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CSCI 4560-001
Homework 3
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CreateDB.sql

```
create schema hw3;
go

create table hw3.supplier (
        sno varchar(45) not null,
        sname varchar(45) null,
        status int null,
        city varchar(45) null,
        primary key(sno));
go

create table hw3.part(
        pno varchar(45) not null,
        pname varchar(45) null,
        color varchar(45) null,
        weight int null,
        city varchar(45) null,
        primary key(pno));
go

create table hw3.shipment(
        sno varchar(45) not null,
        pno varchar(45) not null,
        qty int null,
        price decimal(4,3) null,
        primary key(sno,pno));
go

alter table hw3.shipment
add constraint fk_ship_supply
foreign key (sno)
references hw3.supplier(sno);
go

alter table hw3.shipment
add constraint fk_ship_part
foreign key (pno)
references hw3.part(pno);
go
```

LoadDB.sql

```
insert into hw3.supplier (Sno,Sname,Status,City) values ('s1','Smith','20','London');
insert into hw3.supplier (Sno,Sname,Status,City) values ('s2','Jones','10','Paris');
insert into hw3.supplier (Sno,Sname,Status,City) values ('s3','Blake','30','Paris');
insert into hw3.supplier (Sno,Sname,Status,City) values ('s4','Clark','20','London');
insert into hw3.supplier (Sno,Sname,Status,City) values ('s5','Adams','30',NULL);


insert into hw3.part (Pno,Pname,Color,Weight,City) values ('p1','Nut','Red','12','London');
insert into hw3.part (Pno,Pname,Color,Weight,City) values ('p2','Bolt','Green','17','Paris');
insert into hw3.part (Pno,Pname,Color,Weight,City) values ('p3','Screw',NULL,'17','Rome');
insert into hw3.part (Pno,Pname,Color,Weight,City) values ('p4','Screw','Red','14','London');
insert into hw3.part (Pno,Pname,Color,Weight,City) values ('p5','Cam','Blue','12','Paris');
insert into hw3.part (Pno,Pname,Color,Weight,City) values ('p6','Cog','Red','19','London');


insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s1','p1','300','.005');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s1','p2','200','.009');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s1','p3','400','.004');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s1','p4','200','.009');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s1','p5','100','.01');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s1','p6','100','.01');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s2','p1','300','.006');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s2','p2','400','.004');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s3','p2','200','.009');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s3','p3','200',NULL);
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s4','p2','200','.008');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s4','p3',NULL,NULL);
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s4','p4','300','.006');
insert into hw3.shipment (Sno,Pno,Qty,Price) values ('s4','p5','400','.003');
```

ClearDB.sql

```
drop table hw3.shipment;
go
drop table hw3.supplier;
go
drop table hw3.part;
go
drop schema hw3;
go
```

Query_m.sql

```
-- 1. Print part numbers and names for all parts.
select pno, pname from hw3.part;

-- 2. Print part numbers for parts that either blue or red in color.
select pno from hw3.part where color in ('Red','Blue');

-- 3. Print all shipment information where the quantity is in the range 300 to 750 inclusive.
select * from hw3.shipment where qty between 300 and 750;

-- 4. Print supplier names for suppliers who ship P2 or P4.
select distinct sname from hw3.supplier s
join hw3.shipment h on s.sno=h.sno where h.pno in ('p2','p4');

-- 5. Print supplier numbers for suppliers who ship at least all those parts shipped by supplier S3.
--    Do not include S3 in the answer and do not 'count'.
select distinct sno from hw3.shipment s where s.sno !='s3' and not exists
(select pno from hw3.shipment h where sno = 's3' and pno not in
(select pno from hw3.shipment i where i.sno = s.sno));

-- 6. Print supplier numbers for suppliers who ship at least one type of red part.
select sno from hw3.supplier where sno in
(select s.sno from hw3.supplier s join hw3.shipment h on s.sno=h.sno
join hw3.part p on h.pno=p.pno and color = 'Red');

-- 7. Print supplier numbers for suppliers who do not ship any red parts.
select sno from hw3.supplier where sno not in
(select s.sno from hw3.supplier s join hw3.shipment h on s.sno=h.sno
join hw3.part p on h.pno=p.pno and color = 'Red');

-- 8. Print supplier numbers for suppliers who ship ONLY red parts.
select sno from hw3.supplier where sno in
(select s.sno from hw3.supplier s join hw3.shipment h on s.sno=h.sno
join hw3.part p on h.pno=p.pno and color = 'Red')
and sno not in
(select s.sno from hw3.supplier s join hw3.shipment h on s.sno=h.sno
join hw3.part p on h.pno=p.pno and color != 'Red');

-- 9. Print supplier names for suppliers who do not currently ship any parts.
select sname from hw3.supplier where sname not in (select s.sname from hw3.supplier s join
hw3.shipment h on s.sno=h.sno);
```

```
-- 10. Print supplier names for suppliers who ship at least one part that is also shipped by supplier
S2.
--      Do not include S2 in the answer.
select sname from
(select distinct h.sno from hw3.shipment h where h.pno in (select h.pno from hw3.shipment h
where h.sno = 's2') and h.sno!='s2') r
join hw3.supplier s on s.sno=r.sno;

-- 11. Print the supplier information by cities in alphabetic order.
select * from hw3.supplier s order by city;

-- 12. Print the shipment information by price in descending numeric order.
select * from hw3.shipment h order by price desc;

-- 13. Print supplier numbers for suppliers who are located in the same city as supplier S1.
--      Do not include S1 in the answer.
select sno from hw3.supplier where city=(select city from hw3.supplier where sno='s1') and sno !
= 's1';

-- 14. Print part numbers for all parts shipped by more than one supplier.  You may use a count
on this one.
select h.pno from hw3.shipment h join hw3.part p on h.pno = p.pno group by h.pno having
count(h.pno) > 1;

-- 15. Print supplier numbers for suppliers with status value less than the current average status
value of all suppliers.
select sno from hw3.supplier where status < (select avg(status) from hw3.supplier);

-- 16. Print the total number of suppliers (regardless of whether they are currently shipping any
parts)..
select count(distinct sno) from hw3.supplier;

-- 17. Print the total number of suppliers currently shipping parts.
select count(distinct sno) from hw3.shipment;

-- 18. Print all the shipment information for the shipment(s) with the highest unit cost.
select * from hw3.shipment where price = (select max(price) from hw3.shipment);

-- 19. Print all the shipment information for the shipment(s) with the highest total cost.
select * from hw3.shipment where price*qty = (select max(price*qty) from hw3.shipment);
```

```
-- 20. Print all the supplier information for the supplier(s) making the most money.
--     The supplier money is determined by the sum of all shipment cost.
--     Each shipment cost is found by the number of units being shipped times the price per unit.
select s.* from
(select sno, sum(qty*price) as ttl from hw3.shipment group by sno) as allTtls
join
(select  max(ttl) as maxval from (select sno, sum(qty*price) as ttl from hw3.shipment group by
sno) as a) as maxTtl
on allTtls.ttl=maxTtl.maxval
join hw3.supplier s on allTtls.sno=s.sno;


-- 21. For each supplier, print the supplier number and how many different parts shipped.
--     For example, S1 6; S2 2, ...
select s.sno, count(s.sno) from hw3.supplier s join hw3.shipment h on s.sno=h.sno group by
s.sno;
```

MssqlQR.txt

1. Print part numbers and names for all parts.

p1	Nut
p2	Bolt
p3	Screw
p4	Screw
p5	Cam
p6	Cog

2. Print part numbers for parts that either blue or red in color.

p1
p4
p5
p6

3. Print all shipment information where the quantity is in the range 300 to 750 inclusive.

s1	p1	300	0.005
s1	p3	400	0.004
s2	p1	300	0.006
s2	p2	400	0.004
s4	p4	300	0.006
s4	p5	400	0.003

4. Print supplier names for suppliers who ship P2 or P4.

Smith
Jones
Blake
Clark

5. Print supplier numbers for suppliers who ship at least all those parts shipped by supplier S3. Do not include S3 in the answer and do not "count".

s1
s4

6. Print supplier numbers for suppliers who ship at least one type of red part.

s1
s2
s4

7. Print supplier numbers for suppliers who do not ship any red parts.
s3
s5

8. Print supplier numbers for suppliers who ship ONLY red parts.
NULL

9. Print supplier names for suppliers who do not currently ship any parts.
Adams

10. Print supplier names for suppliers who ship at least one part that is also shipped by supplier S2. Do not include S2 in the answer.
Smith
Blake
Clark

11. Print the supplier information by cities in alphabetic order.

s1	Smith	20	London
s4	Clark	20	London
s5	Adams	30	NULL
s2	Jones	10	Paris
s3	Blake	30	Paris

12. Print the shipment information by price in descending numeric order.

s1	p5	100	0.010
s1	p6	100	0.010
s1	p2	200	0.009
s1	p4	200	0.009
s3	p2	200	0.009
s4	p2	200	0.008
s4	p4	300	0.006
s2	p1	300	0.006
s1	p1	300	0.005
s2	p2	400	0.004
s1	p3	400	0.004
s4	p5	400	0.003
s3	p3	200	NULL
s4	p3	NULL	NULL

13. Print supplier numbers for suppliers who are located in the same city as supplier S1. Do not include S1 in the answer.
s4

14. Print part numbers for all parts shipped by more than one supplier. You may use a count on this one.
p1
p2
p3
p4
p5

15. Print supplier numbers for suppliers with status value less than the current average status value of all suppliers.
s1
s2
s4

16. Print the total number of suppliers (regardless of whether they are currently shipping any parts)..
5

17. Print the total number of suppliers currently shipping parts.
4

18. Print all the shipment information for the shipment(s) with the highest unit cost.
s1 p5 100 0.010
s1 p6 100 0.010

19. Print all the shipment information for the shipment(s) with the highest total cost.
s1 p2 200 0.009
s1 p4 200 0.009
s2 p1 300 0.006
s3 p2 200 0.009
s4 p4 300 0.006

20. Print all the supplier information for the supplier(s) making the most money. The supplier money is determined by the sum of all shipment cost. Each shipment cost is found by the number of units being shipped times the price per unit.
s1 Smith 20 London

21. For each supplier, print the supplier number and how many different parts shipped. For example, S1 6; S2 2, ...
s1 6
s2 2
s3 2
s4 4