

## DBMS Assignment

15-12-2023

### Orphanage Management System

#### Overview

An orphanage management system is a comprehensive software solution designed to streamline and enhance the operations of orphanages and similar institutions that provide care and support to children in need. The system typically incorporates various modules to address the diverse needs of managing children, staff, facilities, finances, and more.

#### Relevance of the system

An orphanage management system is highly relevant as it centralizes information on children, guardians, and staff, optimizing data retrieval and ensuring personalized care for each child. By tracking medical history, educational progress, and organizing activities, the system contributes to the holistic development of children. Financial transparency is enhanced through donation and expense tracking, fostering trust with donors and regulatory compliance. Security measures protect sensitive data, and communication features facilitate collaboration among staff and engagement with guardians. Resource optimization, decision support through analytics, and scalability make the system adaptable to an orphanage's evolving needs, ultimately promoting the well-being of children and improving operational efficiency.

#### Tables

##### Guardians Table:

Stores information about guardians, including a unique identifier (GuardianID), first name, last name, contact number, and address.

| Attribute     | Datatype | Constraints |
|---------------|----------|-------------|
| GuardianID    | INT      | PRIMARY KEY |
| FirstName     | VARCHAR  |             |
| LastName      | VARCHAR  |             |
| ContactNumber | VARCHAR  |             |
| Address       | TEXT     |             |

### Children Table:

Manages details of children, featuring a unique identifier (ChildID), first name, last name, gender, date of birth, entry date, and medical history.

| Attribute      | Datatype | Constraints |
|----------------|----------|-------------|
| ChildID        | INT      | PRIMARY KEY |
| FirstName      | VARCHAR  |             |
| LastName       | VARCHAR  |             |
| Gender         | VARCHAR  |             |
| DateOfBirth    | DATE     |             |
| EntryDate      | DATE     |             |
| MedicalHistory | TEXT     |             |

### Staff Table:

Contains information about staff members, such as a unique identifier (StaffID), first name, last name, position, contact number, email, and address.

| Attribute     | Datatype | Constraints |
|---------------|----------|-------------|
| StaffID       | INT      | PRIMARY KEY |
| FirstName     | VARCHAR  |             |
| LastName      | VARCHAR  |             |
| Position      | VARCHAR  |             |
| ContactNumber | VARCHAR  |             |
| Email         | VARCHAR  |             |
| Address       | TEXT     |             |

### Rooms Table:

Keeps track of room details, including a unique identifier (RoomID), room number, capacity, current occupancy, and a brief description.

| Attribute   | Datatype | Constraints |
|-------------|----------|-------------|
| RoomID      | INT      | PRIMARY KEY |
| RoomNumber  | INT      |             |
| Capacity    | INT      |             |
| Occupancy   | INT      |             |
| Description | VARCHAR  |             |

#### Activities Table:

Records various activities, each identified by a unique identifier (ActivityID), with details such as activity name, description, date, time, and location.

| Attribute    | Datatype | Constraints |
|--------------|----------|-------------|
| ActivityID   | INT      | PRIMARY KEY |
| ActivityName | VARCHAR  |             |
| Description  | TEXT     |             |
| Date         | DATE     |             |
| Time         | TIME     |             |
| Location     | VARCHAR  |             |

#### Donors Table:

Stores information about donors, including a unique identifier (DonorID), donor name, and donor address.

| Attribute    | Datatype | Constraints |
|--------------|----------|-------------|
| DonorID      | INT      | PRIMARY KEY |
| DonorName    | VARCHAR  |             |
| DonorAddress | VARCHAR  |             |

#### Donations Table:

Tracks details of donations, including a unique identifier (DonationID), donation amount, donation date, and a brief purpose description.

| Attribute    | Datatype | Constraints |
|--------------|----------|-------------|
| DonationID   | INT      | PRIMARY KEY |
| Amount       | DECIMAL  |             |
| DonationDate | DATE     |             |
| Purpose      | TEXT     |             |

#### Expenses Table:

Manages information related to expenses, featuring a unique identifier (ExpenseID), expense name, and a description.

| Attribute   | Datatype | Constraints |
|-------------|----------|-------------|
| ExpenseID   | INT      | PRIMARY KEY |
| ExpenseName | DECIMAL  |             |
| Description | VARCHAR  |             |

**Debit Table:**

Records debits associated with expenses, each identified by a unique identifier (DebitID), linked to an expense (ExpenseID), and including an amount.

| Attribute | Datatype | Constraints |
|-----------|----------|-------------|
| DebitID   | INT      | PRIMARY KEY |
| ExpenseID | INT      | FOREIGN KEY |
| Amount    | DECIMAL  |             |

**GuardianChildMap Table:**

Maps the relationship between guardians and children, with a unique identifier (GuardianChildID) and foreign keys linking to GuardianID and ChildID.

| Attribute       | Datatype | Constraints |
|-----------------|----------|-------------|
| GuardianChildID | INT      | PRIMARY KEY |
| GuardianID      | INT      | FOREIGN KEY |
| ChildID         | INT      | FOREIGN KEY |

**ChildActivityMap Table:**

Maps the relationship between children and activities, featuring a unique identifier (ChildActivityID) and foreign keys linking to ChildID and ActivityID.

| Attribute       | Datatype | Constraints |
|-----------------|----------|-------------|
| ChildActivityID | INT      | PRIMARY KEY |
| ChildID         | INT      | FOREIGN KEY |
| ActivityID      | INT      | FOREIGN KEY |

**StaffActivityMap Table:**

Maps the relationship between staff members and activities, with a unique identifier (StaffActivityID) and foreign keys linking to StaffID and ActivityID.

| Attribute       | Datatype | Constraints |
|-----------------|----------|-------------|
| StaffActivityID | INT      | PRIMARY KEY |
| StaffID         | INT      | FOREIGN KEY |
| ActivityID      | INT      | FOREIGN KEY |

**DonorDonationMap Table:**

Maps the relationship between donors and donations, with a unique identifier (DonorDonationID) and foreign keys linking to DonorID and DonationID.

| Attribute       | Datatype | Constraints |
|-----------------|----------|-------------|
| DonorDonationID | INT      | PRIMARY KEY |
| DonorID         | INT      | FOREIGN KEY |
| DonationID      | INT      | FOREIGN KEY |

**ChildRoomMap Table:**

Maps the relationship between children and rooms, with a unique identifier (ChildRoomID) and foreign keys linking to ChildID and RoomID.

| Attribute   | Datatype | Constraints |
|-------------|----------|-------------|
| ChildRoomID | INT      | PRIMARY KEY |
| ChildID     | INT      | FOREIGN KEY |
| RoomID      | INT      | FOREIGN KEY |

**ER Diagram**

