Structured enquiry

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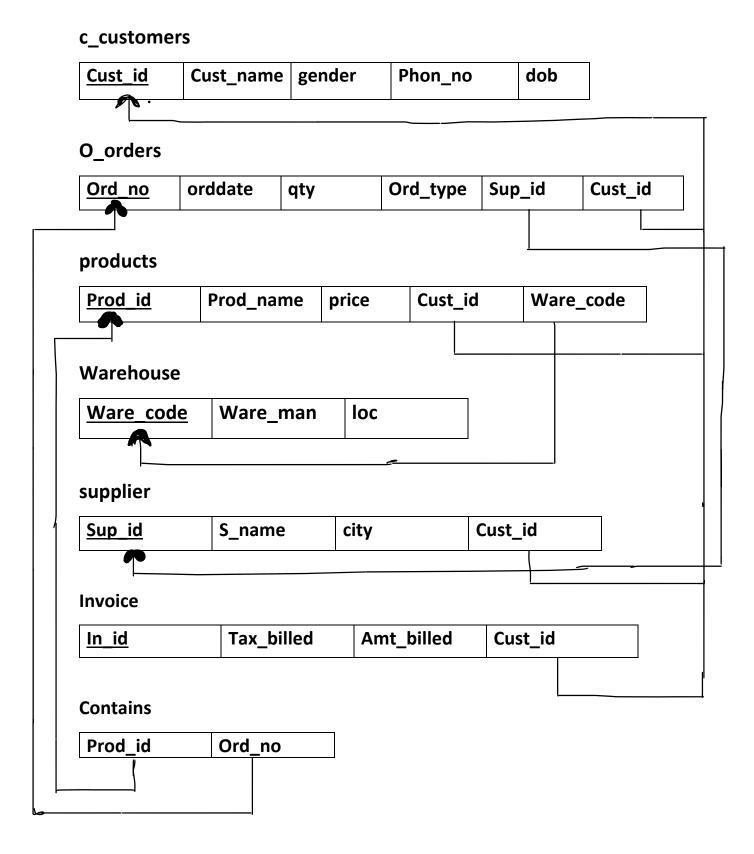
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inventory management system

Consider the following set of requirements for inventory management system that is used to keep track of customers, orders, products, suppliers, and warehouse and invoice details. A customer can order any number of products. All suppliers are desired to supply a product to the customers. It is necessary to keep track of customer who orders a product so every customer is identified by a unique number. So as order and products. A customer can order a product which belongs to different categories; customer can order any number of products. Once a customer places his order, he will be generated with unique order number. With that order their exist a product. Every ordered product has invoice number mentioning the order number as well as product name. Products are delivered to the customer from warehouse through the supplier.

RELATIONAL SCHEMA



```
drop table c_customers
drop table o_orders
drop table product
drop table supplier
drop table invoice
drop table warehouse
drop table contains
create table c_customers
cust id varchar(10) primary key,
cust name char(25),
dob date,
gender char(10),
phon no int
);
insert into c_customers values('c-101','nikita','18-mar-
1990', 'female', 4533436343);
insert into c_customers values('c-102','prakash','18-aug-
1992', 'male', 8296565389);
insert into c_customers values('c-103','bindu','5-jun-
2001', 'female', 9900480889);
insert into c_customers values('c-104','bharat','29-jan-
2002', 'male', 4534267578);
```

```
insert into c_customers values('c-105','dinesh','2-mar-
1991', 'male', 4598767865);
insert into c customers values('c-106','dhanya','4-dec-
1993', 'female', 4598007865);
create table supplier
(
s_id varchar(10) primary key,
s name char(10),
city char(15),
cust id varchar(10) references c customers(cust id)
);
insert into supplier values('s-530','dikshit','mumbai','c-105');
insert into supplier values('s-531','rakshit','belagavi','c-101');
insert into supplier values('s-532', 'manoj', 'dharwad', 'c-102');
insert into supplier values('s-533', 'sushant', 'hubli', 'c-101');
insert into supplier values('s-534','ravi','gokak','c-103');
create table o orders
(
ordno int primary key,
orddate date,
qty int,
ordtype char(10),
s id varchar(10) references supplier(s id),
cust id varchar(10) references c customers(cust id));
```

```
insert into o_orders values(1001,'1-jan-2023',2,'purchase','s-532','c-101')
insert into o orders values(1002,'2-dec-2022',4,'sale','s-531','c-102')
insert into o_orders values(1003,null,5,'sale','s-534','c-105')
insert into o orders values(1004,'19-nov-2022',2,'purchase','s-530','c-
101')
insert into o orders values(1005,null,2,'sale','s-531','c-102')
create table products
(
prod_id char(10) primary key,
prod name char(10),
price int,
cust id varchar(10) references c customers(cust id),
w code varchar(10) references warehouse(w code)
);
insert into products values('p-296','detergents',50,'c-103','w-403');
insert into products values('p-273','toothpest',60,'c-106','w-401');
insert into products values('p-381','wheetpowd',70,'c-101','w-405');
insert into products values('p-890', 'knife', 100, 'c-105', 'w-401');
insert into products values('p-900','broom',150,'c-102','w-403');
```

```
create table warehouse
w code varchar(10) primary key,
w mang char(10),
loc char(15)
);
insert into warehouse values('w-401', 'maruti', 'mangalor');
insert into warehouse values('w-402', 'sagar', 'benglore');
insert into warehouse values('w-403','nitin','mangalore');
insert into warehouse values('w-404', 'manjula', 'mysore');
insert into warehouse values('w-405','prasad','bengalor');
create table invoice
in_id varchar(10) primary key,
tax billed varchar(10),
amt billed int,
cust id varchar(10)
);
insert into invoice values('i-1001','3',4000,'c-106');
insert into invoice values('i-1002','4',5000,'c-101');
insert into invoice values('i-1003','8',8000,'c-102');
insert into invoice values('i-1004','9',20000,'c-106');
insert into invoice values('i-1005','10',1200,'c-105');
```

```
create table contains
prod id char(10) references products(prod id),
ordno int references o orders(ordno));
insert into contains values('p-900',1002);
insert into contains values('p-273',1001);
insert into contains values('p-381',1004);
insert into contains values('p-273',1003);
insert into contains values('p-900',1002);
select * from c_customers;
select * from products;
select * from o_orders;
select * from invoice;
select * from warehouse;
select * from supplier;
select * from contains;
insert into o orders values(1006,null,4,'sale','s-530','c-101')
insert into o orders values(1007,null,4,'purchase','s-530','c-102')
update o orders set orddate='12-dec-2021' where ordno='1007';
update warehouse set loc='mangalore' where w code='w-401';
update warehouse set loc='benglore' where w_code='w-405';
update products set cust id='c-102' where prod name='knife';
insert into products values('p-299','detergents',40,'c-102','w-403');
```

1)display the oder number, orderdate, quantity, and ordertype of the product whoes price is in between the 60 and 150 and indescring order

select o.ordno,o.orddate,o.qty,o.ordtype,p.prod_id,p.price
from o_orders o, products p,contains c
where o.ordno=c.ordno and c.prod_id=p.prod_id
and p.price between 60 and 150
group by o.ordno,o.orddate,o.qty,o.ordtype,p.prod_id,p.price

ordno	orddate	qty	ordtype	Prod_id	price
1002	02-12-22	4	sale	p-900	150
1004	19-11-22	2	purchase	p-381	70
1001	01-01-23	2	purchase	p-273	60
1003	null	5	sale	p-273	60

2)display customer details group by based on the total invoice bill

select c.cust_name,c.cust_id,sum(tax_billed*amt_billed)

from invoice v,c_customers c

where v.cust_id=c.cust_id

order by price desc

group by c.cust_name,c.cust_id

order by c.cust name;

cust_name	cust_id	<pre>sum(tax_billed*amt_billed)</pre>		
dhanya	c-106	192000		
dinesh	c-105	12000		
nikita	c-101	20000		
prakash	c-102	64000		

3) display the customer details in increasing order of there product price

select c.cust_id,c.cust_name,p.price

from c_customers c,products p

where c.cust_id=p.cust_id

order by p.price

cust_id	cust_name	price
c-102	prakash	40
c-103	bindu	50
c-106	dhanya	60
c-101	nikita	70
c-102	prakash	100
c-102	prakash	150

4) display the product name and id of the product that are brought from mangalore warehouse and price greater than or equal to 100

select p.prod_name,p.prod_id,w.loc,p.price

from warehouse w,products p

where p.w_code=w.w_code and w.loc='mangalore'

and p.price>=100;

prod_name	prod_id	loc	price	
knife	p-890	mangalore	100	
broom	p-900	mangalore	150	

5)display the details of the customer who ordered with in 10 days and ordtype is purchase

select c.cust_name,c.cust_id,o.ordtype

from c_customers c,o_orders o

where c.cust id=o.cust id and

sysdate-o.orddate<10 and o.ordtype like '%purchase%';

cust_name	cust_id	ordtype	
nikita	c-101	purchase	
nikita	c-101	purchase	
prakash	c-102	purchase	

USING GROUP BY AND HAVING CLAUSES(8)
OSING GROOF DI AND HAVING CLAOSES(O)

1)to sum the product price of the each customer and sort it in decreasing order on

the sum of price and also display the name

of the customer

select p.cust id,c.cust name,sum(p.price)

from products p,c_customers c

where p.cust_id=c.cust_id

group by p.cust_id,c.cust_name

order by sum(p.price) desc;

cust_id	cust_name	sum(p.price)
c-102	prakash	290
c-101	nikita	70
c-106	dhanya	60
c-103	bindu	50

2) group th data by average invoice biled amount of each customer

select c.cust_id,c.cust_name,avg(v.amt_billed)

from invoice v,c_customers c

where v.cust_id=c.cust_id
group by c.cust_id,c.cust_name
order by avg(v.amt_billed);

cust_id	cust_name	avg(v.amt_billed)	
c-105	dinesh	1200	
c-101	nikita	5000	
c-102	prakash	8000	
c-106	dhanya	12000	

3)to group order number by month of ordderdate

select to_char(orddate,'month')"month",sum(qty)"total qty"
from o_orders

group by to_char(orddate,'month');

month	total qty	
null	11	
december	8	
january	2	
november	2	

4)to group the the data by avrage product price of the customer and display where average product priceis lass than 100

select p.cust_id,c.cust_name,avg(p.price)
from products p,c_customers c
where p.cust_id=c.cust_id
group by p.cust_id,c.cust_name
having avg(p.price)<=100
order by avg(p.price);</pre>

cust_id	cust_name	avg(p.price)
c-103	bindu	50
c-106	dhanya	60
c-101	nikita	70
c-102	prakash	96.667

5) display the details of the warehouse where product price in between the 1000 to 5000 and warehouse lcation is mangalore

```
select distinct w.w_code,w.w_mang,p.price,w.loc
from warehouse w,products p
where p.w_code=w.w_code and p.price between 10 and 100
and w.loc='mangalore'
group by w.w_code,w.w_mang,p.price,w.loc
```

w_code	w_mang	price	w.loc	
w-401	maruti	100	100 mangalore	
w-403	nitin	50	mangalore	
w-401	maruti	60	mangalore	
w-403	nitin	40	mangalore	

6)display the customer id who has order the products and having quantity is greater than 3 and group by orddno

cust_id	cust_name	gender	
c-101	nikita	female	
c-102	prakash	male	
c-105	dinesh	male	

7)display the dtails of the supplier who live in mumbai and and supply the order sale an group by s_id

s_id	s_name	city	c_id	
s-530	dikshit	mumbai	c-105	

8) display customer id of the cutomer whoes count is greater than 5 and ordat not null

```
select o.cust_id,c.cust_name,count(o.qty)
from o_orders o,c_customers c
where o.cust_id=c.cust_id and o.orddate is not null
group by o.cust_id,c.cust_name
having count(o.qty)>=2
```

cust_id	cust_name	count(o.qty)	
c-102	prakash	2	
c-101	nikita	2	

NATURAL JOIN AND OUTER JOINS(LEFT AND RIGHT)AND SET THEORY OPERATORS(10)-----

1)display the details of customer and orders having qty greater than 3 using natural join

select cust name, gender, phon no, dob, orddate, qty

from c customers

natural join o_orders o

where qty>=3;

cust_nam	gender	phon_no	dob	orddate	qty
е					
nikita	female	4533436343	18-03-90	null	4
prakash	male	8296565389	18-08-92	12-12-21	4
prakash	male	8296565389	18-08-92	02-12-22	4
dinesh	male	4598767865	02-03-91	null	5

2)display the suppier id of the suppier sushantor dikshit supplied to a perticular orders and order based on order no

select s.s_id,s.s_name,o.ordno

from supplier s

left join o_orders o

on s.s_id=o.s_id

where s.s_name='dikshit' or s.s_name='sushant'

order by o.ordno

s_id	s_name	ordno	
s-530	dikshit	1004	
s-530	dikshit	1006	
s-530	dikshit	1007	
s-533	sushant	null	

3)to find all the customers having orders with out duplicates

(select cust_id

from c_customers)

intersect

(select cust_id

from o_orders)

cust_id	
c-101	
c-102	
c-105	

4)to display all the supplier id who may supply order or not

(select s_id

from supplier)

union

(select s_id

from o_orders)

s_id		
s-530		
s-531		
s-532		
s-533		
s-534		

5) display the customer id who did not had invoice

(select cust_id

from c_customers)

minus

(select cust_id

from invoice)

cust_id	
c-103	
c-104	

6)display all the product d,product name price,and arehouse manger where products are supplied from mangalore

select p.prod_id,p.prod_name,w.w_mang,w.loc,w.w_code

from products p

full join warehouse w

on p.w_code=w.w_code

where w.loc='mangalore';

prod_id	prod_name	w_mang	loc	w_code
p-296	Detergents	nitin	mangalore	w-403
p-273	toothpest	maruti	mangalore	w-401
p-890	knife	maruti	mangalore	w-401
p-900	broom	nitin	mangalore	w-403
p-299	Detergents	nitin	mangalore	w-403

7)display the all the customer who are brought their orders from a peticular supplier

select distinct c.cust_id,c.cust_name,s.s_id,s_name

from c_customers c

cross join supplier s;

ust_id cust_name s_id s_name	
------------------------------	--

c-103	bindu	s-530	dikshit
c-104	bharat	s-530	dikshit
c-101	nikita	s-531	rakshit
c-103	bindu	s-534	ravi
c-101	nikita	s-530	dikshit
c-102	prakash	s-530	dikshit
c-104	bharat	s-531	rakshit
c-101	nikita	s-532	manoj
c-105	dinesh	s-532	manoj
c-102	prakash	s-533	sushant
c-105	dinesh	s-533	sushant
c-101	nikita	s-534	ravi
c-106	dhanya	s-534	ravi
c-102	prakash	s-532	manoj
c-103	bindu	s-532	manoj
c-104	bharat	s-533	sushant
c-106	dhanya	s-531	rakshit
c-101	nikita	s-533	sushant
c-105	dinesh	s-530	dikshit
c-106	dhanya	s-530	dikshit
c-102	prakash	s-531	rakshit
c-103	bindu	s-531	rakshit
c-103	bindu	s-533	sushant
c-106	dhanya	s-533	sushant
c-104	bharat	s-534	ravi
c-105	dinesh	s-534	ravi
c-105	dinesh	s-531	rakshit
c-104	bharat	s-532	manoj
c-106	dhanya	s-532	manoj
c-102	prakash	s-534	ravi

8)(for self join) self join on table invoice

select b.in_id,a.amt_billed from invoice a,invoice b

where b.amt_billed<a.amt_billed;

in_id	amt_billed	
i-1005	4000	
i-1001	5000	
i-1005	5000	
i-1001	8000	
i-1002	8000	
i-1005	8000	
i-1001	20000	
i-1002	20000	
i-1003	20000	
i-1005	20000	

9)perform the right outer join opertion on the tables product and warehouse

select p.prod_id,p.prod_name,w.w_mang,w.loc

from products p

right join warehouse w

on p.w_code=w.w_code

prod_id	prod_name	w_mang	loc
p-296	detergents	nitin	mangalore
p-273	toothpest	maruti	mangalore
p-890	knife	maruti	mangalore
p-900	broom	nitin	mangalore
p-381	wheetpowd	prasad	benglore
p-299	detergents	nitin	mangalore
null	null	manjula	mysore

10)perform the inner join opertion on the tables orders and contains where qy must greater than 4 and oddate is null

select o.ordno,c.prod_id,o.orddate,o.ordtype,o.qty

from o_orders o

inner join contains c

on o.ordno=c.ordno

where qty<4 and orddate is not null

ordno	prod_id	orddate	ordtype	qty
1001	p-273	01-01-23	purchase	2
1004	p-381	19-11-22	purchase	2

DIFFERENT CLAUSES AND FUNCTIONS(5)

1)display the sum of tatal invoice amount of the invoiecr who having invoce amount greater than 20000 and group by invoice id and in ascending order of there in_id

select in_id,sum(tax_billed*amt_billed)

from invoice

group by in_id

having sum(tax billed*amt billed)>=20000

order by in_id asc

in_id	sum(tax_billed*amt_billed)		
i-1002	20000		
i-1003	64000		
i-1004	180000		

2)display the number of quantity of orders orered by a customer name having letter h

```
select o.cust_id,c.cust_name,sum(qty)
from o_orders o,c_customers c
where c.cust_id=o.cust_id and c.cust_name like '%h%'
group by o.cust_id,c.cust_name
```

cust_id	cust_name	sum(qty)
c-102	prakash	10
c-105	dinesh	5

3)display the number of manager belongs to a perticular location at lest 2 managers work in same same loc and and loction consist name of letter lore

select loc,count(loc)

from warehouse

where loc like '%lore%'

group by loc

having count(loc)>=2;

loc	count(loc)
benglore	2
mangalore	2

4) display the sum an avarage price of the customer

select p.cust_id,c.cust_name,sum(p.price),avg(p.price)

from products p,c_customers c

where p.cust_id=c.cust_id

group by p.cust_id,c.cust_name

order by cust_id desc

p.cust_id	c.cust_name	sum(p.price)	avg(p.price)	
c-106	dhanya	60	60	
c-103	bindu	50	50	
c-102	prakash	290	96.667	
c-101	nikita	70	70	

5)display maximum and minimum price of the invoice amount bill of perticular customer who having max price greater than

5000 and in price less than 8000

select v.cust id, max(v.amt billed), min(v.amt billed)

from invoice v,c_customers c

where c.cust id=v.cust id

group by v.cust_id

having max(v.amt_billed) >=8000 and min(v.amt_billed) <=8000

v.cust_id	max(v.amt_billed)	min(v.amt_billed)	
c-102	8000	8000	
c-106	20000	4000	

VIEWS(SIMPLE AND COMPLEX VIEWS) (5)-----

1)create a view to store the products details which price greater han or equal to 100

create or replace view prod price as

select price,prod_id,prod_name

from products

where price>=100

select * from prod price

price	prod_id	prod_name	
100	p-890	knife	
150	p-900	broom	

2)create a view to store the details of the customer whoes invoice price is Greater than 5000

create or replace view cust_invoice as

select v.in_id,v.amt_billed,v.cust_id,c.cust_name from invoice v,c_customers c where v.amt_billed>5000 and cust_name like '%d%'; select * from cust_invoice;

in_id	amt_billed	cust_id	cust_name
i-1003	8000	c-102	bindu
i-1003	8000	c-102	dinesh
i-1003	8000	c-102	dhanya
i-1004	20000	c-106	bindu
i-1004	20000	c-106	dinesh
i-1004	20000	c-106	dhanya

3)create a view to store the details of customer whoes order date is null and ordertype is sale qty=2

create or replace view cust_order as

select o.ordno,o.orddate,o.qty,o.ordtype,o.cust_id,c.cust_name

from o orders o,c customers c

where o.orddate is null and ordtype='sale' and qty='2'

select * from cust_order

ordno	orddate	o.qty	ordtype	cust_id	cust_name
1005	null	2	sale	c-102	nikita
1005	null	2	sale	c-102	prakash
1005	null	2	sale	c-102	bindu
1005	null	2	sale	c-102	bharat
1005	null	2	sale	c-102	dinesh
1005	null	2	sale	c-102	dhanya

4)create a view to store the avarage, sum, of the price and count of cust_no of the customer

create or replace view prod_cust(cust_id,avg_price,sum_price,c_cust_id) as select cust_id,avg(price),sum(price),count(cust_id)

from products

group by cust_id

select * from prod cust;

cust_id	avg(price)	sum(price)	count(cust_id)
c-102	96.7	290	3
c-103	50	50	1
c-106	60	60	1
c-101	70	70	1

5)create aview to store the number of warehouse are in benglore and mangalore

create or replace view w_warehouse(loc,c_loc)

as select loc,count(loc)

from warehouse

where loc='benglore' or loc='mangalore'

group by loc

select * from w_warehouse

loc	count(loc)	
benglore	2	
mangalore	2	

SUB-QUERY (SINGLE ROW, MULTIPLE ROW AND COORELATED NESTED QUERY)(15)-----

1)to list the customer whoes product price is less than avg price select *

from c customers

where cust_id in(select cust_id

from products

where price<=(select avg(price) from products));

cust_id	cust_name	dob	gender	phon_no
c-101	nikita	18-03-90	female	4533436343
c-102	prakash	18-08-92	male	8296565389
c-103	bindu	05-06-01	female	9900480889
c-106	dhanya	04-12-93	female	4598007865

2)to list the warehuose which is in mangalore and having name maruti

select *

from warehouse

where w code =(select w code

from warehouse

where loc='mangalore' and w mang='maruti');

w_code w_mang city
w-401 maruti mangalore

3)to display all the customer and invoice details hoes invoice amt is less that he amt billed

select v.cust_id,c.cust_name,v.in_id,v.amt_billed

from c customers c,invoice v

where c.cust_id=v.cust_id and v.amt_billed <any(select avg(amt_billed)

from invoice);

cust_id	cust_name	in_id	amt_billed
c-106	dhanya	i-1001	4000
c-101	nikita	i-1002	5000
c-105	dinesh	i-1005	1200

4) display the details of the products that are ordered

order by price;

prod_id	prod_name	price				
p-273	toothpest		60			
p-381	wheetpowd	70				
p-900	broom	150				

5)display the details of the customers whoes tatal invoice price greater than 50000

select cust_name,cust_id
from c_customers
where cust_id in
(select cust_id

from invoice

group by cust id

having sum(tax_billed*amt_billed)>50000)

cust_name	cust_id	
prakash	c-102	
dhanya	c-106	

6) display the product number which is sold for 2 highest price

prod_id	prod_name	price
p-890	knife	100

7) display details of the invoice which has 1 highest price

in_id	tax_billed	amt_billed	
i-1004	9	20000	

8) display the details of the customer who has been get products from a perticlar supplier

```
select *

from c_customers

where cust_id in(select c.cust_id

from c_customers c

where exists (select s.cust_id
```

from supplier s

where s.cust_id=c.cust_id));

cust_id	cust_name	dob	gender	phon_no
c-102	prakash	18-08-92	male	8296565389
c-101	nikita	18-03-90	female	4533436343
c-103	bindu	05-06-01	female	9900480889
c-105	dinesh	02-03-91	male	4598767865

9)display the details of the customrs the products are supplie from a perticular warehouse

select *

from c_customers

where cust_id in

 (select distinct p.cust_id

 from products p, warehouse w

where p.w code=w.w code)

cust_id	cust_name	dob	gender	phon_no
c-102	prakash	18-08-92	male	8296565389
c-101	nikita	18-03-90	female	4533436343
c-103	bindu	05-06-01	female	9900480889
c-106	dhanya	04-12-93	female	4598007865

10)display the detais of the customers whoes qty is greater than the avarage of qty

cust_id	cust_name	gender	phon_no
c-101	nikita	female	4533436343
c-102	prakash	male	8296565389
c-105	dinesh	male	4598767865

11)display the details of the orders who has been not get products from a perticlar supplierand order date be null

```
select o.s_id,o.orddate,o.ordtype
```

from o_orders o

where o.orddate is null and exists (select s.s_id

from supplier s

where s.s_id=o.s_id)

s_id	orddate	ordtype
s-534	null	sale
s-531	null	sale
s-530	null	sale

12)display the details of the supplier those are recived ordered after 30 days and and qty must be less than 5

select * from prod_cust

s_id	s_name	city	cust_id
s-530	dikshit	mumbai	c-105
s-531	rakshit	belagavi	c-101
s-532	manoj	dharwad	c-102

13)display the details of the customer by comapring view table prod_cust and customers having sum of price is grater than avg price

select

c.cust_id,c.cust_name,c.gender,c.phon_no,p.avg_price,p.sum_price

from c customers c,prod cust p

where p.cust_id=c.cust_id and c.cust_id in

(select cust_id

from prod_cust

where sum_price>avg_price)

select * from cust order

cust_id	cust_name	gender	phon_no	avg_price	sum_price
c-102	prakash	male	8296565389	96.67	290

14)display the details of the suppliers whoes order that is ordered by a customer dhanya by comparing view table cust_order and ordertyp must be sale

select *

```
from supplier

where s_id in

(select s_id

from o_orders

where ordno in

(select ordno

from cust_order

where cust_name='dhanya' and ordtype='sale'));
```

s_id	s_name	city	cust_id	
s-531	rakshit	belagavi	c-101	

15)display invoice id invoice amount custmoerid and name who has 2 highest price from view cust_invoice

in_id	amt_billed	cust_id	cust_name
i-1003	8000	c-102	bindu
i-1003	8000	c-102	dinesh
i-1003	8000	c-102	dhanya