Sri Lanka Institute of Information Technology

IM2675-Database Management Systems

Group Assignment

Diaper Deal CRM: Database System Design

Submitted by:

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Submitted to:

Ms. Thisuru Dias

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1. Table of Contents

1. About The Company and The System

Diaper Deal is a small-scale Sri Lankan business that offers baby care and hygiene products, including diapers, and other related essentials. The company mainly serves parents and caregivers across the country by offering a wide range of affordable and quality products suitable for infants and toddlers. At present, Diaper Deal handles most of its operations manually, including customer information, order management, and product details. This traditional method of managing data through spreadsheets and written records often causes inefficiencies such as data duplication, communication delays, and difficulty in maintaining accurate customer histories.

As a growing business, Diaper Deal requires a more organized system to manage its customer relationships and operations effectively. Therefore, our group proposed the development of a **Customer Relationship Management (CRM) System** that will help the company centralize customer data, monitor interactions, support marketing campaigns, and enhance overall customer satisfaction and loyalty.

The requirements for the CRM system of Diaper Deal.

Entity	Attributes
Customer	Customer_ID, Fname, Lname, Email, Address
Customer_Phone	Customer_ID, Phone_Number
Products	Product_ID, Product_Name, Price
Orders	Order_ID, Customer_ID, Order_Date, Total_Amount
Order_Details	Order_Details_ID,Order_ID,Product_ID,Quantity,Total_Amount
Invoice	Invoice_ID, Order_ID, Amount, Quantity
Payments	Payment_ID, Invoice_ID, Amount, PayDate
Tax	Tax_ID, Invoice_ID, Tax_Type, Rate, Amount
Delivery	Delivery_ID, Order_ID, Delivery_Date, Delivery_Address
Feedback_Rating	Feedback_ID, Customer_ID, Rating, Feedback_Date
Loyalty_Point	Loyalty_ID, Customer_ID, Points_Earned, Points_Redeemed
Marketing_Campaign	Campaign_ID, Campaign_Type, Budget, Start_Date, End_Date
Campaign_Targets	Campaign_ID, Customer_ID

2. Problem Identification & Objectives of the CRM System

Problem Identification

Diaper Deal currently manages its customer data, order records, and product information manually using spreadsheets and paper-based methods. This approach presents several challenges;

- Manual entry increases the risk of errors and duplication in customer and order records.
- It is difficult to track customer interactions, purchase history, and feedback systematically.
- Without organized data, analyzing customer behavior or running targeted campaigns is challenging.
- Responding to customer queries and managing promotions is slower due to scattered information.

These challenges delay the company's ability to provide timely service, improve customer satisfaction, and make informed business decisions.

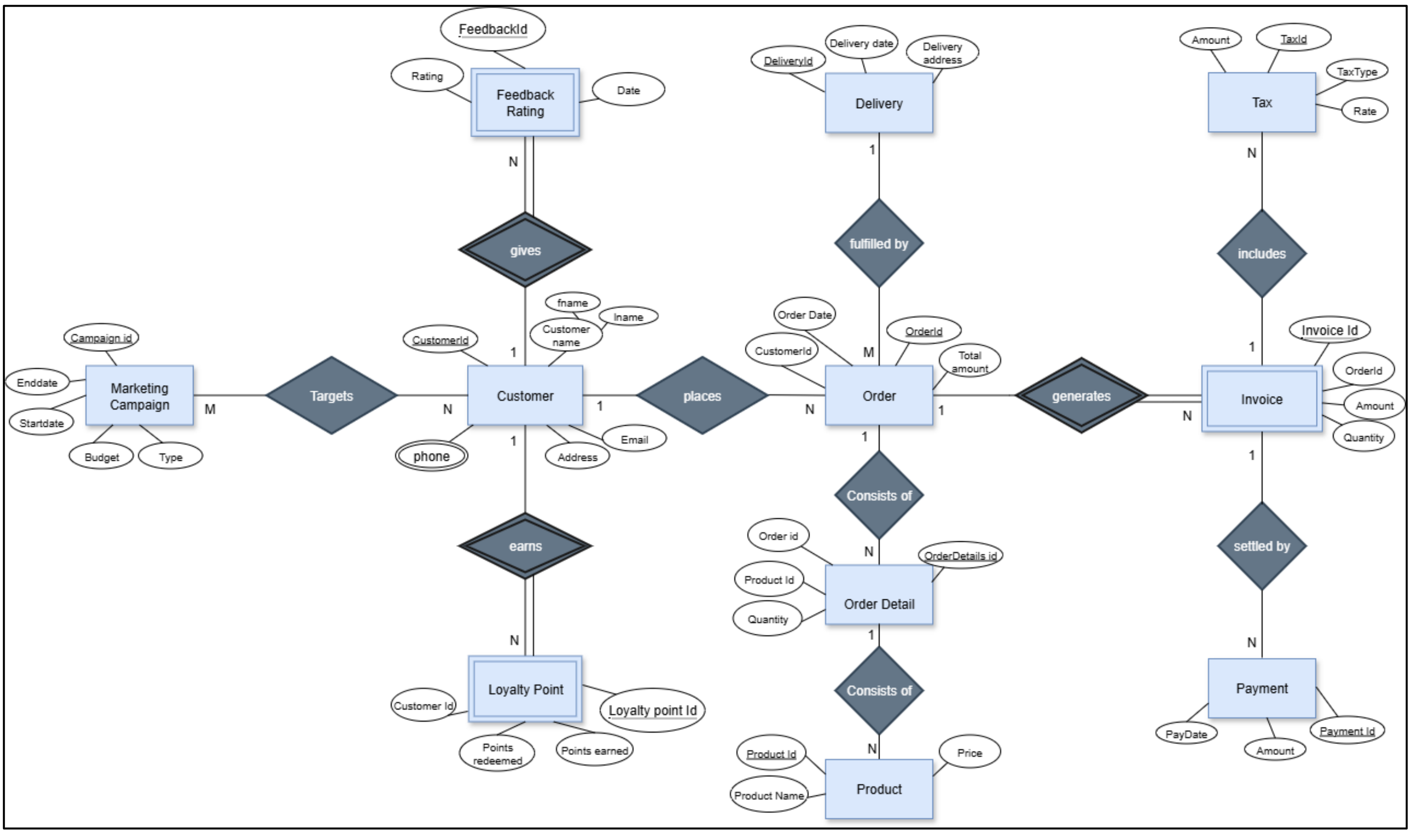
Objectives of the CRM System

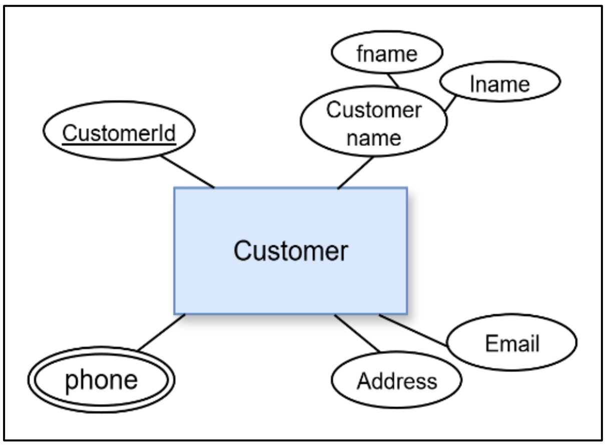
The proposed CRM system aims to overcome these challenges by;

- Storing all customer information, orders, and interactions in a structured database.
- Tracking communications and feedback to provide timely and personalized responses.
- Recording campaign details, analyzing customer engagement, and identifying potential leads.
- Reducing manual work, minimizing errors, and providing accurate reports for decision making.
- By understanding customer preferences and purchase patterns, the company can strengthen long term relationships.

By implementing this CRM system, Diaper Deal will be able to streamline operations, enhance customer experience, and make data driven business decisions effectively.

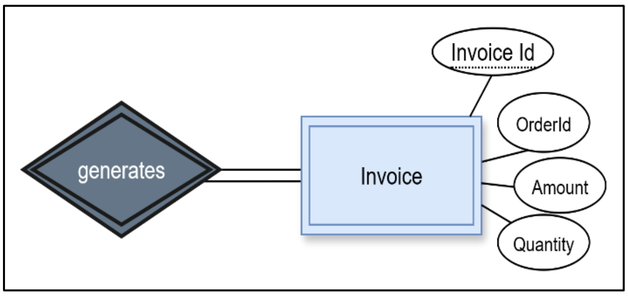
3. Entity Relationship Diagram



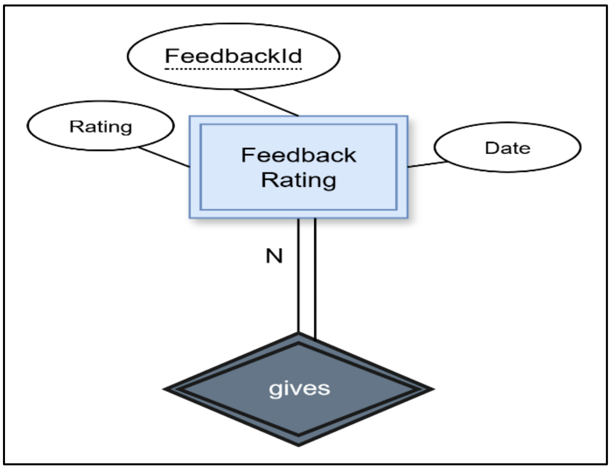


The customer entity has a *composite attribute* **Customer name** which can be further broken down into smaller components- **fname** and **lname.** This provides more detailed information about the customer name.

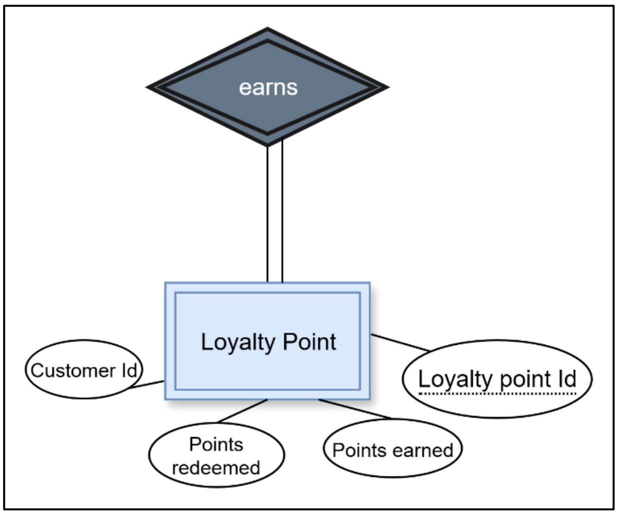
Moreover the attribute **phone** is a *multivalued attribute* which means it can have more than one value, as customers can have more than one phone number.



The entity **Invoice** is a *weak entity* that depends on **Order** for its identification through the *indentifying relationship* generates, this is because each invoice is generated based on a specific order.

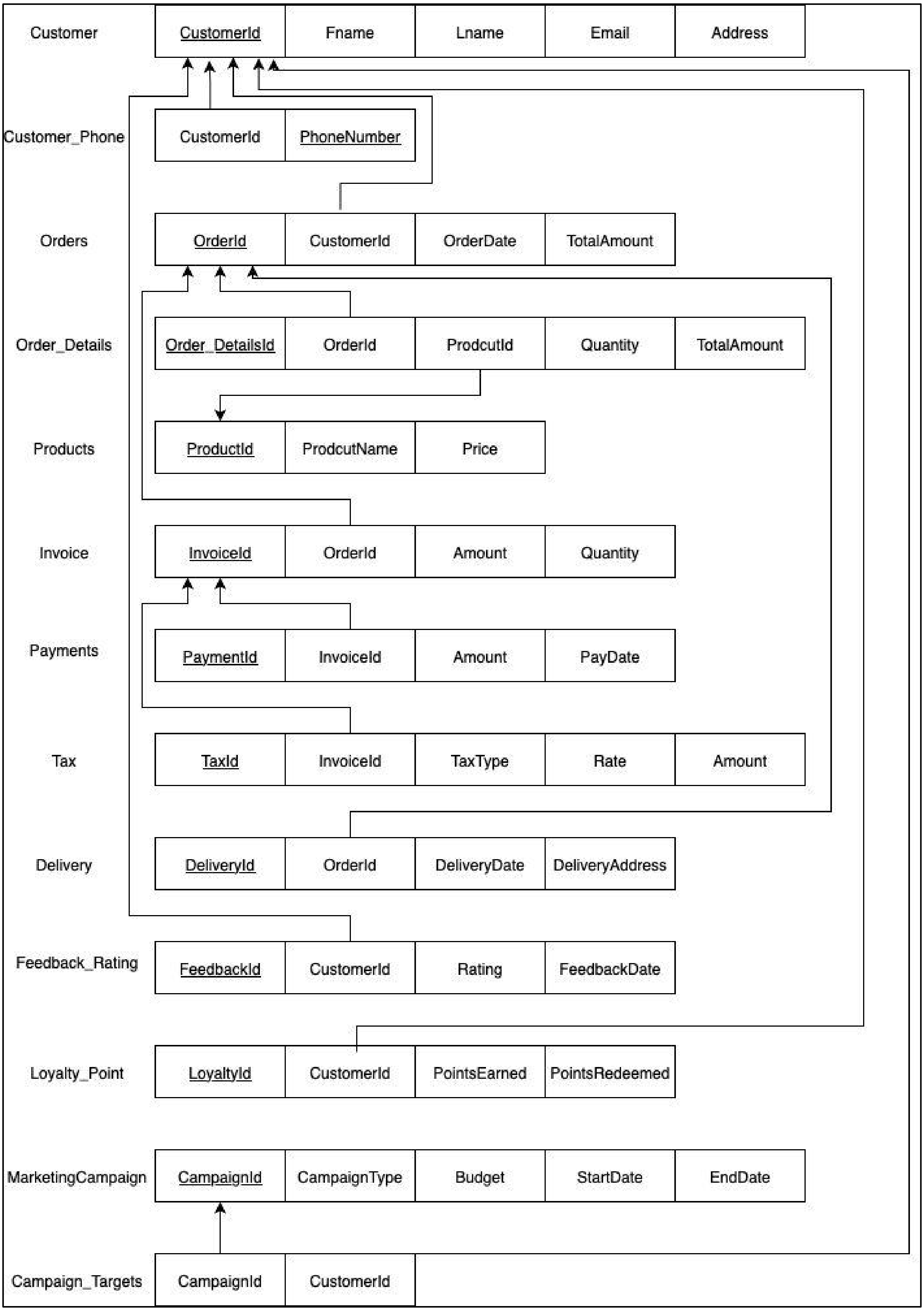


The entity **Feedback Rating** is a *weak entity* dependent on the strong entity **Customer**, it is in an *idenifying relationship* through gives, this specifies that each feedback rating is given by a customer.



The *weak entity* **Loyalty Point** depends on the strong entity **Customer** and is related to customer through the *indetifying relationship* earns as loyalty point is earned by a customer.

4. Relational Schema

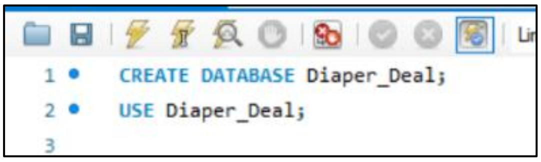


Customer	CustomerId	Fname	Lname	Email	Address
Customer_Phone	CustomerId	PhoneNumber			
Orders	OrderId	CustomerId	OrderDate	TotalAmount	
Order_Details	Order_DetailsId	OrderId	ProdcutId	Quantity	TotalAmount
Products	ProductId	ProdcutName	Price		
Invoice	InvoiceId	OrderId	Amount	Quantity	
Payments	PaymentId	InvoiceId	Amount	PayDate	
Tax	TaxId	InvoiceId	TaxType	Rate	Amount
Delivery	DeliveryId	OrderId	DeliveryDate	DeliveryAddress	
Feedback_Rating	FeedbackId	CustomerId	Rating	FeedbackDate	
Loyalty_Point	LoyaltyId	CustomerId	PointsEarned	PointsRedeemed	
MarketingCampaign	CampaignId	CampaignType	Budget	StartDate	EndDate
Campaign_Targets	CampaignId	CustomerId			

5. SQL Commands

1. Database Creation

```
CREATE DATABASE Diaper_Deal;
USE Diaper_Deal;
```

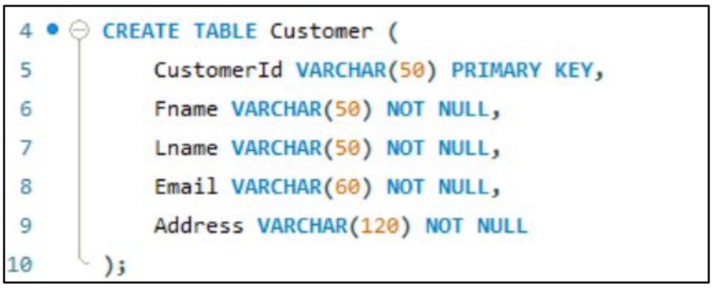


```
CREATE DATABASE Diaper_Deal;
USE Diaper_Deal;
```

2. Database Table Creation

CUSTOMER TABLE

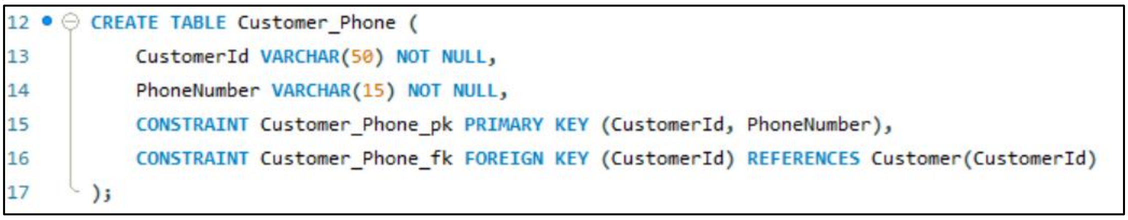
```
CREATE TABLE Customer (
   CustomerID VARCHAR(50)  PRIMARY KEY,
   FName VARCHAR(50) NOT NULL,
   LName VARCHAR(50) NOT NULL,
   Email VARCHAR(60) NOT NULL,
   Address VARCHAR(120) NOT NULL
);
```



```
CREATE TABLE Customer (
    CustomerId VARCHAR(50) PRIMARY KEY,
    Fname VARCHAR(50) NOT NULL,
    Lname VARCHAR(50) NOT NULL,
    Email VARCHAR(60) NOT NULL,
    Address VARCHAR(120) NOT NULL
);
```

CUSTOMER PHONE TABLE

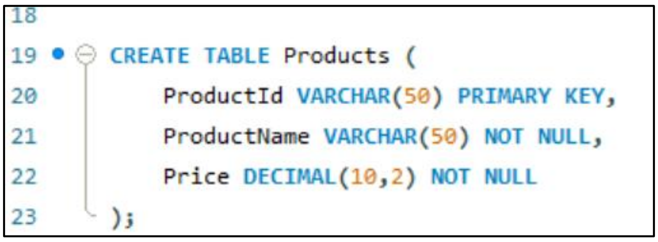
```
CREATE TABLE Customer_Phone (
   CustomerId VARCHAR(50) NOT NULL,
   PhoneNumber VARCHAR(15) NOT NULL,
   CONSTRAINT Customer_Phone_pk PRIMARY KEY (CustomerId, PhoneNumber),
   CONSTRAINT Customer_Phone_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```



```
CREATE TABLE Customer_Phone (
    CustomerId VARCHAR(50) NOT NULL,
    PhoneNumber VARCHAR(15) NOT NULL,
    CONSTRAINT Customer_Phone_pk PRIMARY KEY (CustomerId, PhoneNumber),
    CONSTRAINT Customer_Phone_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```

PRODUCTS TABLE

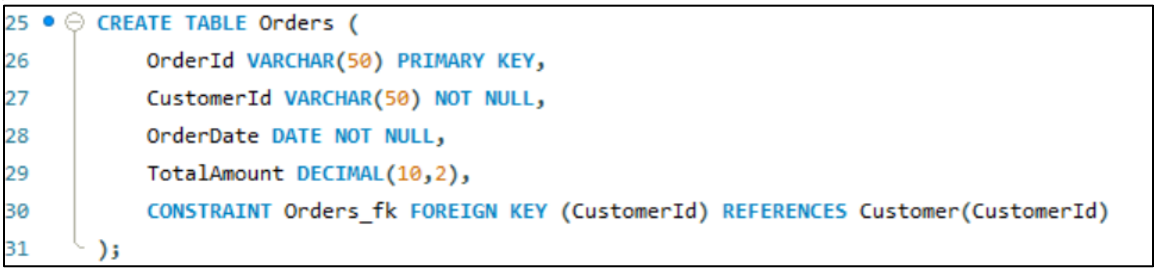
```
CREATE TABLE Products (
   ProductId VARCHAR(50) PRIMARY KEY,
   ProductName VARCHAR(50) NOT NULL,
   Price DECIMAL(10,2) NOT NULL
);
```



```
CREATE TABLE Products (
    ProductId VARCHAR(50) PRIMARY KEY,
    ProductName VARCHAR(50) NOT NULL,
    Price DECIMAL(10,2) NOT NULL
);
```

ORDERS TABLE

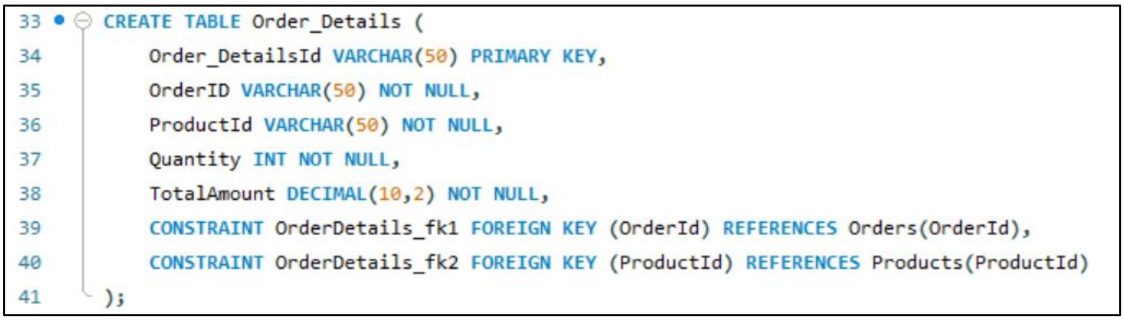
```
CREATE TABLE Orders (
   OrderId VARCHAR(50) PRIMARY KEY,
   CustomerId VARCHAR(50) NOT NULL,
   OrderDate DATE NOT NULL,
   TotalAmount DECIMAL(10,2),
   CONSTRAINT Orders_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```



```
CREATE TABLE Orders (
    OrderId VARCHAR(50) PRIMARY KEY,
    CustomerId VARCHAR(50) NOT NULL,
    OrderDate DATE NOT NULL,
    TotalAmount DECIMAL(10,2),
    CONSTRAINT Orders_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```

ORDER DETAILS TABLE

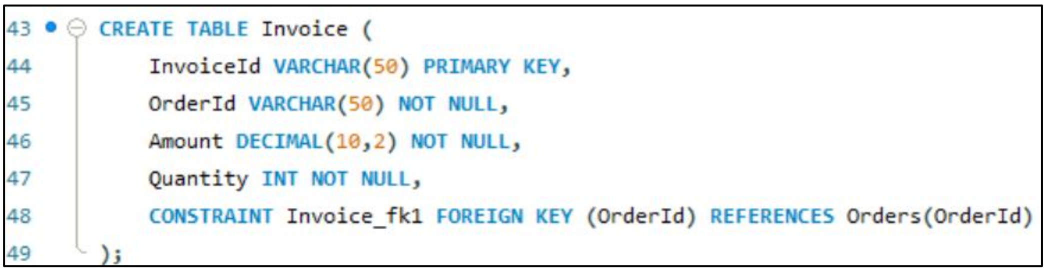
```
CREATE TABLE Order_Details (
   Order_DetailsId VARCHAR(50) PRIMARY KEY,
   OrderID VARCHAR(50) NOT NULL,
   ProductId VARCHAR(50) NOT NULL,
   Quantity INT NOT NULL,
   TotalAmount DECIMAL(10,2) NOT NULL,
   CONSTRAINT OrderDetails_fk1 FOREIGN KEY (OrderId) REFERENCES Orders(OrderId),
   CONSTRAINT OrderDetails_fk2 FOREIGN KEY (ProductId) REFERENCES Products(ProductId)
);
```



```
CREATE TABLE Order_Details (
    Order_DetailsId VARCHAR(50) PRIMARY KEY,
    OrderID VARCHAR(50) NOT NULL,
    ProductId VARCHAR(50) NOT NULL,
    Quantity INT NOT NULL,
    TotalAmount DECIMAL(10,2) NOT NULL,
    CONSTRAINT OrderDetails_fk1 FOREIGN KEY (OrderId) REFERENCES Orders(OrderId),
    CONSTRAINT OrderDetails_fk2 FOREIGN KEY (ProductId) REFERENCES Products(ProductId)
);
```

INVOICE TABLE

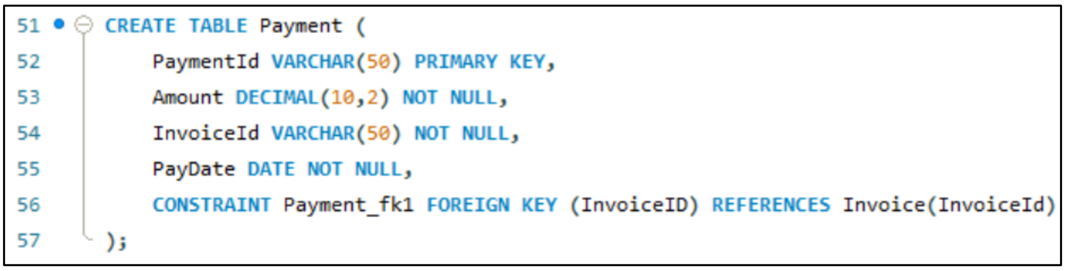
```
CREATE TABLE Invoice (
   InvoiceId VARCHAR(50) PRIMARY KEY,
   OrderId VARCHAR(50) NOT NULL,
   Amount DECIMAL(10,2) NOT NULL,
   Quantity INT NOT NULL,
   CONSTRAINT Invoice_fk1 FOREIGN KEY (OrderId) REFERENCES Orders(OrderId)
);
```



```
CREATE TABLE Invoice (
    InvoiceId VARCHAR(50) PRIMARY KEY,
    OrderId VARCHAR(50) NOT NULL,
    Amount DECIMAL(10,2) NOT NULL,
    Quantity INT NOT NULL,
    CONSTRAINT Invoice_fk1 FOREIGN KEY (OrderId) REFERENCES Orders(OrderId)
);
```

PAYMENT TABLE

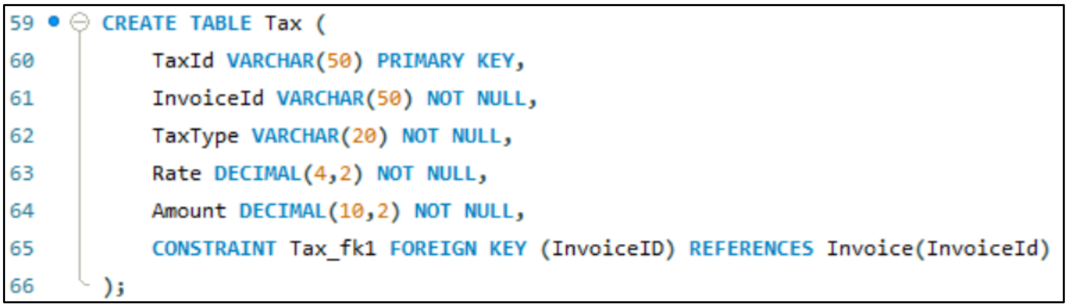
```
CREATE TABLE Payment (
   PaymentId VARCHAR(50) PRIMARY KEY,
   Amount DECIMAL(10,2) NOT NULL,
   InvoiceId VARCHAR(50) NOT NULL,
   PayDate DATE NOT NULL,
   CONSTRAINT Payment_fk1 FOREIGN KEY (InvoiceID) REFERENCES Invoice(InvoiceId)
);
```



```
CREATE TABLE Payment (
    PaymentId VARCHAR(50) PRIMARY KEY,
    Amount DECIMAL(10,2) NOT NULL,
    InvoiceId VARCHAR(50) NOT NULL,
    PayDate DATE NOT NULL,
    CONSTRAINT Payment_fk1 FOREIGN KEY (InvoiceID) REFERENCES Invoice(InvoiceId)
);
```

TAX TABLE

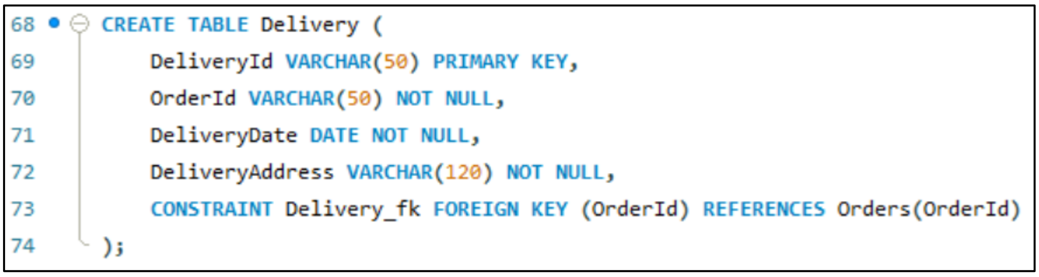
```
CREATE TABLE Tax (
   TaxId VARCHAR(50) PRIMARY KEY,
   InvoiceId VARCHAR(50) NOT NULL,
   TaxType VARCHAR(20) NOT NULL,
   Rate DECIMAL(4,2) NOT NULL,
   Amount DECIMAL(10,2) NOT NULL,
   CONSTRAINT Tax_fk1 FOREIGN KEY (InvoiceID) REFERENCES Invoice(InvoiceId)
);
```



```
CREATE TABLE Tax (
    TaxId VARCHAR(50) PRIMARY KEY,
    InvoiceId VARCHAR(50) NOT NULL,
    TaxType VARCHAR(20) NOT NULL,
    Rate DECIMAL(4,2) NOT NULL,
    Amount DECIMAL(10,2) NOT NULL,
    CONSTRAINT Tax_fk1 FOREIGN KEY (InvoiceID) REFERENCES Invoice(InvoiceId)
);
```

DELIVERY TABLE

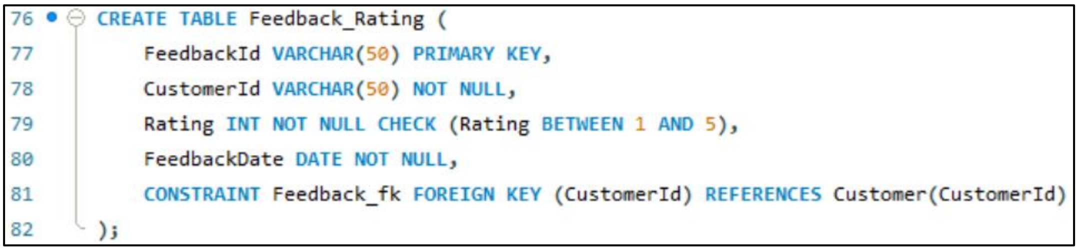
```
CREATE TABLE Delivery (
   DeliveryId VARCHAR(50) PRIMARY KEY,
   OrderId VARCHAR(50) NOT NULL,
   DeliveryDate DATE NOT NULL,
   DeliveryAddress VARCHAR(120) NOT NULL,
   CONSTRAINT Delivery_fk FOREIGN KEY (OrderId) REFERENCES Orders(OrderId)
);
```



```
CREATE TABLE Delivery (
    DeliveryId VARCHAR(50) PRIMARY KEY,
    OrderId VARCHAR(50) NOT NULL,
    DeliveryDate DATE NOT NULL,
    DeliveryAddress VARCHAR(120) NOT NULL,
    CONSTRAINT Delivery_fk FOREIGN KEY (OrderId) REFERENCES Orders(OrderId)
);
```

FEEDBACK RATING TABLE

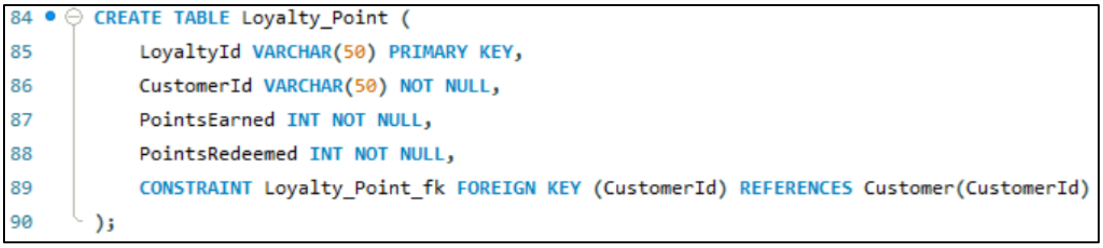
```
CREATE TABLE Feedback_Rating (
   FeedbackId VARCHAR(50) PRIMARY KEY,
   CustomerId VARCHAR(50) NOT NULL,
   Rating INT NOT NULL CHECK (Rating BETWEEN 1 AND 5),
   FeedbackDate DATE NOT NULL,
   CONSTRAINT Feedback_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```



```
CREATE TABLE Feedback_Rating (
    FeedbackId VARCHAR(50) PRIMARY KEY,
    CustomerId VARCHAR(50) NOT NULL,
    Rating INT NOT NULL CHECK (Rating BETWEEN 1 AND 5),
    FeedbackDate DATE NOT NULL,
    CONSTRAINT Feedback_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```

LOYALTY POINT TABLE

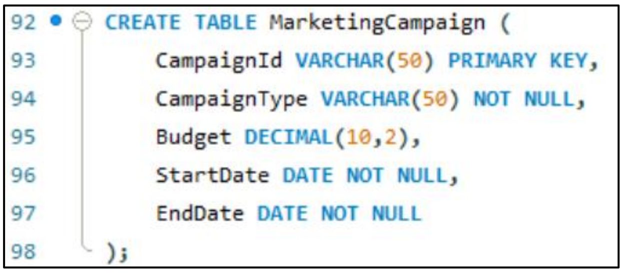
```
CREATE TABLE Loyalty_Point (
   LoyaltyId VARCHAR(50) PRIMARY KEY,
   CustomerId VARCHAR(50) NOT NULL,
   PointsEarned INT NOT NULL,
   PointsRedeemed INT NOT NULL,
   CONSTRAINT Loyalty_Point_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```



```
CREATE TABLE Loyalty_Point (
    LoyaltyId VARCHAR(50) PRIMARY KEY,
    CustomerId VARCHAR(50) NOT NULL,
    PointsEarned INT NOT NULL,
    PointsRedeemed INT NOT NULL,
    CONSTRAINT Loyalty_Point_fk FOREIGN KEY (CustomerId) REFERENCES Customer(CustomerId)
);
```

MARKETING CAMPAIGN TABLE

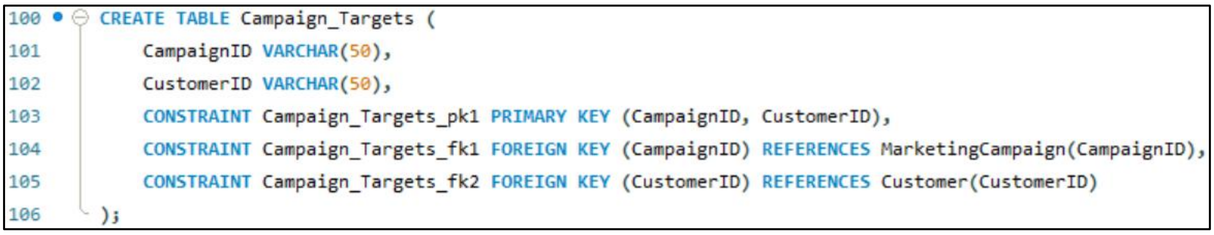
```
CREATE TABLE MarketingCampaign (
   CampaignId VARCHAR(50) PRIMARY KEY,
   CampaignType VARCHAR(50) NOT NULL,
   Budget DECIMAL(10,2),
   StartDate DATE NOT NULL,
   EndDate DATE NOT NULL
);
```



```
CREATE TABLE MarketingCampaign (
    CampaignId VARCHAR(50) PRIMARY KEY,
    CampaignType VARCHAR(50) NOT NULL,
    Budget DECIMAL(10,2),
    StartDate DATE NOT NULL,
    EndDate DATE NOT NULL
);
```

CAMPAIGN TARGETS TABLE

```
CREATE TABLE Campaign_Targets (
   CampaignID VARCHAR(50),
   CustomerID VARCHAR(50),
   CONSTRAINT Campaign_Targets_pk1 PRIMARY KEY (CampaignID, CustomerID),
   CONSTRAINT Campaign_Targets_fk1 FOREIGN KEY (CampaignID) REFERENCES
MarketingCampaign(CampaignID),
   CONSTRAINT Campaign_Targets_fk2 FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)
);
```



```
CREATE TABLE Campaign_Targets (
    CampaignID VARCHAR(50),
    CustomerID VARCHAR(50),
    CONSTRAINT Campaign_Targets_pk1 PRIMARY KEY (CampaignID, CustomerID),
    CONSTRAINT Campaign_Targets_fk1 FOREIGN KEY (CampaignID) REFERENCES MarketingCampaign(CampaignID),
    CONSTRAINT Campaign_Targets_fk2 FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)
);
```

3. Database Data Entry

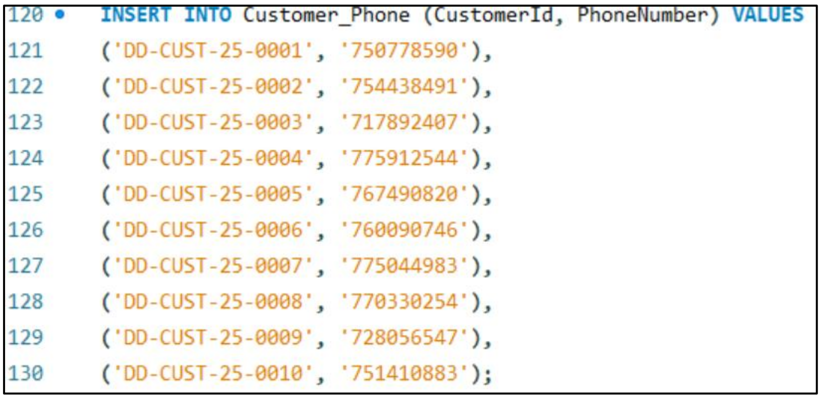
CUSTOMER DATA

INSERT INTO Customer (CustomerId, Fname, Lname, Email, Address) VALUES
('DD-CUST-25-0001', 'Supuni', 'Adikari', 'supunikavindya21@gmail.com', 'No. 12/6, Lake View Apartments, Tudella, Ja-Ela'),
('DD-CUST-25-0002', 'Tharini', 'Herath', 'thariniamanda1121@gmail.com', '“Sisila”, Kandana Road, Ja-Ela'),
('DD-CUST-25-0003', 'Hemashi', 'Siriwardana', 'Hemashigeethma0101@gmail.com', 'No. 77/4, St. Mary’s Lane, Negombo Town'),
('DD-CUST-25-0004', 'Amiru', 'Gunesekara', 'amirupasandul2002@gmail.com', '“Sunset Villa”, Beach Road,Periyamulla'),
('DD-CUST-25-0005', 'Adithya', 'Subharathi', 'adiliyanage246@gmail.com', 'No. 84/1, Beach Road, Ettukala, Negombo'),
('DD-CUST-25-0006', 'Madusara', 'Anuhas', 'madusarapiumantha@gmail.com', 'No. 33/5, Riverside Homes, Kurunegala Road, Kuliyapitiya'),
('DD-CUST-25-0007', 'Heshan', 'Sriyananda', 'sriyanandaheshan@gmail.com', 'No. 56/2, Riverside Apartments, Periyamulla, Negombo'),
('DD-CUST-25-0008', 'Rangi', 'Liyanage', 'rangi.liyanage16@gmail.com', '“Sagara Villa”, Colombo Road, Seeduwa'),
('DD-CUST-25-0009', 'Onel', 'Hettiarachchi', 'onelvh@gmail.com', '171/C3 , Palangathure, Negombo'),
('DD-CUST-25-0010', 'Hareesha', 'Jayarathna', 'hareeshajayarathna@gmail.com', '428 Morawatta Rd, Kandana ');

```
INSERT INTO Customer (CustomerId, Fname, Lname, Email, Address) VALUES
('DD-CUST-25-0001', 'Supuni', 'Adikari', 'supunikavindya21@gmail.com', 'No. 12/6, Lake View Apartments, Tudella, Ja-Ela'),
('DD-CUST-25-0002', 'Tharini', 'Herath', 'thariniamanda1121@gmail.com', '“Sisila”, Kandana Road, Ja-Ela'),
('DD-CUST-25-0003', 'Hemashi', 'Siriwardana', 'Hemashigeethma0101@gmail.com', 'No. 77/4, St. Mary’s Lane, Negombo Town'),
('DD-CUST-25-0004', 'Amiru', 'Gunesekara', 'amirupasandul2002@gmail.com', '“Sunset Villa”, Beach Road,Periyamulla'),
('DD-CUST-25-0005', 'Adithya', 'Subharathi', 'adiliyanage246@gmail.com', 'No. 84/1, Beach Road, Ettukala, Negombo'),
('DD-CUST-25-0006', 'Madusara', 'Anuhas', 'madusarapiumantha@gmail.com', 'No. 33/5, Riverside Homes, Kurunegala Road, Kuliyapitiya'),
('DD-CUST-25-0007', 'Heshan', 'Sriyananda', 'sriyanandaheshan@gmail.com', 'No. 56/2, Riverside Apartments, Periyamulla, Negombo'),
('DD-CUST-25-0008', 'Rangi', 'Liyanage', 'rangi.liyanage16@gmail.com', '“Sagara Villa”, Colombo Road, Seeduwa'),
('DD-CUST-25-0009', 'Onel', 'Hettiarachchi', 'onelvh@gmail.com', '171/C3 , Palangathure, Negombo'),
('DD-CUST-25-0010', 'Hareesha', 'Jayarathna', 'hareeshajayarathna@gmail.com', '428 Morawatta Rd, Kandana ');
```

CUSTOMER PHONE DATA

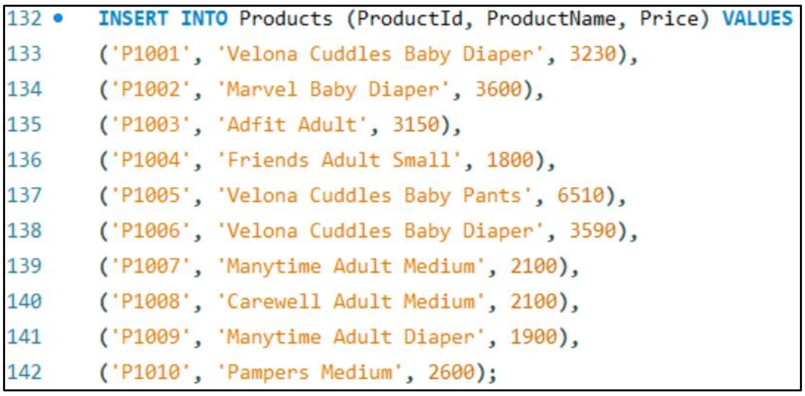
INSERT INTO Customer_Phone (CustomerId, PhoneNumber) VALUES
('DD-CUST-25-0001', '750778590'),
('DD-CUST-25-0002', '754438491'),
('DD-CUST-25-0003', '717892407'),
('DD-CUST-25-0004', '775912544'),
('DD-CUST-25-0005', '767490820'),
('DD-CUST-25-0006', '760090746'),
('DD-CUST-25-0007', '775044983'),
('DD-CUST-25-0008', '770330254'),
('DD-CUST-25-0009', '728056547'),
('DD-CUST-25-0010', '751410883');



```
INSERT INTO Customer_Phone (CustomerId, PhoneNumber) VALUES
('DD-CUST-25-0001', '750778590'),
('DD-CUST-25-0002', '754438491'),
('DD-CUST-25-0003', '717892407'),
('DD-CUST-25-0004', '775912544'),
('DD-CUST-25-0005', '767490820'),
('DD-CUST-25-0006', '760090746'),
('DD-CUST-25-0007', '775044983'),
('DD-CUST-25-0008', '770330254'),
('DD-CUST-25-0009', '728056547'),
('DD-CUST-25-0010', '751410883');
```

PRODUCTS DATA

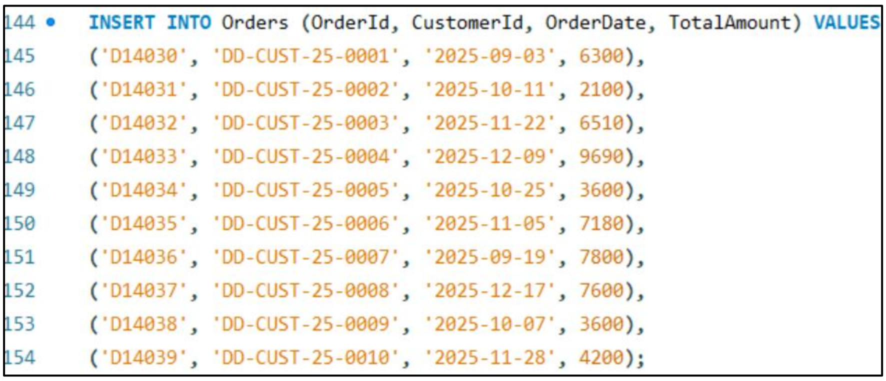
INSERT INTO Products (ProductId, ProductName, Price) VALUES
('P1001', 'Velona Cuddles Baby Diaper', 3230),
('P1002', 'Marvel Baby Diaper', 3600),
('P1003', 'Adfit Adult', 3150),
('P1004', 'Friends Adult Small', 1800),
('P1005', 'Velona Cuddles Baby Pants', 6510),
('P1006', 'Velona Cuddles Baby Diaper', 3590),
('P1007', 'Manytime Adult Medium', 2100),
('P1008', 'Carewell Adult Medium', 2100),
('P1009', 'Manytime Adult Diaper', 1900),
('P1010', 'Pampers Medium', 2600);



```
INSERT INTO Products (ProductId, ProductName, Price) VALUES
('P1001', 'Velona Cuddles Baby Diaper', 3230),
('P1002', 'Marvel Baby Diaper', 3600),
('P1003', 'Adfit Adult', 3150),
('P1004', 'Friends Adult Small', 1800),
('P1005', 'Velona Cuddles Baby Pants', 6510),
('P1006', 'Velona Cuddles Baby Diaper', 3590),
('P1007', 'Manytime Adult Medium', 2100),
('P1008', 'Carewell Adult Medium', 2100),
('P1009', 'Manytime Adult Diaper', 1900),
('P1010', 'Pampers Medium', 2600);
```

ORDERS DATA

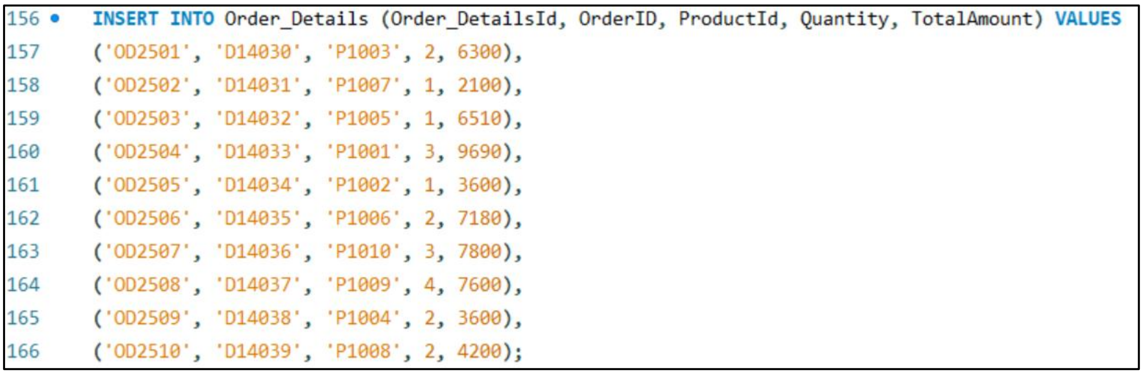
INSERT INTO Orders (OrderId, CustomerId, OrderDate, TotalAmount) VALUES
('D14030', 'DD-CUST-25-0001', '2025-09-03', 6300),
('D14031', 'DD-CUST-25-0002', '2025-10-11', 2100),
('D14032', 'DD-CUST-25-0003', '2025-11-22', 6510),
('D14033', 'DD-CUST-25-0004', '2025-12-09', 9690),
('D14034', 'DD-CUST-25-0005', '2025-10-25', 3600),
('D14035', 'DD-CUST-25-0006', '2025-11-05', 7180),
('D14036', 'DD-CUST-25-0007', '2025-09-19', 7800),
('D14037', 'DD-CUST-25-0008', '2025-12-17', 7600),
('D14038', 'DD-CUST-25-0009', '2025-10-07', 3600),
('D14039', 'DD-CUST-25-0010', '2025-11-28', 4200);



```
INSERT INTO Orders (OrderId, CustomerId, OrderDate, TotalAmount) VALUES
('D14030', 'DD-CUST-25-0001', '2025-09-03', 6300),
('D14031', 'DD-CUST-25-0002', '2025-10-11', 2100),
('D14032', 'DD-CUST-25-0003', '2025-11-22', 6510),
('D14033', 'DD-CUST-25-0004', '2025-12-09', 9690),
('D14034', 'DD-CUST-25-0005', '2025-10-25', 3600),
('D14035', 'DD-CUST-25-0006', '2025-11-05', 7180),
('D14036', 'DD-CUST-25-0007', '2025-09-19', 7800),
('D14037', 'DD-CUST-25-0008', '2025-12-17', 7600),
('D14038', 'DD-CUST-25-0009', '2025-10-07', 3600),
('D14039', 'DD-CUST-25-0010', '2025-11-28', 4200);
```

ORDER DETAILS DATA

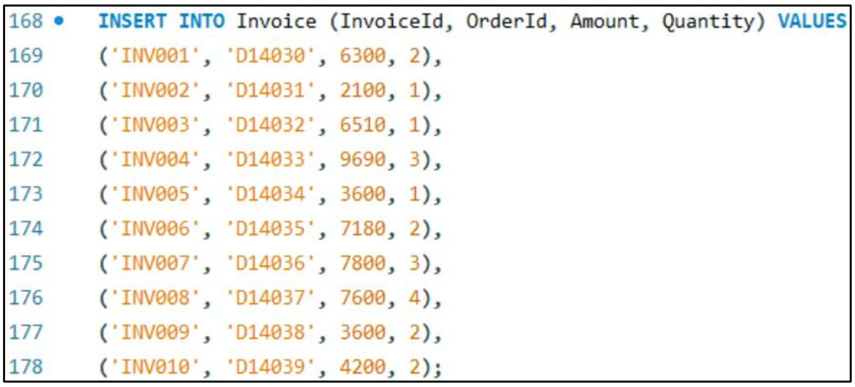
```
INSERT INTO Order_Details (Order_DetailsId, OrderID, ProductId, Quantity, TotalAmount) VALUES
('OD2501', 'D14030', 'P1003', 2, 6300),
('OD2502', 'D14031', 'P1007', 1, 2100),
('OD2503', 'D14032', 'P1005', 1, 6510),
('OD2504', 'D14033', 'P1001', 3, 9690),
('OD2505', 'D14034', 'P1002', 1, 3600),
('OD2506', 'D14035', 'P1006', 2, 7180),
('OD2507', 'D14036', 'P1010', 3, 7800),
('OD2508', 'D14037', 'P1009', 4, 7600),
('OD2509', 'D14038', 'P1004', 2, 3600),
('OD2510', 'D14039', 'P1008', 2, 4200);
```



```
INSERT INTO Order_Details (Order_DetailsId, OrderID, ProductId, Quantity, TotalAmount) VALUES
('OD2501', 'D14030', 'P1003', 2, 6300),
('OD2502', 'D14031', 'P1007', 1, 2100),
('OD2503', 'D14032', 'P1005', 1, 6510),
('OD2504', 'D14033', 'P1001', 3, 9690),
('OD2505', 'D14034', 'P1002', 1, 3600),
('OD2506', 'D14035', 'P1006', 2, 7180),
('OD2507', 'D14036', 'P1010', 3, 7800),
('OD2508', 'D14037', 'P1009', 4, 7600),
('OD2509', 'D14038', 'P1004', 2, 3600),
('OD2510', 'D14039', 'P1008', 2, 4200);
```

INVOICE DATA

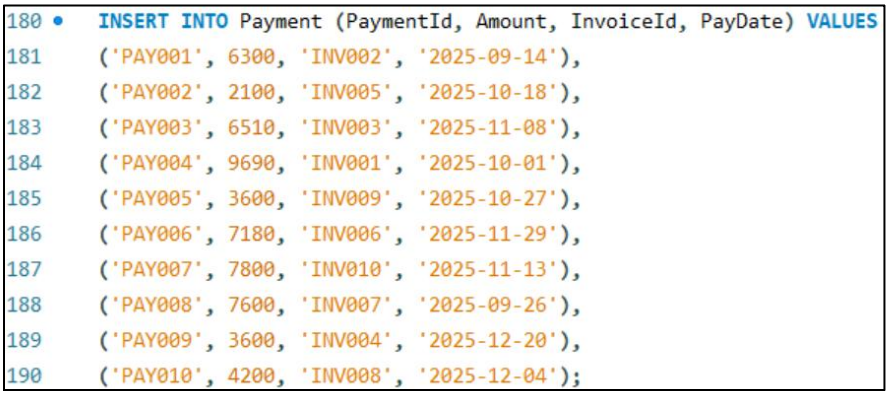
```
INSERT INTO Invoice (InvoiceId, OrderId, Amount, Quantity) VALUES
('INV001', 'D14030', 6300, 2),
('INV002', 'D14031', 2100, 1),
('INV003', 'D14032', 6510, 1),
('INV004', 'D14033', 9690, 3),
('INV005', 'D14034', 3600, 1),
('INV006', 'D14035', 7180, 2),
('INV007', 'D14036', 7800, 3),
('INV008', 'D14037', 7600, 4),
('INV009', 'D14038', 3600, 2),
('INV010', 'D14039', 4200, 2);
```



```
INSERT INTO Invoice (InvoiceId, OrderId, Amount, Quantity) VALUES
('INV001', 'D14030', 6300, 2),
('INV002', 'D14031', 2100, 1),
('INV003', 'D14032', 6510, 1),
('INV004', 'D14033', 9690, 3),
('INV005', 'D14034', 3600, 1),
('INV006', 'D14035', 7180, 2),
('INV007', 'D14036', 7800, 3),
('INV008', 'D14037', 7600, 4),
('INV009', 'D14038', 3600, 2),
('INV010', 'D14039', 4200, 2);
```

PAYMENTS DATA

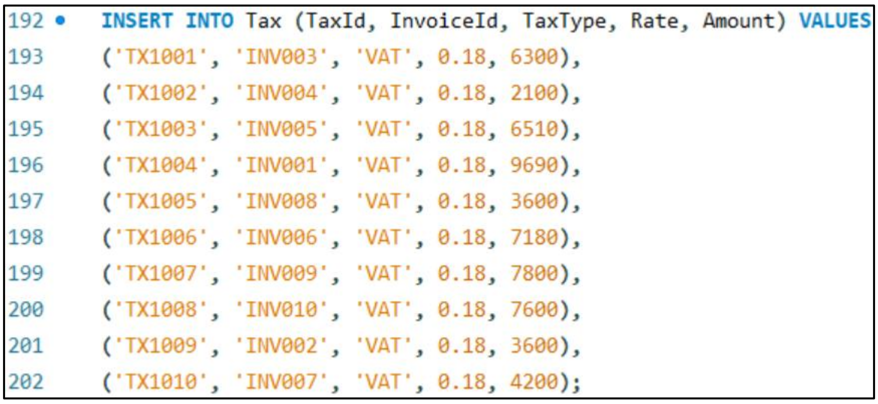
```
INSERT INTO Payment (PaymentId, Amount, InvoiceId, PayDate) VALUES
('PAY001', 6300, 'INV002', '2025-09-14'),
('PAY002', 2100, 'INV005', '2025-10-18'),
('PAY003', 6510, 'INV003', '2025-11-08'),
('PAY004', 9690, 'INV001', '2025-10-01'),
('PAY005', 3600, 'INV009', '2025-10-27'),
('PAY006', 7180, 'INV006', '2025-11-29'),
('PAY007', 7800, 'INV010', '2025-11-13'),
('PAY008', 7600, 'INV007', '2025-09-26'),
('PAY009', 3600, 'INV004', '2025-12-20'),
('PAY010', 4200, 'INV008', '2025-12-04');
```



```
INSERT INTO Payment (PaymentId, Amount, InvoiceId, PayDate) VALUES
('PAY001', 6300, 'INV002', '2025-09-14'),
('PAY002', 2100, 'INV005', '2025-10-18'),
('PAY003', 6510, 'INV003', '2025-11-08'),
('PAY004', 9690, 'INV001', '2025-10-01'),
('PAY005', 3600, 'INV009', '2025-10-27'),
('PAY006', 7180, 'INV006', '2025-11-29'),
('PAY007', 7800, 'INV010', '2025-11-13'),
('PAY008', 7600, 'INV007', '2025-09-26'),
('PAY009', 3600, 'INV004', '2025-12-20'),
('PAY010', 4200, 'INV008', '2025-12-04');
```

TAX DATA

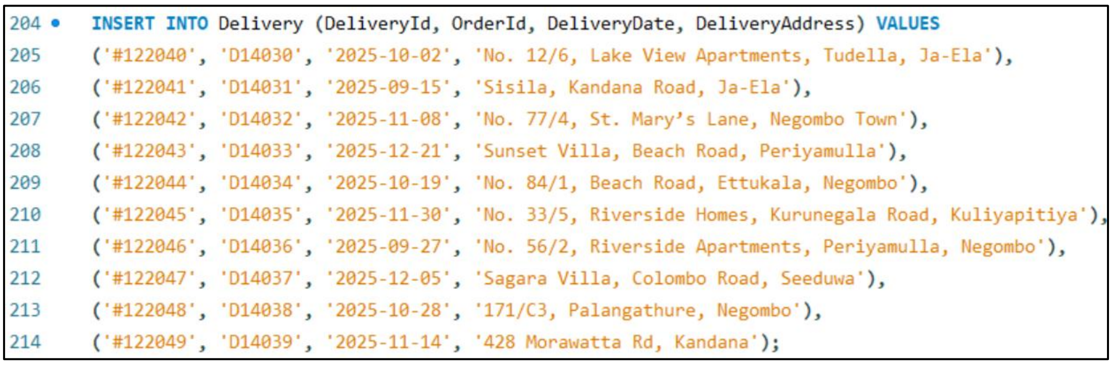
```
INSERT INTO Tax (TaxId, InvoiceId, TaxType, Rate, Amount) VALUES
('TX1001', 'INV003', 'VAT', 0.18, 6300),
('TX1002', 'INV004', 'VAT', 0.18, 2100),
('TX1003', 'INV005', 'VAT', 0.18, 6510),
('TX1004', 'INV001', 'VAT', 0.18, 9690),
('TX1005', 'INV008', 'VAT', 0.18, 3600),
('TX1006', 'INV006', 'VAT', 0.18, 7180),
('TX1007', 'INV009', 'VAT', 0.18, 7800),
('TX1008', 'INV010', 'VAT', 0.18, 7600),
('TX1009', 'INV002', 'VAT', 0.18, 3600),
('TX1010', 'INV007', 'VAT', 0.18, 4200);
```



```
INSERT INTO Tax (TaxId, InvoiceId, TaxType, Rate, Amount) VALUES
('TX1001', 'INV003', 'VAT', 0.18, 6300),
('TX1002', 'INV004', 'VAT', 0.18, 2100),
('TX1003', 'INV005', 'VAT', 0.18, 6510),
('TX1004', 'INV001', 'VAT', 0.18, 9690),
('TX1005', 'INV008', 'VAT', 0.18, 3600),
('TX1006', 'INV006', 'VAT', 0.18, 7180),
('TX1007', 'INV009', 'VAT', 0.18, 7800),
('TX1008', 'INV010', 'VAT', 0.18, 7600),
('TX1009', 'INV002', 'VAT', 0.18, 3600),
('TX1010', 'INV007', 'VAT', 0.18, 4200);
```

DELIVERY DATA

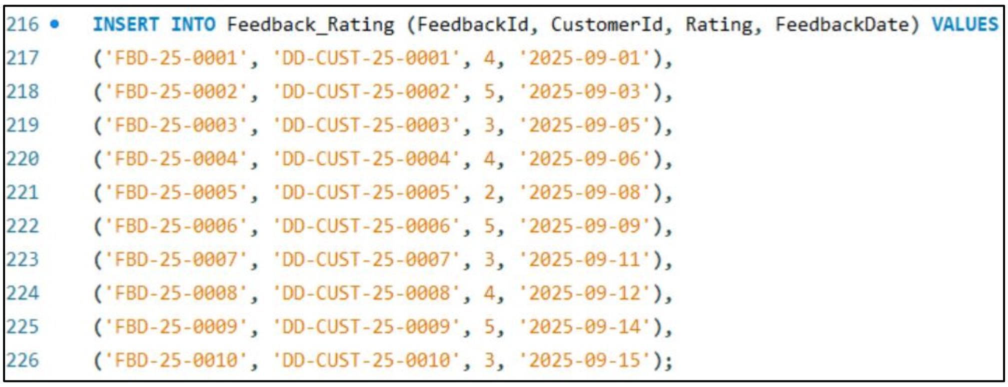
```
INSERT INTO Delivery (DeliveryId, OrderId, DeliveryDate, DeliveryAddress) VALUES
('#122040', 'D14030', '2025-10-02', 'No. 12/6, Lake View Apartments, Tudella, Ja-Ela'),
('#122041', 'D14031', '2025-09-15', 'Sisila, Kandana Road, Ja-Ela'),
('#122042', 'D14032', '2025-11-08', 'No. 77/4, St. Mary’s Lane, Negombo Town'),
('#122043', 'D14033', '2025-12-21', 'Sunset Villa, Beach Road, Periyamulla'),
('#122044', 'D14034', '2025-10-19', 'No. 84/1, Beach Road, Ettukala, Negombo'),
('#122045', 'D14035', '2025-11-30', 'No. 33/5, Riverside Homes, Kurunegala Road, Kuliyapitiya'),
('#122046', 'D14036', '2025-09-27', 'No. 56/2, Riverside Apartments, Periyamulla, Negombo'),
('#122047', 'D14037', '2025-12-05', 'Sagara Villa, Colombo Road, Seeduwa'),
('#122048', 'D14038', '2025-10-28', '171/C3, Palangathure, Negombo'),
('#122049', 'D14039', '2025-11-14', '428 Morawatta Rd, Kandana');
```



```
INSERT INTO Delivery (DeliveryId, OrderId, DeliveryDate, DeliveryAddress) VALUES
('#122040', 'D14030', '2025-10-02', 'No. 12/6, Lake View Apartments, Tudella, Ja-Ela'),
('#122041', 'D14031', '2025-09-15', 'Sisila, Kandana Road, Ja-Ela'),
('#122042', 'D14032', '2025-11-08', 'No. 77/4, St. Mary’s Lane, Negombo Town'),
('#122043', 'D14033', '2025-12-21', 'Sunset Villa, Beach Road, Periyamulla'),
('#122044', 'D14034', '2025-10-19', 'No. 84/1, Beach Road, Ettukala, Negombo'),
('#122045', 'D14035', '2025-11-30', 'No. 33/5, Riverside Homes, Kurunegala Road, Kuliyapitiya'),
('#122046', 'D14036', '2025-09-27', 'No. 56/2, Riverside Apartments, Periyamulla, Negombo'),
('#122047', 'D14037', '2025-12-05', 'Sagara Villa, Colombo Road, Seeduwa'),
('#122048', 'D14038', '2025-10-28', '171/C3, Palangathure, Negombo'),
('#122049', 'D14039', '2025-11-14', '428 Morawatta Rd, Kandana');
```

FEEDBACK RATING DATA

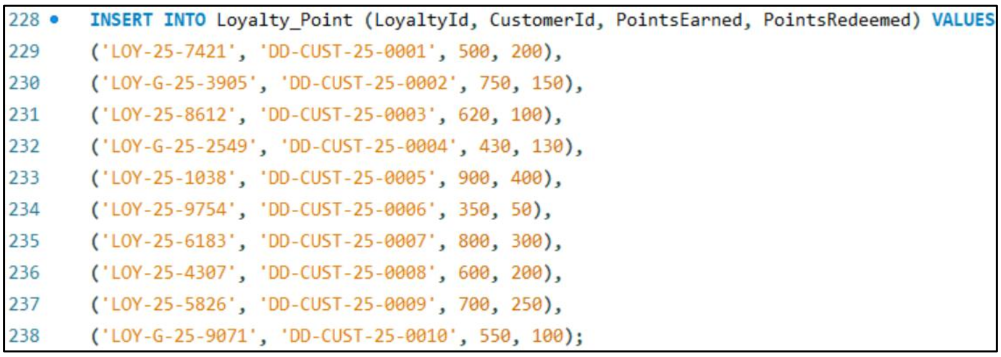
```
INSERT INTO Feedback_Rating (FeedbackId, CustomerId, Rating, FeedbackDate) VALUES
('FBD-25-0001', 'DD-CUST-25-0001', 4, '2025-09-01'),
('FBD-25-0002', 'DD-CUST-25-0002', 5, '2025-09-03'),
('FBD-25-0003', 'DD-CUST-25-0003', 3, '2025-09-05'),
('FBD-25-0004', 'DD-CUST-25-0004', 4, '2025-09-06'),
('FBD-25-0005', 'DD-CUST-25-0005', 2, '2025-09-08'),
('FBD-25-0006', 'DD-CUST-25-0006', 5, '2025-09-09'),
('FBD-25-0007', 'DD-CUST-25-0007', 3, '2025-09-11'),
('FBD-25-0008', 'DD-CUST-25-0008', 4, '2025-09-12'),
('FBD-25-0009', 'DD-CUST-25-0009', 5, '2025-09-14'),
('FBD-25-0010', 'DD-CUST-25-0010', 3, '2025-09-15');
```



```
INSERT INTO Feedback_Rating (FeedbackId, CustomerId, Rating, FeedbackDate) VALUES
('FBD-25-0001', 'DD-CUST-25-0001', 4, '2025-09-01'),
('FBD-25-0002', 'DD-CUST-25-0002', 5, '2025-09-03'),
('FBD-25-0003', 'DD-CUST-25-0003', 3, '2025-09-05'),
('FBD-25-0004', 'DD-CUST-25-0004', 4, '2025-09-06'),
('FBD-25-0005', 'DD-CUST-25-0005', 2, '2025-09-08'),
('FBD-25-0006', 'DD-CUST-25-0006', 5, '2025-09-09'),
('FBD-25-0007', 'DD-CUST-25-0007', 3, '2025-09-11'),
('FBD-25-0008', 'DD-CUST-25-0008', 4, '2025-09-12'),
('FBD-25-0009', 'DD-CUST-25-0009', 5, '2025-09-14'),
('FBD-25-0010', 'DD-CUST-25-0010', 3, '2025-09-15');
```

LOYALTY POINT DATA

```
INSERT INTO Loyalty_Point (LoyaltyId, CustomerId, PointsEarned, PointsRedeemed) VALUES
('LOY-25-7421', 'DD-CUST-25-0001', 500, 200),
('LOY-G-25-3905', 'DD-CUST-25-0002', 750, 150),
('LOY-25-8612', 'DD-CUST-25-0003', 620, 100),
('LOY-G-25-2549', 'DD-CUST-25-0004', 430, 130),
('LOY-25-1038', 'DD-CUST-25-0005', 900, 400),
('LOY-25-9754', 'DD-CUST-25-0006', 350, 50),
('LOY-25-6183', 'DD-CUST-25-0007', 800, 300),
('LOY-25-4307', 'DD-CUST-25-0008', 600, 200),
('LOY-25-5826', 'DD-CUST-25-0009', 700, 250),
('LOY-G-25-9071', 'DD-CUST-25-0010', 550, 100);
```



```
INSERT INTO Loyalty_Point (LoyaltyId, CustomerId, PointsEarned, PointsRedeemed) VALUES
('LOY-25-7421', 'DD-CUST-25-0001', 500, 200),
('LOY-G-25-3905', 'DD-CUST-25-0002', 750, 150),
('LOY-25-8612', 'DD-CUST-25-0003', 620, 100),
('LOY-G-25-2549', 'DD-CUST-25-0004', 430, 130),
('LOY-25-1038', 'DD-CUST-25-0005', 900, 400),
('LOY-25-9754', 'DD-CUST-25-0006', 350, 50),
('LOY-25-6183', 'DD-CUST-25-0007', 800, 300),
('LOY-25-4307', 'DD-CUST-25-0008', 600, 200),
('LOY-25-5826', 'DD-CUST-25-0009', 700, 250),
('LOY-G-25-9071', 'DD-CUST-25-0010', 550, 100);
```

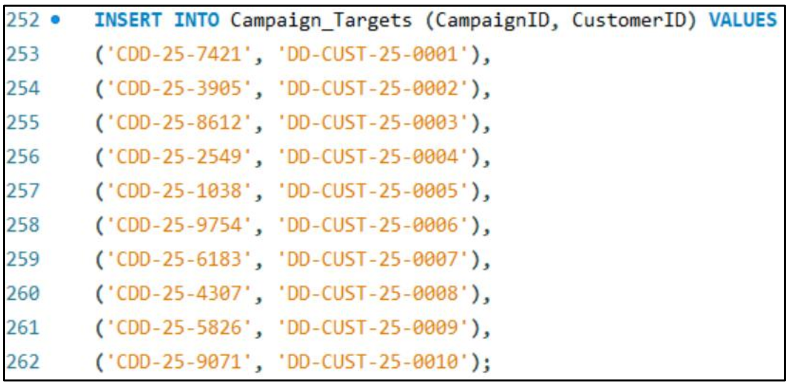
MARKETING CAMPAIGN DATA

```
INSERT INTO MarketingCampaign (CampaignId, CampaignType, Budget, StartDate, EndDate) VALUES
('CDD-25-7421', 'Mom & Baby Workshop', 5000.00, '2025-01-10', '2025-01-13'),
('CDD-25-3905', 'Instagram Story Contest', 2000.00, '2024-05-06', '2024-07-25'),
('CDD-25-8612', 'Baby Care Tips Newsletter', 1500.00, '2024-01-10', '2025-08-10'),
('CDD-25-2549', 'Diaper Discount Bundle', 650.00, '2022-03-10', '2025-12-25'),
('CDD-25-1038', 'Diaper Giveaway', 500.00, '2025-08-05', '2025-08-15'),
('CDD-25-9754', 'Mom Referral Program', 1000.00, '2024-11-11', '2025-12-11'),
('CDD-25-6183', 'Mother’s Day Special Offer', 1000.00, '2025-05-11', '2025-05-11'),
('CDD-25-4307', 'Children’s Day Special Offer', 1500.00, '2025-10-01', '2025-10-01'),
('CDD-25-5826', 'Adults Health Week', 5000.00, '2025-01-15', '2025-01-20'),
('CDD-25-9071', 'Annual diaper giveaway (CSR)', 750.00, '2024-01-01', '2025-12-31');
```

```
INSERT INTO MarketingCampaign (CampaignId, CampaignType, Budget, StartDate, EndDate) VALUES
('CDD-25-7421', 'Mom & Baby Workshop', 5000.00, '2025-01-10', '2025-01-13'),
('CDD-25-3905', 'Instagram Story Contest', 2000.00, '2024-05-06', '2024-07-25'),
('CDD-25-8612', 'Baby Care Tips Newsletter', 1500.00, '2024-01-10', '2025-08-10'),
('CDD-25-2549', 'Diaper Discount Bundle', 650.00, '2022-03-10', '2025-12-25'),
('CDD-25-1038', 'Diaper Giveaway', 500.00, '2025-08-05', '2025-08-15'),
('CDD-25-9754', 'Mom Referral Program', 1000.00, '2024-11-11', '2025-12-11'),
('CDD-25-6183', 'Mother’s Day Special Offer', 1000.00, '2025-05-11', '2025-05-11'),
('CDD-25-4307', 'Children’s Day Special Offer', 1500.00, '2025-10-01', '2025-10-01'),
('CDD-25-5826', 'Adults Health Week', 5000.00, '2025-01-15', '2025-01-20'),
('CDD-25-9071', 'Annual diaper giveaway (CSR)', 750.00, '2024-01-01', '2025-12-31');
```

CAMPAIGN TARGETS DATA

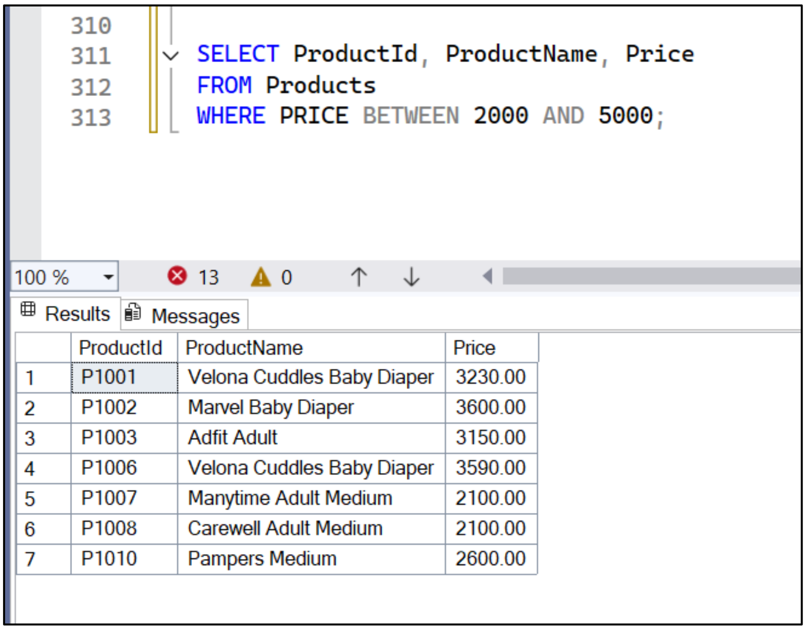
```
INSERT INTO Campaign_Targets (CampaignID, CustomerID) VALUES
('CDD-25-7421', 'DD-CUST-25-0001'),
('CDD-25-3905', 'DD-CUST-25-0002'),
('CDD-25-8612', 'DD-CUST-25-0003'),
('CDD-25-2549', 'DD-CUST-25-0004'),
('CDD-25-1038', 'DD-CUST-25-0005'),
('CDD-25-9754', 'DD-CUST-25-0006'),
('CDD-25-6183', 'DD-CUST-25-0007'),
('CDD-25-4307', 'DD-CUST-25-0008'),
('CDD-25-5826', 'DD-CUST-25-0009'),
('CDD-25-9071', 'DD-CUST-25-0010');
```



```
INSERT INTO Campaign_Targets (CampaignID, CustomerID) VALUES
('CDD-25-7421', 'DD-CUST-25-0001'),
('CDD-25-3905', 'DD-CUST-25-0002'),
('CDD-25-8612', 'DD-CUST-25-0003'),
('CDD-25-2549', 'DD-CUST-25-0004'),
('CDD-25-1038', 'DD-CUST-25-0005'),
('CDD-25-9754', 'DD-CUST-25-0006'),
('CDD-25-6183', 'DD-CUST-25-0007'),
('CDD-25-4307', 'DD-CUST-25-0008'),
('CDD-25-5826', 'DD-CUST-25-0009'),
('CDD-25-9071', 'DD-CUST-25-0010');
```

6. Sample SQL Queries (10 Queries)

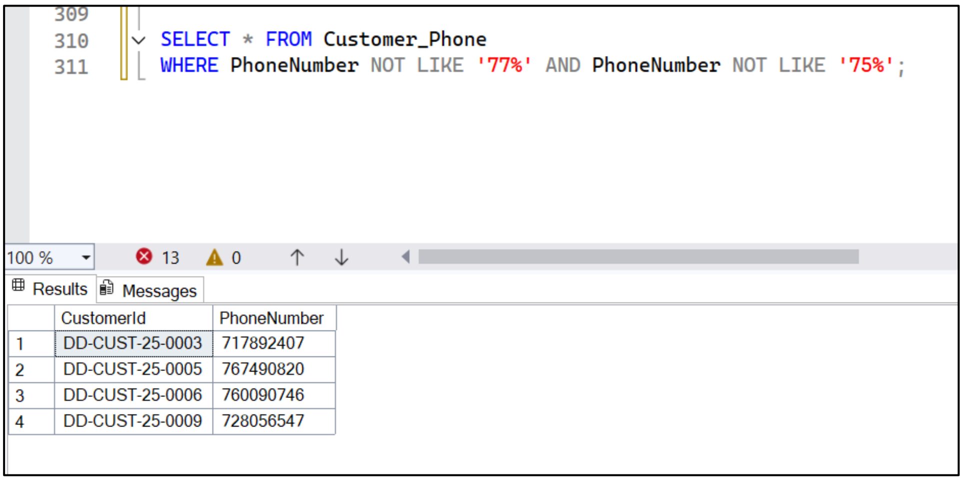
1. *Retrieve products with a price between 2000 and 5000.*
SELECT ProductId, ProductName, Price
FROM Products
WHERE PRICE BETWEEN 2000 AND 5000;



```
SELECT ProductId, ProductName, Price
FROM Products
WHERE PRICE BETWEEN 2000 AND 5000;
```

	ProductId	ProductName	Price
1	P1001	Velona Cuddles Baby Diaper	3230.00
2	P1002	Marvel Baby Diaper	3600.00
3	P1003	Adfit Adult	3150.00
4	P1006	Velona Cuddles Baby Diaper	3590.00
5	P1007	Manytime Adult Medium	2100.00
6	P1008	Carewell Adult Medium	2100.00
7	P1010	Pampers Medium	2600.00

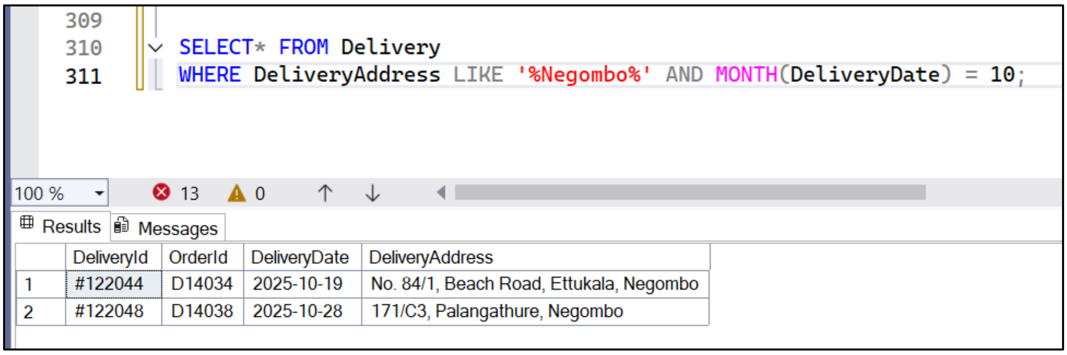
2. *Display the customers whose phone number does not start with '077' AND '75'.*
SELECT * FROM Customer_phone
WHERE PhoneNumber NOT LIKE '77%' AND PhoneNumber NOT LIKE '75%';



```
SELECT * FROM Customer_Phone
WHERE PhoneNumber NOT LIKE '77%' AND PhoneNumber NOT LIKE '75%';
```

	CustomerId	PhoneNumber
1	DD-CUST-25-0003	717892407
2	DD-CUST-25-0005	767490820
3	DD-CUST-25-0006	760090746
4	DD-CUST-25-0009	728056547

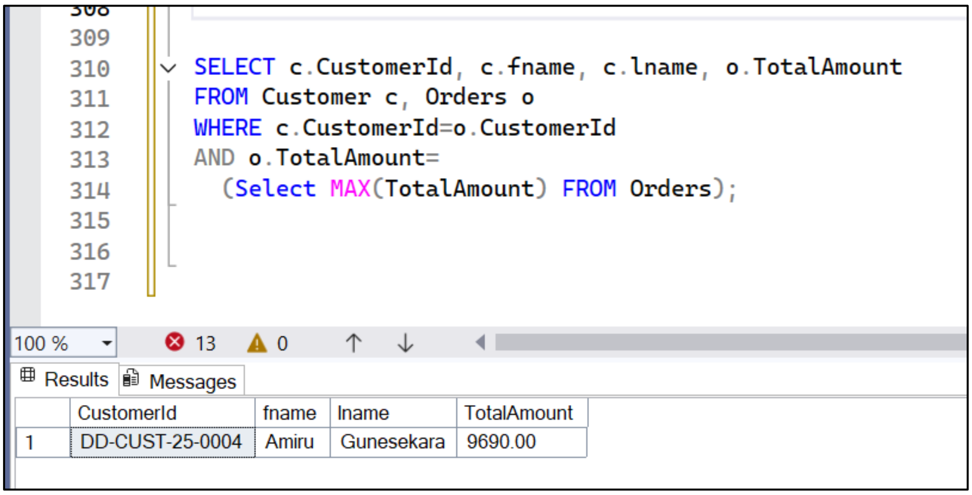
3. *Retrieve customers who are from Negombo and who had a delivery in October.*
   SELECT* FROM Delivery
   WHERE DeliveryAddress LIKE '%Negombo%' AND MONTH(DeliveryDate) =10;



```
SELECT* FROM Delivery
WHERE DeliveryAddress LIKE '%Negombo%' AND MONTH(DeliveryDate) = 10;
```

	DeliveryId	OrderId	DeliveryDate	DeliveryAddress
1	#122044	D14034	2025-10-19	No. 84/1, Beach Road, Ettukala, Negombo
2	#122048	D14038	2025-10-28	171/C3, Palangathure, Negombo

4. *Find the highest spending customer.*
   SELECT c.CustomerId, c.fname, c.lname, o.TotalAmount
   FROM Customer c, Order o
   WHERE c.CustomerId=o.CustomerId
   AND o.TotalAmount=
     (Select MAX(TotalAmount) FROM Order);

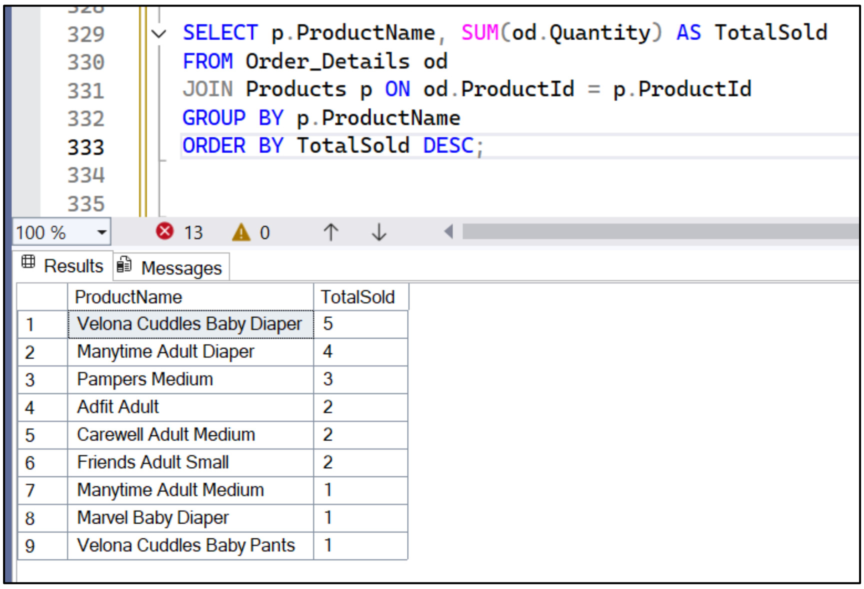


```
SELECT c.CustomerId, c.fname, c.lname, o.TotalAmount
FROM Customer c, Orders o
WHERE c.CustomerId=o.CustomerId
AND o.TotalAmount=
  (Select MAX(TotalAmount) FROM Orders);
```

	CustomerId	fname	lname	TotalAmount
1	DD-CUST-25-0004	Amiru	Gunesekara	9690.00

5. *Display each products name and the total quantity sold for that product, order it by most sold to least sold.*

```
SELECT p.ProductName, SUM(od.Quantity) AS TotalSold
FROM Order_Details od
JOIN Products p ON od.ProductId = p.ProductId
GROUP BY p.ProductName
ORDER BY TotalSold DESC;
```

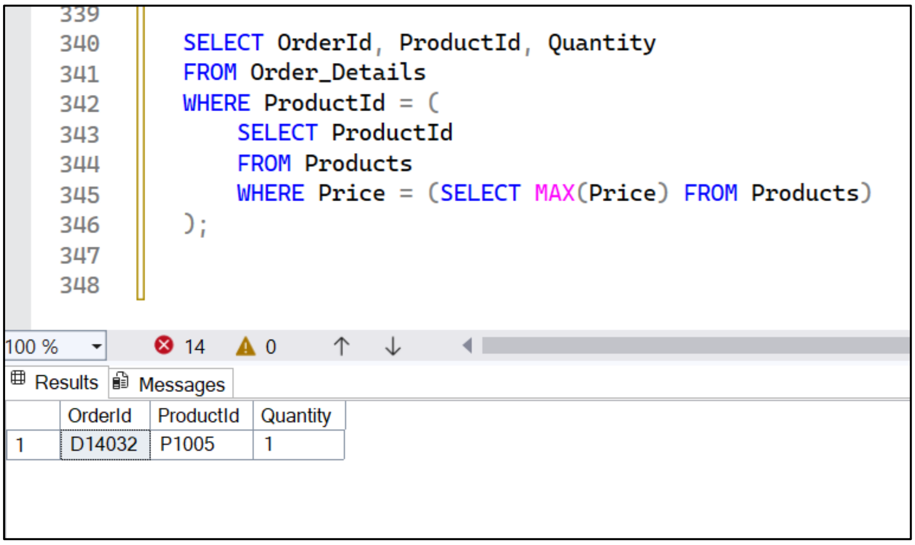


```
SELECT p.ProductName, SUM(od.Quantity) AS TotalSold
FROM Order_Details od
JOIN Products p ON od.ProductId = p.ProductId
GROUP BY p.ProductName
ORDER BY TotalSold DESC;
```

	ProductName	TotalSold
1	Velona Cuddles Baby Diaper	5
2	Manytime Adult Diaper	4
3	Pampers Medium	3
4	Adfit Adult	2
5	Carewell Adult Medium	2
6	Friends Adult Small	2
7	Manytime Adult Medium	1
8	Marvel Baby Diaper	1
9	Velona Cuddles Baby Pants	1

6. *Find the order with the highest priced product.*

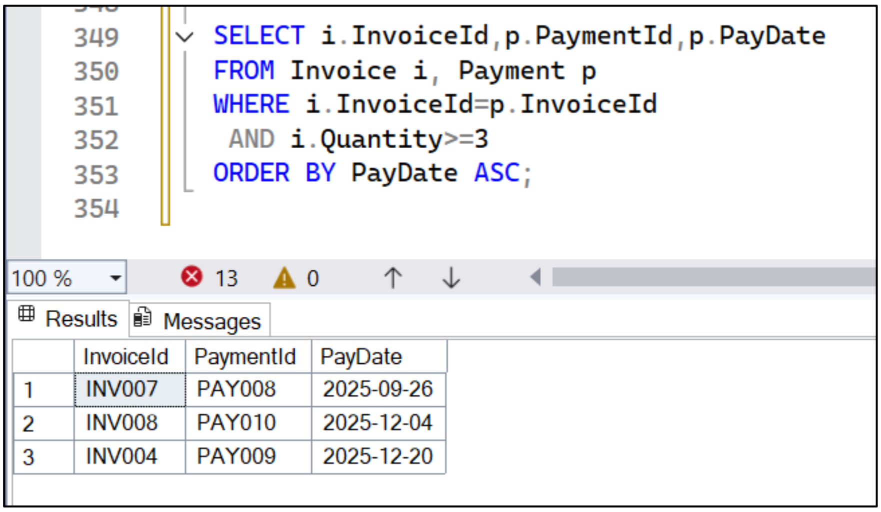
```
SELECT OrderId, ProductId, Quantity
FROM Order_Details
WHERE ProductId = (
    SELECT ProductId
    FROM Products
    WHERE Price = (SELECT MAX(Price) FROM Products)
);
```



```
SELECT OrderId, ProductId, Quantity
FROM Order_Details
WHERE ProductId = (
    SELECT ProductId
    FROM Products
    WHERE Price = (SELECT MAX(Price) FROM Products)
);
```

	OrderId	ProductId	Quantity
1	D14032	P1005	1

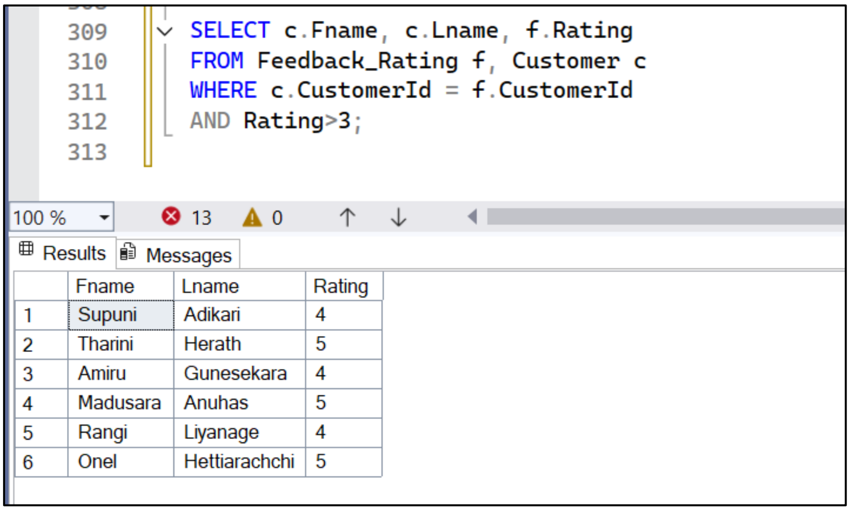
7. *Display invoice ID, payment ID, and pay date for invoices with quantity ≥ 3, sorted by the earliest payment date.*
SELECT i.InvoiceId,p.PaymentId,p.PayDate
FROM Invoice i, Payment p
WHERE i.InvoiceId=p.InvoiceId
  AND i.Quantity>=3
ORDER BY PayDate ASC;



```
SELECT i.InvoiceId,p.PaymentId,p.PayDate
FROM Invoice i, Payment p
WHERE i.InvoiceId=p.InvoiceId
 AND i.Quantity>=3
ORDER BY PayDate ASC;
```

	InvoiceId	PaymentId	PayDate
1	INV007	PAY008	2025-09-26
2	INV008	PAY010	2025-12-04
3	INV004	PAY009	2025-12-20

8. *Identify names of customers who have given a rating above 3.*
SELECT c.Fname, c.Lname, f.Rating
FROM Feedback_Rating f, Customer c
WHERE c.CustomerId = f.CustomerId
AND Rating>3;

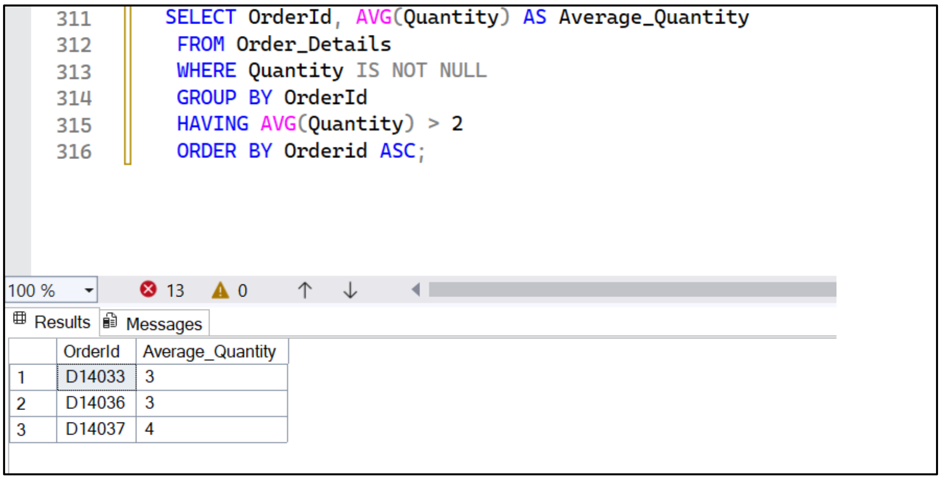


```
SELECT c.Fname, c.Lname, f.Rating
FROM Feedback_Rating f, Customer c
WHERE c.CustomerId = f.CustomerId
AND Rating>3;
```

	Fname	Lname	Rating
1	Supuni	Adikari	4
2	Tharini	Herath	5
3	Amiru	Gunesekara	4
4	Madusara	Anuhas	5
5	Rangi	Liyanage	4
6	Onel	Hettiarachchi	5

9. *Display the orders sorted by order id excluding any null values if the average quantity is above 2.*

```
SELECT OrderId, AVG(Quantity) AS Average_Quantity
 FROM Order_Details
 WHERE Quantity IS NOT NULL
 GROUP BY OrderId
 HAVING AVG(Quantity) > 2
 ORDER BY Orderid ASC;
```

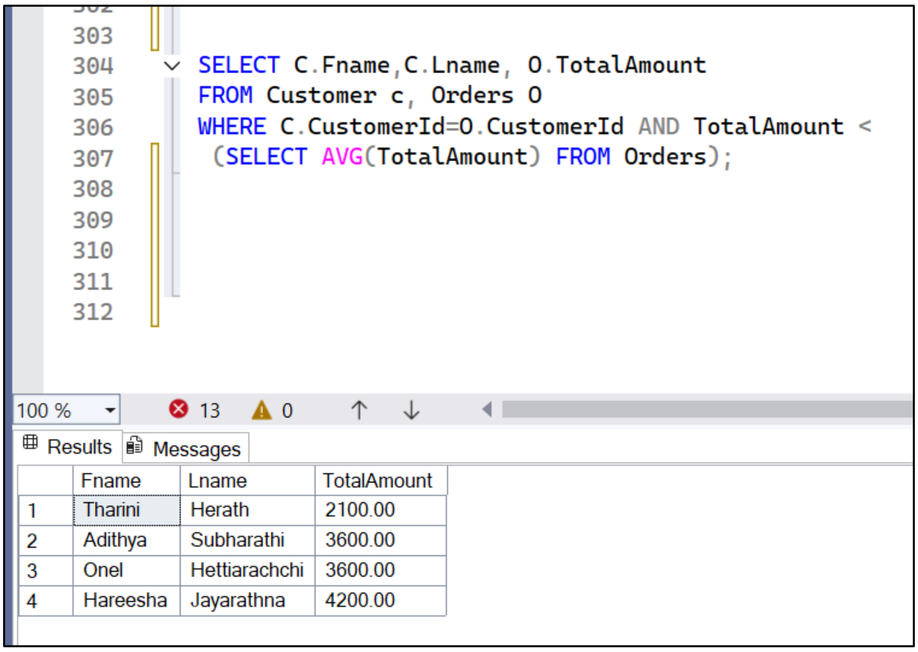


```
SELECT OrderId, AVG(Quantity) AS Average_Quantity
 FROM Order_Details
 WHERE Quantity IS NOT NULL
 GROUP BY OrderId
 HAVING AVG(Quantity) > 2
 ORDER BY Orderid ASC;
```

	OrderId	Average_Quantity
1	D14033	3
2	D14036	3
3	D14037	4

10. *List down the customers with their total spending where total spending is less than the average spending.*

```
SELECT C.Fname,C.Lname, O.TotalAmount
FROM Customer c, Orders O
WHERE C.CustomerId=O.CustomerId AND TotalAmount<
  (SELECT AVG(TotalAmount) FROM Orders);
```



```
SELECT C.Fname,C.Lname, O.TotalAmount
FROM Customer c, Orders O
WHERE C.CustomerId=O.CustomerId AND TotalAmount <
 (SELECT AVG(TotalAmount) FROM Orders);
```

	Fname	Lname	TotalAmount
1	Tharini	Herath	2100.00
2	Adithya	Subharathi	3600.00
3	Onel	Hettiarachchi	3600.00
4	Hareesha	Jayarathna	4200.00