Data Base System Project

Constructor : Dr. Wael Ayoub


Company

Contents

Table Of Figures :

Choice of Topic:

Developing a database for a company that have nine entities employees, shipers, customers, payment, region, categories, products, order, order details.

Chapter 1 : Introduction :

Report :

This Project is done by two students of AL Maaref University , computer science department, in data base system course Mohammad Akar and Mahdi Khazal . The project contain the database of a company that have employees,shipers,customers,payment, region, categories, products, order and order details which shows the relation between them and what data they have represented by ER diagram and some meaningful querie. The project contains 4 chapters starting with introduction , chapter2 contains full ERD, requirements and use cases and description for them chapter 3 include the relational model of the ER diagram and chapter 4 the meaningful queries

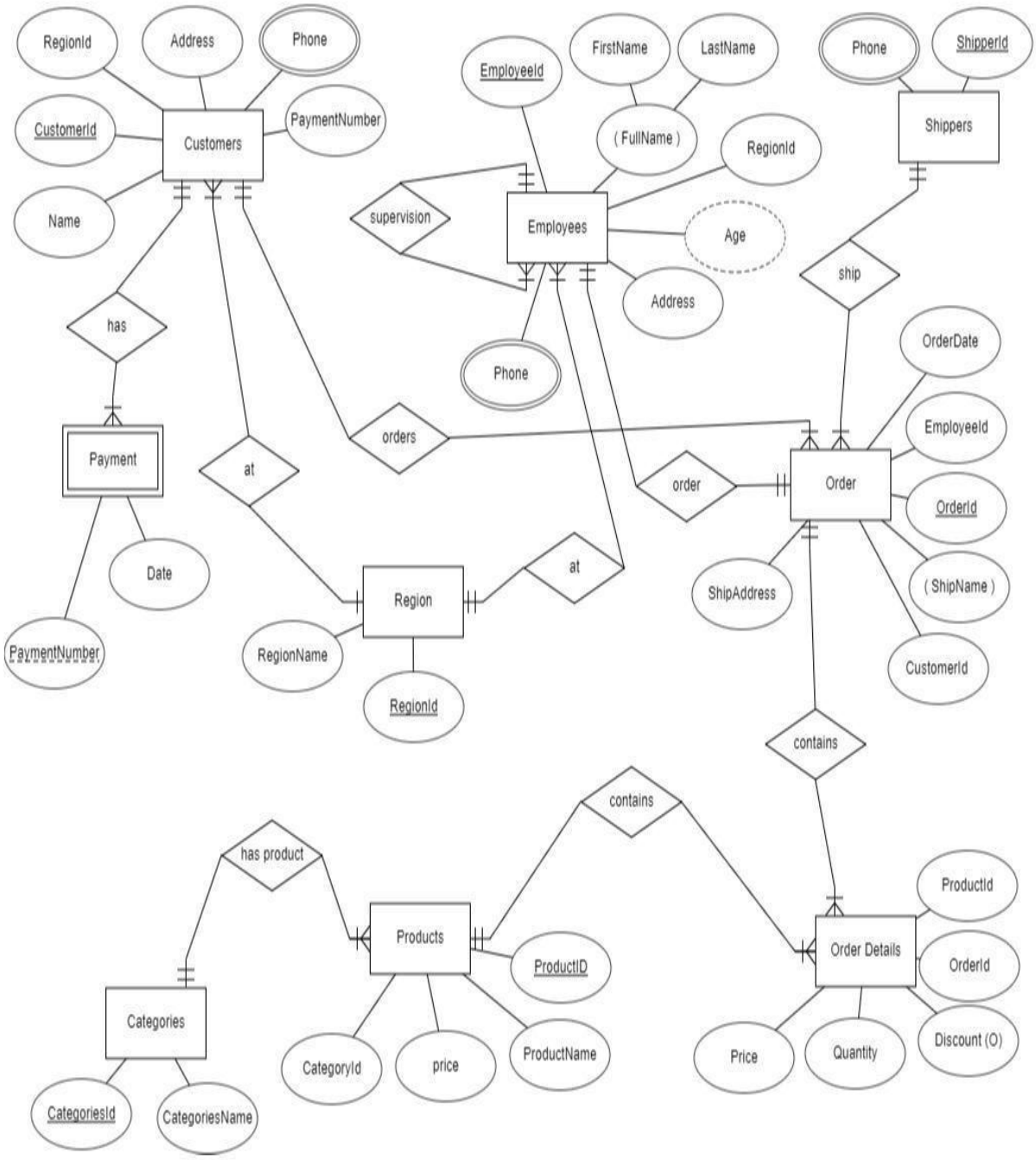
Chapter 2 :

Description about ERD:

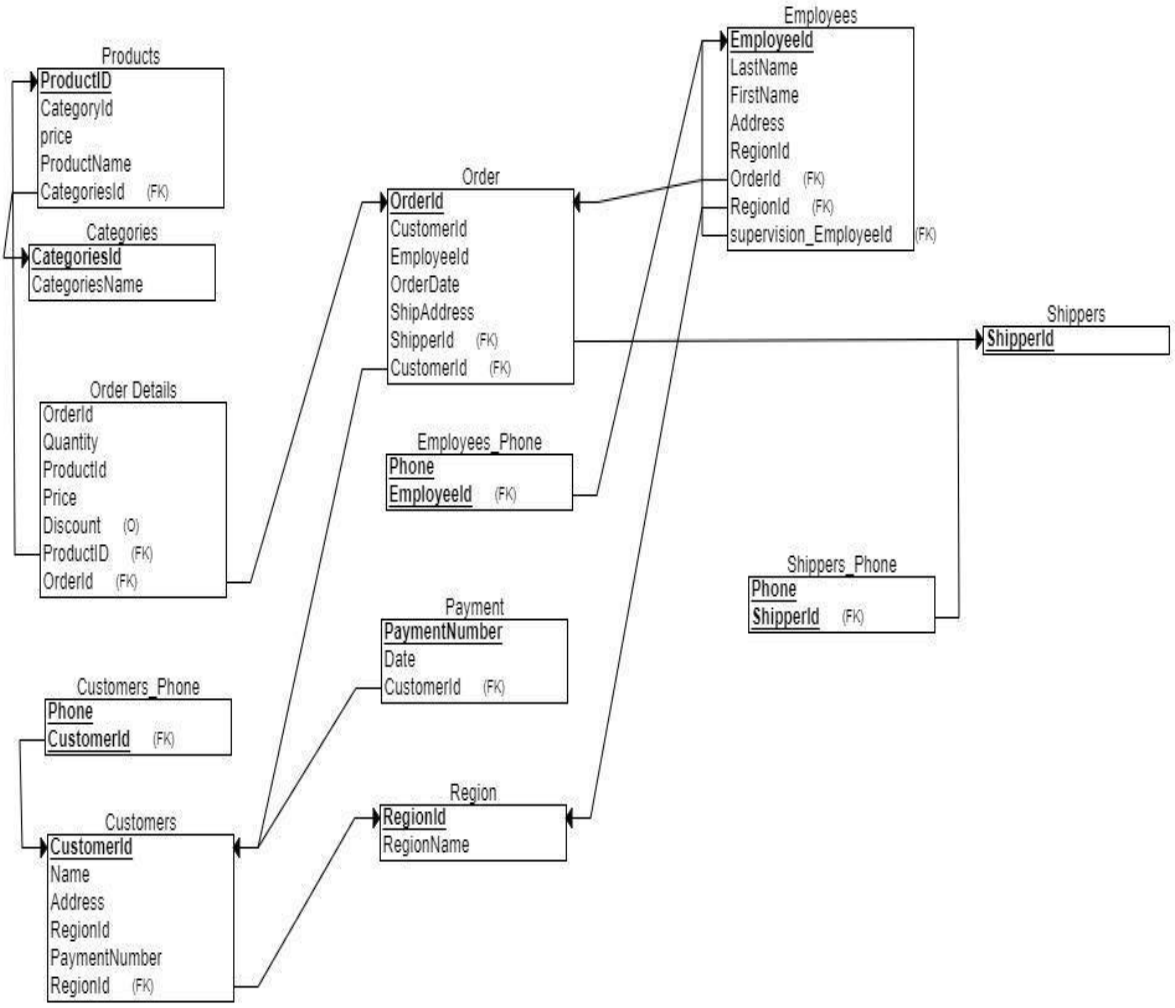
In chapter 2 the full ERD, requirements and use cases are presnted as follow : 9 entities employees ,shipers,customers,payment, region, categories, products, order and order details. Customers have 6 entites : Name,RegionID(FK),Address,CustomerID(PK),Phone number(multivated entity), payment number and have mandatory to many relation(orders)

with order and mandator many to one relation(at)with region and mandotary one to mandotary many relation (has) payment. Employee attribute have EmployeeID(PK),FullName(composite attribute of firstName and lastName),RegionID(Fk),Age(Derived),Address, phone(multivated) and mandatory one to mandatory one relation(order) with order and mandatory many to mandatory one relation(at) with region and have 1 unary relationship(supervision). Shippers have shipperID(PK), Phone (multivated) and mandatory many to mandatory one relation (ship) with order. Payment weak entity have Date,Pyment number. Region have region name,
RegionID(pk). Order have
OrderDate,EmployeeID(fk),OrderID(pk),shipName(composite),customerID(fk),shipAddress and mandatory one to mandator many relation (contains) with order details. Categories have caregoriesID(pk), categoriesName and mandatory one to mandary many relation (has product) with products. Products have categoryID(fk), price, productName,ProductID(PK), and mandatory one to mandary many relation(contains) with order details. Order details have productID(fk),OrderId(fk),Discount(optional),quantity and price.

ER Diagram:


RegionId
Address
Phone
CustomerId
Customers
PaymentNumber
Name
has
Payment
Date
PaymentNumber
at
Region
RegionName
RegionId
at
orders
EmployeeId
FirstName
LastName
(FullName)
supervision
Employees
Age
Address
Phone
RegionId
order
Order
Phone
ShipperId
Shippers
ship
OrderDate
EmployeeId
OrderId
(ShipName)
CustomerId
ShipAddress
contains
contains
has product
Products
ProductID
ProductName
price
CategoryId
Categories
CategoriesId
CategoriesName
Order Details
ProductId
OrderId
Discount (O)
Quantity
Price

Chapter 3 :



Chapter 4 :

/* 4 quries that join 2 tables*/

/*list first name , last name and region of employees. */

select e.firstName , e.LastName, r.name from employees e inner join region r on r.RegionId = e.RegionId;

/*list name , address and region of customers. */ select c.name, c.address, r.name from

customers c inner join region r on r.RegionId = c.RegionID;

/*list quantity , productID and orderDate of Order Details. */ select o.quantity, o.productID, or.orderDate from Order details o inner join order or on or.OrderId = o.OrderId;

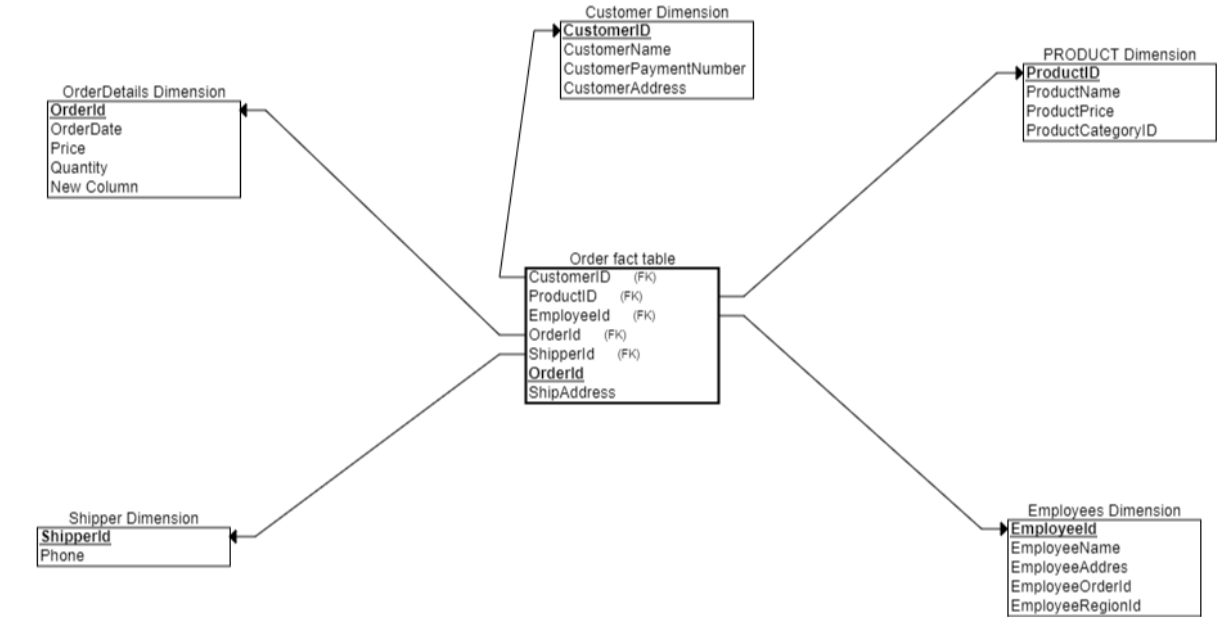
```
/*list name , adress and date of payment of customers. */ select
c.name, c.address, p.date from customers c inner join payment p
on p.PaymentNumber = c.PaymentNumber;
/* 2 queries that join 3 tables */
/*list name , adress , region and date of orders of customers. */
select c.Name, c.address, r.name, o.OrderDate from customers
c inner join region r on r.RegionId = c.RegionID inner join orders
o on o.CustomerID = c.CustomerID ;

/*list first name , last name and customers of employees.
*/ select e.firstName , e.LastName, c.Name from
employees e inner join orders o on o.EmployeeID =
e.EmployeeID inner join customers c on c.CustomerID =
o.CustomerID;

/* 2 subqueries */

/*list first name , last name,age and address of employees where Phone = "76057474" */ select
firstname , lastname, age, address from employees where Phone = "76057474";
/*name of product where Price = "30.0000"*/

select productName from products where Price = "30.0000";
```

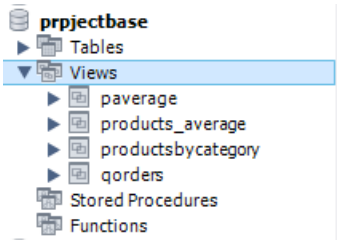
```
/* 3 queries with aggregate calculation */

/*list the average price of product. */

select avg(price) from products;

/* number of employees*/

select count(FirstName) from employees;

/* number of products names*/

select count(productName) fromproducts;


/* 1 single table query */


select ShipName from orders where ShipAddress='Bei' group by ShipName having count(*) = 1
order by OrderID;
```

Data for queries :

DATABASEPROJECTS.
sql

Star schema:





/*5 queries*/
#1
/*list last name and first from employee where his adress in jdeideh*/
SELECT FIRSTNAME, LASTNAME FROM employees WHERE Address = 'jdeideh';
#2
/*list CompanyName, and any OrderID order by CompanyName.*/
select c.companyname , o.orderid from customers c inner join orders o on o.CustomerID =
c.CustomerID order by CompanyName;
#3

```
/*list of employees FirstName and LastName, and any OrderID order by orderID.*/
select e.firstname, e.lastname, o.orderid from employees e inner join orders o on
o.EmployeeID = e.EmployeeID order by OrderID;
#4
/*list the customer CompanyName and order date for each order where
orderdate=
"2024-05-18"*/
select c.companyname, o.orderdate from customers c inner join orders o on
o.CustomerID =
c.CustomerID where OrderDate = "2024-05-18";
#5
select p.ProductName,s.CompanyName from products p left join suppliers s on
s.SupplierID=p.SupplierID;


/*5 views*/
#1
/*view called PAverage that select product with a unit price higher than the
average unit
price.*/
create or replace view PAverage as select productId , productName from
products where Price> (select avg(Price) from products);
#2
/*view called QOrders that lists the product done by customers in 2024-05-08.*/
create or replace view QOrders as select p.ProductName from products p inner
join
orderdetails o1 on o1.productId = p.productId inner join orders o2 on o2.OrderID
= o1.OrderId
where OrderDate="2024-03-08";
#3
/*view called ProductsbyCategory that lists products grouped by category.*/
create or replace view ProductsbyCategory as select p.ProductName,
c.CategoryName from
products p inner join categories c on c.CategoryID = p.CategoryID group by
CategoryName;
#4
/*view called OrdersbyShippers.*/
create or replace view OrdersbyShippers as select o.shipAddress, from
orders o inner join shippers s on o.shipperID = s.shipperId group by
shipAddress;
#5
/*view called OrdersbyEmployee.*/

create or replace view OrdersbyEmployee as select e.firstname,o.orderdate  from
```

```
employee e inner join order o on e.orderID = o.orderID group by firstname;

/*5 triggers*/
create trigger setPrice before INSERT on products for each row set
products.price= price*0.1 ;
create trigger setPrice before INSERT on order details as o for each row set
o.price= price*1.1 ;
show triggers in prprojectbase like '%a%' ;
show triggers in prprojectbase like '%bc%' ;
DROP TRIGGER IF EXISTS setPrice;
/*5 users and get permession for each user*/

create user moe@localhost IDENTIFIED BY 'akar';
grant insert ,update, delete,create temporary tables on prpjectbase.* to
moe@localhost;

CREATE USER mehdi@localhost IDENTIFIED BY 'Khazal' ;
grant select on prpjectbase.customers to mehdi@localhost;

CREATE USER user1@localhost IDENTIFIED BY 'user1' ;
grant insert ,update, delete,create temporary tables on prpjectbase.* to
user1@localhost;

CREATE USER user2@localhost IDENTIFIED BY 'user2' ;
grant update on prpjectbase.categories to user2@localhost;

CREATE USER user3@localhost IDENTIFIED BY 'user3' ;
grant insert on prpjectbase.products to user3@localhost;
/*procedures*/
/*1*/
create procedure Getproducts(IN ProductName varchar(255) )
Begin
select * from products
Delimiter ;
/*2*/ create procedure GetOrders(
IN orderID varchar(25), OUT TOTAL INT )
Begin select count(orderDate) into total from orders delimiter ;
/*3*/ create procedure SetCounter ( inout counter int, in inc int )
begin
delimiter ;
```