|  |  |
| --- | --- |
| **NAME** | **ID** |
| **FAHIM, SHEIKH FARHAN** | **17-35984-3** |
| **Sadia Mubbassira Chowdhury** | **20-43407-1** |
| **Sumaya jahan kanta** | **20-41853-1** |
| **ARIFA, MUSHARRAT** | **18-37707-1** |

**AMERICAN INTERNATIONAL**

**UNIVERSITY-BANGLADESH**

**Faculty of Science and Information Technology**

**Course Name: Introduction To Database.**

**Faculty Name: JUENA AHMED NOSHIN**

**Section: L**

**Project Name: Super Shop Management System.**

**CONTENTS:**

|  |  |
| --- | --- |
| **PAGE NUMBER** | **TOPIC NAME** |
| **1** | **COVER PAGE** |
| **2** | **CONTENTS** |
| **3** | **INTRODUCTION** |
| **4** | **SCENARIO DESCRIPTION,ER DIAGRAM** |
| **5,6,7,8,9** | **NORMALIZATION** |
| **10** | **SCHEMA DIAGRAM** |
| **11,12,13,14,15,16,17** | **TABLE CREATION** |
| **18** | **DATA INSERTION** |
| **18,19,20,21,22,23** | **QUERY WRITING** |
| **23** | **RELATIONAL ALGEBRA** |
|  |  |

**INTRODUCTION:**

This documentation has been prepared to give an overview of the Super shop management software system specification for the real-life projects that each student of Database Design and Development course Project has to develop and implement group. Super shop management software system should be purchased from software package vendors and customised to the departmental Super shop’s needs, if necessary. Customer service refers to a departmental Super shop ability to satisfy the needs of its customers by this Super shop management software system.

**Primary Keys**

         CUSTOMER – CUSTOMER\_ID

         BILL - BILL\_NO.

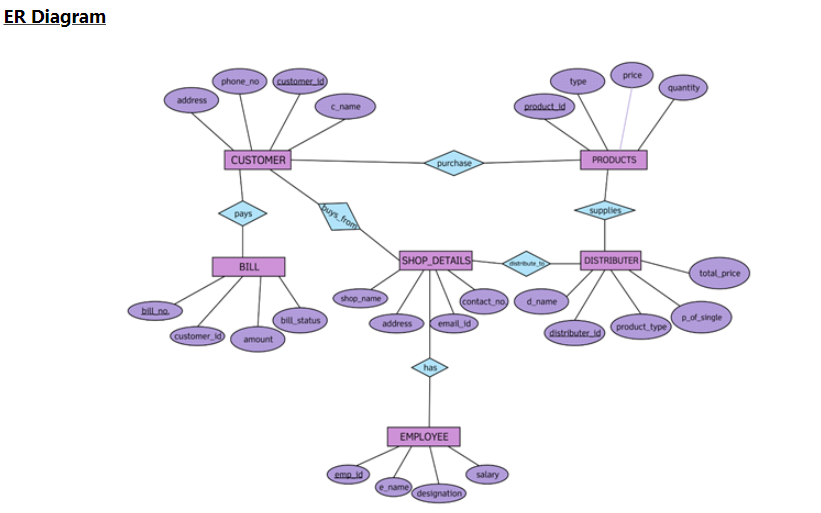
         EMPLOYEE – EMP\_ID

         DISTRIBUTER- DISTRIBUTER\_ID

         PRODUCT- PRODUCT\_ID

**Relationships**

         Customer – Customer ID – Billing Counter



**NORMALIZATION:**

**Served by:**

**UNF**

Served by (customer id, customer\_ name, phone no, shop id, shop\_ name, house\_ no,

street name, city)

**1NF**

phone no is a multi-value attribute

1. customer id, customer\_name, phone no, shop id, shop\_ name, house\_ no, street\_

name, city

**2NF**

1. customer id, customer\_name, phone no

2. shop\_id, shop\_name, house\_ no, street\_name, city

**3NF**

**There is no transitive dependency. Relation is already in 3NF**

1. customer id, customer\_name, phone no

2. shop\_id, shop\_name, house\_no, street\_name, city

**Table Creation**

1. customer id, customer\_name, phone no, shop\_id

2. shop\_id, shop\_name, house\_ no, street\_name, city

**Order**

**UNF**

Order (product id, product type, price, customer id, customer\_name, phone no)

**1NF**

phone no is a multi-value attribute

1. product id, product \_type, price, customer id, customer\_name, phone no

**2NF**

1. product id, product\_type, price

2. customer id, customer\_name, phone no

**3NF**

**There is no transitive dependency. Relation is already in 3NF**

1. product id, product \_type, price

2. customer id, customer\_name, phone no

**Table Creation**

1. product id, product \_type, price

2. customer id, customer\_name, phone no

3. **product id, customer\_id**

**Pay**

**UNF**

Pay (bill id, amount, customer id, customer\_name, phone no)

**1NF**

phone no is a multi-value attribute

bill id, amount, customer id, customer\_name, phone no

**2NF**

1. bill id, amount

2. customer id, customer\_name, phone no

**3NF**

**There is no transitive dependency. Relation is already in 3NF**

1. bill id, amount

2. customer id, customer\_name, phone no

**Table Creation**

1. bill id, amount

2. customer id, customer\_name, phone no

3. **bill id, customer id**

**Work:**

**UNF:**

Work (Shop id , shop\_ name, house\_ no, street\_ name, City, employee id, employee\_ name, salary, designation)

**1NF:**

There is no multi valued attribute.

1.Shop id , shop\_ name, house\_ no, street\_ name, City, employee id, employee\_ name, salary, designation

**2NF:**

1.Shop id,Shop\_name, house\_no, Street\_name, City

2.employee Id, employee\_name, Salary, designation

**3NF:**

There is no transitive dependency.The Relation is already in 3NF

1.Shop id,Shop\_name, house\_no, Street\_name, City

2.employee Id, employee\_name, Salary, designation

**TABLE CREATION:**

1.Shop id,Shop\_name, house\_no, Street\_name, City

2..employee id, employee\_name, Salary, designation,Shop Id .

Owned by:

Owned by (Shop id, Shop\_name, house\_no, Street\_name, City,Owner id, Owner \_name)

**1NF:**

There is no multi valued attribute.

1.Shop id, Shop\_name, house\_no, Street\_name, City,Owner id, Owner \_name

**2NF:**

1.Shop id, Shop\_name, house\_no, Street\_name, City

2.Owner Id, Owner\_name

**3NF:**

There is no transitive dependency.The Relation is already in 3NF.

1.Shop id ,Shop\_name, house\_no, Street\_name, City

2.Owner Id, Owner\_name

**Table Creation:**

1. Shop id,Shop\_name, house\_no, Street\_name, City

2.Owner Id, Owner\_name,Shop\_id.

Temporary Table:

1.Customer id, Customer \_name, Phone no,Shop\_id

2.Shop id,Shop\_name, house\_no, Street\_name, City

3.Product id, Customer id

4.bill id, amount.

5.bill id, Customer id.

6.employee id, employee \_name, salary, designation,shop\_id

7.Owner id, Owner \_name,Shop \_id.

**Final Table:**

1.Customer id, Customer \_name, Phone no 1, phone no2, Phone no 3.......... phone no n

Shop \_id

2 .Shop id,Shop\_name, house\_no, Street\_name, City

3.product id , product \_type, price

4.Product id, Customer id

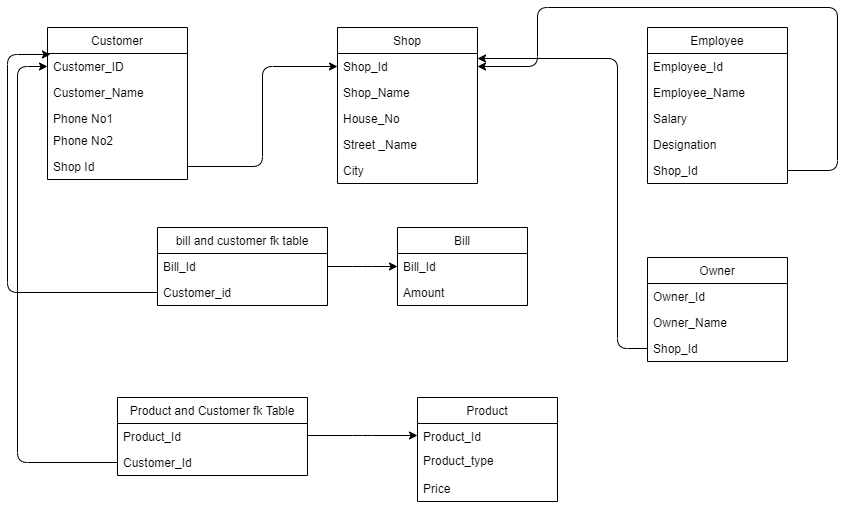
5.bill id, amount

6.employee id, employee \_name, salary, designation,shop\_id

7.Owner id , Owner \_name ,Shop \_id.

8.bill id, customer id

**SCHEMA DIAGRAM:**

****

**Table Creation:**

➢ CREATE USER Isopropyl IDENTIFIED BY net23xyz;

➢ GRANT UNLIMITED TABLESPACE TO Isopropyl;

➢ CREATE ROLE Accounts;

➢ GRANT create table, create view, create sequence to Accounts;

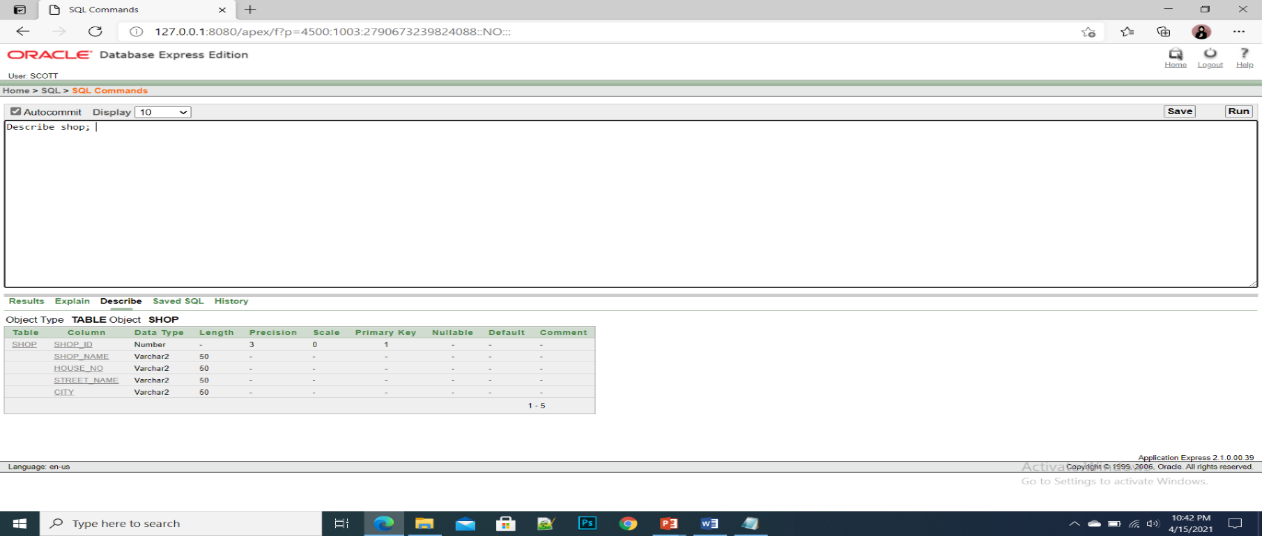
➢ GRANT Accounts to Isopropyl;

➢ ALTER USER Isopropyl IDENTIFIED BY net345abc;

* **For Shop Table :**

create table shop (shop\_id number (3) primary key,shop\_name varchar2(50) not null,house\_no varchar2(50) not null,street\_name varchar2(50) not null,city varchar2(50) not null);

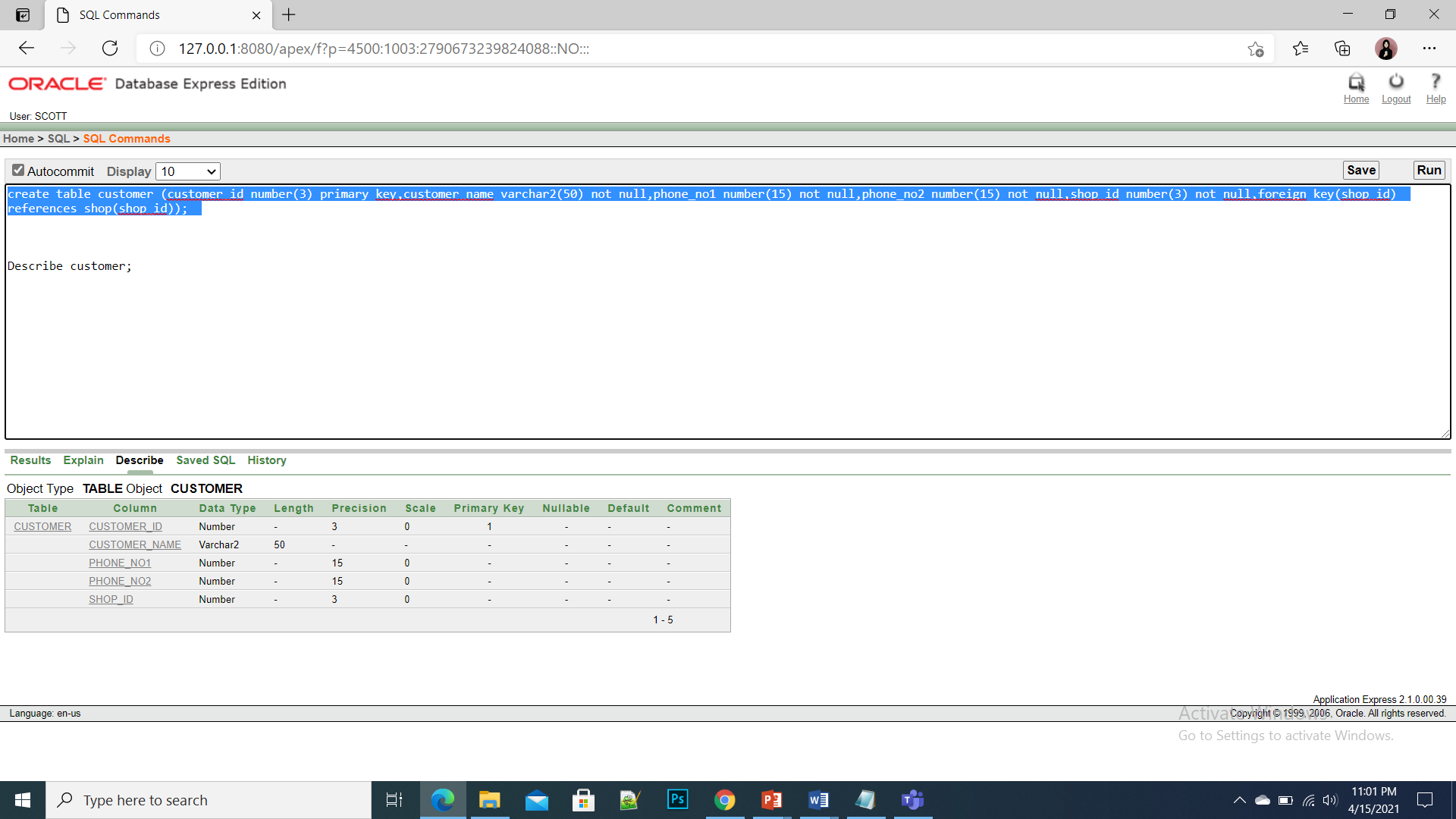
Describe shop;



* **For Customer Table :**

create table customer (customer\_id number(3) primary key,customer\_name varchar2(50) not null,phone\_no1 number(15) not null,phone\_no2 number(15) not null,shop\_id number(3) not null,foreign key(shop\_id) references shop(shop\_id));

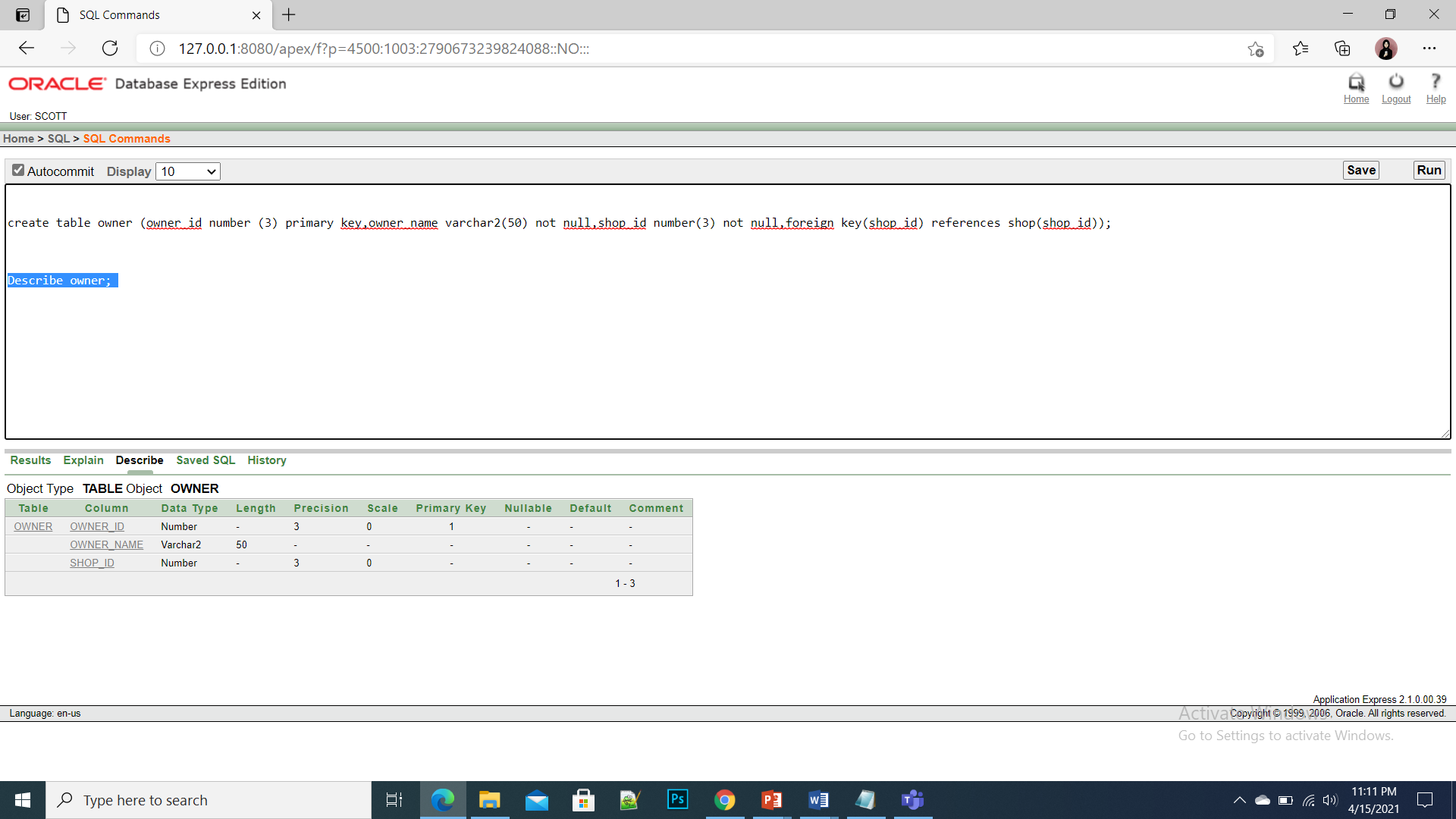
Describe customer;



**3. For Employee Table :**

create table employee (employee\_id number (3) primary key,employee\_name varchar2(50) not null,salary number(20) not null,designation varchar2(50) not null,shop\_id number(3) not null,foreign key(shop\_id) references shop(shop\_id));

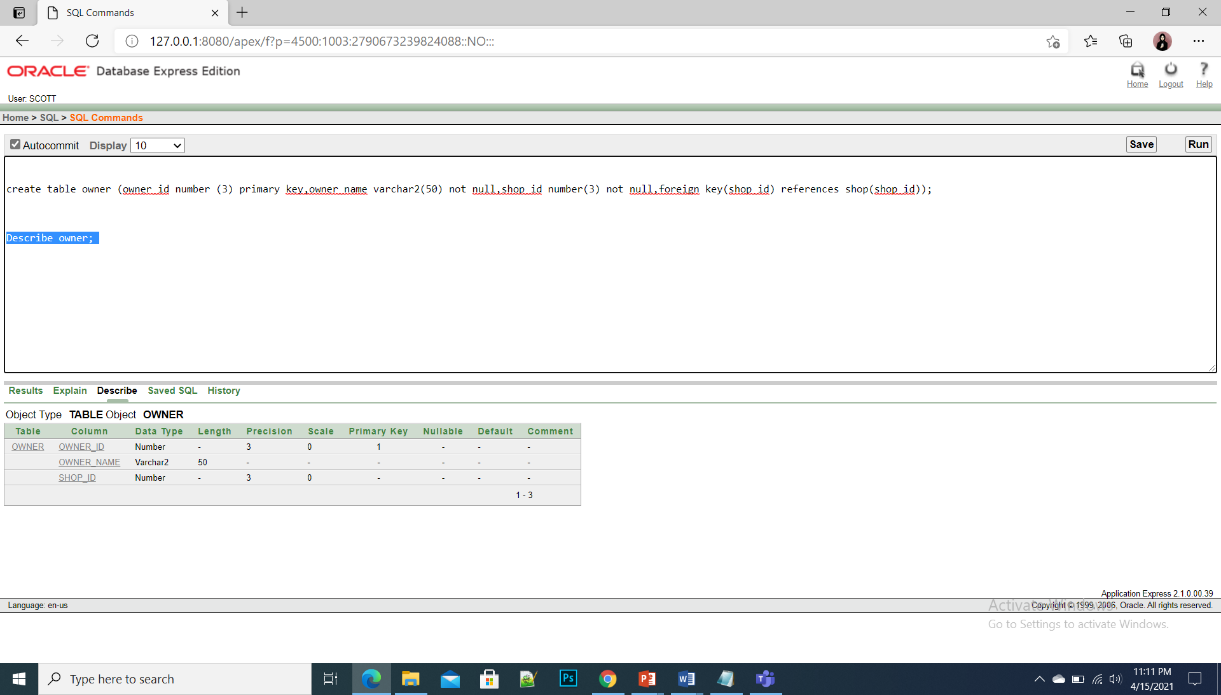
Describe employee;



**4. For Owner Table**

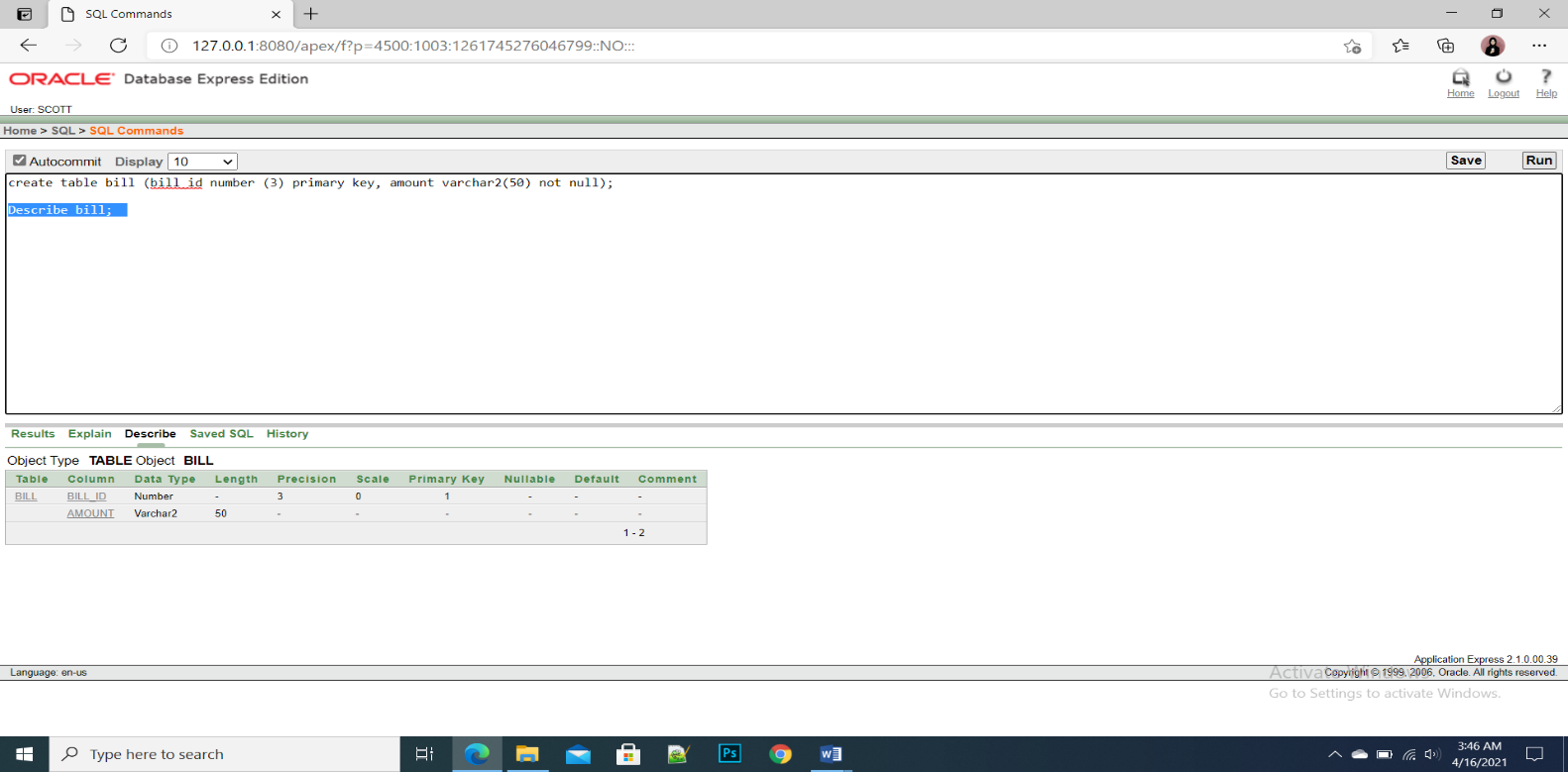
create table owner (owner\_id number (3) primary key,owner\_name varchar2(50) not null,shop\_id number(3) not null,foreign key(shop\_id) references shop(shop\_id));

Describe owner;



**5. For Bill Table**

create table bill (bill\_id number (3) primary key, amount varchar2(50) not null);

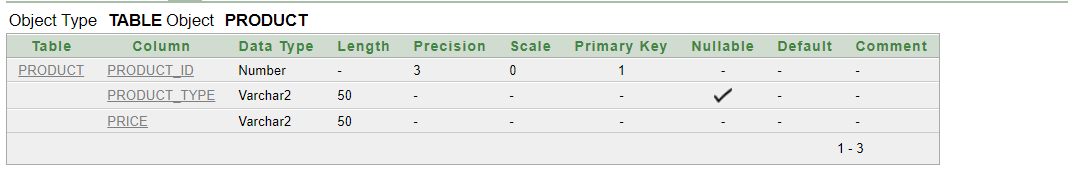
Describe bill;

**6. For Product Table**

create table product(product\_id number (3) primary key,product\_type varchar2(50) unique,price

varchar2(50) not null);

Describe product;

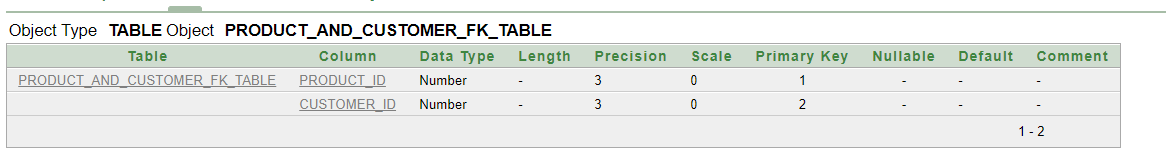


**7. For product and customer fk Table**

Create table product\_and\_customer\_fk\_table(product\_id number(3)not null,foreign key(product\_id)references product(product\_id),customer\_id number(3) not null,foreign

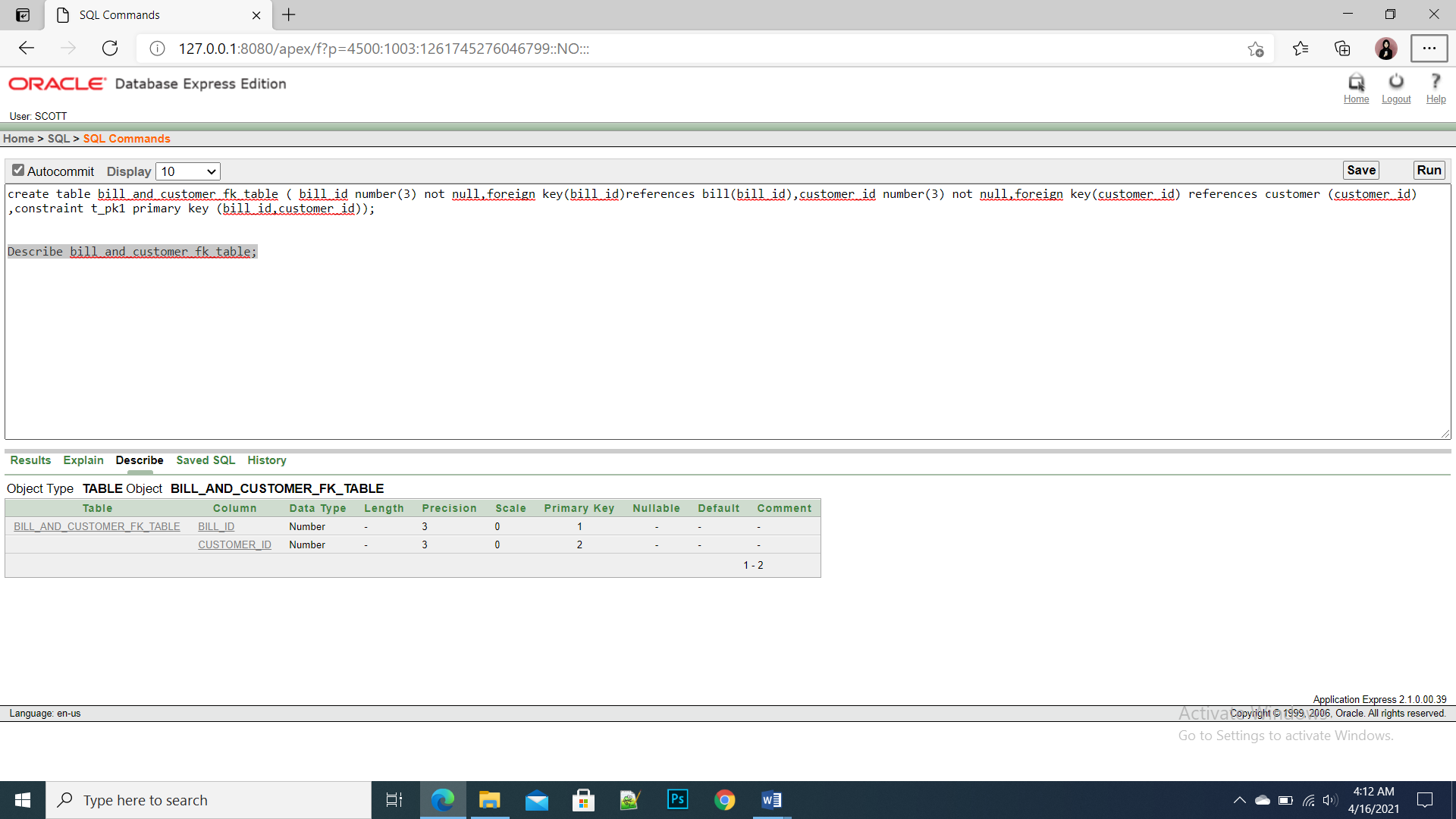
key(customer\_id)references customer(customer\_id),constraint p\_pk primary key(product\_id,customer\_id));

Describe product \_and\_customer\_fk\_table;



**8. For bill and customer fk Table**

create table bill\_and\_customer\_fk\_table ( bill\_id number(3) not null,foreign key(bill\_id)references bill(bill\_id),customer\_id number(3) not null,foreign key(customer\_id) references customer (customer\_id) ,constraint t\_pk1 primary key (bill\_id,customer\_id));

Describe bill\_and\_customer\_fk\_table;

**Sequence**

* create sequence shop\_id\_seq increment by 1 start with 100 maxvalue 999;
* create sequence customer\_id\_seq increment by 1 start with 200 maxvalue 999;
* create sequence employee\_id\_seq increment by 1 start with 300 maxvalue 999;
* create sequence owner\_id\_seq increment by 1 start with 400 maxvalue 999;
* create sequence bill\_id\_seq increment by 1 start with 500 maxvalue 999;
* create sequence product\_id\_seq increment by 1 start with 600 maxvalue 999;

**DATA INSERTION :**

**1. For Shop Table**

insert into shop (shop\_id,shop\_name ,house\_no,street\_name,city)values(shop\_id\_seq.NEXTVAL,'ABC','55/B','Baily Road','DHAKA');

insert into shop (shop\_id,shop\_name ,house\_no,street\_name,city)values(shop\_id\_seq.NEXTVAL,'DEF','64/A','Shohid Bir Uttam Road','DHAKA');

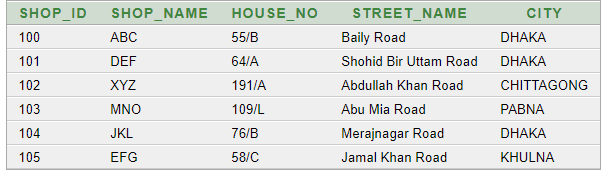
insert into shop (shop\_id,shop\_name ,house\_no,street\_name,city)values(shop\_id\_seq.NEXTVAL,'XYZ','191/A','Abdullah Khan Road','CHITTAGONG');

insert into shop (shop\_id,shop\_name ,house\_no,street\_name,city)values(shop\_id\_seq.NEXTVAL,'MNO','109/L','Abu Mia Road','PABNA');

insert into shop (shop\_id,shop\_name ,house\_no,street\_name,city)values(shop\_id\_seq.NEXTVAL,'JKL','76/B','Merajnagar Road','DHAKA');

insert into shop (shop\_id,shop\_name ,house\_no,street\_name,city)values(shop\_id\_seq.NEXTVAL,'EFG','58/C','Jamal Khan Road','KHULNA');

SELECT \*FROM SHOP;

****

**2. For Customer Table**

* INSERT INTO customer(customer\_id, customer\_name,phone\_no1,phone\_no2,shop\_id)

values(customer\_id\_seq.NEXTVAL,'RAJ','8801711318734','8801552392801','100');

* INSERT INTO customer(customer\_id,customer\_name,phone\_no1,phone\_no2,shop\_id)

values(customer\_id\_seq.NEXTVAL,'SAMIUN','8801723210623','88019107499455','101'

);

* INSERT INTO customer(customer\_id,customer\_name,phone\_no1,phone\_no2,shop\_id)

values(customer\_id\_seq.NEXTVAL,'Kamal','88015865448796','880156586586','102');

* INSERT INTO customer(customer\_id,customer\_name,phone\_no1,phone\_no2,shop\_id)

values(customer\_id\_seq.NEXTVAL,'Badol','8801847265122','8801313054598','103');

* INSERT INTO customer(customer\_id,customer\_name,phone\_no1,phone\_no2,shop\_id)

values(customer\_id\_seq.NEXTVAL,'Santa','8801552349494','8801722629237','104');

* INSERT INTO customer(customer\_id,customer\_name,phone\_no1,phone\_no2,shop\_id)

values(customer\_id\_seq.NEXTVAL,'Rima','8801747440554','8801955997675','105');

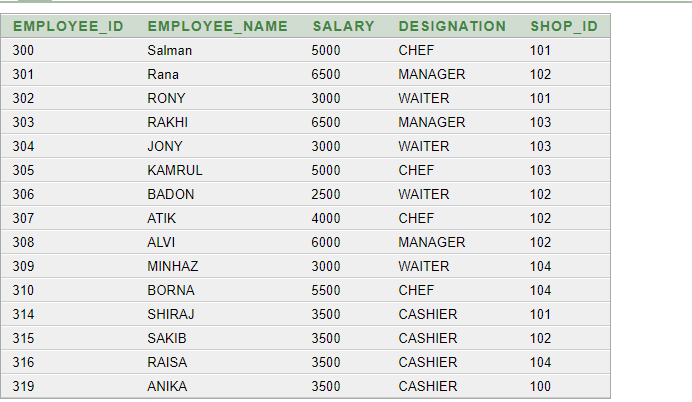
SELECT \*FROM CUSTOMER;

****

**3. For Employee Table:**

* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq.NEXTVAL, 'Salman', 5000, 'CHEF', '101');
* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq.NEXTVAL, 'Rana', 6500, 'MANAGER', '102');
* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq. NEXTVAL, 'RONY', 3000, 'WAITER', '101');
* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq. NEXTVAL, 'RAKHI', 6500, 'MANAGER', '103');
* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq. NEXTVAL, 'JONY', 3000, 'WAITER', '103');
* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq .NEXTVAL, 'KAMRUL', 5000, 'CHEF', '103');
* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq.NEXTVAL,'BADON',2500,'WAITER','102');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values(employee\_id\_seq.NEXTVAL,'ATIK',4000,'CHEF','102');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values(employee\_id\_seq.NEXTVAL,'ALVI',6000,'MANAGER','102');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values (employee\_id\_seq.NEXTVAL,'MINHAZ',3000,'WAITER','104');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values(employee\_id\_seq.NEXTVAL,'BORNA',5500,'CHEF','104');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values (employee\_id\_seq.NEXTVAL,'SHAKIL',6000,'MANAGER','100');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values (employee\_id\_seq.NEXTVAL,'RONY',3000,'WAITER','100');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values(employee\_id\_seq. NEXTVAL,'FATEMA',5000,'CHEF','100');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values(employee\_id\_seq. NEXTVAL,'SHIRAJ',3500,'CASHIER','101');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values(employee\_id\_seq. NEXTVAL,'SAKIB',3500,'CASHIER','102');
* insert into employee (employee\_id,employee\_name,salary,designation,shop\_id)values(employee\_id\_seq. NEXTVAL,'RAISA',3500,'CASHIER','104');
* insert into employee (employee\_id, employee\_name, salary, designation, shop\_id)values (employee\_id\_seq. NEXTVAL,'ANIKA',3500,'CASHIER','100');

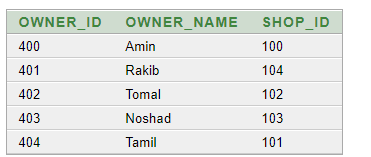
SELECT \*FROM EMPLOYEE;



**4. For Owner Table:**

* insert into owner (owner\_id, owner\_name, shop\_id) values (owner\_id\_seq.NEXTVAL,'Amin',100 );
* insert into owner (owner\_id, owner\_name, shop\_id) values (owner\_id\_seq.NEXTVAL,'Rakib',104 );
* insert into owner (owner\_id, owner\_name, shop\_id) values (owner\_id\_seq.NEXTVAL,'Tomal',102 );
* insert into owner (owner\_id, owner\_name, shop\_id) values (owner\_id\_seq.NEXTVAL,'Noshad',103 );
* insert into owner (owner\_id, owner\_name, shop\_id) values (owner\_id\_seq.NEXTVAL,'Tamil',101 );

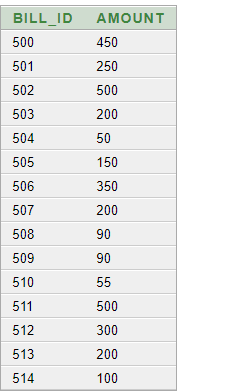
SELECT \*FROM OWNER



**5. For Bill Table:**

* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'450');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'250');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'500');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'200');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'50');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'150');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'350');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'200');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'90');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'90');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'55');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'500');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'300');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'200');
* INSERT INTO bill (bill\_id,amount)VALUES(bill\_id\_seq.NEXTVAL,'100');

SELECT \*FROM BILL;

****

**6. FOR PRODUCT TABLE:**

* INSERT INTO PRODUCT (product\_id, product\_type,price) VALUES (product\_id\_seq.NEXTVAL,

'HOLUS GURA(500gm)', '40');

* INSERT INTO PRODUCT(product\_id,product\_type,price) VALUES (product\_id\_seq.NEXTVAL,

'MORICH GURA(500gm)','50');

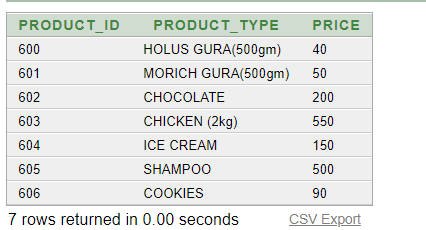
* INSERT INTO PRODUCT (product\_id, product\_type, price) VALUES (product\_id\_seq.NEXTVAL,'ICE CREAM', '150');
* INSERT INTO PRODUCT (product\_id, product\_type, price) VALUES (product\_id\_seq.NEXTVAL,'CHICKEN (2kg)', '550');
* INSERT INTO PRODUCT (product\_id,product\_type, price) VALUES (product\_id\_seq.NEXTVAL,'CHOCOLATE', '200');

• INSERT INTO product (product\_id, product\_type, price) VALUES (product\_id\_seq.NEXTVAL,

'SHAMPOO', '500');

• INSERT INTO product (product\_id, product\_type, price) VALUES (product\_id\_seq.NEXTVAL,

'COOKIES', '90');



**7.For product and customer fk Table:**

INSERT INTO product\_and\_customer\_fk\_table(product\_id ,customer\_id)VALUES('600','217');

INSERT INTO product\_and\_customer\_fk\_table(product\_id ,customer\_id)VALUES('604','219');

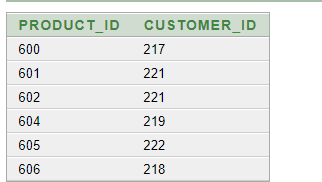
INSERT INTO product\_and\_customer\_fk\_table(product\_id ,customer\_id)VALUES('602','221');

INSERT INTO product\_and\_customer\_fk\_table(product\_id ,customer\_id)VALUES('605','222');

INSERT INTO product\_and\_customer\_fk\_table(product\_id ,customer\_id)VALUES('601','221');

INSERT INTO product\_and\_customer\_fk\_table(product\_id ,customer\_id)VALUES('606','218');

SELECT \*FROM product\_and\_customer\_fk\_table;

****

**8. For Bill and customer fk Table:**

INSERT INTO bill\_and\_customer\_fk\_table(bill\_id ,customer\_id)VALUES('500','217');

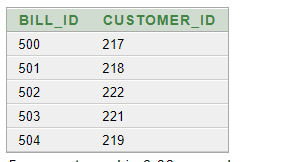
INSERT INTO bill\_and\_customer\_fk\_table(bill\_id ,customer\_id)VALUES('501','218');

INSERT INTO bill\_and\_customer\_fk\_table(bill\_id ,customer\_id)VALUES('503','221');

INSERT INTO bill\_and\_customer\_fk\_table(bill\_id ,customer\_id)VALUES('504','219');

INSERT INTO bill\_and\_customer\_fk\_table(bill\_id ,customer\_id)VALUES('502','222');

SELECT \*FROM bill\_and\_customer\_fk\_table;

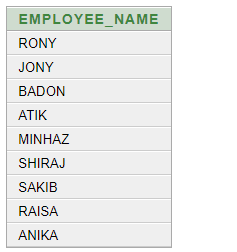


**SQL Queries:**

**Question:** Display the employee names who earn less than employee KAMRUL.

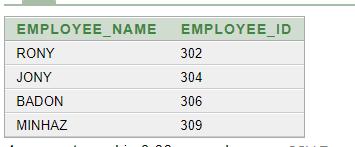
**ANSWER:** select employee\_name from employee where salary<(select salary from

employee where employee\_name='KAMRUL');

****

**Question:** Display the employee names and employee id who have the same designation as employee BADON

Answer: select employee\_name,employee\_id from employee where designation=(select designation from employee where employee\_name='BADON');

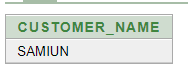


**2. Joining**

**Question: Display the name of all the customers who eat in shop DEF.**

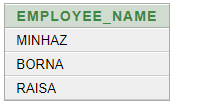
**Answer:** **SELECT c.customer\_name FROM customer c, shop s WHERE c.shop\_id=s.shop\_id**

**and shop\_name='DEF';**



**Question:** Display the name of all the employess who work in shop JKL.

**ANSWER:**SELECT e.employee\_name FROM employee e, shop s WHERE e.shop\_id=s.shop\_id and shop\_name='JKL';



**RELATIONAL ALGEBRA:**

1. Find the name of the customer whose id is 2001

***∏customer\_name (σ customer\_id=“2001”(CUSTOMER))***

2. Find the bill where amount is greater than $3004

**∏*amount* (σ*amount* > 3004 (*BILL*))**

3. Find the Employee name where Employee name is 'Suresh'

**∏*f\_name* (σ*f\_name*=“Suresh” (*Employee*))**

4. Find the Product type product type is 'Bath Soap'

**∏*product\_type* (σ*product\_type*=“Bath Soap” (*DISTRIBUTER*))**

5. Find Product Id and price where price is 30

**∏*product\_id,price* (σ*price*=“30” (*BILL*))**