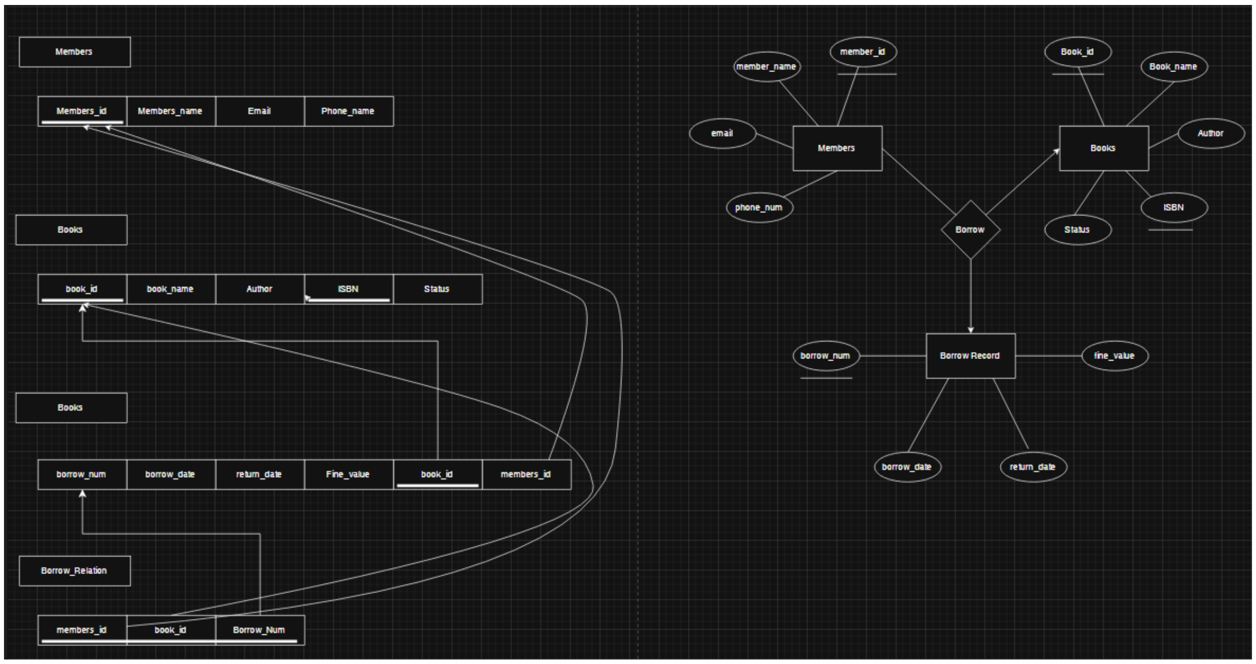
ER Diagram & Shema :



DDL Code :

CREATE DATABASE Library_Management_System;

GO

USE Library_Management_System;

GO

CREATE TABLE Members(

Member_ID INT PRIMARY KEY,

Member_Name NVARCHAR(20) NOT NULL,

Email NVARCHAR(50) NOT NULL UNIQUE,

Phone_Num NVARCHAR(15) NOT NULL,

);

CREATE TABLE Books(

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Book_ID INT PRIMARY KEY,
Book_name NVARCHAR(150) NOT NULL,
Author NVARCHAR(50) NOT NULL,
ISBN NVARCHAR(20) UNIQUE,
Status NVARCHAR(20) DEFAULT 'Available'
);

CREATE TABLE Borrow_Records(
Borrow_Num INT PRIMARY KEY,
Member_ID INT,
Book_ID INT,
Borrow_Date DATE NOT NULL,
Return_Date DATE NOT NULL,
Fine_Value DECIMAL(5,2) DEFAULT 0,
FOREIGN KEY (Member_ID) REFERENCES Members(Member_ID),
FOREIGN KEY (Book_ID) REFERENCES Books(Book_ID)
);



INSERT INTO Members (Member_ID, Member_Name, Email, Phone_Num)
VALUES ('1', 'Ziad', 'Ziad@gmail.com', '011'),
    ('2', 'Zoz', 'zoz@gmail.com', '012');

INSERT INTO Books (Book_ID, Book_name, Author, ISBN)
VALUES ('1', 'python', 'Devolper', '1234567890'),
    ('2', 'c++', 'Dev2', '02134567'),
   ('3', 'Data Base', 'Dev5', '0218437');

GO

CREATE PROCEDURE Borrow_Book
    @Member_ID INT,
    @Book_ID INT
AS
BEGIN
    IF EXISTS (SELECT 1 FROM Books WHERE Book_ID = @Book_ID AND Status = 'Available')
    BEGIN
        INSERT INTO Borrow_Records (Member_ID, Book_ID, Borrow_Date)
        VALUES (@Member_ID, @Book_ID, GETDATE());

        UPDATE Books
        SET Status = 'Borrowed'
        WHERE Book_ID = @Book_ID;

        PRINT 'Book Borrowed';
    END
    ELSE
    BEGIN
        PRINT 'Book Is Not Available';
    END
END;
```

```
GO

CREATE PROCEDURE Return_Book
   @Borrow_ID INT
AS
BEGIN
   DECLARE @Book_ID INT;
   DECLARE @Due_Date DATE;
   DECLARE @Fine DECIMAL(5,2);

   SELECT @Book_ID = Book_ID, @Due_Date = Borrow_Date FROM Borrow_Records
WHERE @Borrow_ID = @Borrow_ID;
   SET @Fine = CASE
               WHEN DATEDIFF(DAY, @Due_Date, GETDATE()) > 14
               THEN (DATEDIFF(DAY, @Due_Date, GETDATE()) - 14) * 2
               ELSE 0
            END;

   UPDATE Borrow_Records
   SET Return_Date = GETDATE(), Fine_Value = @Fine
   WHERE @Borrow_ID = @Borrow_ID;

   UPDATE Books
   SET Status = 'Available'
   WHERE Book_ID = @Book_ID;
```

  PRINT 'Book Returned' + CAST(@Fine AS NVARCHAR);

END;

GUI :

Using tkinter

```python
import pyodbc
from tkinter import *
from tkinter import messagebox, ttk

try:
    conn = pyodbc.connect(
            'DRIVER=ODBC Driver 17 for SQL Server;'  #This Driver Is For
MicrosoftSQl Change It If You Use Another DBMS
            'SERVER=DESKTOP-PMHMTSM;'   #Change it Accoording To Your Device Name
            'DATABASE=Library_Management_System;'
            'Trusted_Connection=yes;'
        )

    cursor = conn.cursor()
except Exception as e:
    messagebox.showerror("Database Connection Error", str(e))

root = Tk()
root.title("📚Library Management System")
root.geometry("800x600")



def view_members():
    try:
        cursor.execute("SELECT * FROM Members")
        records = cursor.fetchall()
        display_records("Members", records)
    except Exception as e:
        messagebox.showerror("Error", str(e))

def view_books():
    try:
        cursor.execute("SELECT * FROM Books")
        records = cursor.fetchall()
        display_records("Books", records)
    except Exception as e:
        messagebox.showerror("Error", str(e))

def insert_member():
    member_id = member_id_entry.get()
    member_name = member_name_entry.get()
    email = email_entry.get()
    phone_num = phone_num_entry.get()
    try:
        cursor.execute(
            "INSERT INTO Members (Member_ID, Member_Name, Email, Phone_Num)
VALUES (?, ?, ?, ?)",
            (member_id, member_name, email, phone_num)
        )
        conn.commit()
        messagebox.showinfo("Success", "Member added successfully!")
    except Exception as e:
        messagebox.showerror("Error", str(e))

def insert_book():
    book_id = book_id_entry.get()
    book_name = book_name_entry.get()
    author = author_entry.get()
    isbn = isbn_entry.get()
    try:
        cursor.execute(
            "INSERT INTO Books (Book_ID, Book_name, Author, ISBN) VALUES
(?, ?, ?, ?)",
            (book_id, book_name, author, isbn)
        )
        conn.commit()
        messagebox.showinfo("Success", "Book added successfully!")
    except Exception as e:
        messagebox.showerror("Error", str(e))

def display_records(title, records):
    display_root = Toplevel(root)
    display_root.title(title)
    tree = ttk.Treeview(display_root, columns=(1, 2, 3, 4, 5), show="headings",
height=20)
```

```python
    tree.pack()
    for i, column in enumerate(records[0] if records else range(5)):
        tree.heading(i+1, text=f"Column {i+1}")
    for row in records:
        tree.insert('', 'end', values=row)


Label(root, text="Library Management System", font=("Arial", 24)).pack(pady=20)

frame = Frame(root)
frame.pack(pady=20)

Button(frame, text="View Members", command=view_members, width=20).grid(row=0,
column=0, padx=10)
Button(frame, text="View Books", command=view_books, width=20).grid(row=0,
column=1, padx=10)


Label(frame, text="Member ID").grid(row=1, column=0, pady=10)
member_id_entry = Entry(frame)
member_id_entry.grid(row=1, column=1, pady=10)

Label(frame, text="Member Name").grid(row=2, column=0, pady=10)
member_name_entry = Entry(frame)
member_name_entry.grid(row=2, column=1, pady=10)

Label(frame, text="Email").grid(row=3, column=0, pady=10)
email_entry = Entry(frame)
email_entry.grid(row=3, column=1, pady=10)

Label(frame, text="Phone Number").grid(row=4, column=0, pady=10)
phone_num_entry = Entry(frame)
phone_num_entry.grid(row=4, column=1, pady=10)

Button(frame, text="Insert Member", command=insert_member, width=20).grid(row=5,
column=0, pady=10)

Label(frame, text="Book ID").grid(row=6, column=0, pady=10)
book_id_entry = Entry(frame)
book_id_entry.grid(row=6, column=1, pady=10)

Label(frame, text="Book Name").grid(row=7, column=0, pady=10)
```

```
book_name_entry = Entry(frame)
book_name_entry.grid(row=7, column=1, pady=10)

Label(frame, text="Author").grid(row=8, column=0, pady=10)
author_entry = Entry(frame)
author_entry.grid(row=8, column=1, pady=10)

Label(frame, text="ISBN").grid(row=9, column=0, pady=10)
isbn_entry = Entry(frame)
isbn_entry.grid(row=9, column=1, pady=10)

Button(frame, text="Insert Book", command=insert_book, width=20).grid(row=10,
column=0, pady=10)

root.mainloop()

conn.close()
```