

WEEK 7

SUPPLIER DATABASE

```
create database supplier_253;
use supplier_253;
create table supplier(
sid int,
sname varchar(20),
city varchar(20),
primary key (sid));
create table parts(
pid int,
pname varchar(20),
color varchar(10),
primary key (pid));
create table catalog(
sid int,
pid int,
cost float,
primary key (sid,pid),
foreign key(sid) references supplier(sid) on delete cascade on update cascade,
foreign key(pid) references parts(pid) on delete cascade on update cascade);

insert into supplier values(10001,'Acme
Widget','Bangalore'),(10002,'Johns','Kolkata'),(10003,'Vimal','Mumbai'),
(10004,'Reliance','Delhi');

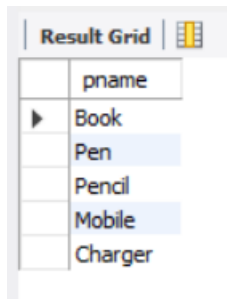
insert into parts
values(20001,'Book','Red'),(20002,'Pen','Red'),(20003,'Pencil','Green'),(20004,'Mobile','Green
'),(20005,'Charger','Black');

insert into catalog
values(10001,20001,10),(10001,20002,10),(10001,20003,30),(10001,20004,10),(10001,2000
5,10),(10002,20001,10),
(10002,20002,20),(10003,20003,30),(10004,20003,40);
```

QUERY 1

Find the pnames of parts for which there is some supplier.

```
select distinct pname from parts p,catalog c
where p.pid=c.pid;
```



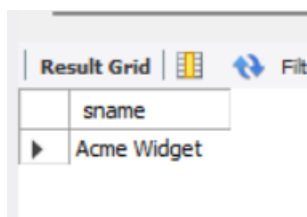
A screenshot of a database query result grid. The grid has a header row with the column name 'pname'. Below the header, there are five rows of data: 'Book', 'Pen', 'Pencil', 'Mobile', and 'Charger'. The 'Pen' and 'Mobile' rows are highlighted with a light blue background.

pname
Book
Pen
Pencil
Mobile
Charger

QUERY 2

Find the snames of suppliers who supply every part.

```
select sname from supplier
where sid in (select distinct c.sid from catalog c
where not exists (select p.pid from parts p
where not exists (select c1.sid from catalog c1
where c1.sid = c.sid and c1.pid = p.pid))));
```



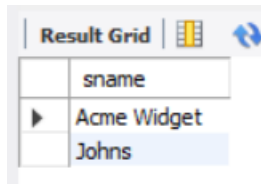
A screenshot of a database query result grid. The grid has a header row with the column name 'sname'. Below the header, there is one row of data: 'Acme Widget'. The 'Acme Widget' row is highlighted with a light blue background.

sname
Acme Widget

QUERY 3

Find the snames of suppliers who supply every red part.

```
select sname from supplier
where sid in (select sid from catalog
where pid in(select pid from parts where color='red'));
```

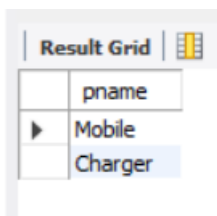


	sname
▶	Acme Widget
	Johns

QUERY 4

Find the pnames of parts supplied by Acme Widget Suppliers and by no one else.

```
select p.pname
from parts p, catalog c, supplier s
where p.pid = c.pid and c.sid = s.sid
and s.sname = 'Acme Widget'
and not exists (select *
from catalog c1, supplier s1
where p.pid = c1.pid and c1.sid = s1.sid and
s1.sname != 'Acme Widget' );
```



	pname
▶	Mobile
	Charger

QUERY 5

Find the sids of suppliers who charge more for some part than the average cost of that part (averaged over all the suppliers who supply that part).

```

select distinct c.sid
from catalog C
where c.cost > ( select avg(c1.cost) from catalog c1
where c1.pid = c.pid);

```

Result Grid	
	sid
▶	10002
	10004

QUERY 6

For each part, find the sname of the supplier who charges the most for that part.

```

select p.pid, s.sname
from parts p, supplier s, catalog c
where c.pid = p.pid
and c.sid = s.sid
and c.cost = (select max(c1.cost)
from catalog c1
where C1.pid = P.pid);

```

Result Grid		
	pid	sname
▶	20001	Acme Widget
	20004	Acme Widget
	20005	Acme Widget
	20001	Johns
	20002	Johns
	20003	Reliance