Introduction To Database Project

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Project Name: Supershop Database System

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Section: [K]

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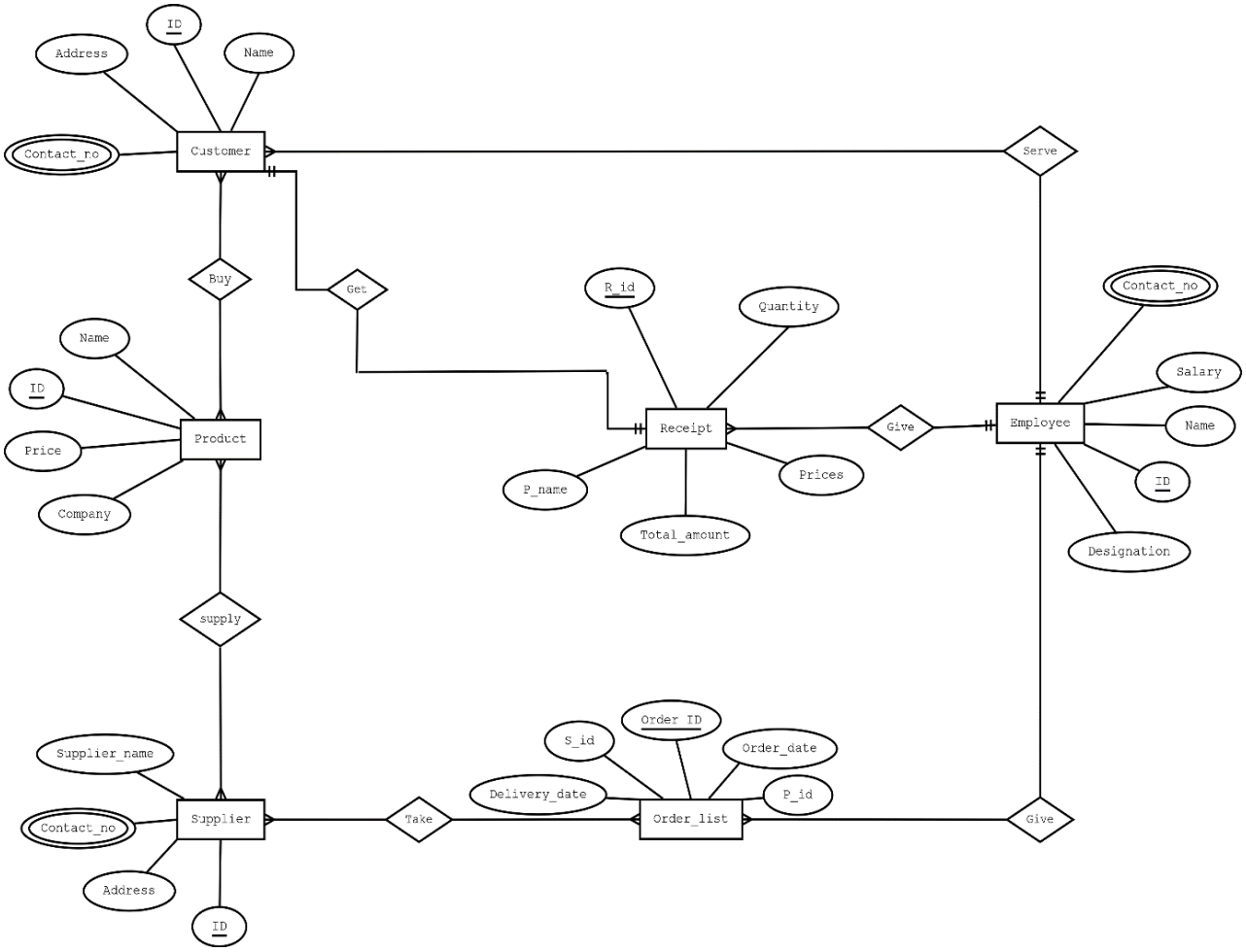
INTRODUCTION

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.

```
select *
from customer
where C_add='Mirpur'
```

Results Explain Describe Saved SQL History

C_NAME	C_ID	C_ADD	R_ID	E_ID
Abir	100000	Mirpur	100000	100000

1 rows returned in 0.00 seconds CSV Export

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

```
select e_name,sal
from emp natural join product
where p_name='Fish'
```

Results Explain Describe Saved SQL History

E_NAME	SAL
Binti	80000
Atik	20000
Tazkia	55000

3 rows returned in 0.00 seconds CSV Export

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

```
select e_name,e_id
from emp
where sal=(
select min(sal)
from emp
)
```

Results Explain Describe Saved SQL History

E_NAME	E_ID
Atik	100001

1 rows returned in 0.00 seconds CSV Export

❖ 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.

```
create sequence sq
increment by 1
start with 100006
maxvalue 100050
nocycle
nocache
```

Results Explain Describe Saved SQL History

```
Sequence created.
```

0.01 seconds

//Alter sequence

```
alter sequence sq
increment by 1
maxvalue 100090
nocycle
nocache
```

Results Explain Describe Saved SQL History

```
Sequence altered.
```

0.00 seconds

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

```
select p_name, company, s_name
from supplier natural join product
where s_name='Jaman'
```

Results Explain Describe Saved SQL History

P_NAME	COMPANY	S_NAME
Fish	Bengal	Jaman
Rice	Dada	Jaman
Soap	LUX	Jaman

3 rows returned in 0.00 seconds CSV Export

❖ Display all employee data who served Abir.

```
select *
from emp natural join customer
where c_name='Abir'
```

Results Explain Describe Saved SQL History

E_ID	E_NAME	SAL	DESIGNATION	C_NAME	C_ID	C_ADD	R_ID
100000	Binti	80000	Manager	Abir	100000	Mirpur	100000

1 rows returned in 0.00 seconds CSV Export

❖ Display average salary of all the employees.

```
select avg(sal)
from emp
```

Results Explain Describe Saved SQL History

AVG(SAL)
51666.666666666666666666666666666666667

1 rows returned in 0.00 seconds CSV Export

❖ Rename employee sal to salary.

```
alter table emp rename column sal to salary
```

Results Explain Describe Saved SQL History

```
Table altered.

0.01 seconds
```

❖ Display all constraints.

```
select *
from user_constraints
```

Results Explain Describe Saved SQL History

OWNER	CONSTRAINT_NAME	CONSTRAINT_TYPE	TABLE_NAME	SEARCH_CONDITION	R_OWNER	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	DEFERRED	VALIDATED	GENERATED	BAD	RELY	LAST_CHANGE	INDEX_OWNER	INDEX_NAME	INVALID	VIEW_RELATED
PROJECT	OR3	R	ORD	-	PROJECT	O1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	OR2	R	ORD	-	PROJECT	S1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	OS3	R	OS	-	PROJECT	S1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	OS2	R	OS	-	PROJECT	P1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	O3	R	ORDER_LIST	-	PROJECT	E1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	O2	R	ORDER_LIST	-	PROJECT	OS1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	R3	R	RECEIPT	-	PROJECT	E1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	R2	R	RECEIPT	-	PROJECT	PRO1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	SUP3	R	SUPP	-	PROJECT	S1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-
PROJECT	SUP2	R	SUPP	-	PROJECT	P1	NO ACTION	ENABLED	NOT DEFERRABLE	IMMEDIATE	VALIDATED	USER NAME	-	-	11-DEC-19	-	-	-	-

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.02 seconds CSV Export

RELATIONAL ALGEBRA

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

  $\sigma_{c\_add="Mirpur"}$ (customer)

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

  . $\prod_{e\_name,\ sal}(\sigma_{p\_name="Fish"}$ (emp ⋈ product))

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

  $\prod_{e\_name,e\_id}(\sigma_{salr=min(sal)}$ (emp))

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

  $\prod_{p\_name,company,s\_name}(\sigma_{s\_name="Jaman"}$ (supplier ⋈ product))

- Display all employee data who served Abir.

  $\sigma_{p\_name="Abir"}$ (emp ⋈ product)

- Display average salary of all the employees.

  $\prod_{avg(sal)}(\sigma$(emp))

- Rename employee sal to salary.

  $\rho_{sal/salary}$(emp)

- Display all constraints.

  σ(user_constraints)

THE END