Data Base System Project

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Company

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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

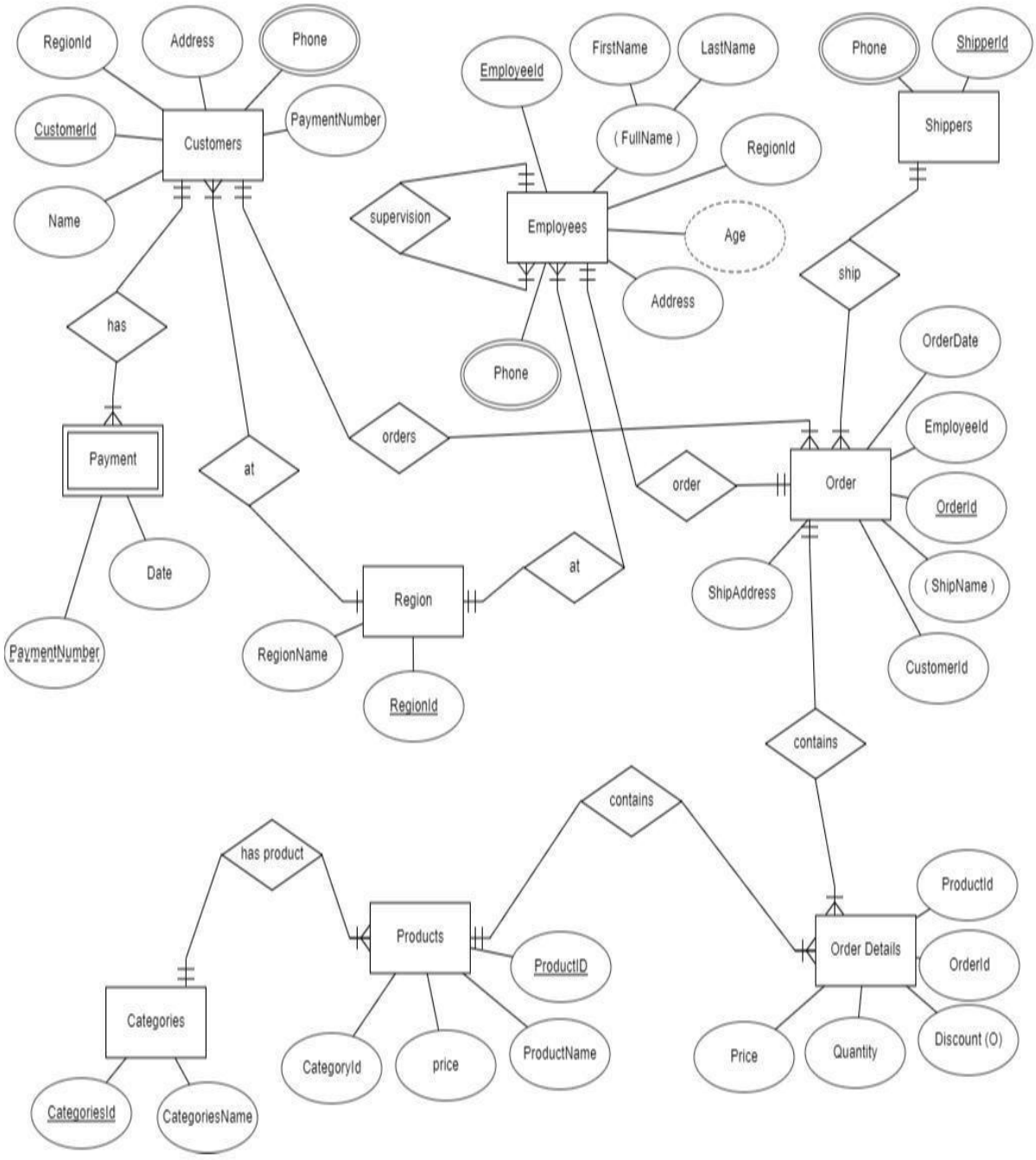
Chapter 2 :

Description about ERD:

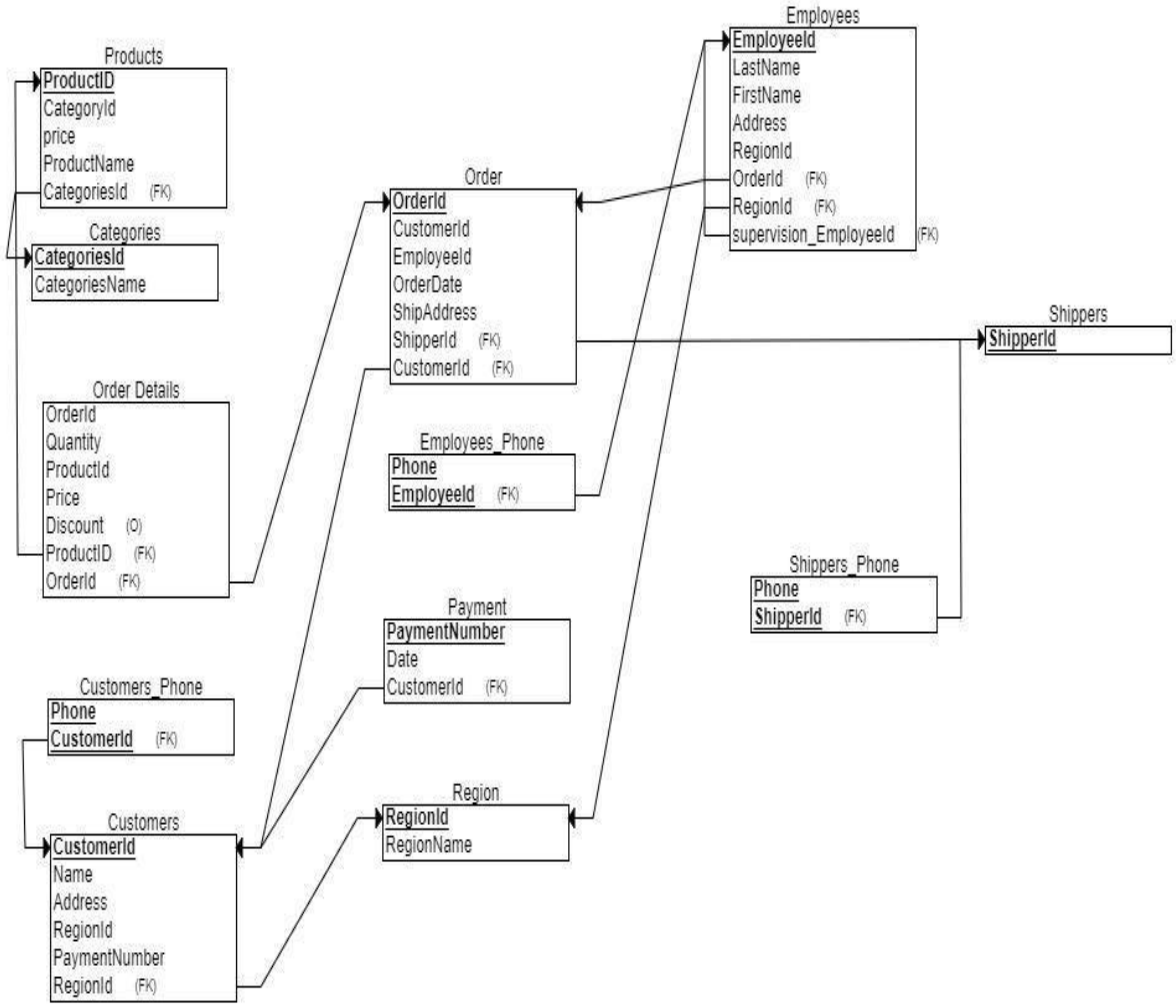
In chapter 2 the full ERD, requirements and use cases are presnted as follow : 9 entities employees ,shipers,customers,payment, region, categories, products, order and order details. Customers have 6 entites : Name,RegionID(FK),Address,CustomerID(PK),Phone number(multivated entity), payment number and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