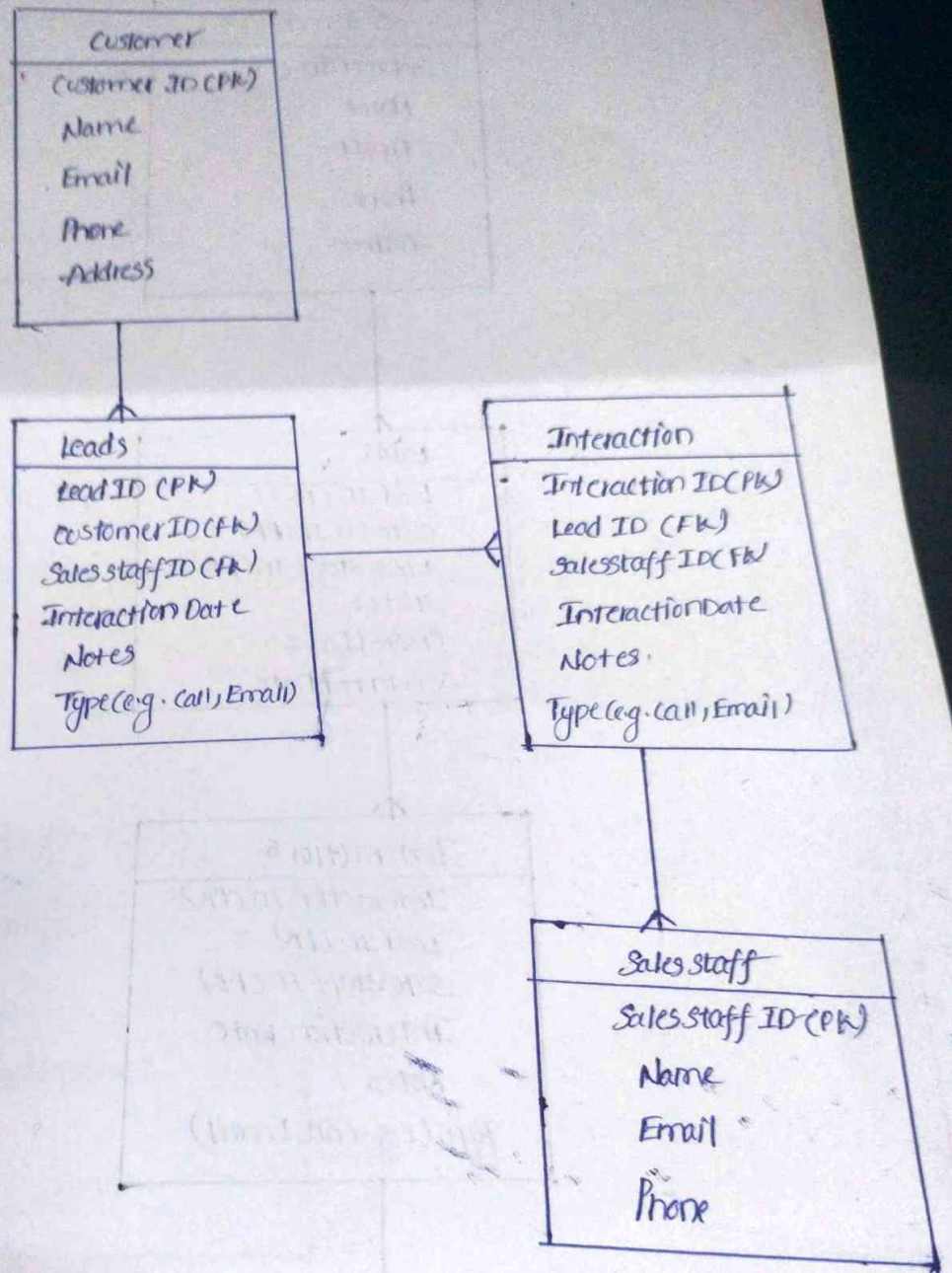P.Yashwanth
192372335
DBMS
CSA0593

Assignment - I

Customer Relationship Database management (CRM) for lead Analysis develop a track leads, interactions, sales representatives, and conversion rates for a CRM system.

Requirements:

Models tables for customers, leads, interactions and sales staff, with data integrity constraints. Implement stored procedures for updating lead statuses and tracking interaction between sales. write queries to generate reports on conversion rates, average time to close deals, and lead status distributions.
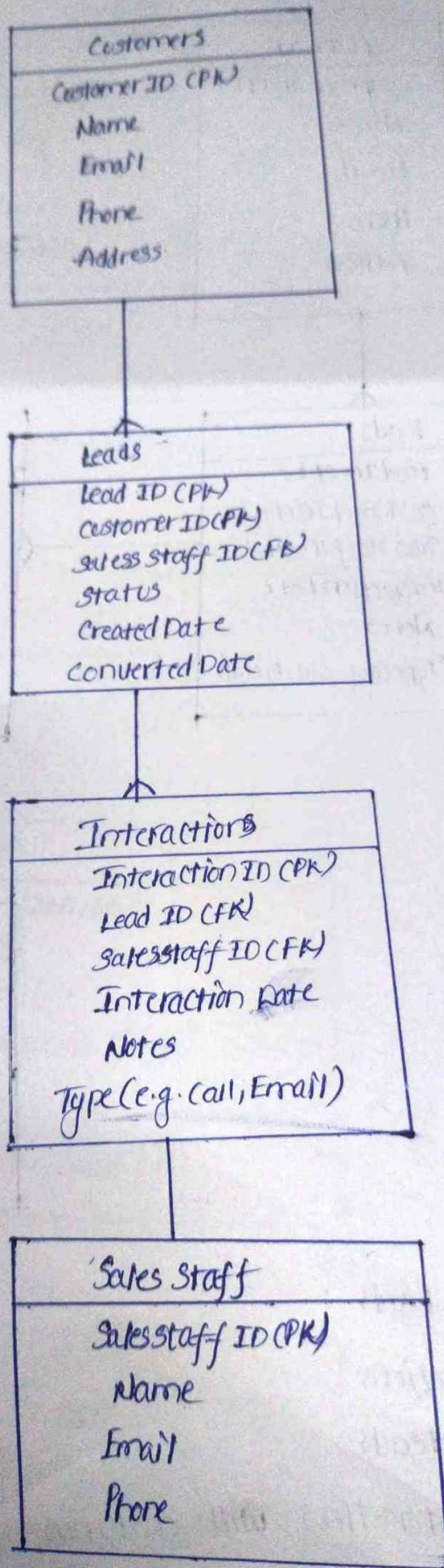
1) conceptual ERD:

Customer

- Customer ID (PK)
- Name
- Email
- Phone
- Address

Leads

- Lead ID (PK)
- customer ID (FK)
- Sales staff ID (FK)
- Interaction Date
- Notes
- Type (e.g. Call, Email)

Interaction

- Interaction ID (PK)
- Lead ID (FK)
- Salesstaff ID (FK)
- InteractionDate
- Notes
- Type (e.g. Call, Email)

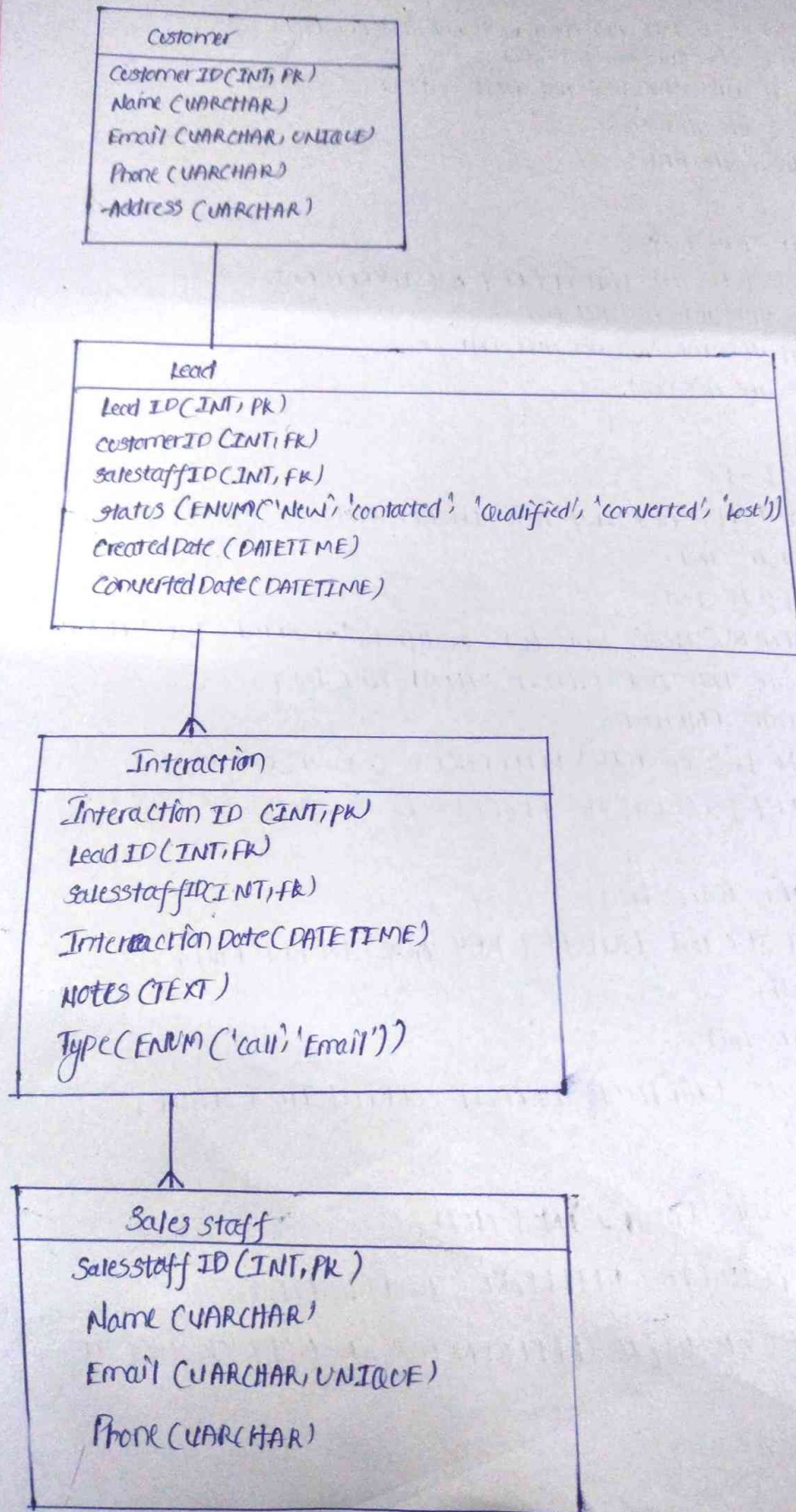**Sales staff**

- Sales staff ID (PK)
- Name
- Email
- Phone

Relationships:

- A customer can have multiple Leads
- A Lead can have multiple interactions.
- A sales staff can hand multiple leads
- A sales staff can have multiple interactions with customers.

2) Logical ERD:

Customers

- Customer ID (PK)
- Name
- Email
- Phone
- Address

Leads

- Lead ID (PK)
- Customer ID (PK)
- Sales Staff ID (FK)
- Status
- Created Date
- Converted Date

Interactions

- Interaction ID (PK)
- Lead ID (FK)
- Salesstaff ID (FK)
- Interaction Date
- Notes
- Type (e.g. Call, Email)

Sales Staff

- Salesstaff ID (PK)
- Name
- Email
- Phone

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5) Physical ERD :

Customer
Customer ID (INT, PK)
Name (VARCHAR)
Email (VARCHAR, UNIQUE)
Phone (VARCHAR)
-Address (VARCHAR)

Lead
Lead ID (INT, PK)
customerID (INT, FK)
salestaffID (INT, FK)
status (ENUM ('New', 'contacted', 'Qualified', 'converted', 'lost'))
CreatedDate (DATETIME)
ConvertedDate (DATETIME)

Interaction
Interaction ID (INT, PK)
Lead ID (INT, FK)
Salesstaff ID (INT, FK)
Interaction Date (DATETIME)
NOTES (TEXT)
Type (ENUM ('call', 'Email'))

Sales staff
Salesstaff ID (INT, PK)
Name (VARCHAR)
Email (VARCHAR, UNIQUE)
Phone (VARCHAR)

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SQL statements:

```sql
CREATE TABLE Customer (
        CustomerID INT PRIMARY KEY AUTO-INCREMENT,
        Name VARCHAR(100) NOT NULL,
        Email VARCHAR(100) NOT NULL UNIQUE,
        Phone VARCHAR(15),
        Address VARCHAR(255)
    );

CREATE TABLE SalesStaff (
        SalesstaffID INT PRIMARY KEY AUTO-INCREMENT,
        Name VARCHAR(100) NOT NULL,
        Email VARCHAR(100) NOT NULL UNIQUE,
        Phone VARCHAR(15)
    );

CREATE TABLE Lead (
        Lead INT PRIMARY KEY AUTO-INCREMENT,
        customerID INT,
        SalesStaff ID INT,
        Status ENUM ('New', 'contacted', 'Qualified', 'converted', 'Lost') NOT NULL,
        Created Date DATETIME DEFAULT CURRENT-TIMESTAMP,
        Converted Date DATETIME
        FOREIGN KEY (Customer ID) REFERENCES Customer (Customer ID),
        FOREIGN KEY (SalesstaffID) REFERENCES Salesstaff (Salesstaff ID).
    );

CREATE TABLE Interaction (
        Interaction IDE INT PRIMARY KEY AUTO-INCREMENT,
        Lead ID INT,
        SalesStaff ID INT,
        InteractionDate DATETIME DEFAULT CURRENT TIMESTAMP,
        Notes TEXT,
        Type ENUM ('call', 'Email') NOT NULL,
        FOREIGN KEY (Lead ID) REFERENCES Lead (Lead ID),
        FOREIGN KEY (SalesstaffID) REFERENCES Salesstaff (Salesstaff ID)
    );
```