**NAME: INEZA Aimee Nicole**

**Reg n: 2309000641**

**Department: BBIT**

**Course: Database Management System**

**Project name: Contact Management System**

**DESCRIBTION OF CONTACY MANAGEMENT SYSTEM**

A Contact Management System (CMS) is a database application used to store, organize, and manage information about individuals or entities with whom a user has interactions. The system is typically designed to store details like names, addresses, phone numbers, email addresses, and the history of communications between users.

This system is crucial for businesses, organizations, or individuals who need to keep track of their contacts efficiently. A CMS often allows the management of not only personal or client contacts but also groups, communication logs, and associated metadata.

Some features of contact management system

**Contact Information Storage**: Store personal and business-related information for each contact, Information may include: first name, last name, phone number, email, physical address).

**Grouping Contacts**: Categorize contacts into different groups for easy access and organization (e.g., "Family", "Colleagues", "Clients", etc.).Supports one-to-many and many-to-many relationships (a contact can belong to multiple groups).

**Communication:** Record communication history with each contact. Store different types of communication, including phone calls, emails, messages, and meetings.

conclusion

The Contact Management System is an essential tool for managing contacts, grouping them logically, and tracking communications. This project involves creating a quick database structure and designing an efficient way to interact with it using SQL queries. A CMS improves personal and professional contact management, providing both users and businesses with valuable insights and an organized way of interacting with their contacts.

**ENTITY RELATION DIAGRAM (ERD)**

|  |
| --- |
| Communications |
| C\_id (PK)  contact\_id (FK)  date\_of\_interaction  communication\_type |

|  |
| --- |
| Contacts |
| contact\_id (PK)  first\_name  last\_name  email  phone\_number  address  date\_added |

|  |
| --- |
| Groups |
| group\_id (PK),  group\_name  description |

**LOGICAL DATA MODEL (LDM)**

The **Logical Data Model** represents **what data** is needed and **how** it will be structured, but it doesn’t define **how the data will be stored**. It focuses on the **business requirements** and describes the data in a way that’s independent of any specific technology or storage system.

**Here it is logical data model of contact management system**

**Contact**: ( ContactID (PK), FirstName, LastName, Email, Phone, Address, Date added)

**Group**: (GroupID (PK), GroupName, CreatedDate)

**Communication**: (CommunicationID (PK), ContactID (FK), GroupID(FK), CommunicationType, Date of interaction.)

**PHYSICAL DATA MODEL (PDM)**

The **Physical Data Model** takes the logical model and adds **physical implementation details,** explaining **how** the data will be stored, accessed, and managed within a specific database system (like MySQL, PostgreSQL, or Oracle).

|  |  |
| --- | --- |
| **ENTITY** | **ATTRIBUTES** |
| CONTACT | contact\_id (PK)  first\_name  last\_name  email  phone\_number  address  date\_added |

|  |  |
| --- | --- |
| **ENTITY** | **ATTRIBUTES** |
| GROUP | group\_id (PK),  group\_name  description |

|  |  |
| --- | --- |
| **ENTITY** | **ATTRIBUTES** |
| COMMUNICATION | C\_id (INT PK)  contact\_id (FK)  date\_of\_interaction  communication\_type |

**DATA DICTIONARY**

A **Data Dictionary** is a detailed reference document or database table that describes **all the data elements** in the database, their structure, and their meaning. It’s essentially the **“dictionary”** for your database, providing information about each field in your database, including its name, data type, possible values, and any rules or constraints that apply.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ENTITY | ATTRIBUTE | DATATYPE | DESCRIPTION | CONSTRAINTS | EXAMPLE |
| CONTACT | Contact ID | INT | Primary Key. Unique identifier for each contact. | NOT NULL | e.g. 1, 2 …. |
| First name | VARCHAR | First name of the contact | NOT NULL | e.g. ‘INEZA’ |
| Last name | VARCHAR | Last name of the contact | NOT NULL | e.g. ‘Nicole’ |
| Email | VARCHAR | Email address of the contact. | NOT NULL | e.g. ‘nicoleineza@gmail.com’ |
| Phone number | VARCHAR | Phone number of the contact | NOT NULL | e.g. "078635563" |
| Address | VARCHAR | Physical address of the contact. | NULL | e.g. ‘MUSANZE’ |
| Date added | DATE | |  | | --- | |  |  |  | | --- | | date and time the contact was added | | NOT NULL | e.g.’20-20-2024’ |
| GROUP | Group ID | INT | Unique identifier for the group. Primary Key. | NOT NULL | e.g. 1, 2 …. |
| Group name | VARCHAR | Name of the group | NOT NULL | e.g. ‘FAMILY’ |
| Description | TEXT | A brief description of the group or its purpose. | NULL | e.g. “ To help each other as family “ |
| COMMUNICATION | Communication ID | INT | |  | | --- | |  |  |  | | --- | | Unique identifier for the communication. Primary Key. | | NOT NULL | e.g. 1, 2 …. |
| Communication type | VARCHAR | Type of communication | NOT NULL | e.g., "email", "phone call", "meeting", "SMS" |
| Date of interaction | DATE | |  | | --- | |  |  |  | | --- | | Date and time when the communication took place | | NULL | e.g.’ 20-12-2025’ |
| Contact ID | INT | Foreign key referring to the contact that the communication was | NOT NULL | e.g. 1, 2 … |