Data Base System Project CSS 330 – A

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Chapter 1 : Introduction :
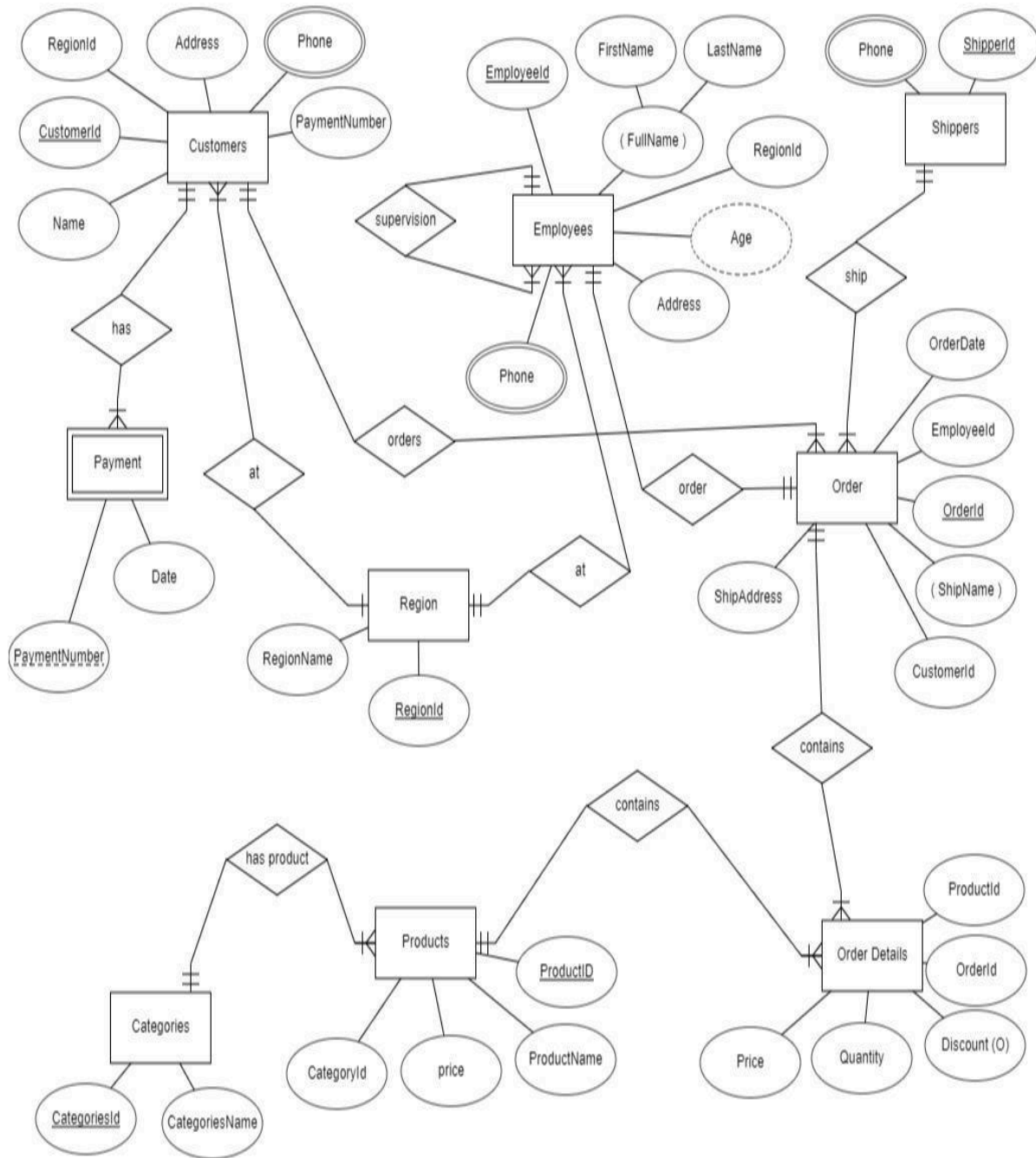
Report :

This Project is done by two students of AL Maaref University , computer science department, in data base system course Ali Khalil and Ali Fala . 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.
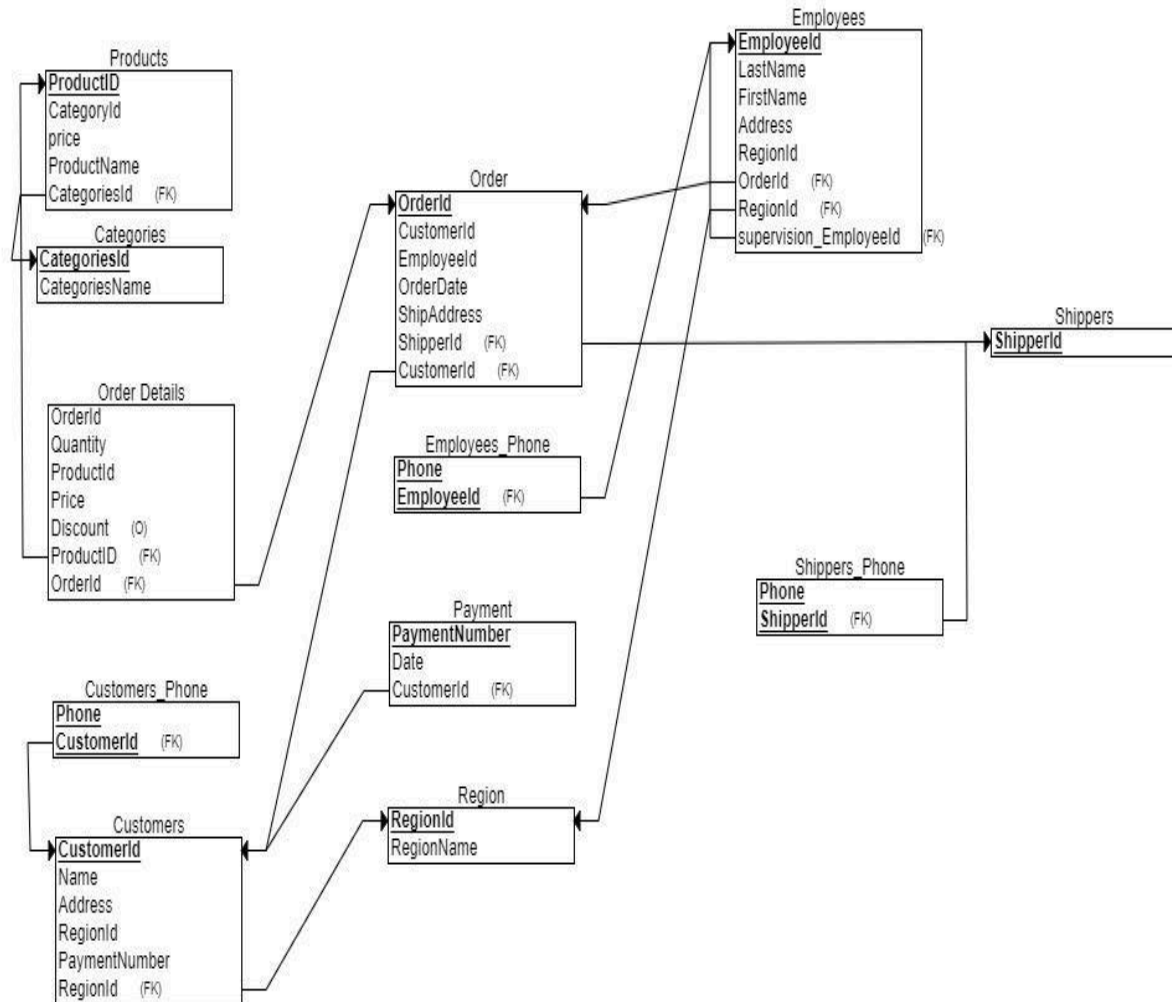
Chapter 2 :

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:

Chapter 3 :

Products
- ProductID
- CategoryId
- price
- ProductName
- CategoriesId (FK)

Categories
- CategoriesId
- CategoriesName

Order Details
- OrderId
- Quantity
- ProductId
- Price
- Discount (O)
- ProductID (FK)
- OrderId (FK)

Order
- OrderId
- CustomerId
- EmployeeId
- OrderDate
- ShipAddress
- ShipperId (FK)
- CustomerId (FK)

Employees
- EmployeeId
- LastName
- FirstName
- Address
- RegionId
- OrderId (FK)
- RegionId (FK)
- supervision_EmployeeId (FK)

Shippers
- ShipperId

Employees_Phone
- Phone
- EmployeeId (FK)

Shippers_Phone
- Phone
- ShipperId (FK)

Payment
- PaymentNumber
- Date
- CustomerId (FK)

Customers_Phone
- Phone
- CustomerId (FK)

Region
- RegionId
- RegionName

Customers
- CustomerId
- Name
- Address
- RegionId
- PaymentNumber
- RegionId (FK)

Chapter 4 :

/* 3 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 , adress and region of customers. */

select c.name, c.address, r.name from customers c inner join region r on r.RegionId = c.RegionID;

/*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 queries with aggregate calculation */

/*list the average price of product. */

select avg(price) from products;

/* number of name of product.*/

select count(productName) from products;

/* 2 subqueries */

/*list first name , last name,age and address of employees where Phone = "81-123 456" */

select firstname , lastname, age, address from employees where Phone = "81-123 456";

/name of product where Price = "19.0000"./

select productName from products where Price = "19.0000";

/* 1 single table query */
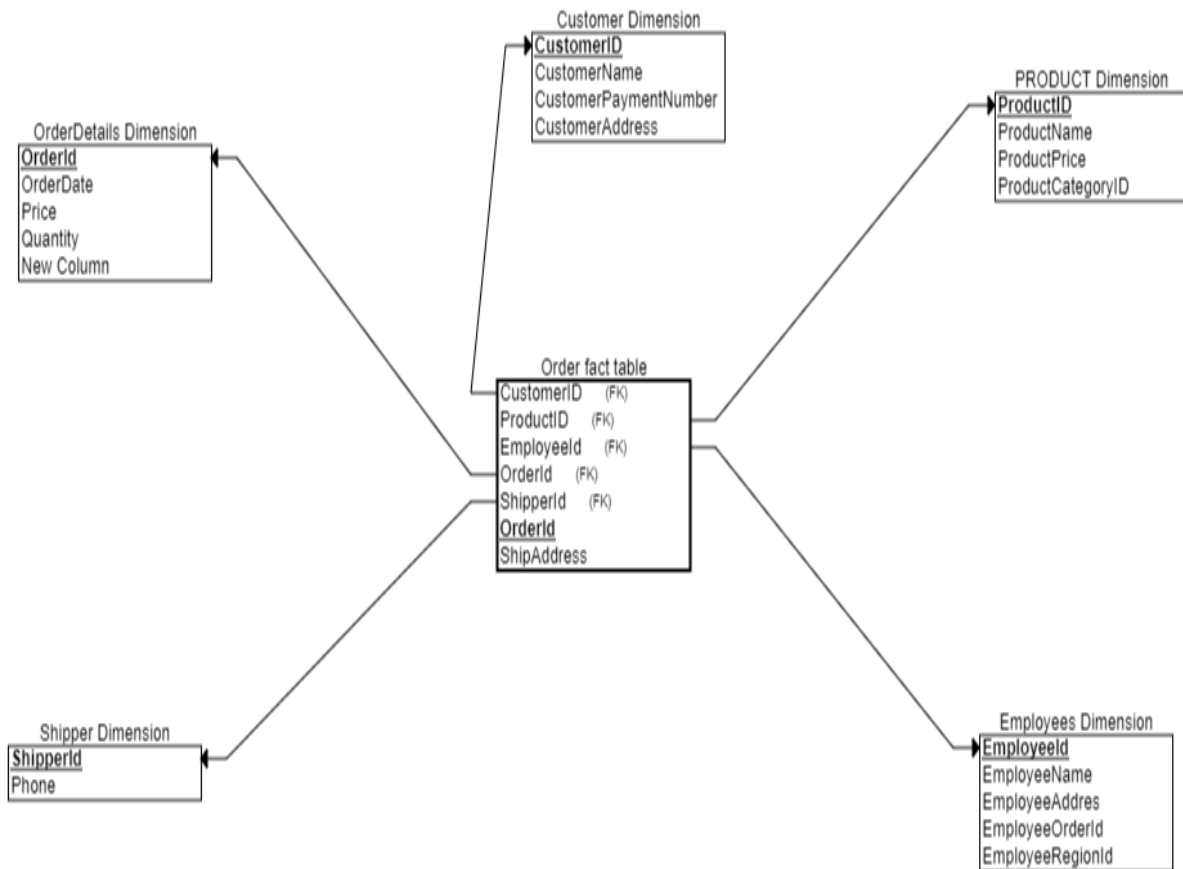

select ShipName from orders where ShipAddress='Tyr' group by ShipName having count(*) = 1
order by OrderID;

Data for queries :

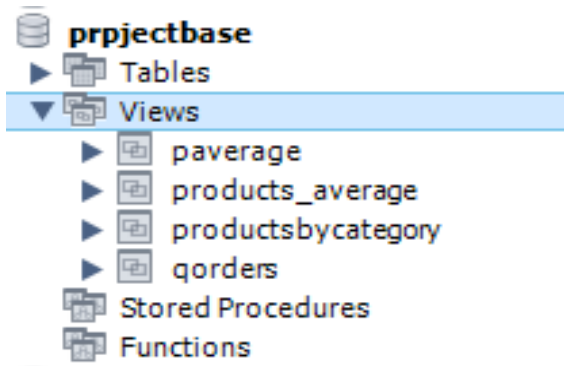DATABASEPROJECTS (1).sql

Star Schema:

Customer Dimension
- **CustomerID**
- CustomerName
- CustomerPaymentNumber
- CustomerAddress

PRODUCT Dimension
- **ProductID**
- ProductName
- ProductPrice
- ProductCategoryID

OrderDetails Dimension
- **OrderId**
- OrderDate
- Price
- Quantity
- New Column

Order fact table
- CustomerID (FK)
- ProductID (FK)
- EmployeeId (FK)
- OrderId (FK)
- ShipperId (FK)
- **OrderId**
- ShipAddress

Shipper Dimension
- **ShipperId**
- Phone

Employees Dimension
- **EmployeeId**
- EmployeeName
- EmployeeAddres
- EmployeeOrderId
- EmployeeRegionId

prpjectbase
- ► Tables
- ▼ Views
  - ► paverage
  - ► products_average
  - ► productsbycategory
  - ► qorders
- Stored Procedures
- Functions

/*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= "2022-05-18"*/

select c.companyname, o.orderdate from customers c inner join orders o on o.CustomerID = c.CustomerID where OrderDate = "2022-05-18";

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```sql
/*5*/

select p.ProductName,s.CompanyName from products p left join suppliers s on s.SupplierID= p.SupplierID;

/*1*/

/*3 views*/

/*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);

/*view called QOrders that lists the product done by customers in 2022-05-08.*/

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="2022-05-08";

/*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;


/*3 triggers*/

create trigger setPrice before INSERT on products for each row set products.price= price*0.1 ;


show triggers in prprojectbase like '%a%' ;


DROP TRIGGER IF EXISTS setPrice;


/*5 users and get permession for each user*/

create user ali@localhost IDENTIFIED BY 'fala';

grant  insert ,update, delete,create temporary tables on prpjectbase.* to ali@localhost;


CREATE USER alikh@localhost IDENTIFIED BY 'Khalil' ;
```

```sql
grant select on prpjectbase.customers to alikh@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 ;
```

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