

***Introduction To Database* Project**

**Fall**

**2019-20**

****

**Project Name: Supershop Database System**

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**Section: [ K ]**

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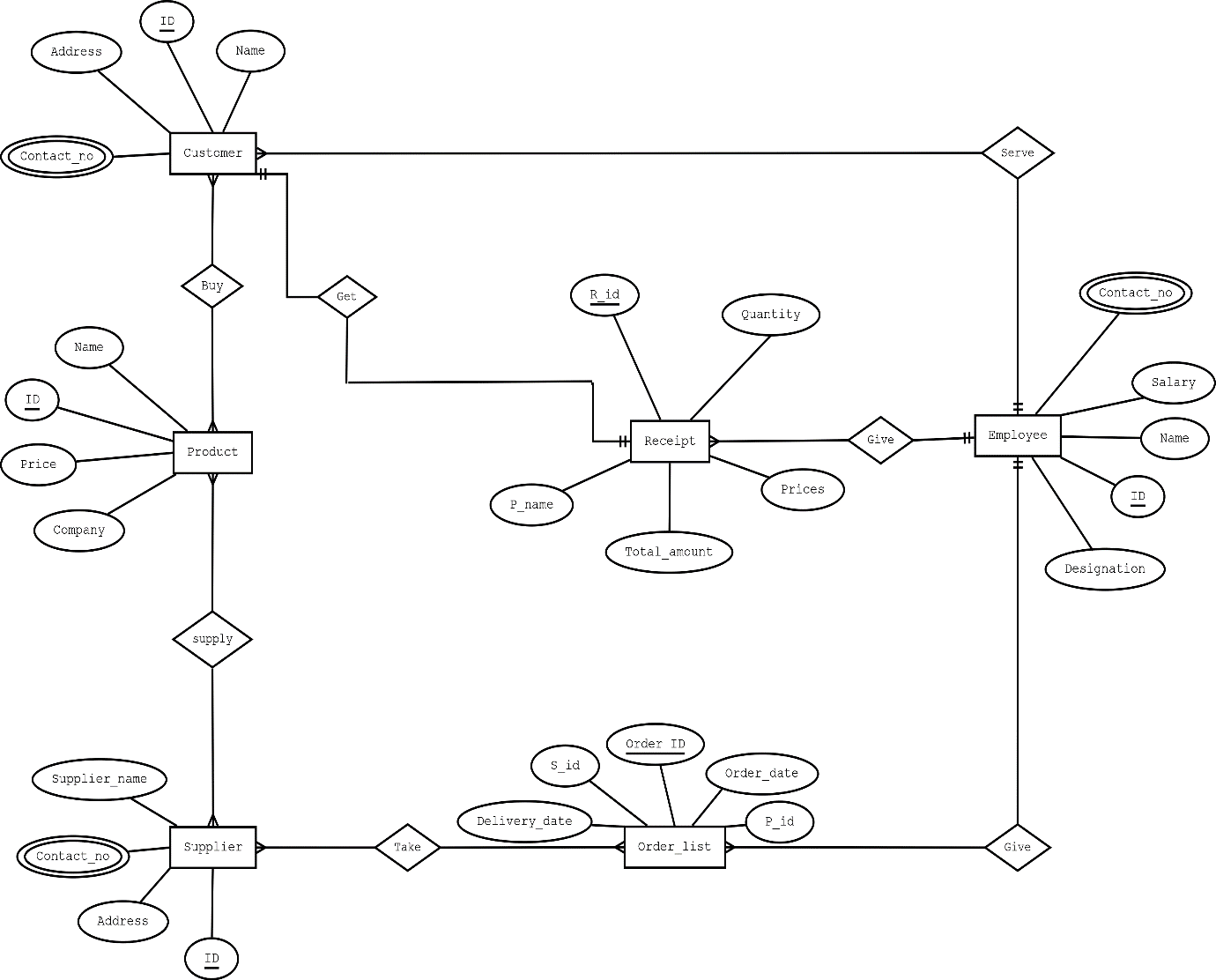
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**INTRODUCTION**

In a super shop, usually people come to shop on either daily basis or weekly. Some may come for monthly shopping. They purchase various kinds of things there.

Customers can buy many products. Customers have name, id, address and contact no. Products have name, id, price and company name. One customer gets one receipt after shopping. Receipt has id, product name, quantity, price and total amount. Employees serve customers. One employee can serve many customers. A employee has id, salary, name, designation and contact no. Products are supplied by many suppliers. Suppliers have name, id, contact no and address. Suppliers take many order lists. Order list has id, supplier id, delivery date, order date and product id. Employee gives order lists.

**ENTITY RELATIONSHIP DIAGRAM**



**NORMALIZATION & DEPENDENCIES**

**Buy**: (name,ID,Add,cont no,name,ID,company,price)

1NF → c\_contact is a multivalued Attribute

2NF → C\_name, C\_ID, C\_add, C\_Contact

P\_name, P\_ID, company, price

3NF → C\_name, C\_ID, C\_Add, C\_Contact

P\_name, P\_ID, company, price

Table list:

1. C\_name, C\_ID, C\_add
2. P\_name, P\_ID, company, price
3. B\_id, C\_ID , P\_ID
4. C\_id, c\_contact

**Supply**: (P\_name,P ID, company, price,S\_name, S\_ID, S\_Add, S\_contact)

1NF→ S\_contact is a multivalued attribute

2NF→ P\_name, P\_ID, company, price,

S\_name, S\_ID, s\_add, S\_contact

3NF→ P\_name, P\_ID, company, price

S\_name, S\_ID, S\_add, S\_contact

Table list:

5. P\_name,P\_ID, company, price

6. S\_name, S\_ID, S­\_Add, S\_contact

7. Sup\_ID, p\_id , s\_id

8. S\_id, s\_contact

**GET:** (name, id, add, cont,R\_id,p\_name, quantity, price, total amount)

1NF→ c\_contact is a multivalued attribute.

2NF→ c­\_name,C\_id,C\_add,C\_contact

R\_id, P\_name, quantity, price, total\_amount

3NF→ c\_name, C\_id, c\_add, C\_conatct

R\_id,P\_name

P2\_id, quantity, price, total\_amount

TABLE LIST:

9. C\_name, C\_id, C\_add, r\_id

10. r\_id, p\_name, P2\_id

11. P2\_id, quantity,price, total\_amount

12. c\_id, c\_contact

**TAKE:** (s\_name, s\_id, s\_add, S-contact, O\_id,O\_date, d\_date, P\_id,S\_id)

1NF→ S\_contact is a multivalued attribute

2NF→ s\_name, S\_id, s\_add, s\_contact

O\_id,O\_date, d\_date, P\_id,S\_id

3NF→ o\_id, o\_date, d\_date

Os\_id, p\_id, s\_id

s\_name, S\_id, s\_add, s\_contact

TABLE LIST:

13. s\_name, s\_id, s\_add

14. o\_id, o\_date, d\_date, os\_id

15. os\_id, p\_id , s\_id

16. t\_id, s\_id , o\_id

17. s\_id, s\_contact

**SERVE:** (c\_name, c\_id, c\_add, c\_contact, e\_name, e\_id, sal, e\_contact, designation)

1NF→ c\_contact is a multivaled attribute

E\_contact is a multivaled attribute

2NF→ c\_name, c\_id, c\_add, c\_contact

e\_name, e\_id, sal, e\_contact, designation

3NF→ c\_name, c\_id, c\_add, c\_contact

e\_name, e\_id, sal, e\_contact, designation

TABLE LIST:

18. c\_name, c\_id, c\_add, e\_id , R\_id

19. e\_name, e\_id, sal, designation

20. c\_id, c\_contact

21. e\_id, e\_conatct

**GIVE**: (e\_name, e\_id, sal, e\_contact, designation, o\_id, o\_date, d\_date, p\_id, s\_id)

1NF→ e\_contact is a multicvalued attribute.

2NF→ e\_name, e\_id, sal, e\_contact, designation

o\_id, o\_date, d\_date, p\_id, s\_id

3NF→ o\_id, o\_date, d\_date

Os\_id, s\_id, P\_id

e\_name, e\_id, sal, e\_contact, designation

TABLE LIST:

22. o\_id, o\_date, d\_date, os\_id , e\_id

23. os\_id, p\_id , s\_id

24. e\_name, e\_id, sal, designation

25. e\_id, e\_contact

**GIVE:** (R\_id, p\_name, quantity, price, total\_amount, e\_name, e\_id, sal,e\_contact, designation)

1NF→ e\_contact is a multivalued attribute

2NF→ R\_id, p\_name, quantity, price, total\_amount

e\_name, e\_id, sal,e\_contact, designation

3NF→ R\_id, p\_name

P2\_id, quantity, price, total\_amount

e\_name, e\_id, sal,e\_contact, designation

TABLE LIST**:**

26. r\_id, p\_name, P2\_id , e\_id

27. P2\_id, quantity, price, total\_amount

28. e\_name, e\_id, sal, designaton

29. e\_id, e\_contact

**CREATING TABLE**

Create user Project identified by oracle;

grant connect, resource, unlimited tablespace to Project;

ALTER USER Project DEFAULT TABLESPACE USERS;

ALTER USER Project TEMPORARY TABLESPACE TEMP;

FINAL TABLES

1.CUSTOMER:

Create table customer(

C\_name varchar2 (20),

C\_id number (6),

C\_add varchar2 (25),

R\_id number ( 6),

E\_id number (6))

Alter table customer add constraint c1 primary key (C\_id)

Alter table customer add constraint c2 foreign key(R\_id) references receipt(R\_id)

Alter table customer add constraint c3 foreign key(E\_id) references emp(E\_id)

Insert into customer values(‘Abir’,100000,’Mirpur’,100000,100000)

Insert into customer values(‘Jakir’,100001,’Sahajadpur’,100001,100001)

Insert into customer values(‘Aryan’,100002,’Purobi’,100002,100002)

2.PRODUCT:

Create table product(

P\_name varchar2 (20),

P\_id number (6),

Company varchar2 (15),

Price number(6))

Alter table product add constraint p1 primary key(p\_id)

Insert into product values(‘Fish’,100000,’Bengal’,550)

Insert into product values(‘Rice’,100001,’Dada’,65)

Insert into product values(‘Soap’,100002,’LUX’,55)

3.CP:

Create table cp(

B\_id number(6),

C\_id number (6),

P\_id number(6))

Alter table cp add constraint cp1 primary key(B\_id)

Alter table cp add constraint cp2 foreign key(C\_id) references customer(C\_id)

Alter table cp add constraint cp3 foreign key(P\_id) references product(P\_id)

Insert into cp values(100000,100000,100000)

Insert into cp values(100001,100001,100001)

Insert into cp values(100002,100002,100002)

4.CUST:

Create table cust(

C\_id number (6),

C\_contact number (11))

Alter table cust add constraint cu1 primary key (c\_contact)

Insert into cust values(100000,01111111110)

Insert into cust values(100001,01111111111)

Insert into cust values(100002,01111111112)

5.SUPPLIER:

Create table supplier(

S\_name varchar2 (20),

S\_id number (6),

S\_add varchar2 (20))

Alter table supplier add constraint s1 primary key (S\_id)

Insert into supplier values(‘Rakib’,100000,’New Market’)

Insert into supplier values(‘Jaman’,100001,’Old Dhaka’)

6.SUPP:

Create table supp(

Sup\_id number (6),

S\_id number(6),

P\_id number(6))

Alter table supp add constraint sup1 primary key (Sup\_id)

Alter table supp add constraint sup2 foreign key(P\_id) references product(P\_id)

Alter table supp add constraint sup3 foreign key(S\_id) references supplier(S\_id)

Insert into supp values(100000,100000,100000)

Insert into supp values(100001,100001,100001)

Insert into supp values(100002,100001,100002)

7.SUPP2:

Create table supp2(

S\_id number (6),

S\_contact number (11))

Alter table supp2 add constraint supp1 primary key (S\_contact)

Insert into supp2 values(100000,01211111110)

Insert into supp2 values(100000,01211111111)

Insert into supp2 values(100001,01211111112)

8.RECEIPT:

Create table receipt(

R\_id number (6),

P\_name varchar2 (20),

P2\_id number (6),

E\_id number (6))

Alter table receipt add constraint r1 primary key (R\_id)

Alter table receipt add constraint r2 foreign key(P2\_id) references pro(P2\_id)

Alter table receipt add constraint r3 foreign key(E\_id) references emp(E\_id)

Insert into receipt values(100000,’Fish’,100000,100000)

Insert into receipt values(100001,’Rice’,100001,100001)

Insert into receipt values(100002,’Soap’,100002,100002)

9.PRO:

Create table pro(

P2\_id number (6),

Quantity number (10),

Price number (6),

Total\_amount number (6))

Alter table pro add constraint pro1 primary key (P2\_id)

Insert into pro values(100000,2,550,1100)

Insert into pro values(100001,2,65,120)

Insert into pro values(100002,1,55,55)

10.ORDER\_LIST:

Create table order\_list(

O\_id number (6),

O\_date date,

D\_date date,

Os\_id number (6),

E\_id number (6))

Alter table order\_list add constraint o1 primary key (O\_id)

Alter table order\_list add constraint o2 foreign key(Os\_id) references os(Os\_id)

Alter table order\_list add constraint o3 foreign key(E\_id) references emp(E\_id)

Insert into order\_list values(100000,’08-DEC-2019’,’10-DEC-2019’,100000,100000)

Insert into order\_list values(100001,’09-DEC-2019’,’10-DEC-2019’,100000,100000)

11.OS:

Create table os(

Os\_id number (6),

P\_id number (6),

S\_id number(6))

Alter table os add constraint os1 primary key (Os\_id)

Alter table os add constraint os2 foreign key(P\_id) references product(P\_id)

Alter table os add constraint os3 foreign key(S\_id) references supplier(S\_id)

Insert into os values(100000,100000,100000)

Insert into os values(100001,100001,100001)

12.ORD:

Create table ord(

T\_id number (6),

S\_id number (6),

O\_id number (6))

Alter table ord add constraint or1 primary key (T\_id)

Alter table ord add constraint or2 foreign key(S\_id) references supplier(S\_id)

Alter table ord add constraint or3 foreign key(O\_id) references order\_list(O\_id)

Insert into ord values(100000,100000,100000)

Insert into ord values(100001,100000,100001)

13.EMP:

Create table emp(

E\_name varchar2 (20),

E\_id number (6),

Sal number (6),

Designation varchar2(20))

Alter table emp add constraint e1 primary key (E\_id)

Insert into emp values(‘Binti’,100000,80000,’Manager’)

Insert into emp values(‘Atik’,100001,20000,’Salesman’)

Insert into emp values(‘Tazkia’,100002,55000,’Supervisor’)

14.EMP2:

Create table emp2(

E\_id number (6),

E\_contact number (6))

Alter table emp2 add constraint emp1 primary key (E\_contact)

Insert into emp2 values(100000,013110)

Insert into emp2 values(100000,013111)

Insert into emp2 values(100001,013112)

Insert into emp2 values(100002,013113)

**FINAL TABLE LIST**

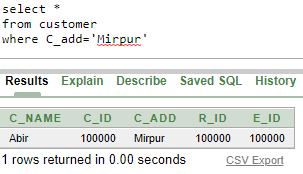
|  |  |  |
| --- | --- | --- |
| TABLE NO | TABLE NAME | COLUMN NAME |
| 1 | customer | C\_name, C\_id, C\_add, R\_id , E\_id |
| 2 | product | P\_name, P\_id, Company, Price |
| 3 | cp | B\_id, C\_id , P\_id |
| 4 | cust | C\_ id, C\_contact |
| 5 | supplier | S\_name, S\_id, S\_add |
| 6 | supp | Sup\_id, P\_id , S\_id |
| 7 | supp2 | S\_id, S\_contact |
| 8 | receipt | R\_id, P\_name, P2\_id , E\_id |
| 9 | pro | P2\_id, Quantity, Price, total\_amount |
| 10 | order\_list | O\_id, O\_date, D\_date, Os\_id , E\_id |
| 11 | os | Os\_id, P\_id , S\_id |
| 12 | ord | T\_id, S\_id , O\_id |
| 13 | emp | E\_name, E\_id, Sal, Designation |
| 14 | emp2 | E\_id, E\_contact |

**Query**

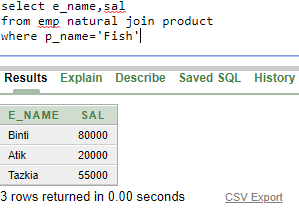
1. Find all the information of the customer who lives in Mirpur.
2. Find name and salary of the employees who sold fish.
3. Find name and id of the employee who gets minimum salary.
4. Create a view customer\_info based on customers’ name, id and contact no.
5. Create a sequence for customer where customer id is 100006 to 100050 and increases by 1. Then alter the sequence where max id limit is 100090.
6. Display product name, company name and supplier name in one table where Jaman is the supplier.
7. Display all employee data who served Abir.
8. Display average salary of all the employees.
9. Rename employee sal to salary.
10. Display all constraints.

**SQL**

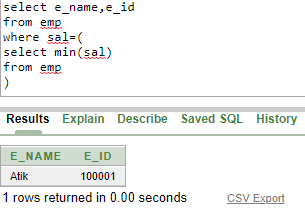
* Find all the information of the customer who lives in Mirpur.



* Find name and salary of the employees who sold fish.



* Find name and id of the employee who gets minimum salary.



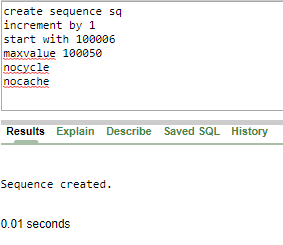
* Create a view customer\_info based on customers’ name, id and contact no.

create view customer\_info as

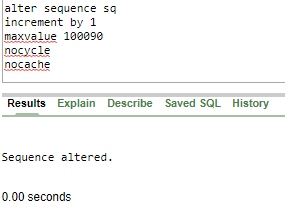
select c\_name, c\_id

from customer

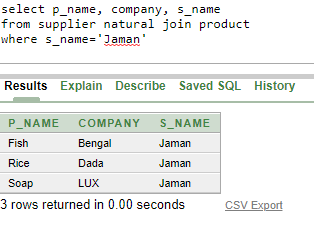
* Create a sequence for customer where customer id is 100006 to 100050 and increases by 1. Then alter the sequence where max id limit is 100090.



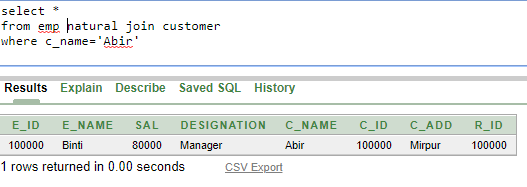
//Alter sequence



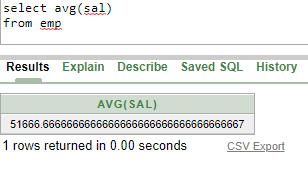
* Display product name, company name and supplier name in one table where Jaman is the supplier.



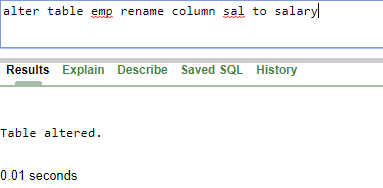
* Display all employee data who served Abir.



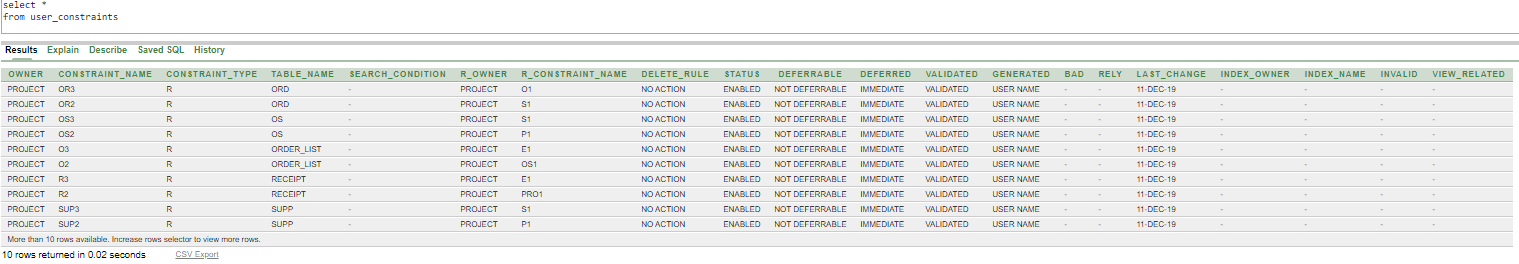
* Display average salary of all the employees.



* Rename employee sal to salary.



* Display all constraints.



**RELATIONAL ALGEBRA**

* Find all the information of the customer who lives in Mirpur.

*σ* *c\_add=”Mirpur”* (customer)

* Find name and salary of the employees who sold fish.

. ∏*e\_name, sal* (*σ* *p\_name =”Fish”* (emp ⋈ product))

* Find name and id of the employee who gets minimum salary.

∏ *e*\_*name,e\_id*(*σ* *salr=min(sal)* (emp))

* Display product name, company name and supplier name in one

table where Jaman is the supplier.

∏ *p\_name,company,s\_name*(σ *s\_name=“Jaman”* (supplier ⋈ product))

* Display all employee data who served Abir.

*σ* *p\_name=“Abir”* (emp ⋈ product)

* Display average salary of all the employees.

∏ *avg(sal)*(*σ* (emp))

* Rename employee sal to salary.

*ρsal/salary*(emp)

* Display all constraints.

*σ* (user\_constraints)

**THE END**