 <div> King Saud University College of Computer and Information Sciences Computer Science Department </div>	
CSC380 Fundamentals Of Database Systems	First Semester 1443 - 2021

CSC 380 Project

Section #66516	Team #5	Phase #3
Topic	Date Factory	
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Overview

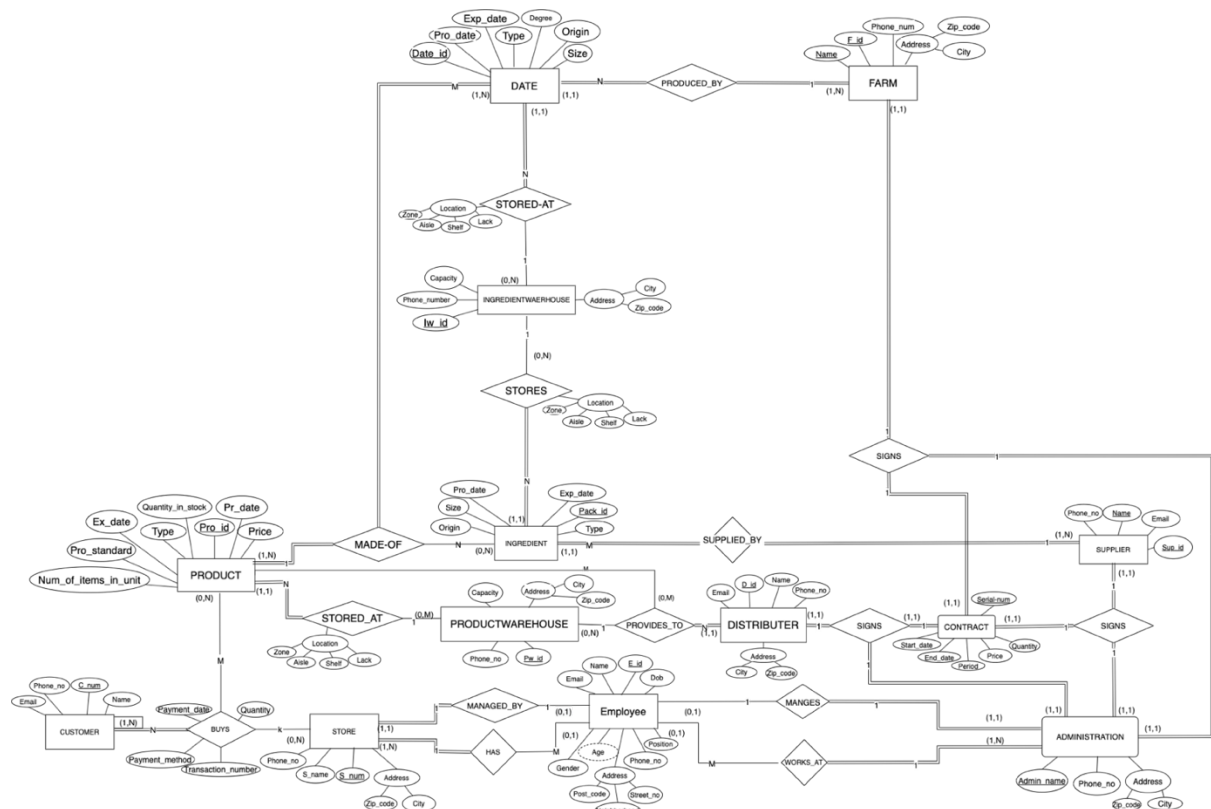
As dates are considered to be the most popular fruit in the Kingdom of Saudi Arabia, the factory was established to manufacture and export the finest quality of pure dates and date-products to the entire Kingdom. Most of the Saudi families consume dates on a daily basis, so it is fair to say it is an essential part of our lives in the kingdom. Dates are usually served with Qahwa (Arabic coffee), and it is considered as one of the traditional sweets. Therefore, the factory's goal is to make unorthodox products using traditional ingredients to dominate the market. Since dates are iconic symbol of Arabian hospitality, we aspire to produce creative and modernized date-products using the essence of our Saudi generosity.

Requirement Specification

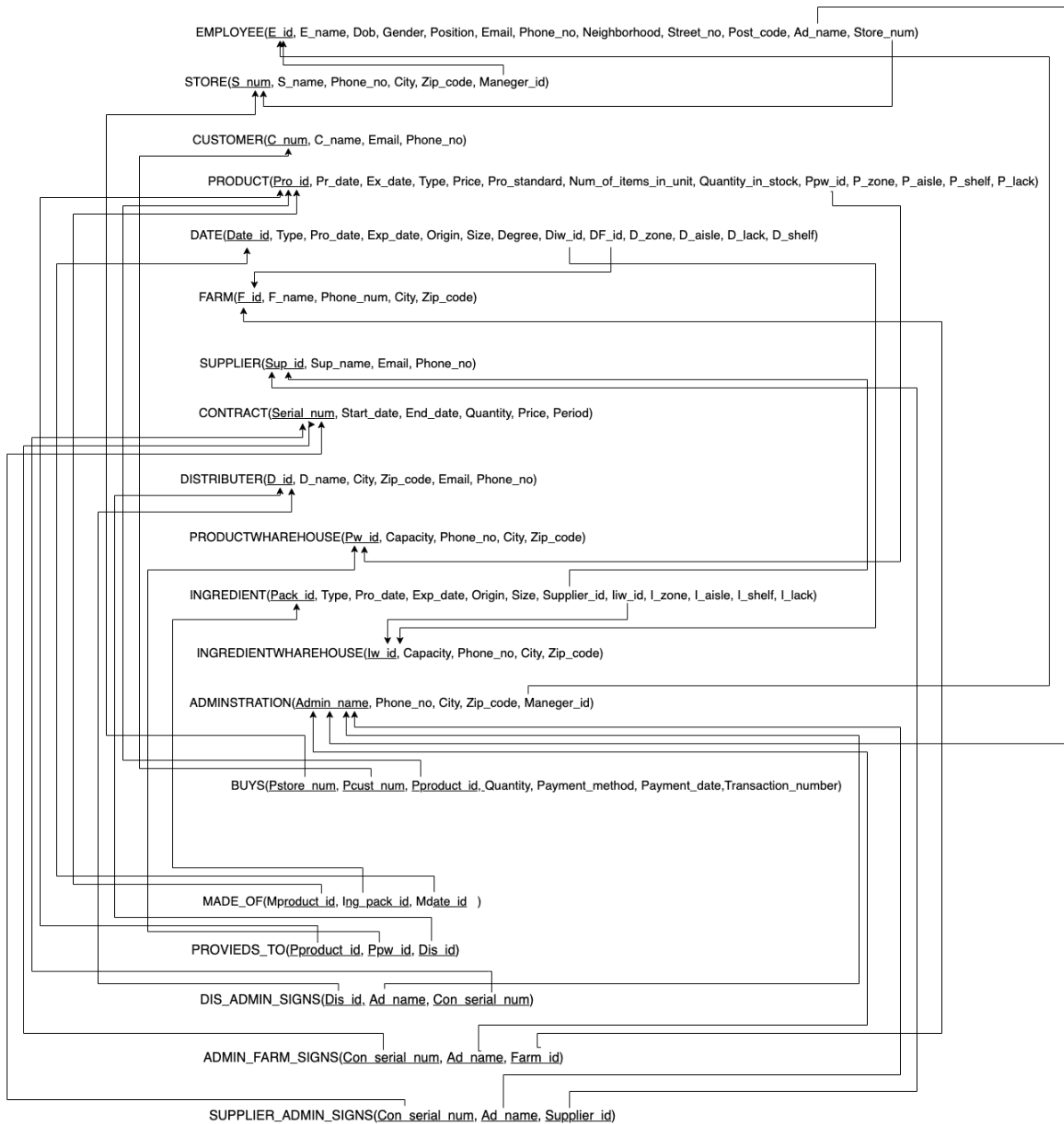
- The factory has **employees**. Each employee identified by a unique id number and has a name, age, date of birth, position, gender, phone number and email. In addition, address for each employee and it contains the postcode, street number, and neighborhood.
- The **distributers** are known by a unique id number, name, phone number and address which consists of the city and zip code, also the email should be registered.
- Each **date** produced by one farm and organized into packs. Each pack of dates is identified by a unique Id number. Also, it's described by production date, expiration date, type of date, degree, origin, and size of the pack.
- The factory contracts with several **farms** to provide dates. Each farm record consists of unique name, contact number, unique farm id and an address. The address contains city and zip code.
- The **products** are produced from the factory are made of dates and other ingredients. Each product is stored at product warehouse in a specific location that can be known by the zone, aisle, shelf and lack. The product is sold through distributor or store. Each product is identified by an Id, type, price, expiry date, production date, and product's standards which indicate whether the product meets the quality checks or not (true or false) in addition to number of items in a unit and the quantity in stock.
- The **product warehouse** stores products and provides them to distributors. Each Product warehouse is identified by an Id, capacity, contact number, and address consisting of city and zip code.
- The factory has an **ingredient warehouse** that stores the ingredients needed to make the products (including the dates), each ingredient has a specific location that include the zone, aisle, shelf and lack. The ingredient warehouse is identified by an Id, capacity, contact number, and address consisting of city and zip code.
- The factory contracts with different **suppliers** to supply the ingredients needed to make the products. Each supplier is identified by unique name and Id and must have contact number and email.

- Each **ingredient** is identified by the pack id and contains the origin, size, production date, expiration date, and the ingredient type. Each ingredient has exactly one supplier.
- Each **contract** is identified by the contract serial number and contains the details such as start date, end date, period, quantity, and price.
- The **administration** contracts with distributors, suppliers, and farms. Each administration is identified by its unique name and has a phone number and an address consisting of city and zip code. The administration has exactly one employee that manages it and deals with the distributors, suppliers, farms, and their contracts. The administration has at least one employee that works for it that tracks dates, ingredients and products locations and manages the ingredient and product warehouses.
- The factory has many **stores** and each one is identified by a unique number and has exactly one manger and at least one employee. Each store described by the store name, address consists of city and zip code and contact number.
- **Customers** can buy one or more products from one or more stores. Each customer is identified by a customer number, name, phone number and email. Each transaction made by the customer has payment details such as quantity, payment method, payment date, and transaction number.

Entity Relationship Diagram



Relational Schema



System Users

This system consists of 8 user groups as follow:

5.1 ADMINISTRATION EMPLOYEE

This user group This user group is an employee that works for the factory. Administration's employees keep track of the ingredients, dates, products, products warehouses, and ingredients warehouse. Administration Employees can remove and modify ingredients, dates, they can also add, remove, and modify products, products warehouses, and ingredients warehouse information.

5.1.1 The view of this group is presented below in the table:

ADMINISTRATION EMPLOYEE																																			
Pw_id	Pw_Capacity	Pw_Phone_no	Pw_City	Pw_Zip_code	W_id	W_Capacity	W_Phone_no	W_City	W_Zip_code	Pro_id	Pro_Type	Pro_date	Pro_Exp_date	P_Drove	P_Aisle	P_Shelf	P_Lack	Pro_H	Pro_Type	Pro_Origin	Pro_date	Pro_Exp_date	Pro_Price	Pro_Aisle	Pro_Shelf	Pro_Lack	Date_id	Date_Type	Date_Origin	Date_Price	Date_Exp_date	Date_Drove	Date_Aisle	Date_Shelf	Date_Lack

To see the table clearly please check the User-view.docx file

5.1.2 This user group accesses the database using some different operations, below some of them:

- **Insert:** Create ingredient warehouse, product warehouses and products records:

```
/*insert 1 INGREDIENTWAREHOUSE*/
INSERT INTO INGREDIENTWAREHOUSE VALUES('112223330', 530, '966504562813', 'Riyadh', 91168);
/*insert 2 PRODUCTWAREHOUSEs*/
INSERT INTO PRODUCTWAREHOUSE VALUES ('4455667788', '5000', '0551112233', 'Riyadh', '12211');
INSERT INTO PRODUCTWAREHOUSE VALUES ('5566778844', '2500', '0553322111', 'Jeddah', '22230');
/* insert 6 PRODUCTS */
INSERT INTO PRODUCT VALUES('1234567890', '2021-05-12', '2021-11-12', 'Date', '50', 'TRUE', '5', '1', '4455667788', '15', '25', '35', '7');
INSERT INTO PRODUCT VALUES('2345678901', '2021-07-17', '2021-12-17', 'Mamool', '120', 'TRUE', '10', '3', '5566778844', '3', '5', '10', '21');
INSERT INTO PRODUCT VALUES('3456789012', '2021-07-07', '2021-08-07', 'Date', '50', 'FALSE', '5', '1', '4455667788', '15', '25', '35', '8');
INSERT INTO PRODUCT VALUES('4567890123', '2021-03-01', '2021-12-01', 'Kleja', '70', 'TRUE', '12', '5', '4455667788', '7', '14', '23', '13');
INSERT INTO PRODUCT VALUES('5678901234', '2021-07-17', '2021-12-17', 'Mamool', '120', 'TRUE', '10', '7', '5566778844', '9', '13', '35', '20');
INSERT INTO PRODUCT VALUES('6789012345', '2021-03-01', '2021-12-01', 'Date honey', '70', 'TRUE', '6', '4', '5566778844', '17', '13', '14', '23');
```

- **Delete:**

Delete dates with farm id '1763018466' - Delete product with id '3456789012'

```
DELETE FROM DATE WHERE DF_id='1763018466';
DELETE FROM PRODUCT WHERE Pro_id='3456789012';
```

- **Update:**

Update the date '1123' expiry date to '2022-5-12' - update the product '1234567890' price to 65

```
UPDATE DATE SET Exp_date='2022-5-12' WHERE Date_id='1123';
UPDATE PRODUCT SET Price= '65' WHERE Pro_id='1234567890';
```

- **Retrieve from one table:**

- Retrieve the product id and quantity in stock of the product type 'mamool' and their product warehouse id.

```
SELECT Pro_id, Quantity_in_stock, Ppw_id FROM PRODUCT WHERE Type
='Mamool';
```

- Retrieve the capacity and phone number of the product warehouse located in Riyadh.

```
SELECT Capacity, Phone_no FROM PRODUCTWAREHOUSE WHERE City
='Riyadh';
```

- **Retrieve from more than two table:**

- Retrieve the date type and origin of dates that made products with type 'mamool'.

```
SELECT D.Type, D.Origin
FROM DATE AS D, MADE_OF AS M, PRODUCT AS P
WHERE D.Date_id=M.Mdate_id AND M.Mproduct_id=P.Pro_id AND P.Type
='Mamool';
```

- Retrieve the city of the ingredient warehouse with id '1112223330' and the origin of all the ingredients/dates stored in it.

```
SELECT IW.City, I.Origin, D.Origin
FROM INGREDIENTWAREHOUSE AS IW, DATE AS D, INGREDIENT AS I
WHERE IW.Iw_id=D.Diw_id AND IW.Iw_id=I.Iiw_id AND IW.Iw_id
='1112223330';
```

5.2 ADMINISTRATION MANAGER

This user is a manager at the headquarter. He/She is able to access or add or modify or remove his/her information and employees' information, contract's information, distributor's information, suppliers' information.

5.2.1 The view of this user is presented below in the table:

ADMINISTRATION MANAGER																										
ADMIN_NAME	ADMIN_CITY	ADMIN_PHONE_NO	ADMIN_EMAIL	CITY	CITY_CODE	TYPE	TYPE_CODE	DATE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE	DATE_CODE

To see the table clearly please check the User-view.docx file

5.2.2 This user accesses the database using some different operations, below some of them:

- **Insert:** Create few employees, administration and contracts records:

```
/* insert 5 Employees for ADMINISTRATION */
INSERT INTO EMPLOYEE VALUES('100327746','FAHAD','1990-5-3','M','Manager','Fahad4@gmail.com','0544453376','Olaya',62,11312,'Farm Factory Headquarter',NULL);
INSERT INTO EMPLOYEE VALUES('100325564','OMAR','1994-8-11','M','Salesman','omar6@gmail.com','0590005085','Olaya',59,11334,'Farm Factory Headquarter',NULL);
INSERT INTO EMPLOYEE VALUES('100325666','NAMAF','1990-5-7','M','Salesman','namaf@gmail.com','0506222433','Olaya',59,11334,'Farm Factory Headquarter',NULL);
INSERT INTO EMPLOYEE VALUES('123123123','Shroog','1998-10-9','F','Accountant','Shroog123@gmail.com','0501231230','AlYarmok',37,1234,'Farm Factory Headquarter',NULL);
INSERT INTO EMPLOYEE VALUES('456456456','Badr','1999-10-9','M','Accountant','Badr456@gmail.com','0504564560','AlRimal',70,4563,'Farm Factory Headquarter',NULL);
INSERT INTO EMPLOYEE VALUES('100321234','AHMAD','1991-12-5','M','Manager','Ahmadi@gmail.com','0523567689','Alnarjis',400,11265,NULL,1);
INSERT INTO EMPLOYEE VALUES('100329885','WONA','1992-1-2','F','Manager','moona_r@gmail.com','0599873357','Olaya',42,11389,NULL,2);
INSERT INTO EMPLOYEE VALUES('100317645','AMAL','1995-1-6','F','Manager','Amal@gmail.com','0558844356','Alnarjis',504,11254,NULL,3);
/* insert ADMINISTRATION */
INSERT INTO ADMINISTRATION VALUES('Farm Factory Headquarter','100327746','0551209859','Riyadh',12214);
/*Insert 3 Stores*/
INSERT INTO STORE VALUES(1,'Farm Factory Store 1','0512378900','Riyadh',16789,'100321234');
INSERT INTO STORE VALUES(2,'Farm Factory Store 2','0512378911','Jeddah',12289,'100329985');
INSERT INTO STORE VALUES(3,'Farm Factory Store 3','0512378922','Dammam',13389,'100317645');
/* insert 2 contracts for DISTRIBUTER */
INSERT INTO CONTRACT VALUES('1112223330','2020-10-3','2021-12-10','700','70000','Every 3 months');
INSERT INTO CONTRACT VALUES('2223334440','2020-9-7','2021-11-9','650','65000','Every 2 months');
/* insert 2 contracts for FARM */
INSERT INTO CONTRACT VALUES('444555666','2020-3-12','2022-7-15','400','40000','Every 5 months');
INSERT INTO CONTRACT VALUES('5556667770','2020-10-3','2021-12-10','500','50000','Every 3 months');
/* insert 2 contracts for SUPPLIER */
INSERT INTO CONTRACT VALUES('7778889990','2017-8-3','2022-6-5','300','30000','Every 7 months');
INSERT INTO CONTRACT VALUES('8889990000','2021-5-13','2023-6-10','850','85000','Every 2 months');
INSERT INTO CONTRACT VALUES('333444555','2019-7-14','2021-12-17','800','80000','Every 4 months');
```

- **Delete:**

Delete the contract with serial number '333444555' - delete employee with id '100325666'

```
/*1-*/ DELETE FROM CONTRACT WHERE Serial_num = '333444555';
/*2-*/DELETE FROM EMPLOYEE WHERE E_id = '100325666';
```

- **Update:**

Update administration with manger id '100321234' phone number to '0551209859'

```
/*1-*/ UPDATE ADMINISTRATION SET Phone_no = '0551209859' WHERE Manager_id= '100321234';
/*2-*/UPDATE CONTRACT SET Price = '60000' WHERE Serial_num = '5556667770';
```

- **Retrieve from one table :**

```
/*1-*/
SELECT Serial_num FROM CONTRACT WHERE
Price>30000;
/*2-*/
SELECT Admin_name,Phone_no FROM
ADMINISTRATION WHERE City='Riyadh';
```

- **Retrieve from more than two tables:**

```

/*1-*/
SELECT AD.Admin_name,F_id,F_name
FROM ADMINISTRATION AS AD ,ADMIN_FARM_SIGNS AS AFS , FARM AS F
WHERE AD.Admin_name = AFS.Ad_name AND AFS.Farm_id = F.F_id AND Manager_id = '100327746';
/*2-*/
SELECT AD.Admin_name , SA.Con_serial_num
FROM ADMINISTRATION AS AD , SUPPLIER_ADMIN_SIGNS AS SA , SUPPLIER AS S
WHERE AD.Admin_name = SA.Ad_name AND SA.Supplier_id = S.Sup_id AND SA.Supplier_id = '888664350';

```

5.3 STORE MANAGER

The Store Manager is an employee how works in a store and has the ability to Delete and Insert and Update all of the Employees information, how work at the same store as the store manager. And the Store manager has the ability to update the Quantity in the stock for the products. Also, the store manager has access to some of the Product and the Warehouse information.

5.3.1 The view of The Store Manager is presented below in the table:

STORE MANAGER																
E_id	E_name	Dop	Position	Email	Phone_no	Neighborhood	Street_no	Post_code	Pro_id	Pro_date	Ex_date	Type	Price	id_Pw	Phone_no	Zip_code

To see the table clearly please check the User-view.docx file

5.3.2 The Store Manager accesses the database using some different operations, below some of them:

- **Insert:** new employee for the store

```

INSERT INTO EMPLOYEE VALUES('100321255','REEM','1997-11-05','F','Co.Manager','Reem111@gmail.com','0577767689','Alnarjis',898,12345,NULL,3);
INSERT INTO EMPLOYEE VALUES('100389985','MANAL','1993-10-02','F','Janitorial','Manal.m@gmail.com','0588883357','Olaya',89,12355,NULL,3);

```

- **Delete:**

delete some employee from the store

```

DELETE FROM EMPLOYEE WHERE Store_num = 3 AND E_id = '1234567890';
DELETE FROM EMPLOYEE WHERE Stor_num = 3 AND Position = 'Co.Manager';

```

- **Update:**

the information for employee how work at the store -the quantity of the product that have been sold

```

UPDATE EMPLOYEE SET Position = 'Hygiene Officer' WHERE Position = 'Janitorial' ;
UPDATE Product SET Quantity_in_stock = (Quantity_in_stock-2) where Pro_id =6789012345 ;

```

- **Retrieve from one table:**

the Meal employees – the product with price more than 80.

```

SELECT E_name,Email FROM EMPLOYEE WHERE Store_num = 3 AND Gender = 'M' ;
SELECT Pro_id,Price FROM Product WHERE(Price<80);

```

- **Retrieve from more than two tables:**

- Retrieve the customer number and phone number and the product id and the quantity ordered which the customer bought more than 1, in one time
- Retrieve the product id, quantity, and quantity in stock for products in product warehouse in 'Riyadh' and its phone number

```
PR.Pro_id,C.C_num,Phone_no,B.Quantity FROM(BUYS AS B JOIN CUSTOMER AS C ON Ccust_num=C_num ) JOIN PRODUCT AS PR ON Pproduct_id = pro_id WHERE Quantity > 1;
PR.Pro_id,PR.Quantity_in_stock,PW.Phone_no,B.Quantity FROM( BUYS AS B JOIN PRODUCT AS PR ON Pproduct_id=pro_id ) JOIN PRODUCTWAREHOUSE AS PW ON Ppw_id = Pw_id WHERE City ='Ri
```

5.4 STORE EMPLOYEE

The store employee Has the ability only to see the customer, product, and the store information. Furthermore, he/she has the ability to see, modify, remove and add the bills information which includes payment method, the transaction number and the payment date.

5.4.1 The view of this group is presented below in the table:

STORE EMPLOYEE																
Sto Phone_no	Sto S_name	Sto City	Cus C_name	Cus Email	Cus Phone_n	Cus C_num	Buy Transaction_number	Buy Payment_method	Buy Payment_date	Pro Type	Pro Pro_id	Pro Price	Pro Pr_date	Pro Ex_date	Pro Quantity_in_stock	Pro Num_of_items_in_unit

To see the table clearly please check the User-view.docx file

5.4.2 This user group accesses the database using some different operations, below some of them:

- **Insert:** insert new information records for the bills

```
INSERT INTO BUYS VALUES(1,'200016372','1234567890',3,'CASH',2021-01-01,'4419144621');
INSERT INTO BUYS VALUES(2,'200016885','2345678901',1,'CREDIT-CARD',2021-01-02,'4462143661');
INSERT INTO BUYS VALUES(3,'200016099','3456789012',2,'CASH',2021-01-03,'4323345156');
```

- **Delete:**

- Delete the customer information who has the customer number 200016079
- Delete the product information who has the id 2345678901

```
/*1-*/ DELETE FROM CUSTOMER WHERE C_num ='200016079';
/*2-*/ DELETE FROM PRODUCT WHERE Pro_id ='6789012345';
```

- **Update:**

- Update the customer email to eman21@hotmail.com for the customer number 200016372
- Update the price to 130 for the product id 2345678901

```
/*1-*/ UPDATE CUSTOMER SET Email = 'eman21@hotmail.com' WHERE C_num= '200016372';
/*2-*/ UPDATE PRODUCT SET Price = '130' WHERE Pro_id= '2345678901';
```

- **Retrieve from one table:**

- Retrieve the customer name and his/her email who has the customer number 200016079

-Retrieve the products id and the products type if they are in stock

```
/*1-*/ SELECT C_name,Email FROM CUSTOMER WHERE C_num='200016079';
/*2-*/ SELECT Pro_id,Pro_type FROM PRODUCT WHERE Quantity_in_stock >= 1;
```

- **Retrieve from more than two tables:**

-retrieve the customer name, the store city and the contact number, also retrieve the bill information which includes payment method and the payment date and the transaction number for the customer number 1234567890

-retrieve the city of the store and the product information: product id , product type,and the product price , also retrieve the bill information which includes payment method and the payment date and the transaction number for the transaction number 4462143661

```
/*1-*/
SELECT CUS.C_num ,STO.City ,STO.S_name ,STO.Phone_no ,B.Payment_method ,B
.Payment_date ,B.Transaction_number
FROM CUSTOMER AS CUS, BUYS AS B ,STORE AS STO
WHERE CUS.C_num= B.Pcust_num AND CUS.C_num= '200016372' AND B.Pstore_num=STO
.S_num ;
/*2-*/
SELECT STO.City ,PR.Pro_id ,PR.Type , PR.Price, B.Payment_date ,B
.Payment_method ,B.Transaction_number
FROM STORE AS STO ,BUYS AS B,PRODUCT AS PR
WHERE STO.S_num = B.Pstore_num AND B.Pproduct_id=PR.Pro_id AND B
.Transaction_number = '4462143661';
```

5.5 SUPPLIER

This user group is a person, company, or organization that contracts with the factory to supply the factory with the needed ingredients of the products based on specific period of time as agreed in the contract. In addition, the supplier delivers the ingredients to the Ingredient Warehouse. The price, quantity and type of an ingredient differ from one supplier to the other. A supplier interacts with the administration for contract details.

5.5.1 The view of this group is presented below in the table:

SUPPLIER																
Sup_id	Sup_name	Supplier Email	Sup Phone_no	Contract Serial_num	Contract Quantity	Contract Start_date	Contract End_date	Contract Period	Contract Price	Ingredient Pro_date	Ingredient Exp_date	Ingredient Size	Ingredient Type	Ingredient Pack_id	Ingredient Origin	Ingredient warehouse City

To see the table clearly please check the User-view.docx file

5.5.2 This user group accesses the database using some different operations, below some of them:

- **Insert:** Create few suppliers' records:

```
INSERT INTO SUPPLIER VALUES('123456789', 'Foodics', 'riyadh@foodics.com', '966920028928');
INSERT INTO SUPPLIER VALUES('888664350', 'Arabian Food', 'info@arabianfoodcorp.com', '966540536723');
INSERT INTO SUPPLIER VALUES('848390001', 'Food Choice KSA', 'food_choice@hotmail.com', '966114738022');
INSERT INTO SUPPLIER VALUES('647297729', 'Alpha Co', 'AlphaCo@hotmail.com', '966509732562');
```

- **Delete:**

Remove 'Food Choice KSA' and supplier with id=' 647297729':

```
DELETE FROM SUPPLIER WHERE Sup_name = 'Food Choice KSA';
DELETE FROM SUPPLIER WHERE Sup_id = '647297729';
```

- **Update:**

Reform the information of the supplier with id = '123456789':

```
UPDATE SUPPLIER SET Sup_name= 'MultiFood', Email='multi-food@hotmail.com', Phone_no = '966239483110' WHERE Sup_id= '123456789';
UPDATE SUPPLIER SET Phone_no = '966503746372' WHERE Sup_id= '888664350';
```

- **Retrieve from one table:**

Retrieve name and email of the supplier with id = '123456789' and the id of 'Arabian Food ' supplier:

```
SELECT Sup_name, Email FROM SUPPLIER WHERE Sup_id= '123456789';
SELECT Sup_id FROM SUPPLIER WHERE Sup_name= 'Arabian Food';
```

- **Retrieve from more than two tables:**

Retrieve supplier's name and type of ingredient he supplies and location of the sugar:

```
SELECT Sup_name, Type FROM SUPPLIER JOIN INGREDIENT WHERE Sup_id=Supplier_id;
SELECT I_zone, I_aisle, I_shelf, I_lack FROM SUPPLIER JOIN INGREDIENT WHERE Sup_id=Supplier_id AND Type='Sugar';
```

5.6 DISTRIBUTER

This user group is a person, company, or organization that contracts with the factory to distribute the products to other companies or stores based on a specific period of time as agreed in the contract. A distributor interacts with the administration for contract details. distributors are able to add or modify or remove their information when the contract is over, they also have access to the contract details, product warehouses it deals with its information and products that was delivered to them.

5.6.1 The view of this group is presented below in the table:

DISTRIBUTER																							
Dis D_id	Dis D_name	Dis Email	Dis Phone_no	Dis City	Dis Zip_code	PW PW_id	PW PW_name	Admin Admin_name	Admin Admin_email	Contract Contract_id	Contract Contract_start_date	Contract Contract_end_date	Contract Contract_period	Contract Contract_price	Contract Contract_quantity	Pro Pro_id	Pro Pro_name	Pro Pro_size	Pro Pro_origin	Pro Pro_weight	Pro Pro_color	Pro Pro_shape	Pro Pro_taste

To see the table clearly please check the User-view.docx file

5.6.2 This user group accesses the database using some different operations, below some of them:

- **Insert:** Create few distributors' records:

```

/* insert 4 DISTRIBUTERS */
INSERT INTO DISTRIBUTER VALUES('1998876500', 'XYZ Distributing
United', 'Riyadh', '13323', 'DistribUnited@org.com',
'0534567890');
INSERT INTO DISTRIBUTER VALUES('1967898900', 'TX Distribute',
'Riyadh', '24432', 'DistributeTX@org.com', '0587654321');
INSERT INTO DISTRIBUTER VALUES('5678987600', 'Distributing Union
', 'Riyadh', '87654', 'DistribUnion@org.com', '0599887765');
INSERT INTO DISTRIBUTER VALUES('8794565300', 'Distributing For
Food', 'Riyadh', '81234', 'DistribForFood@org.com',
'0509876543');

```

- **Delete:**

Delete distributors with id '8794565300' and '1998876500'

```

/* delete 2 DISTRIBUTERS */
DELETE FROM DISTRIBUTER WHERE D_id='8794565300';
DELETE FROM DISTRIBUTER WHERE D_id='1998876500';

```

- **Update:**

Update distributor with id '1967898900' email to 'DistributeTX@org.net' -
update distributor with id '5678987600' phone number to '0599887555'

```

/* update 2 DISTRIBUTERS */
UPDATE DISTRIBUTER SET Email='DistributeTX@org.net' WHERE D_id
='1967898900';
UPDATE DISTRIBUTER SET Phone_no='0599887555' WHERE D_id
='5678987600';

```

- **Retrieve from one table:**

- Retrieve all the ids of products in stock with production date "17/7/2021";

```

SELECT Pro_id, Type FROM PRODUCT WHERE Pr_date='2021-07-17';

```

- Retrieve the price and quantity of the contract with serial number "111222333";

```

SELECT Price, Quantity FROM CONTRACT WHERE Serial_num ='1112223330';

```

- **Retrieve from more than two tables:**

-Retrieve the product id of the products that has date as type and their distributor id and the product warehouse id.

```

SELECT P.Pro_id, PW.Pw_id, PT.Dis_id
FROM PROVIDES_TO AS PT JOIN PRODUCTWAREHOUSE AS PW JOIN PRODUCT AS P
WHERE PT.Ppw_id=PW.Pw_id AND PW.Pw_id=P.Ppw_id AND P.Type='Date';

```

- Retrieve the contract end date and Distributer phone number of the contract signed by distributor with id "1967898900".

```

SELECT C.End_date, D.Phone_no
FROM CONTRACT AS C, DIS_ADMIN SIGNS AS DAS, DISTRIBUTER AS D
WHERE C.Serial_num=DAS.Con_serial_num AND DAS.Dis_id=D.D_id AND D
.D_id='1967898900';

```

5.7 FARM REPRESENTER

This user group is a person, company, or organization that contracts with the factory to produce dates based on specific period of time as agreed in the contract. A farm representer interacts with the administration for contract details. Farm representers are able to add or modify or remove their information when the contract is over, they also have access to the contract details.

5.7.1 The view of this group is presented below in the table:

FARM REPRESENTER																	
Dat Degree	Dat Size	Dat Origin	Dat Exp_date	Adm Phone_no	Con Serial_num	Con Start_date	Con end_date	Con Period	Con Price	Con Quantity	Dat Type	Dat Date_id	Far Zip_code	Far City	Far Phone_num	Far F_name	Far F_id

To see the table clearly please check the User-view.docx file

5.7.2 This user group accesses the database using some different operations, below some of them:

- **Insert:** Create few Farms' records:

```
INSERT INTO FARM VALUES ('1763018417', 'ghady-farm', '0535002072', 'buraydah', '52763');
INSERT INTO FARM VALUES ('6180931410', 'alsaleem-farm', '0503972024', 'buraydah', '52355');
INSERT INTO FARM VALUES ('7847838897', 'Abdullah-Ali-lablan-farm', '0504183356', 'al-kharj', '16231');
```

- **Delete:**

Delete farm with id '7847838897' - delete date with id '1234'

```
DELETE FROM FARM WHERE F_id='7847838897';
DELETE FROM DATE WHERE Date_id='1234';
```

- **Update:**

update farm with id '6180931410' zip code to '52357' - update farm with id '7847838897' name to 'alnakheel-farm'

```
UPDATE FARM SET Zip_code='52357' WHERE F_id='6180931410' ;
UPDATE FARM SET F_name='alnakheel-farm' WHERE F_id='7847838897' ;
```

- **Retrieve from one table:**

-Retrieve the farm's name and phone number of the farm located in Buraydah.
-Retrieve the farm's name and id of the farm phone number 0503972024.

```
SELECT F_name ,Phone_num FROM FARM WHERE City='buraydah' ;
SELECT F_name ,F_id FROM FARM WHERE Phone_num='0503972024';
```

- **Retrieve from more than two tables:**

-Retrieve the farm's name and the size of the date.
-Retrieve the farm's phone number, city, and zip code of the date type sukari.

```
/*1-*/
SELECT F.F_name,D.Size
FROM FARM AS F JOIN DATE AS D
WHERE F.F_id=D.DF_id;
/*2-*/
SELECT F.Phone_num,F.City,F.Zip_code
FROM FARM AS F JOIN DATE AS D
WHERE F.F_id=D.DF_id AND D.Type='sukari';
```

5.8 CUSTOMER

This user group are customers who buy from our Stores. The customers have access to their information, store information, product information and purchase information like Payment date, Quantity etc.

5.8.1 The view of this group is presented below in the table:

CUSTOMER																		
Cus_C_num	Cus Name	Cus Email	Cus Phone_no	Sto_L_name	Sto Phone_no	Sto City	Sto Zip_code	Pro_id	Pro pr_date	Pro Cr_date	Pro Price	Pro Type	Pro Standard	Pro Name_of_store_in_unit	Payment_date	Buy Quantity	Payment_method	Transaction_number

To see the table clearly please check the User-view.docx file

5.8.2 This user group accesses the database using some different operations, below some of them:

- **Insert:**

```
INSERT INTO CUSTOMER VALUES('200016372','Eman','eman21@gmail.com','0555332987');
INSERT INTO CUSTOMER VALUES('200016885','Fay','fay.33@gmail.com','0577562237');
INSERT INTO CUSTOMER VALUES('200016099','Layan','laayann.987@gmail.com','0599044876');
```

- **Delete:**

Delete customers with number '200016099' and name 'Fay'

```
DELETE FROM CUSTOMER WHERE C_num = '200016099';
DELETE FROM CUSTOMER WHERE C_name = 'Fay';
```

- **Update:**

Update customer with number '200016885' phone number to '0577663546'

Update customer with number '200016372' name to 'Amal'

```
UPDATE CUSTOMER SET Phone_no = '0577663546' WHERE C_num = '200016885';
UPDATE CUSTOMER SET C_name = 'Amal' WHERE C_num = '200016372';
```

- **Retrieve from one table:**

-Retrieve the customer's name , phone number of the customer number: 200016372.

-Retrieve the customer's email and customer's number of customer name:Fay

```
SELECT C_name,Phone_no FROM CUSTOMER WHERE C_num='200016372';
SELECT Email,C_num FROM CUSTOMER WHERE C_name = 'Fay';
```

- **Retrieve from more than two tables:**

-Retrieve the customer's name and the payment date .

-Retrieve the customer's email and the customer's phone number of the payment method:CASH.

```
SELECT C.C_name,B.Payment_date FROM CUSTOMER JOIN BUYS WHERE C_num=Pcust_num;
SELECT C.Email,C.Phone_no FROM CUSTOMER JOIN BUYS WHERE C_num=Pcust_num AND B.Payment_method='CASH';
```