Exercise 1: Create an E-R model for the following requirements.

- An INVOICE is written by a SALESREP. Each sales representative can write many invoices, but each invoice is written by a single sales representative.
- The INVOICE is written for a single CUSTOMER. However, each customer may have many invoices.
- An INVOICE may include many detail lines (LINE) which describe the products bought by the customer.
- The product information is stored in a PRODUCT entity.
- The product's vendor information is found in a VENDOR entity.

Entities:

- INVOICE(InvoiceID, DateBuy, TotalPay)

- SALESREP(SalesRepID, NameSalesRep, Phonenumber, Identifier, Address)

- CUSTOMER(CustomerID, CustomerName, Phonenumber, Address)

- PRODUCT(ProductID, ProductName, UnitPrice, Type)

- VENDOR(VendorID, VendorName, Phonenuber, Address)

- ORDER DETAIL(ProductID, QuantityBuy, AmountMoney)

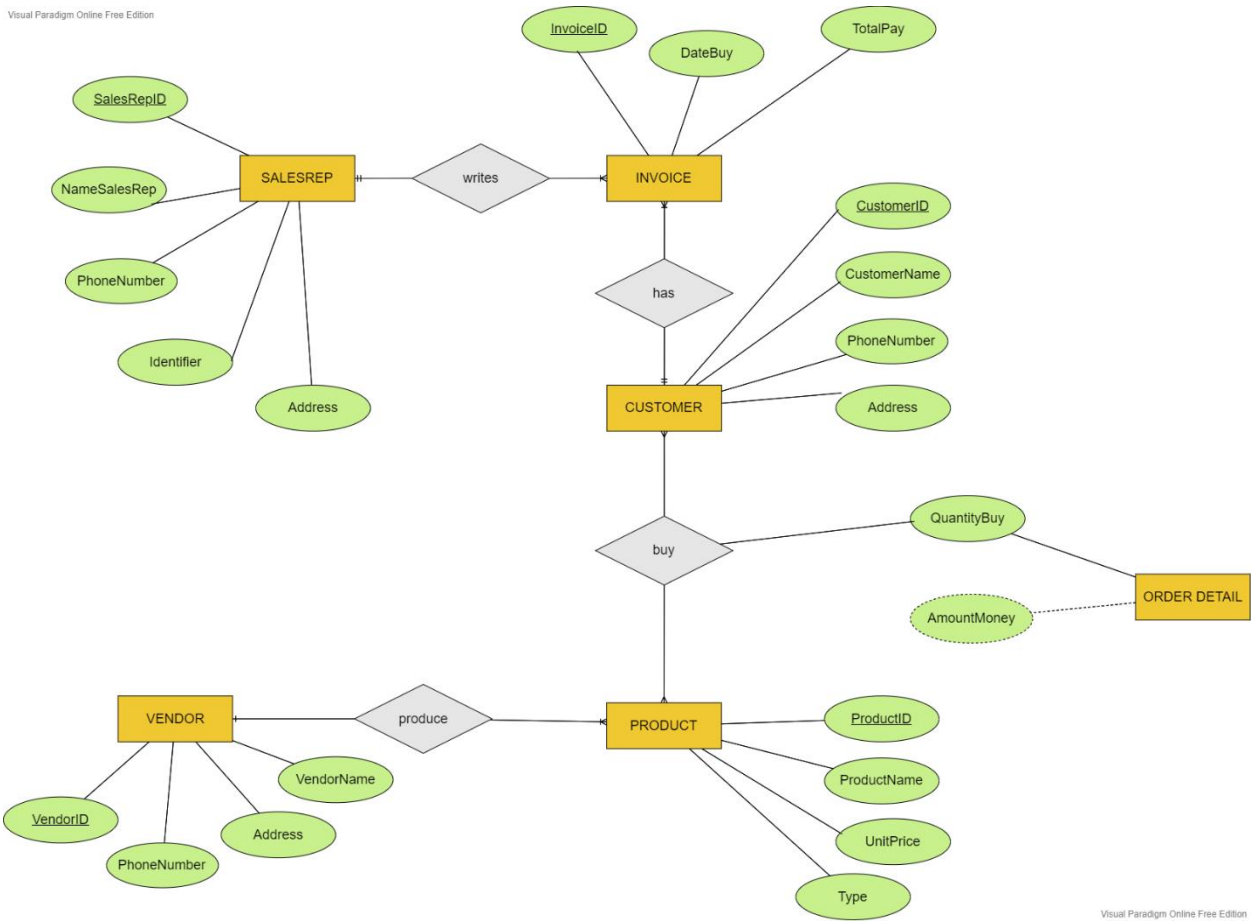
The Relations Between Entities

1 SALESREP – write -> M INVOICE

1 CUSTOMER – has -> M INVOICE

1 INVOICE – contain -> M ORDER DETAIL (DETAIL LINES)

1 VENDOR – produce – M PRODUCT



Relation data model

The Relations

- SALESREP(**SalesRepID (PK)**, NameSalesRep, PhoneNumber, Identifier, Address)

- INVOICE(**InvoiceID (PK),** *SalesRepID*, *CustomerID* (FK), DateBuy, TotalPay)

- CUSTOMER(**CustomerID (PK)**, CustomerName, Phonenumber, Address)

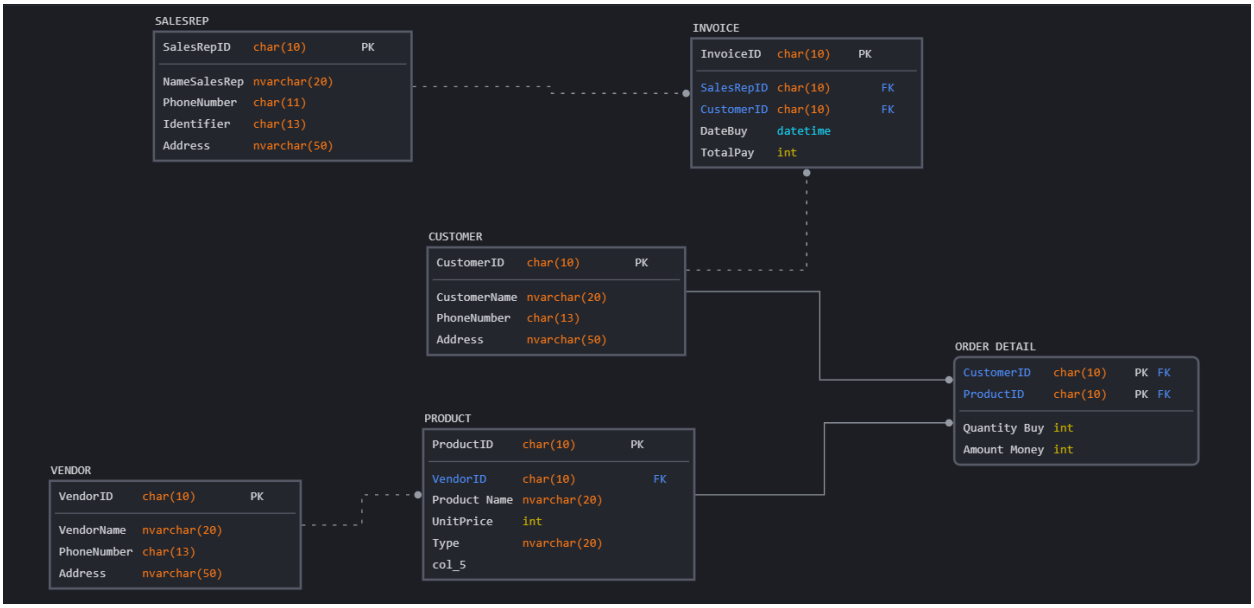
- ORDER(**CustomerID, ProductID**)

- ORDER DETAIL (**CustomerID, ProductID, (PK)** QuantityBuy, AmountMoney)

- PRODUCT(**ProductID (PK)**, *VendorID* (FK), ProductName, UnitPrice, Typ)

- VENDOR(**VendorID (PK)**, VendorName, Phonenuber, Address)

My Relational Diagram



My Assignment

Student Management

Entities:

- Student: StudentID, StudentName, Birthday, Phonenumber, Identifier Card

- Course: CourseID, CourseName, Semester

- Timetable: classID,CourseID,SlotID, Date, RoomID, Present

- Slot: SlotID, TimeStart, TimeEnd

- Attendace Report: StudentID, Slot, Date

- Academic Transcript: StudentID, CourseID, Score

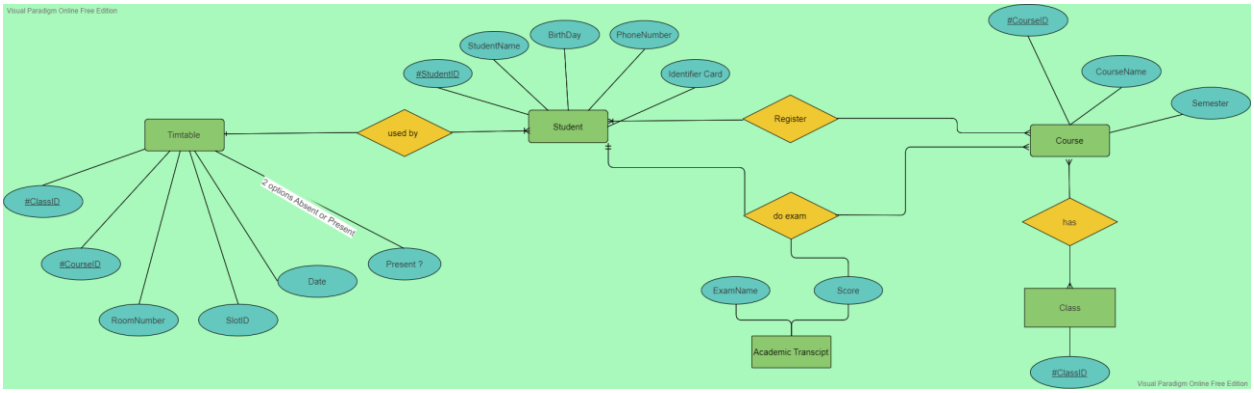
The Relations Between Entities

1 Student – register - M Course

M Course – be teached in - M Class

1 Timetable – be used by - M Students

1 Student – do - M ExamCourse



Relation data model

The Relations

- Student: **StudentID(PK),**StudentName, Birthday, Phonenumber, Identifier Card,

- Course: **CourseID(PK),** CourseName, Semester

- ClassCourse: *ClassID (FK), CourseID (FK)*

- StudentClass: *StudentID, ClassID, CourseID* (FK)

- Student Course Register: *StudentID(FK), CourseID(FK)*

- Timetable: **classID, CourseID (PK)** , *SlotID(FK),* Date, RoomNumber, Present(True : False)

- Slot: **SlotID (PK),** TimeStart, TimeEnd

- Academic Transcript : **StudentID, CourseID, ExamName** (**PK)** , Score

My Relational Diagram