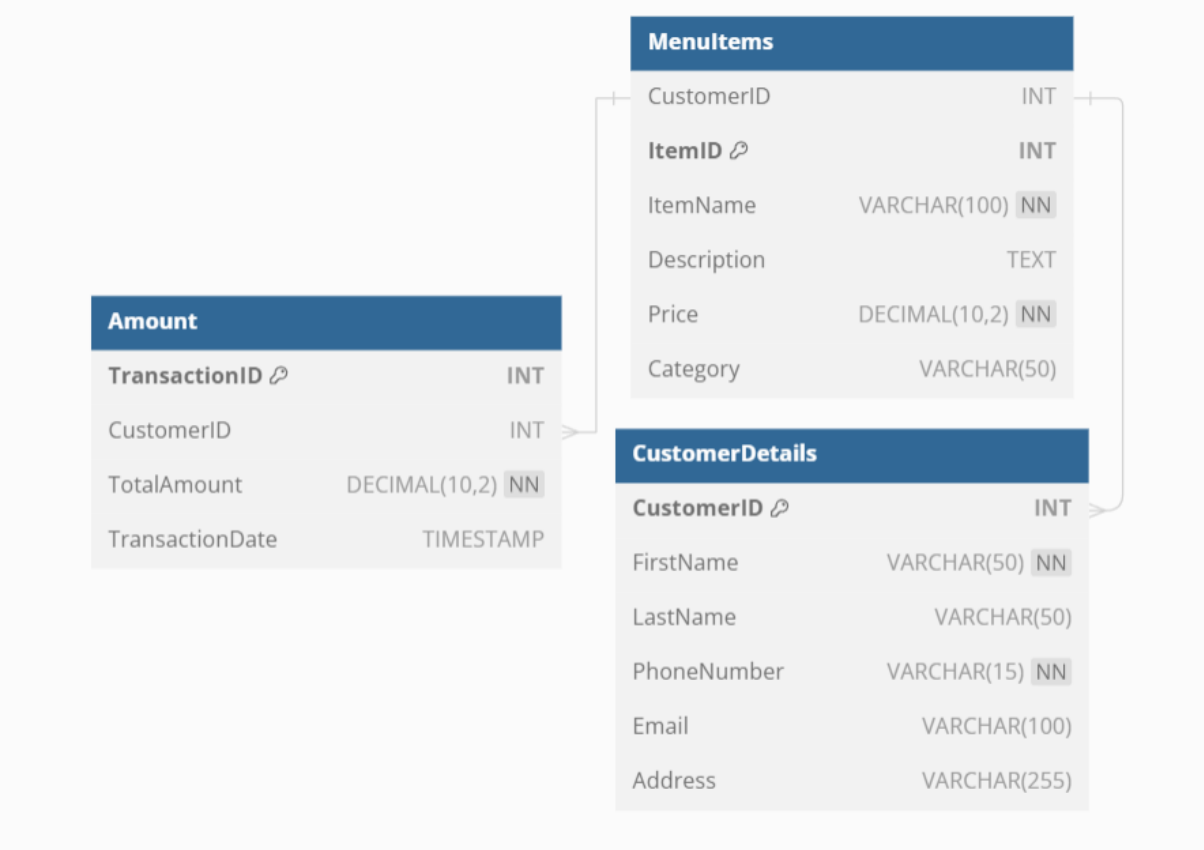
CASE STUDY - D'S CAFE

Introduction:

Welcome to D's Cafe, where culinary excellence meets a warm and inviting atmosphere. At D's Cafe, we pride ourselves on offering a diverse menu crafted with fresh, locally-sourced ingredients and a touch of creativity. Whether you're craving a hearty breakfast, a leisurely lunch, or a delightful dinner, our menu features a range of options to satisfy every palate, from classic comfort foods to innovative culinary creations.

Entity Relationship Diagram:



Dataset:

```
CREATE TABLE CustomerDetails (
    CustomerID INT PRIMARY KEY AUTO_INCREMENT,
    FirstName VARCHAR(50) NOT NULL,
    LastName VARCHAR(50),
    PhoneNumber VARCHAR(15) UNIQUE NOT NULL,
    Email VARCHAR(100) UNIQUE,
    Address VARCHAR(255)
);
INSERT INTO CustomerDetails (FirstName, LastName, PhoneNumber, Email, Address) VALUES
('john', 'doe', '1234567890', 'john.doe@example.com', '123 Main St'),
('Jane', 'Smith', '0987654321', 'jane.smith@example.com', '456 Oak Ave'),
('Alice', 'Johnson', '1122334455', 'alice.johnson@example.com', '789 Pine Rd'),
('Bob', 'Brown', '6677889900', 'bob.brown@example.com', '321 Maple Ln'),
('Charlie', 'Davis', '1231231234', 'charlie.davis@example.com', '654 Cedar Blvd');

CREATE TABLE MenuItems (
    ItemID INT PRIMARY KEY AUTO_INCREMENT,
    ItemName VARCHAR(100) NOT NULL,
```

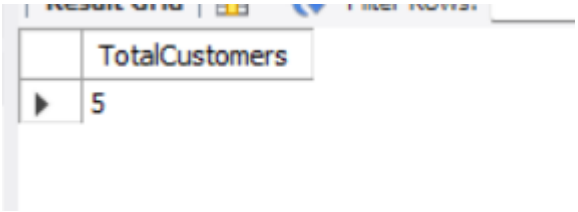
```
    Description TEXT,
    Price DECIMAL(10, 2) NOT NULL,
    Category VARCHAR(50)
);
INSERT INTO MenuItems (ItemName, Description, Price, Category)
VALUES
('Cheeseburger', 'A delicious cheeseburger with lettuce, tomato, and
cheese', 8.99, 'Main Course'),
('Caesar Salad', 'Fresh romaine lettuce with Caesar dressing, croutons,
and Parmesan', 6.49, 'Salad'),
('Margherita Pizza', 'Classic Margherita pizza with fresh tomatoes and
mozzarella', 12.99, 'Main Course'),
('Chocolate Cake', 'Rich and moist chocolate cake with chocolate
frosting', 4.99, 'Dessert'),
('Lemonade', 'Freshly squeezed lemonade', 2.99, 'Beverage');

CREATE TABLE Amount (
    TransactionID INT PRIMARY KEY AUTO_INCREMENT,
    CustomerID INT,
    TotalAmount DECIMAL(10, 2) NOT NULL,
    TransactionDate TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    FOREIGN KEY (CustomerID) REFERENCES
CustomerDetails(CustomerID)
);
```

```
INSERT INTO Amount (CustomerID, TotalAmount, TransactionDate)
VALUES
(1, 15.48, '2024-07-15 12:34:56'),
(2, 8.99, '2024-07-16 13:45:23'),
(3, 4.99, '2024-07-17 14:56:34'),
(4, 17.98, '2024-07-18 15:12:45'),
(5, 12.99, '2024-07-19 16:23:56');
```

CASE STUDY QUESTIONS & ANSWERS:

1. How many customers are currently registered in your database?

```
SELECT COUNT(*) AS TotalCustomers
FROM CustomerDetails;
```



	TotalCustomers
▶	5

2. What are the top three most expensive menu items and their prices?

```
SELECT ItemName, Price
FROM MenuItems
ORDER BY Price DESC
LIMIT 3;
```

	ItemName	Price
▶	Margherita Pizza	12.99
	Cheeseburger	8.99
	Caesar Salad	6.49

3. What was the total revenue generated from transactions on July 15, 2024?

```
SELECT SUM(TotalAmount) AS TotalRevenue
FROM Amount
WHERE DATE(TransactionDate) = '2024-07-15';
```

	TotalRevenue
▶	15.48

4. How many customers have provided their email addresses?

```
SELECT COUNT(*) AS CustomersWithEmail
FROM CustomerDetails
WHERE Email IS NOT NULL;
```

	CustomersWithEmail
▶	5

5. How many customers have registered with both their phone number and email address?

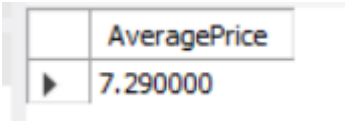
```
SELECT COUNT(*) AS CustomersWithContactInfo
FROM CustomerDetails
WHERE PhoneNumber IS NOT NULL AND Email IS NOT NULL;
```

	CustomersWithContactInfo
▶	5

6. What is the average price of all menu items?

```
SELECT AVG(Price) AS AveragePrice
```

FROM MenuItems;



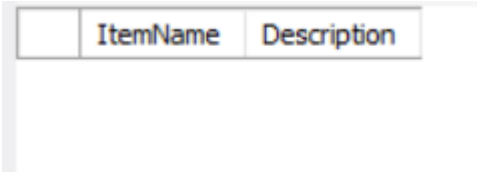
	AveragePrice
▶	7.290000

7. Which menu items have descriptions longer than 100 characters?

SELECT ItemName, Description

FROM MenuItems

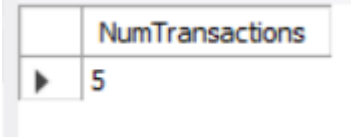
WHERE LENGTH(Description) > 100;



	ItemName	Description

8. How many transactions were recorded between two specific dates?

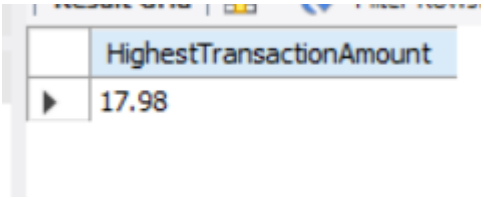
SELECT COUNT(*) AS NumTransactions
FROM Amount
WHERE TransactionDate BETWEEN '2024-07-01' AND '2024-07-31';



	NumTransactions
▶	5

9. What is the highest transaction amount recorded in your database?

SELECT MAX(TotalAmount) AS HighestTransactionAmount
FROM Amount;



	HighestTransactionAmount
▶	17.98

10. How would you identify customers who have not visited the restaurant in the last 3 months and send them a personalized promotional offer?

```
SELECT FirstName, LastName, Email

FROM CustomerDetails

WHERE CustomerID NOT IN (

   SELECT DISTINCT CustomerID

   FROM Amount

   WHERE TransactionDate >= DATE_SUB(NOW(), INTERVAL 3
MONTH)

);
```

	FirstName	LastName	Email

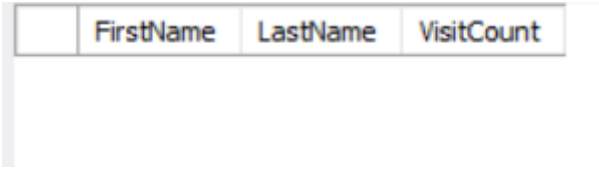
11. How can you identify the most frequent diners who visit during weekends?

```
SELECT c.FirstName, c.LastName, COUNT(*) AS VisitCount

FROM CustomerDetails c

JOIN Amount a ON c.CustomerID = a.CustomerID

WHERE DAYOFWEEK(a.TransactionDate) IN (1, 7) -- 1 = Sunday, 7 =
Saturday
```

GROUP BY c.CustomerID

ORDER BY VisitCount DESC

LIMIT 10;



	FirstName	LastName	VisitCount

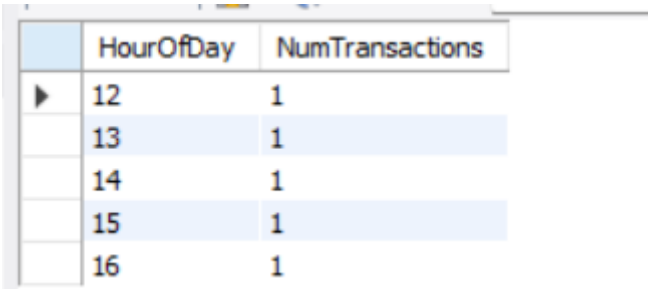
12. **How would you determine the busiest times of the day to optimize staff scheduling?**

SELECT HOUR(TransactionDate) AS HourOfDay, COUNT(*) AS NumTransactions

FROM Amount

GROUP BY HourOfDay

ORDER BY NumTransactions DESC;



	HourOfDay	NumTransactions
▶	12	1
	13	1
	14	1
	15	1
	16	1