

Database Project Pharmacy

Group: 4

supervisor name: Afaf Muslim Salem Al-Mahmadi



Student Name	ID	section number
Taef Abd Ul-Wahab	44512026	4
Raneem khalid alharbi	445002398	4
Lana Nasser Alotaibi	445001397	4
Ghada Shujaa Alotibi	445003024	4
Retaj Khalid Alqurashi	44512037	4

Business Rules

Policy Description

The objective of this project is to create a database that manages all operations related to pharmacies, medications, customers, orders, and payments. The database includes several tables containing important data such as pharmacy information, available medications, customers who interact with these pharmacies, orders placed, and customer payments.



Business Rules

Procedure Description:

- 1. A pharmacy must have a unique identifier (PharmacyID), name, address, phone number, email, license number, and opening hours.
- 2. Each medication must have a unique identifier (MedicationID), name, brand, price, the pharmacy it belongs to, quantity in stock, and expiry date.
- 3. A customer must have a unique identifier (CustomerID), first name, last name, email, phone number, address, and registration Date.
- 4. Each order must have a unique identifier (OrderID), the customer who placed the order, the pharmacy fulfilling the order, the order date, status (completed, pending, cancelled), total amount, and whether a prescription is required.
- 5. Each payment must have a unique identifier (PaymentID), the associated order, the customer who made the payment, the amount paid, payment date, method of payment (e.g., credit card, cash), and the payment status (e.g., completed, pending, refunded).
- 6. A pharmacy can stock multiple medications and Each medication can be stocked by multiple pharmacies .
- 7. A customer can place multiple orders and Each order is placed by one customer.
- 8. A pharmacy can receive multiple orders and Each order is associated with one pharmacy.
- 9. Each order is associated with exactly one payment and Each payment is made for one order.
- 10. Each customer can have only one payment record associated with them per transaction and Each payment record is uniquely associated with one customer.
- 11. Each Medication can appear in multiple orders and Each order can contain one medication

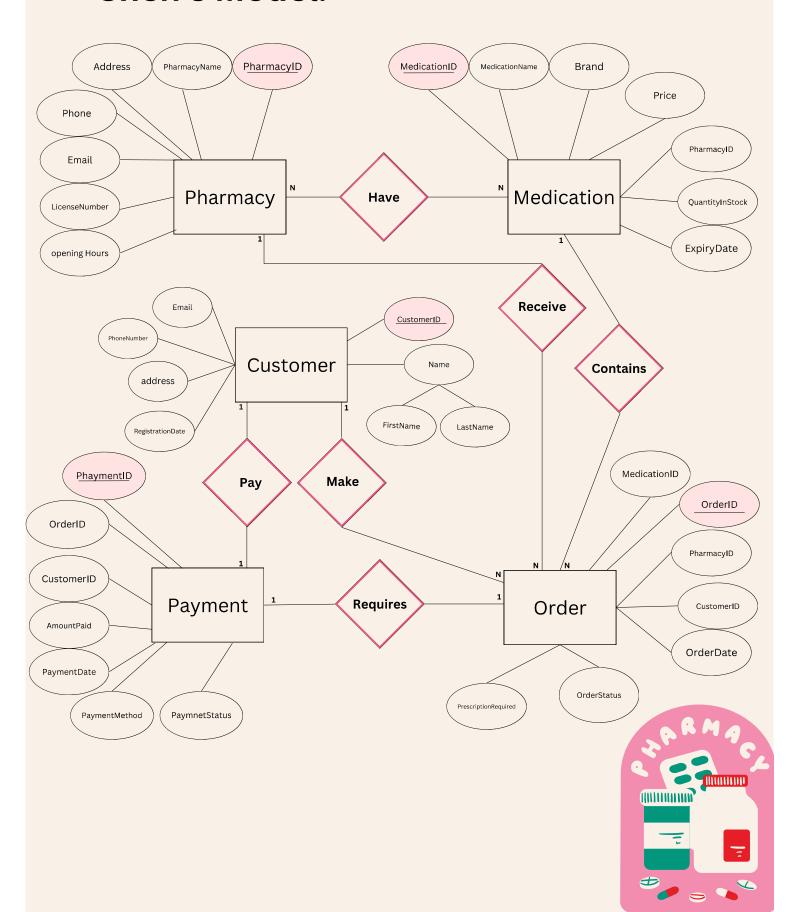
Business Rules

Principles

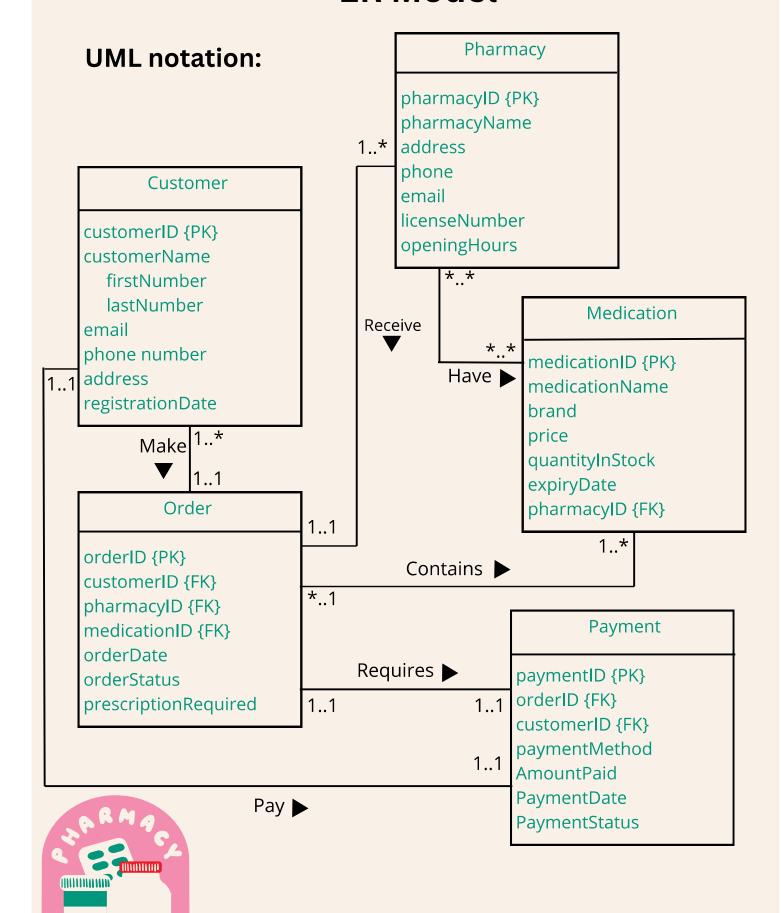
- **Data Integrity:** The system maintains accurate data relationships, ensuring that pharmacy information, medication stock, customer orders, and payments are all linked properly. This ensures that customers receive the correct products, and pharmacies maintain adequate stock.
- Security and Privacy: Customer data, including email and payment details, is handled securely, ensuring that private information is only accessible by authorized users.
- **Transparency:** All transactions (orders and payments) are clearly recorded, and updates are made to ensure real-time reflection of status (Pending, Completed, Cancelled).
- Compliance: All medications are handled in compliance with health regulations, including ensuring accurate expiry dates and removing medications from the system if the stock is insufficient.

ER Model

Chen's Model:



ER Model



Based on the ER Model:

Identify entity types:

• Strong entity types: Pharmacy, Medication, Customer, Orders, payment.

• Weak entity types: None

Identify relationship types:

• One-to-One: Pay, Requires

• One-to-Many: Make, Contains, Receive

• Many-to-Many: Have

• N-ary: None

Step 1. Mapping the **Regular** entity type:

Pharmacy

PharmacyID Ph	harmacyName	Address	Phone	Email	LicenseNumber	OpeningHours
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Medication

MedicationID MedicationName	Brand Price	QuantityInStock	ExpiryDate	PharmcyID
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Customer

Orders

<u>OrderID</u>	CustomerID	PharmacyID	MedcationID	OrderDate	OrderStatus	TotalAmount	prescriptionRequired
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Payment

Payme	ntID Custo	merID Ord	erID PaymentD	PaymentStatu	AmountPaid	PaymentMethod
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Step 2. Mapping the Weak entity type:

None.



Step 3. Mapping of 1:1 relationship type:

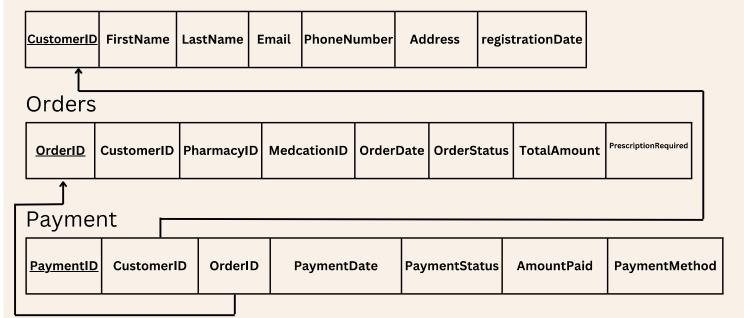
Pharmacy

<u>PharmacyID</u>	PharmacyName	Address	Phone	Email	LicenseNumber	OpeningHours

Medication

<u>MedicationID</u>	MedicationName	Brand	Price	QuantityInStock	ExpiryDate	PharmacyID
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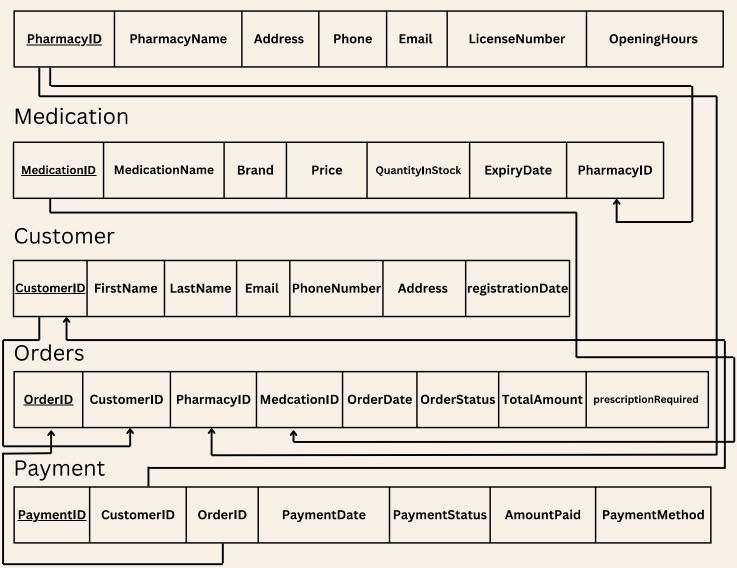
Customer





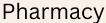
Step 4. Mapping of 1:N relationship type:

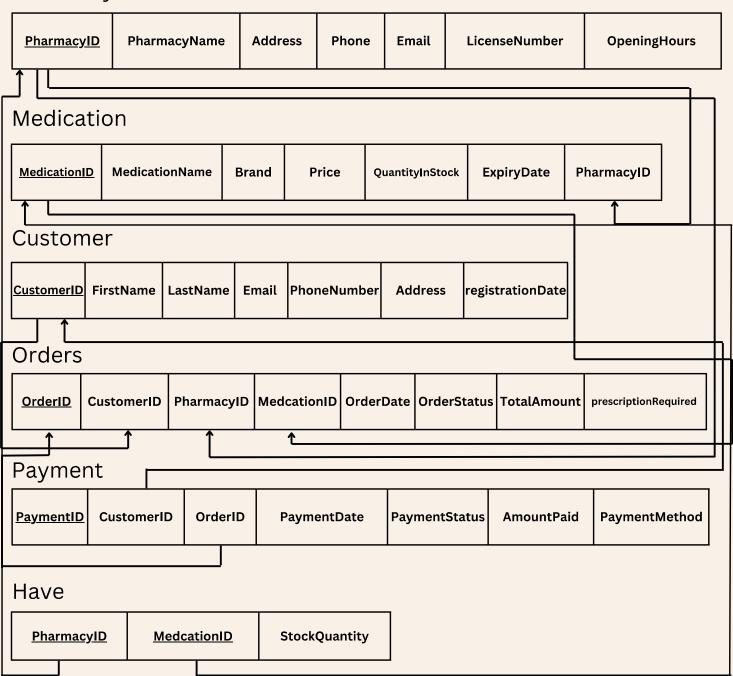
Pharmacy





Step 5: Mapping of Binary M:N relationship type:





Step 6: Mapping of Multivalued

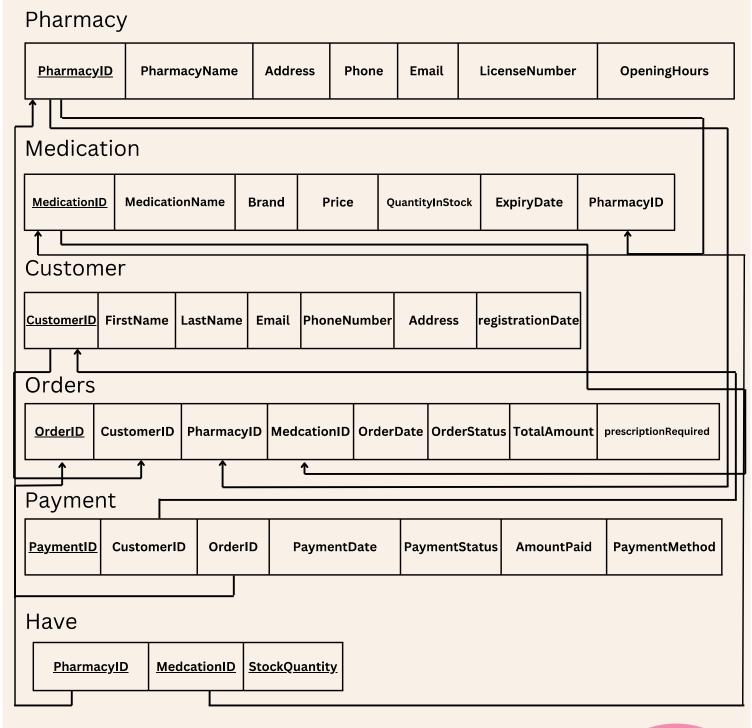
None

Step 7: Mapping of N-ary

None

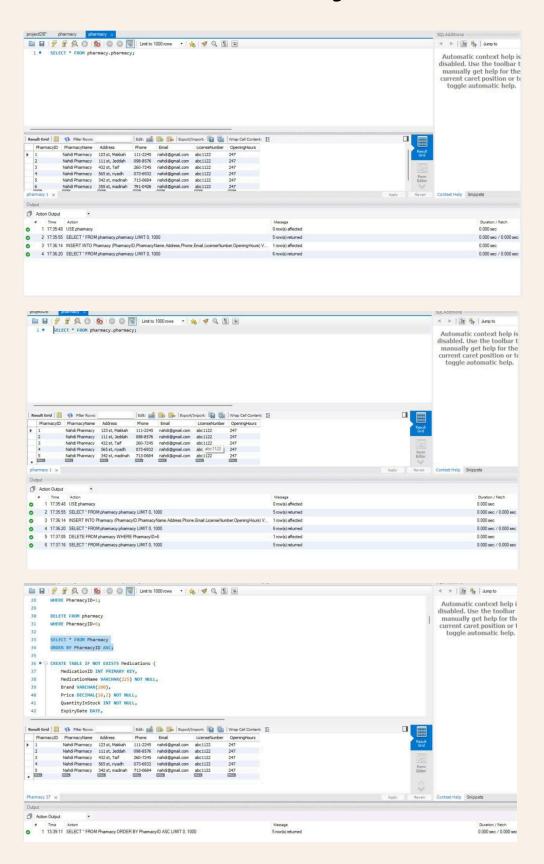


The Final Rational Schema

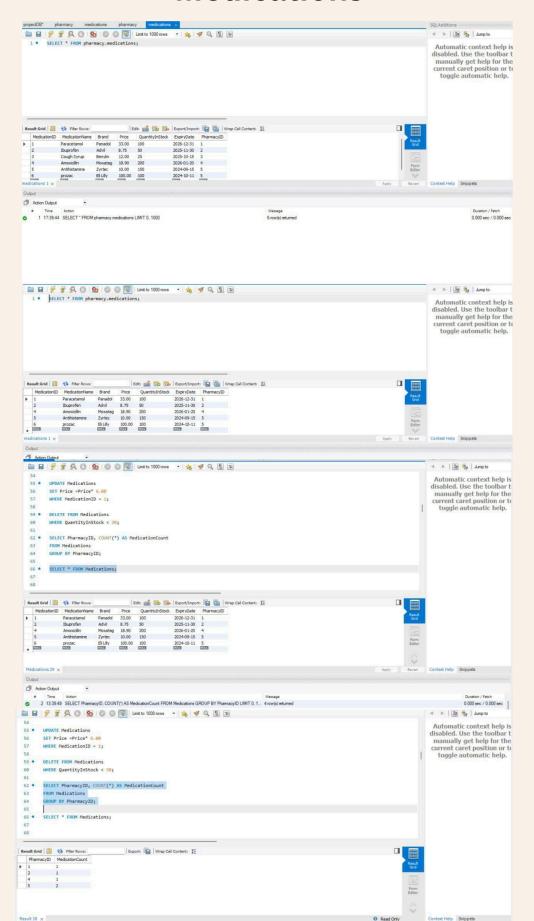




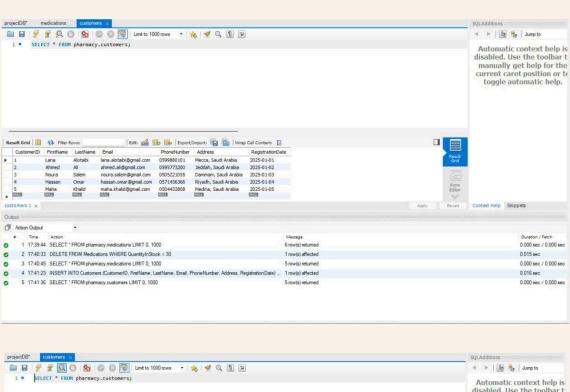
Pharmacy

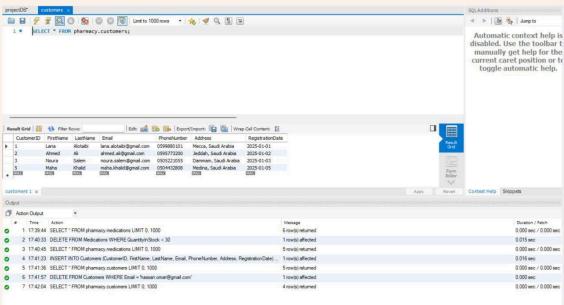


Medications

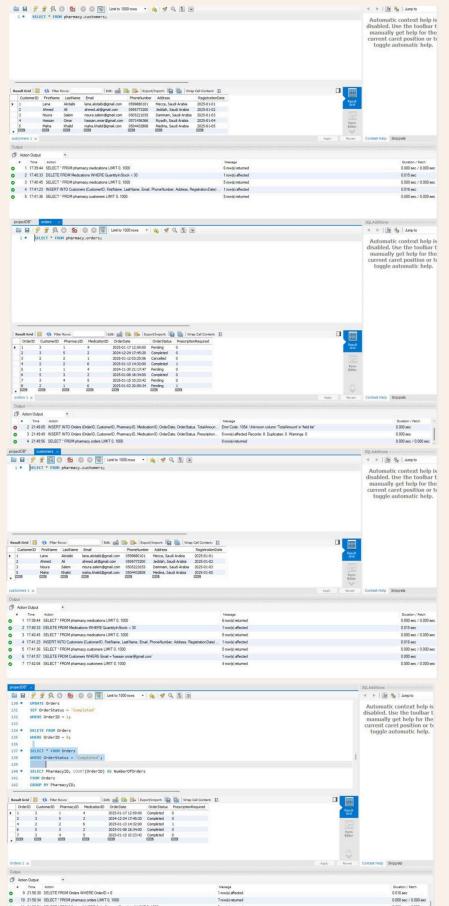


Customers

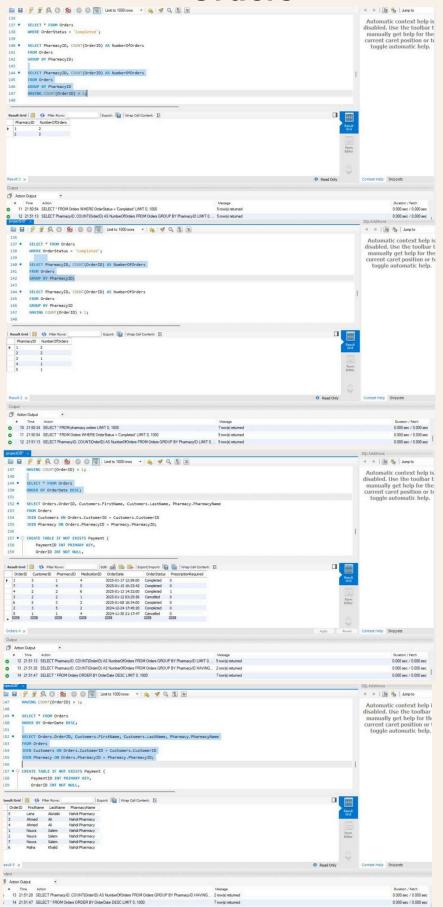




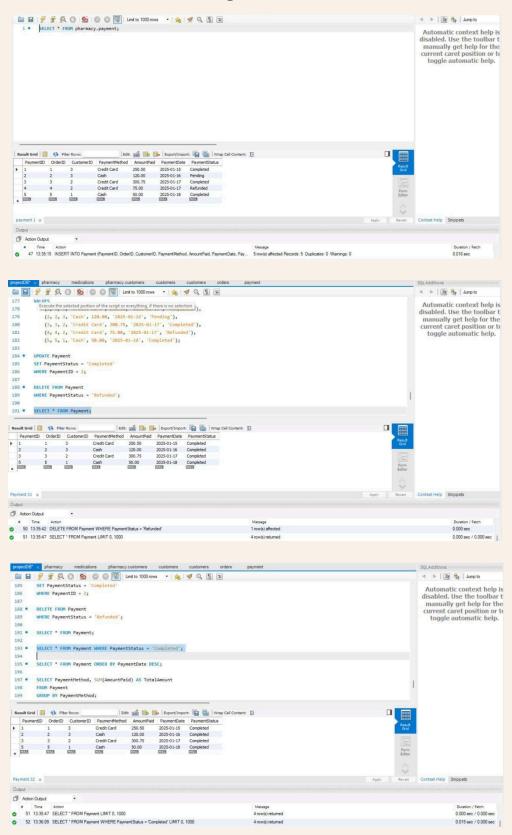
Orders



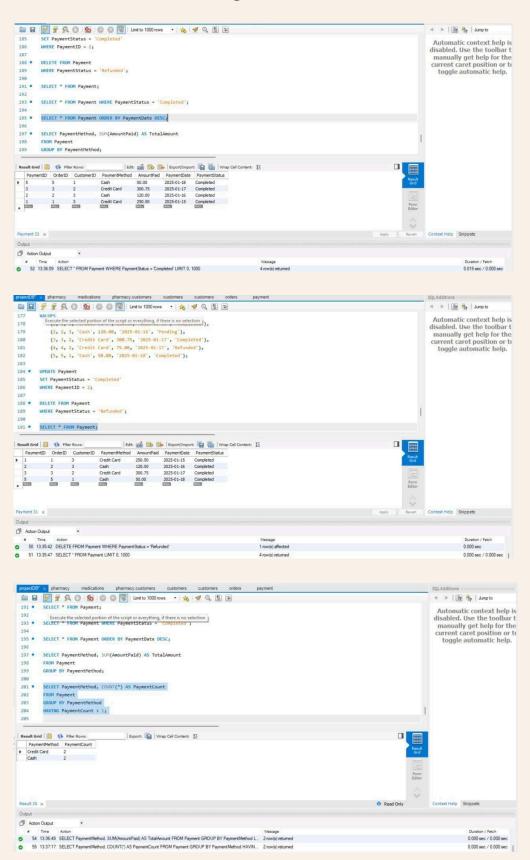
Orders



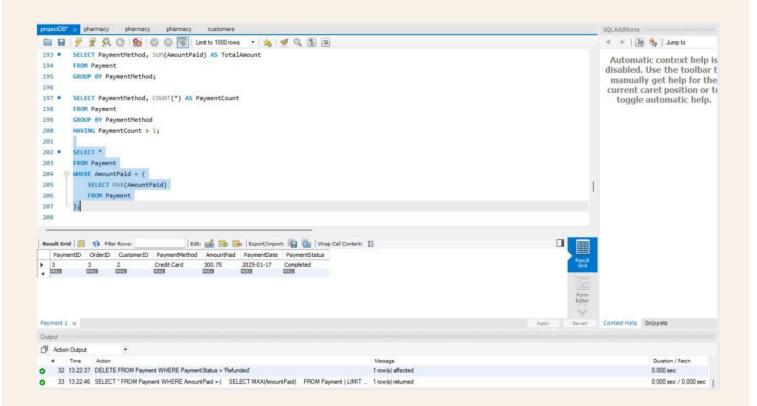
Payment



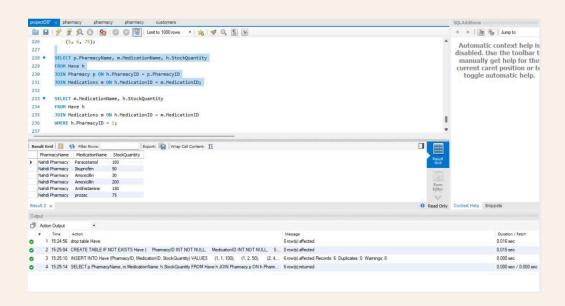
Payment

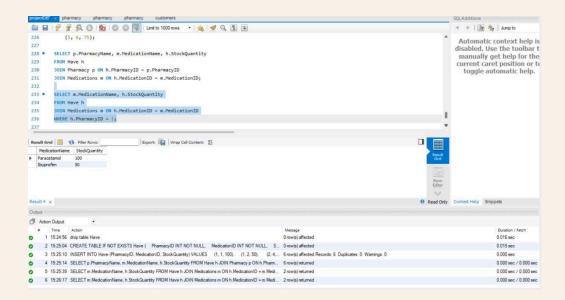


Payment

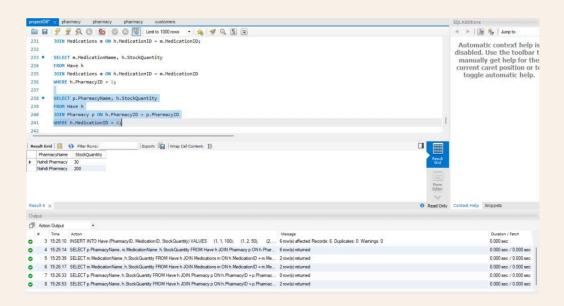


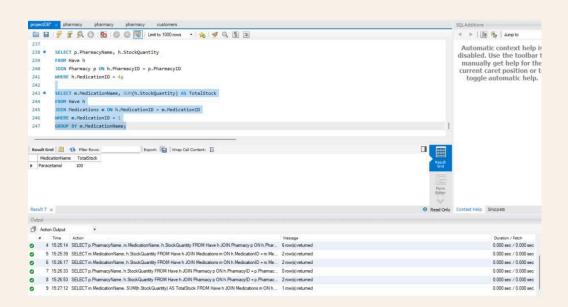
Have





Have





Output



Task Table

Student Name	ID	Task
Taef Abd Ul-Wahab	44512026	Medications table/Business Rules
Raneem khalid alharbi	445002398	Pharmacy table/ER Model
Lana Nasser Alotaibi	445001397	Customers table /ER Model
Ghada Shujaa Alotibi	445003024	Orders table/Relational Schema
Retaj Khalid Alqurashi	44512037	Payment table/Relational Schema

