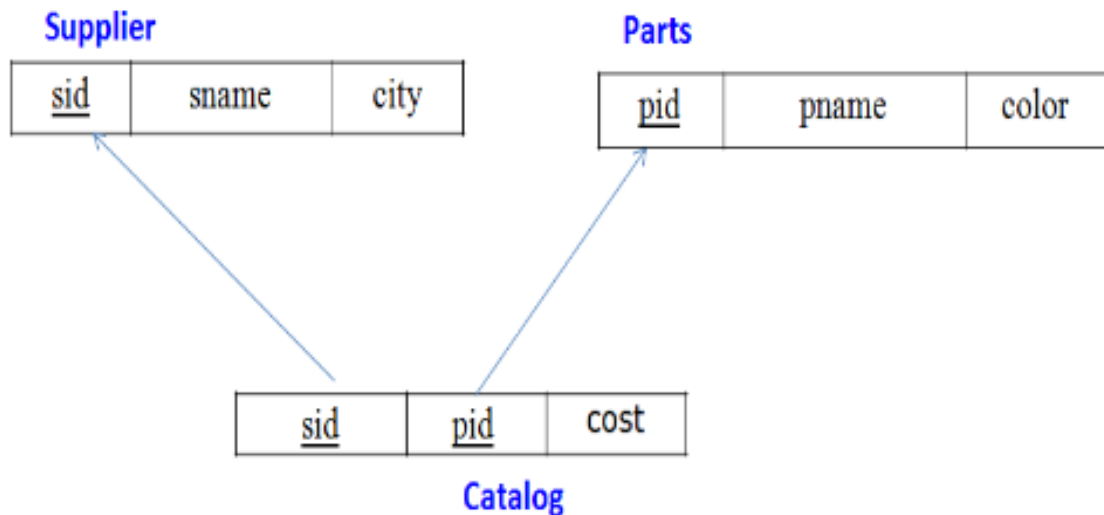


WEEK 7 – SUPPLIER DATABASE

(Tuesday, 20-12-2022)

Schema Diagram



SUPPLIERS		
SID	SNAME	CITY

10001	Acme Widget	Bangalore
10002	Johns	Kolkata
10003	Vimal	Mumbai
10004	Reliance	Delhi

PARTS		
PID	PNAME	COLOR

20001	Book	Red
20002	Pen	Red
20003	Pencil	Green
20004	Mobile	Green
20005	Charger	Black

CATALOG		
SID	PID	COST

10001	20001	10
10001	20002	10
10001	20003	30
10001	20004	10
10001	20005	10
10002	20001	10
10002	20002	20
10003	20003	30
10004	20003	40

TO DO:

- 1) **Using Scheme diagram, Create tables by properly specifying the primary keys and the foreign keys.**
(CREATION)

```
create database dhiksha_supplier;
use dhiksha_supplier;
create table dhiksha_supplier.Supplier(
sid int,
sname varchar(15),
city varchar(10),
PRIMARY KEY(sid)
);
create table dhiksha_supplier.Parts(
pid int,
pname varchar(10),
color varchar(5),
PRIMARY KEY(pid)
);
create table dhiksha_supplier.Catalog(
sid int,
pid int,
cost int,
PRIMARY KEY(sid, pid),
FOREIGN KEY(sid) REFERENCES Supplier(sid),
FOREIGN KEY(pid) REFERENCES Parts(pid)
);
```

2) Insert appropriate records in each table.

(INSERTION)

```
insert into Supplier values(10001,"Acme Widget", "Bangalore");
```

```
insert into Supplier values(10002,"Johns", "Kolkata");
```

```
insert into Supplier values(10003,"Vimal", "Mumbai");
```

```
insert into Supplier values(10004,"Reliance", "Delhi");
```

```
insert into Parts values(20001,"Book", "Red");
```

```
insert into Parts values(20002,"Pen", "Red");
```

```
insert into Parts values(20003,"Pencil", "Green");
```

```
insert into Parts values(20004,"Mobile", "Green");
```

```
insert into Parts values(20005,"Charger", "Black");
```

```
insert into Catalog values(10001,20001, 10);
```

```
insert into Catalog values(10001,20002, 10);
```

```
insert into Catalog values(10001,20003, 30);
```

```
insert into Catalog values(10001,20004, 10);
```

```
insert into Catalog values(10001,20005, 10);
```

```
insert into Catalog values(10002,20001, 10);
```

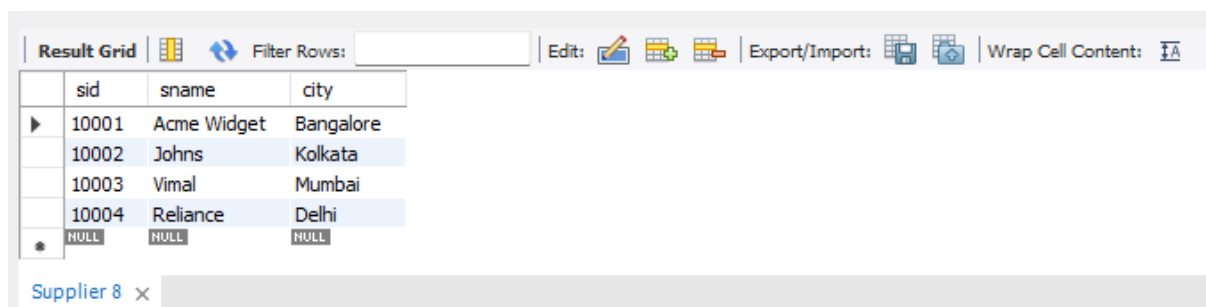
```
insert into Catalog values(10002,20002, 20);
```

```
insert into Catalog values(10003,20003, 30);
```

```
insert into Catalog values(10004,20003, 40);
```

(SELECTION)

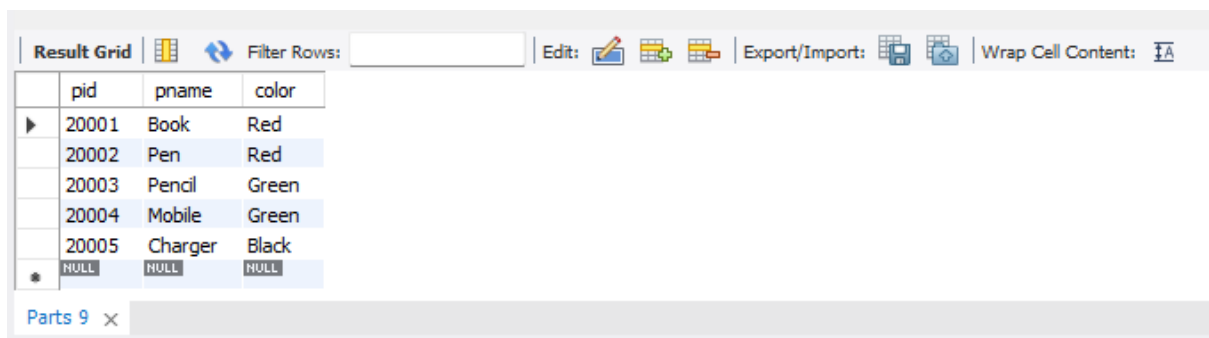
```
select * from Supplier;
```



	sid	sname	city
▶	10001	Acme Widget	Bangalore
	10002	Johns	Kolkata
	10003	Vimal	Mumbai
	10004	Reliance	Delhi
*	NULL	NULL	NULL

Supplier 8 x

select * from Parts;

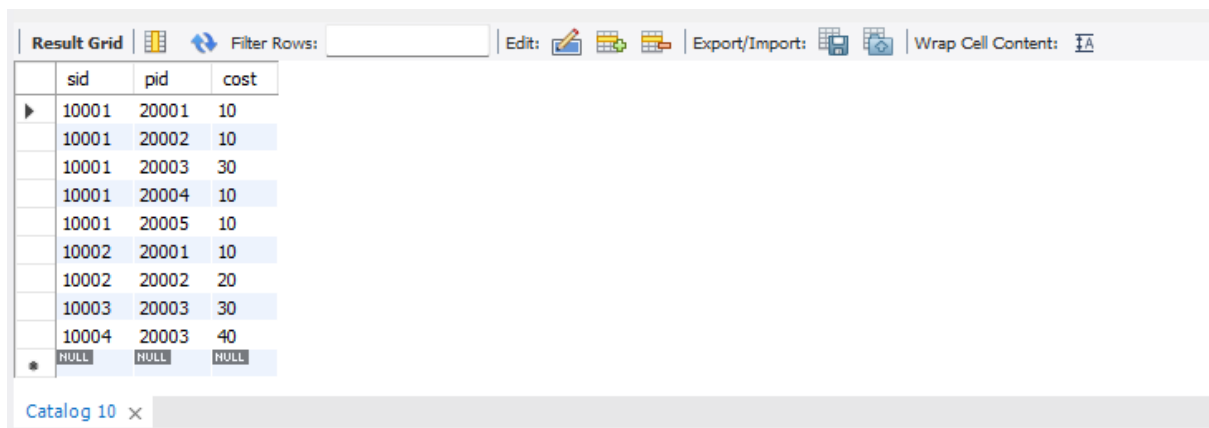


The screenshot shows a database query result grid for the 'Parts' table. The grid has a toolbar at the top with options like 'Filter Rows', 'Edit', 'Export/Import', and 'Wrap Cell Content'. The table has three columns: 'pid', 'pname', and 'color'. The data is as follows:

pid	pname	color
20001	Book	Red
20002	Pen	Red
20003	Pencil	Green
20004	Mobile	Green
20005	Charger	Black
NULL	NULL	NULL

The bottom of the window shows a tab labeled 'Parts 9'.

select * from Catalog;



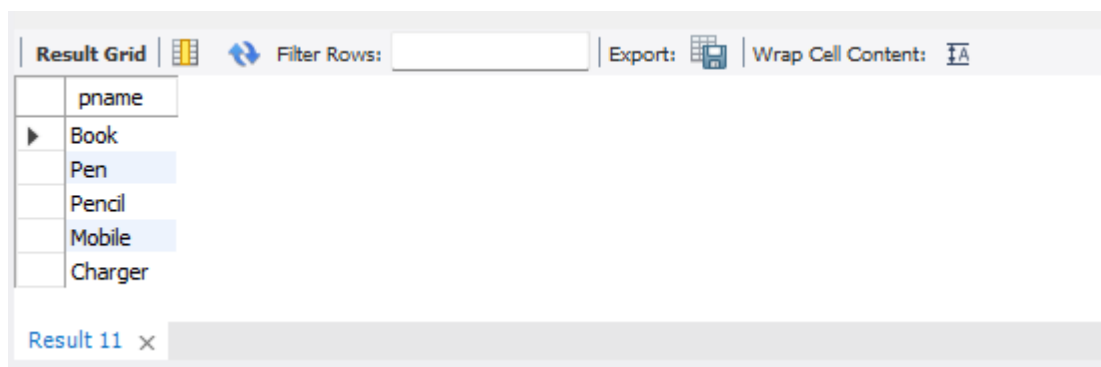
The screenshot shows a database query result grid for the 'Catalog' table. The grid has a toolbar at the top with options like 'Filter Rows', 'Edit', 'Export/Import', and 'Wrap Cell Content'. The table has three columns: 'sid', 'pid', and 'cost'. The data is as follows:

sid	pid	cost
10001	20001	10
10001	20002	10
10001	20003	30
10001	20004	10
10001	20005	10
10002	20001	10
10002	20002	20
10003	20003	30
10004	20003	40
NULL	NULL	NULL

The bottom of the window shows a tab labeled 'Catalog 10'.

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

```
select distinct p.pname  
from Parts p, Catalog c  
where p.pid = c.pid;
```



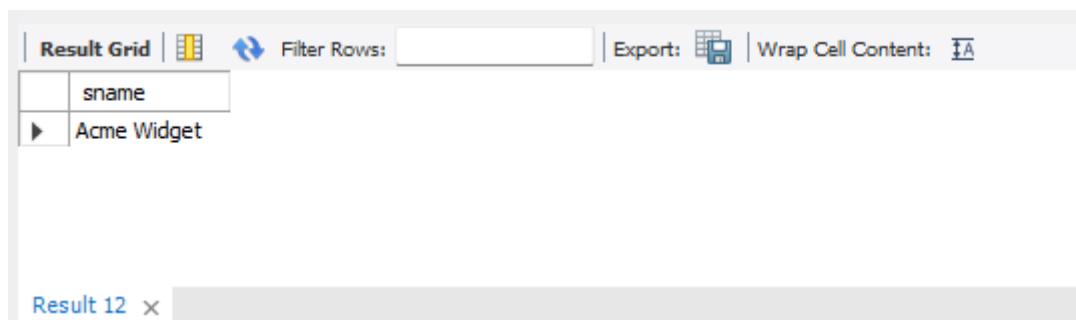
The screenshot shows a database query result grid for the query result. The grid has a toolbar at the top with options like 'Filter Rows', 'Export', and 'Wrap Cell Content'. The table has one column: 'pname'. The data is as follows:

pname
Book
Pen
Pencil
Mobile
Charger

The bottom of the window shows a tab labeled 'Result 11'.

4) Find the snames of suppliers who supply every part.

```
select distinct s.sname
from Catalog C, Supplier s WHERE C.sid=s.sid and 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));
```

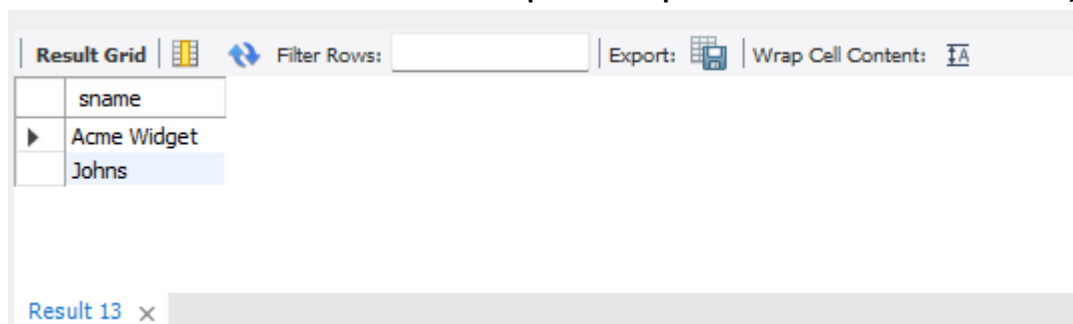


The screenshot shows a database interface with a 'Result Grid' tab. The grid has a header row with 'sname' and a single data row with 'Acme Widget'. Above the grid is a toolbar with 'Filter Rows:', 'Export:', and 'Wrap Cell Content:'. Below the grid is a tab labeled 'Result 12' with a close button.

sname
Acme Widget

5) Find the snames of suppliers who supply every red part.

```
select distinct s.sname
from Catalog C, Supplier s where C.sid=s.sid and NOT
EXISTS (select P.pid from Parts P
where P.color="Red" and NOT EXISTS (select C1.sid from
Catalog C1
where C1.sid = C.sid and C1.pid = P.pid and P.color="Red"));
```



The screenshot shows a database interface with a 'Result Grid' tab. The grid has a header row with 'sname' and two data rows: 'Acme Widget' and 'Johns'. The 'Johns' row is highlighted. Above the grid is a toolbar with 'Filter Rows:', 'Export:', and 'Wrap Cell Content:'. Below the grid is a tab labeled 'Result 13' with a close button.

sname
Acme Widget
Johns

6) 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");
```

The screenshot shows a database interface with a toolbar at the top containing 'Result Grid', 'Filter Rows', 'Export', and 'Wrap Cell Content'. Below the toolbar is a table with the following data:

	pname
▶	Mobile
	Charger

At the bottom of the interface, there is a tab labeled 'Result 14' with a close button (x).

7) 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);
```

The screenshot shows a database interface with a toolbar at the top containing 'Result Grid', 'Filter Rows', 'Export', and 'Wrap Cell Content'. Below the toolbar is a table with the following data:

	sid
▶	10002
	10004

At the bottom of the interface, there is a tab labeled 'Catalog 15' with a close button (x).

8) 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			Filter Rows:	Export:	Wrap Cell Content:
	pid	sname			
▶	20001	Acme Widget			
	20004	Acme Widget			
	20005	Acme Widget			
	20001	Johns			
	20002	Johns			
	20003	Reliance			

Result 16 ×