, and False for not married |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

Trigger on any update to the is\_married column in person table will populate a new row in this table with the from and to fields corresponding to before and after values of the is\_married update.

**Indices**

None

### history log tables erd

Table

Description automatically generated

## Lookup Tables

### animal\_origin

A lookup table of animal origin e.g. BORN AT FARM, BOUGHT, GIFT etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Animal origin e.g. BORN AT FARM, BOUGHT, GIFT |
|  | description | VARCHAR(400) | YES |  | Description of the animal origin type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### animal\_status

A lookup table of animal status e.g. SOLD, STOLEN, GIFTED, DIED etc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Animal origin e.g. SOLD, STOLEN, GIFTED, DIED etc. |
|  | description | VARCHAR(400) | YES |  | Description of the animal status type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### animal\_type

A lookup table of animal types e.g. SHEEP, COW, GOAT etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Type of animal e.g. COW, SHEEP, GOAT |
|  | description | VARCHAR(400) | YES |  | Description of the animal type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### breed

A lookup table of breeds animal type

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | animal\_type\_id | UUID | NO |  | Foreign key from animal type |
|  | name | VARCHAR(100) | NO |  | Breed of animal |
|  | description | VARCHAR(400) | YES |  | Description of the breed |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### dom\_skin\_colour

Dominant skin colour based on the animal type and breed

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
| FK | animal\_type\_id | UUID | NO |  | Foreign key from animal\_type table |
| FK | breed\_id | UUID | NO |  | Foreign key from breed table |
|  | name | VARCHAR(100) | NO |  | Dominant skin color |
|  | description | VARCHAR(400) | YES |  | Description of the colour |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### education\_level\_type

Stores education level types for the highest education level of a person

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Education level types e.g. PRIMARY, SECONDARY, BACHELORS DEGREE etc. |
|  | description | VARCHAR(400) | YES |  | Description of the education level type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### est\_type

Stores establishment types

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Establishment type e.g. Farm, Kraal |
|  | description | VARCHAR(400) | YES |  | Description of the establishment type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### identity\_doc\_type

This is a look up table of identification document types e.g. passport, national identification, refugee card, etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Name of the identity document |
|  | description | VARCHAR(400) |  |  | Description of the identity document |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### incident\_type

This is a look up table for incident types e.g. THEFT, LOST, DEATH, SICKNESS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Name of the incident type |
|  | description | VARCHAR(400) |  |  | Description of the incident type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### incident\_priority\_level

This is a look up table for incident priority levels with colour codes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Name of the incident priority level e.g. INFORMATIONAL, LOW, MEDIUM, HIGH |
|  | colour\_code | VARCHAR(50) |  |  | Colour code for the priority level. E.g. RED is HIGH ALERT |
|  | description | VARCHAR(400) |  |  | Description of the incident type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On name column

### nationality

Stores standard nationality names

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Name of nationality e.g. UGANDAN, KENYAN, AMERICAN etc. |
|  | description | VARCHAR(400) | YES |  | Description of the nationality |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### next\_of\_kin\_type

This is a lookup table that stores the different next of kin types e.g. Wife, Husband, Mother, Father, Sister, Brother, Cousin, Friend etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
| UK | name | VARCHAR(25) | NO |  | The name of the module type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

On the name column

### ops\_status

This is a lookup table for slaughterhouse and tag installer operation status

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
|  | name | VARCHAR(100) | NO |  | The standard status name e.g. OPEN, CLOSED, SUSPENDED, EXPIRED |
|  | description | VARCHAR(400) |  |  | Description of the status name |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### org\_type

Stores organisation types

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Organisation type e.g. CORPORATE, NGO, etc. |
|  | description | VARCHAR(400) | YES |  | Description of the organisation type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### payment\_mode

Stores payment methods e.g. mobile money, cash, bank transfer, cheque etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Payment mode or method e.g MOBILE MONEY, CASH, BANK TRANSFER, CHEQUE etc. |
|  | description | VARCHAR(400) | YES |  | Description of the payment mode |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### payment\_channel

Stores service provider for the method of payment used

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Payment channel e.g. VISA, MTN, AIRTEL, STANDARD CHARTERED BANK etc. |
|  | description | VARCHAR(400) | YES |  | Description of the payment channel |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### quarantine\_reason

This is a lookup table for quarantine reason e.g. DISEASE OUTBREAK

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
|  | name | VARCHAR(100) | NO |  | The reason for quarantine e.g. DISEASE OUTBREAK |
|  | description | VARCHAR(400) | YES |  | Description of the quarantine reason |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### quarantine\_status

This is a lookup table for quarantine status

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
|  | name | VARCHAR(100) | NO |  | The standard status name e.g. OPEN, CLOSED, SUSPENDED, EXPIRED |
|  | description | VARCHAR(400) |  |  | Description of the quarantine status name |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### role

Value chain roles for both individuals and organisations e.g. Farmer, Livestock trader, Transporter, Slaughterhouse, Local Council Memeber, DVO etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
|  | name | VARCHAR(100) | NO |  | Name of the role. eg. Farmer, Transporter, Livestock Trader, Local Council Member, District Veterinary Officer (DVO) etc. |
|  | description | VARCHAR(400) | YES |  | Description of the role |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### sex

This is a lookup table for gender values e.g. MALE, FEMALE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
|  | name | VARCHAR(100) | NO |  | The standard gender name |
|  | description | VARCHAR(400) |  |  | Description of the gender name |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### tag\_status

Stores status types for tags e.g. LOST, STOLEN, BLACKLISTED, EXPIRED etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
|  | name | VARCHAR(100) | NO |  | The types of tag status e.g. LOST, STOLEN, BLACKLISTED, EXPIRED etc. |
|  | description | VARCHAR(400) |  |  | Description of the tag status |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### title

This table stores the titles by which people are formally addressed, it’s a lookup table e.g. Mr, Mrs, Ms, Miss, Doctor etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
|  | name | VARCHAR(10) | NO |  | The name of the title e.g. Mr, Mrs, Doctor, Sir |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every person may have a title

**Database Triggers**

Audit field triggers

**Indices**

On name column

### transfer\_fee\_type

This is a lookup table for animal transfer fees e.g. STAMP DUTY, LG LEVY

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated unique UUID number |
|  | name | VARCHAR(100) | NO |  | The animal transfer fee type |
|  | description | VARCHAR(400) |  |  | Description of the transfer fee |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### tribe

This table stores ethnic group names e.g. MUGANDA,MUSOGA, ITESOT etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
|  | name | VARCHAR(10) | NO |  | The name of the ethnic group e.g. MUGANDA, MUSOGA, ITESOT etc. |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every person may have a title

**Database Triggers**

Audit field triggers

**Indices**

On name column

### transfer\_status

A lookup table of transfer status e.g. PENDING, APPROVED, REJECTED, IN TRANSIT, DELIVERED etc.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Name of the status e.g. PENDING, APPROVED, REJECTED, IN TRANSIT, DELIVERED |
|  | description | VARCHAR(400) | YES |  | Description of the status |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

### transfer\_action\_type

A lookup table of transfer action types e.g. Transfer Approval by DVO at origin

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CONSTRAINT | COLUMN NAME | DATA TYPE | NULLABLE | DEFAULT | DESCRIPTION |
| PK | id | UUID | NO |  | Autogenerated primary key |
|  | name | VARCHAR(100) | NO |  | Name of the action type |
|  | description | VARCHAR(400) | YES |  | Description of the action type |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Database Triggers**

Audit field triggers

**Indices**

Index on name column

## Location Tables

Through this Module, the user shall be able to manage Regions, Districts, Counties, Sub-counties, Parishes, and Villages.

### region

This table stores regions i.e. Northern, Western, Eastern, Central

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
|  | name | VARCHAR(50) | NO |  | The name of the region |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every region must cover one or more districts

Each and every district must belong to one and only one region

**Database Triggers**

Audit field triggers

**Indices**

On name column

### district

This table stores districts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
| FK | region\_id | SMALLINT | NO |  | Foreign key from the region table. Each district falls in a particular region. |
|  | name | VARCHAR(100) | NO |  | The name of the district |
|  | hckey | VARCHAR(10) | NO |  | **ASK DEVELOPER** |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every district must cover one or more counties

Each and every county must belong to one and only one district

**Database Triggers**

Audit field triggers

**Indices**

On name column

### county

This table stores counties.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
| FK | district\_id | SMALLINT | NO |  | Foreign key from the district table. Each county falls in a particular district. |
|  | name | VARCHAR(100) | NO |  | The name of the county |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every county must cover one or more subcounties

Each and every subcounty must belong to one and only one county

**Database Triggers**

Audit field triggers

**Indices**

On name column

### subcounty

This table stores sub-counties.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
| FK | county\_id | SMALLINT | NO |  | Foreign key from the county table. Each sub-county falls in a particular county. |
|  | name | VARCHAR(100) | NO |  | The name of the sub-county |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every subcounty must cover one or more parishes

Each and every parish must belong to one and only one subcounty

**Database Triggers**

Audit field triggers

**Indices**

On name column

### parish

This table stores parishes.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
| FK | subcounty\_id | SMALLINT | NO |  | Foreign key from the subcounty table. Each parish falls in a particular sub-county. |
|  | name | VARCHAR(100) | NO |  | The name of the parish |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every parish must cover one or more villages

Each and every village must belong to one and only one parish

**Database Triggers**

Audit field triggers

**Indices**

On name column

### village

This table stores villages.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CONSTRAINT** | **COLUMN NAME** | **DATA TYPE** | **NULLABLE** | **DEFAULT** | **DESCRIPTION** |
| PK | id | UUID | NO |  | Autogenerated unique serial number |
| FK | parish\_id | SMALLINT | NO |  | Foreign key from the parish table. Each village falls in a particular parish. |
|  | name | VARCHAR(100) | NO |  | The name of the village |
|  | active | BOOLEAN | NO | False | An indicator on whether the record is activated for use. Default value is false. So the record can be activated after creation. |
|  | created\_by | VARCHAR(100) | NO |  | The username of the person who created the record |
|  | created\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at creation of the record |
|  | updated\_by | VARCHAR(100) | NO |  | The username of the person who updated the record |
|  | updated\_timestamp | TIMESTAMPTZ | NO | NOW() | Date-time timestamp assigned at update of the record |

**Relationship names**

Each and every parish must belong to one and only one village

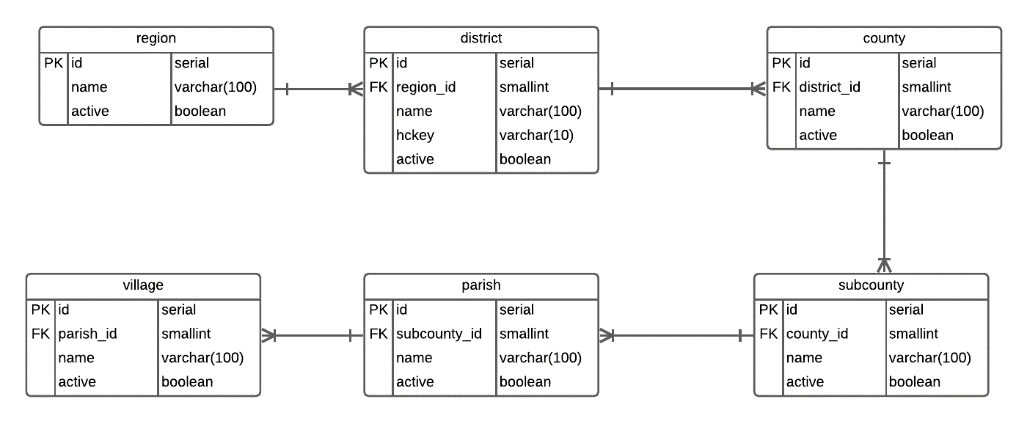
**Database Triggers**

Audit field triggers

**Indices**

On name column

### locations erd



## User Access Rights Tables

The authorization module handles access rights to certain modules and their subcomponents in the system. Access rights are assigned by a full administrator from the control panel.