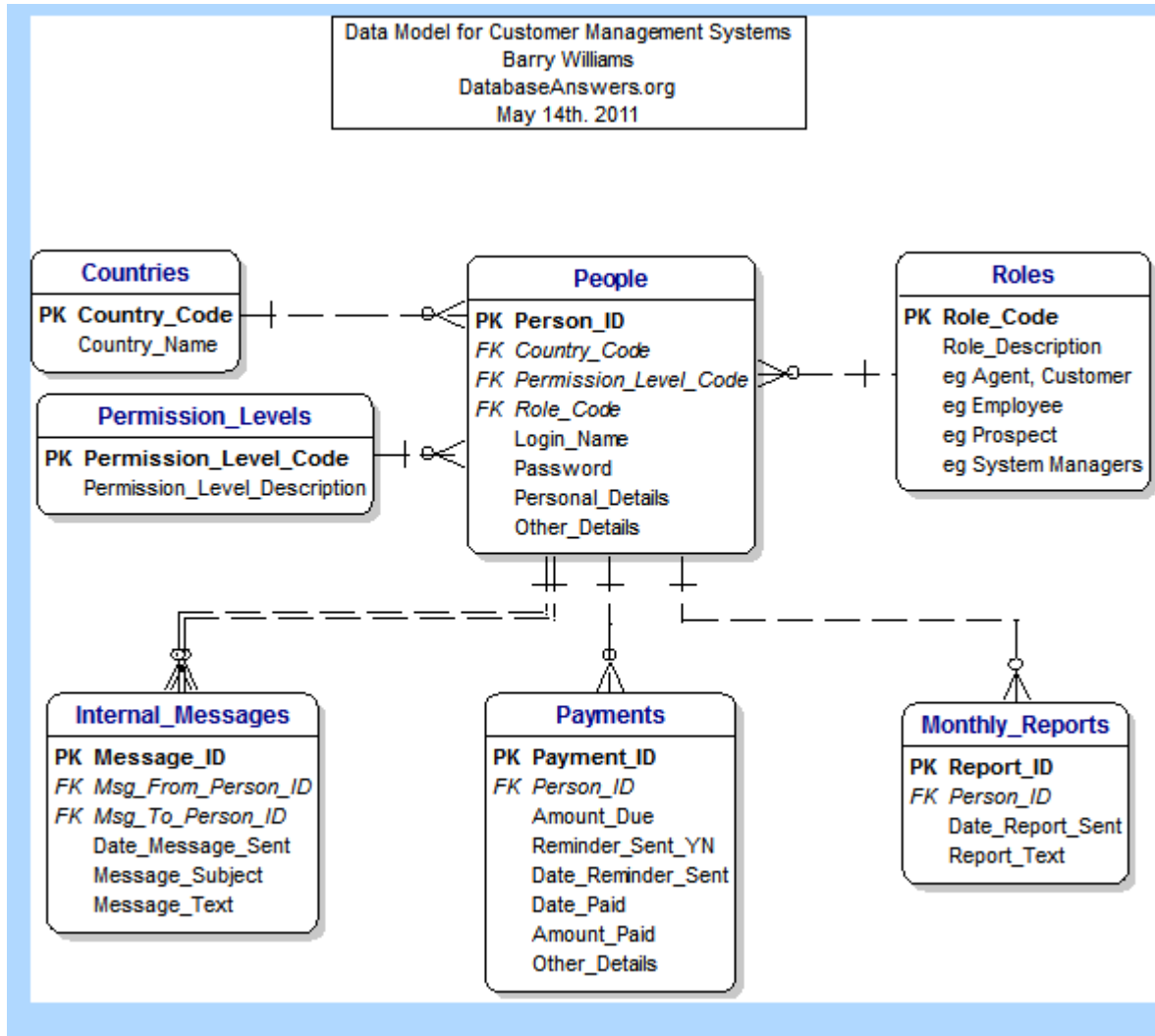


SAMPLE DATA MODEL & ANALYSIS

Data model:

https://fordnox.github.io/databaseanswers/data_models/customer_management_systems/index.htm



The data model represents a **Customer Management System** designed to manage people, roles, payments, internal messages, and reports in an organization. It organizes the relationships between different entities, such as customers, employees, and system managers, and their associated transactions, permissions, and communication.

Original Scope & Key Components

1. Countries

- **Primary Key (PK):** Country_Code
- **Attributes:** Country_Name

2. Permission_Levels

- **Primary Key (PK):** Permission_Level_Code
- **Attributes:** Permission_Level_Description

3. Roles

- **Primary Key (PK):** Role_Code
- **Attributes:** Role_Description

4. People

- **Primary Key (PK):** Person_ID
- **Foreign Keys (FK):**
 - Country_Code
 - Permission_Level_Code
 - Role_Code
- **Attributes:**
 - Login_Name
 - Password
 - Personal_Details
 - Other_Details

5. Internal_Messages

- **Primary Key (PK):** Message_ID
- **Foreign Keys (FK):**
 - Msg_From_Person_ID
 - Msg_To_Person_ID
- **Attributes:**
 - Date_Message_Sent
 - Message_Subject
 - Message_Text

6. Payments

- **Primary Key (PK):** Payment_ID
- **Foreign Key (FK):** Person_ID
- **Attributes:**
 - Amount_Due
 - Reminder_Sent_YN
 - Date_Reminder_Sent
 - Date_Paid
 - Amount_Paid
 - Other_Details

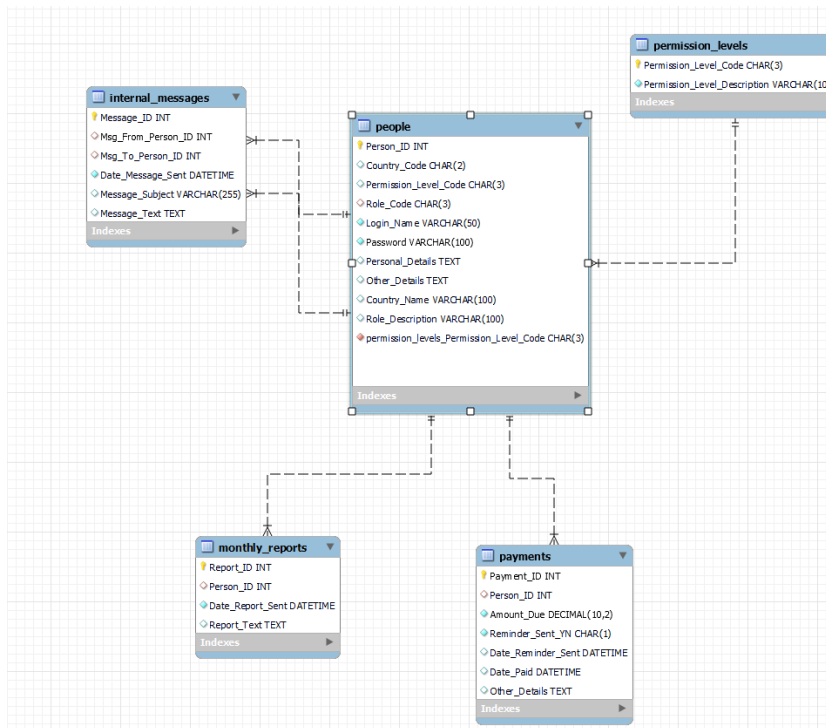
7. Monthly_Reports.

- **Primary Key (PK):** Report_ID
- **Foreign Key (FK):** Person_ID
- **Attributes:**
 - Date_Report_Sent
 - Report_Text

Original System:

- 7 tables
- Complex reference system
- Multiple contact methods
- too many references to people's table

Minimized Scope - Essential Features Only



1. People Table

Column Name	Data Type
Person_ID	INT
Country_Code	CHAR(2)
Permission_Level_Code	CHAR(3)
Role_Code	CHAR(3)
Login_Name	VARCHAR(50)
Password	VARCHAR(100)
Personal_Details	TEXT
Other_Details	TEXT

2. Permission_Levels Table

Column Name	Data Type
Permission_Level_Code	CHAR(3)
Permission_Level_Description	VARCHAR(100)

3. Internal_Messages Table

Column Name	Data Type
Message_ID	INT
Msg_From_Person_ID	INT
Msg_To_Person_ID	INT
Date_Message_Sent	DATETIME
Message_Subject	VARCHAR(255)
Message_Text	TEXT

4. Payments Table

Column Name	Data Type
Payment_ID	INT
Person_ID	INT
Amount_Due	DECIMAL(10,2)
Reminder_Sent_YN	CHAR(1)
Date_Reminder_Sent	DATETIME
Date_Paid	DATETIME
Other_Details	TEXT

5. Monthly_Reports Table

Column Name	Data Type
Report_ID	INT
Person_ID	INT
Date_Report_Sent	DATETIME
Report_Text	TEXT

Simplified System:

- **5 core tables**
- **Direct relationships**
- **Basic client info**
- **Simple service catalog**
- **combined roles countries and people into 1 table to simplify functionality**

User Stories (Simplified)

1. Permission Levels

I want to get the their work and the description of their work

2. People

I want to find the information of the people their login name, password, personal details country and their role

3. Internal Messages

I want to see the messages sent by the people to others, message subject and message text

4. Payments

I want to see the payments of the people the amount due and date paid and other details

5. Monthly Reports

I want to see the monthly reports sent by the people and sort by when the report was sent and the description of the report

Endpoints

1. Permission Levels

- **As an administrator**, I want to retrieve all permission levels using GET /permission_levels so that I can view the available access levels for users.
 - **As an administrator**, I want to add a new permission level using POST /permission_levels so that I can define new access roles for users.
 - **As an administrator**, I want to update a specific permission level using PUT /permission_levels/<int:id> so that I can modify existing access levels.
 - **As an administrator**, I want to delete a specific permission level using DELETE /permission_levels/<int:id> so that I can remove outdated or unnecessary access levels.
-

2. People

- **As an administrator**, I want to retrieve all people using GET /people so that I can see a list of all users in the system.
 - **As an administrator**, I want to add a new person using POST /people so that I can register a new user in the system.
 - **As an administrator**, I want to update a specific person using PUT /people/<int:id> so that I can modify a user's details, such as their role or access level.
 - **As an administrator**, I want to delete a specific person using DELETE /people/<int:id> so that I can remove users who are no longer active.
-

3. Internal Messages

- **As a user**, I want to retrieve all internal messages using GET /internal_messages so that I can view all messages sent and received.
 - **As a user**, I want to send a new internal message using POST /internal_messages so that I can communicate with other users in the system.
 - **As a user**, I want to update a specific internal message using PUT /internal_messages/<int:id> so that I can correct or modify a previously sent message.
 - **As a user**, I want to delete a specific internal message using DELETE /internal_messages/<int:id> so that I can remove messages that are no longer relevant.
-

4. Payments

- **As an administrator**, I want to retrieve all payments using GET /payments so that I can review all financial transactions in the system.
- **As an administrator**, I want to add a new payment using POST /payments so that I can record a payment made by a user.
- **As an administrator**, I want to update a specific payment using PUT /payments/<int:id> so that I can correct or modify payment details, such as the amount or payment date.

- **As an administrator**, I want to delete a specific payment using DELETE /payments/<int:id> so that I can remove invalid or unnecessary payment records.
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5. Monthly Reports

- **As an administrator**, I want to retrieve all monthly reports using GET /monthly_reports so that I can review all reports submitted by users.
- **As an administrator**, I want to add a new monthly report using POST /monthly_reports so that I can record a new report for a specific user.
- **As an administrator**, I want to update a specific monthly report using PUT /monthly_reports/<int:id> so that I can correct or modify details in an existing report.
- **As an administrator**, I want to delete a specific monthly report using DELETE /monthly_reports/<int:id> so that I can remove reports that are no longer relevant or were submitted in error.