Q1.

Conversion step convert ERD to Relational Model

Step1: Convert entity to relation

Scientist(SID, FName,LName,Country)

RArea(SID,RArea)

Invention(IID,IName,Year)

Step2: Convert relationship to relation

Invents(SID,IID)

Summary, the result of convert ERD to RM is:

Scientist(SID, FName,LName,Country)

RArea(SID,RArea)

Invention(IID,IName,Year)

Invents(SID,IID)

Q2.

-- create database OrderSystem\_PE

-- go

-- use

-- OrderSystem\_PE

-- go

-- Tạo bảng customer

create table Customer(

CustomerID INT primary key,

LastName nvarchar(50),

FirstName nvarchar(50),

Phone nvarchar(20),

Address nvarchar(100),

City nvarchar(50),

Country nvarchar(50)

)

go

insert into Customer(CustomerID,LastName,FirstName,Phone,Address,City,Country)

VALUES

(1,'Nguyen','Van Binh','0123456789','123 Le Hoan','Da Nang','Viet nam'),

(2,'Nguyen','Van A','0123456788','123 Le Hoan 1','Da Nang','Viet nam'),

(3,'Nguyen','Van B','0123456787','123 Le Hoan 2','Ho Chi Minh','Viet nam');

-- Tao bang Order

CREATE TABLE tblOrder(

OrderID INT primary key,

CustomerID INT foreign key references Customer(CustomerID),

OrderDate DATE,

RequiredDate DATE,

ShippedDate DATE,

Status bit,

Comment nvarchar(100)

)

GO

INSERT INTO [tblOrder] (OrderID, CustomerID, OrderDate, RequiredDate, ShippedDate, [Status], Comment)

VALUES

(1, 1, '2023-11-03', '2023-11-10', '2023-11-05', 1, N'Đặt hàng thành công.'),

(2, 2, '2023-11-04', '2023-11-11', '2023-11-06', 0, N'Đang chờ xử lý.'),

(3, 3, '2023-11-05', '2023-11-12', '2023-11-07', 1, N'Giao hàng thành công.');

GO

-- Create Product

create table Product(

ProductCode INT primary key,

Name nvarchar(100),

Scale int,

Vendor nvarchar(100),

Description nvarchar(200),

BuyPrice FLOAT,

Inventory nvarchar(100)

)

GO

INSERT INTO Product (ProductCode, Name, Scale, Vendor, Description, BuyPrice, Inventory)

VALUES

(1, N'Đồ chơi ô tô', 1, N'ToyCo', N'Mô hình ô tô đồ chơi', 10.99, N'Còn hàng'),

(2, N'Mô hình máy bay', 1, N'ToyCo', N'Mô hình máy bay chi tiết', 15.99, N'Hết hàng'),

(3, N'Máy tính xách tay', 1, N'TechMart', N'Máy tính xách tay cao cấp', 999.99, N'Còn hàng');

GO

create table OrderDetail(

OrderID int foreign key references tblOrder(OrderID),

ProductCode int foreign key references Product(ProductCode),

Qty int,

Price float,

primary key(OrderID,ProductCode)

)

Q3.

CREATE VIEW view\_best\_selling AS

select top 1 p.ProductCode,p.Name,COUNT(o.OrderID)AS number\_items

FROM tblOrder as o

JOIN

OrderDetail AS od

ON

o.OrderID=od.OrderID

JOIN

Product as p

ON

od.ProductCode=p.ProductCode

WHERE MONTH(o.OrderDate)=6

GROUP by p.ProductCode,p.Name

Q4.

select

o.CustomerID,o.OrderDate,o.RequiredDate,o.ShippedDate,od.OrderID,

SUM(od.Qty\*od.Price) as total\_amount

FROM

OrderDetail od

JOIN

tblOrder as o

ON

od.OrderID=o.OrderID

group by od.OrderID,o.CustomerID,o.RequiredDate,o.ShippedDate,o.OrderDate

having SUM(od.Qty\*od.Price)>500

Q5.

create function CalculateTotalAmount (@Invoidcode INT)

returns float

AS

begin

Declare @TotalAmount float;

SELECT @TotalAmount = SUM(od.Qty\*od.Price)

FROM OrderDetail od

where od.OrderID=@Invoidcode

return @TotalAmount

end