WEEK 7 – SUPPLIER DATABASE

(Tuesday, 20-12-2022)

Schema Diagram

Supplier

sid	sname	city

Parts

pid	pname	color

sid	pid	cost
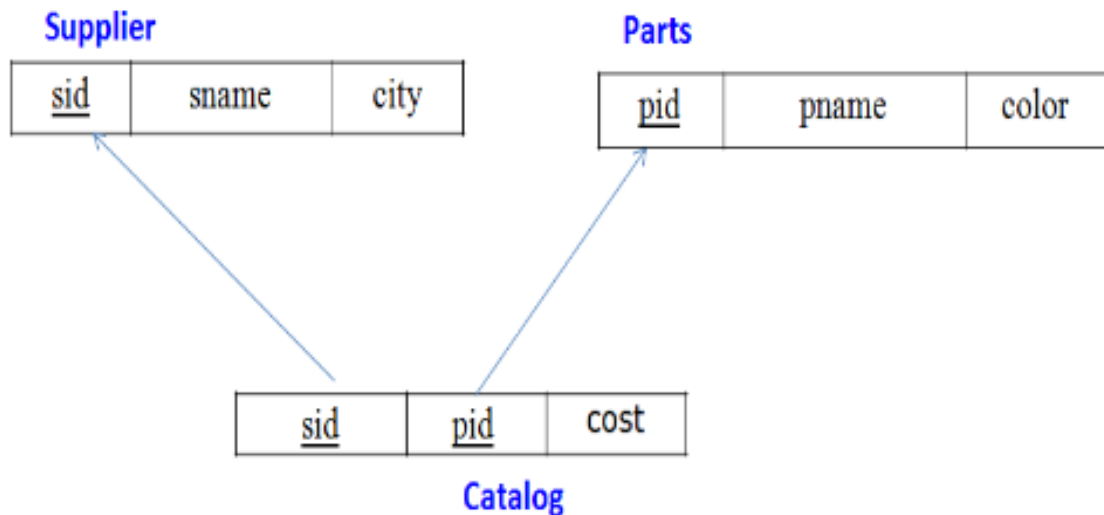
Catalog

```
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);
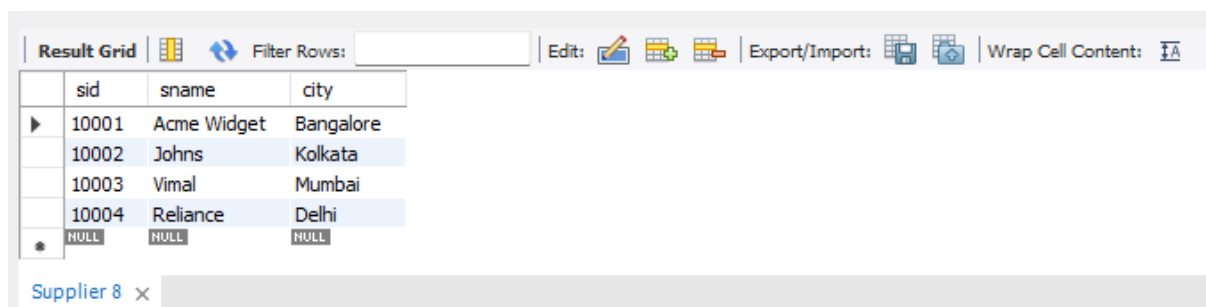
(SELECTION)

select * from Supplier;
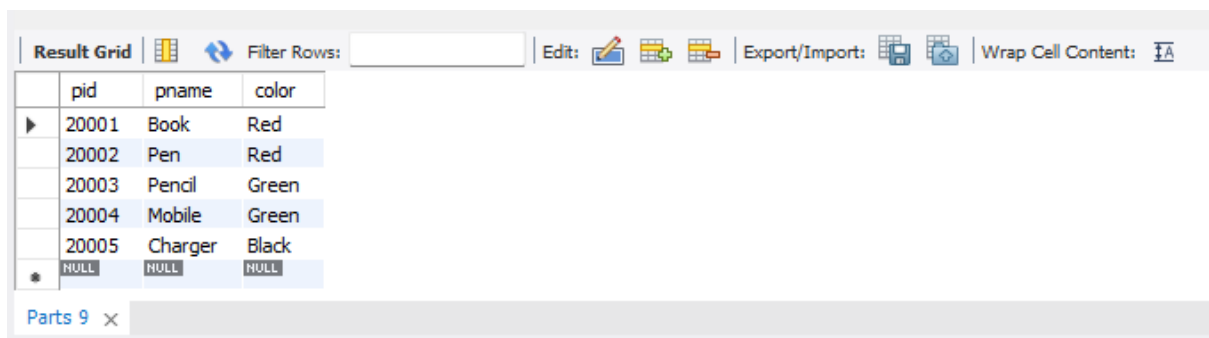
sid	sname	city
10001	Acme Widget	Bangalore
10002	Johns	Kolkata
10003	Vimal	Mumbai
10004	Reliance	Delhi
NULL	NULL	NULL

Supplier 8 ✕
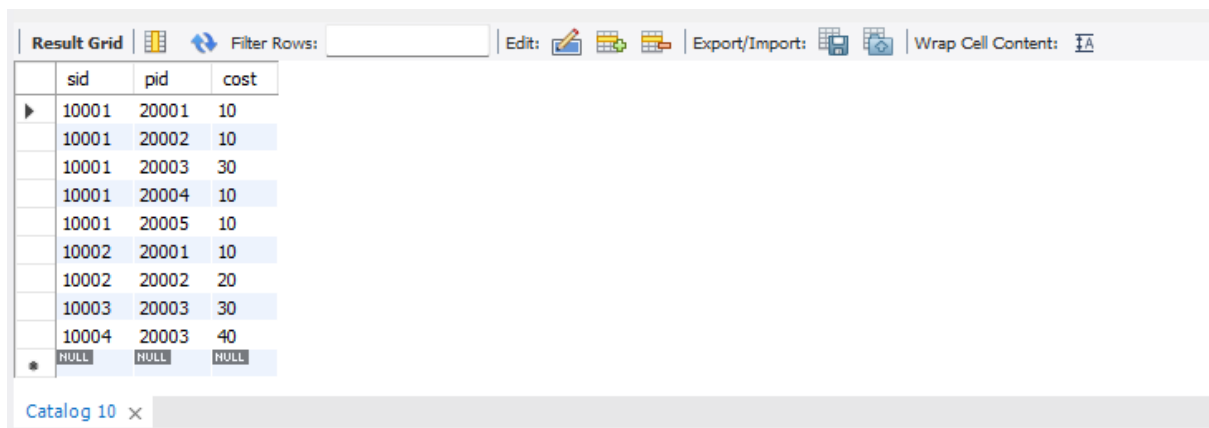
select * from Parts;

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

Parts 9

select * from Catalog;
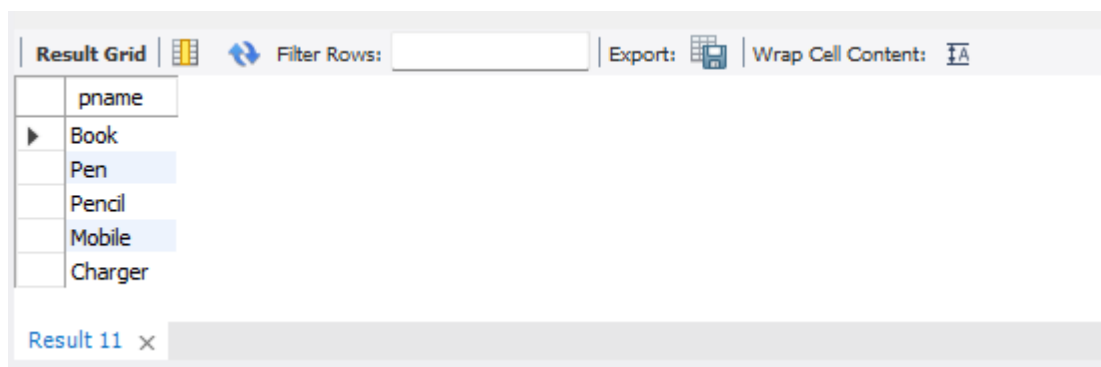
sid	pid	cost
10001	20001	10
10001	20002	10
10001	20003	30
10001	20004	10
10001	20005	10
10002	20001	10
10002	20002	20
10003	20003	30
10004	20003	40
NULL	NULL	NULL

Catalog 10

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

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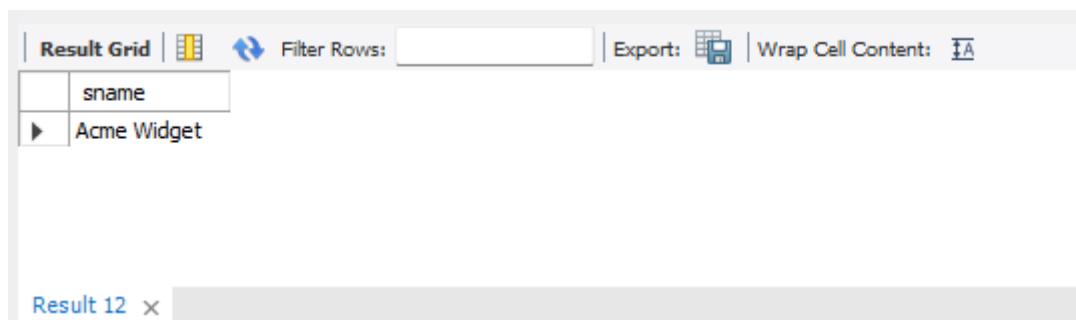from Parts p, Catalog c
where p.pid = c.pid;

pname
Book
Pen
Pencil
Mobile
Charger

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
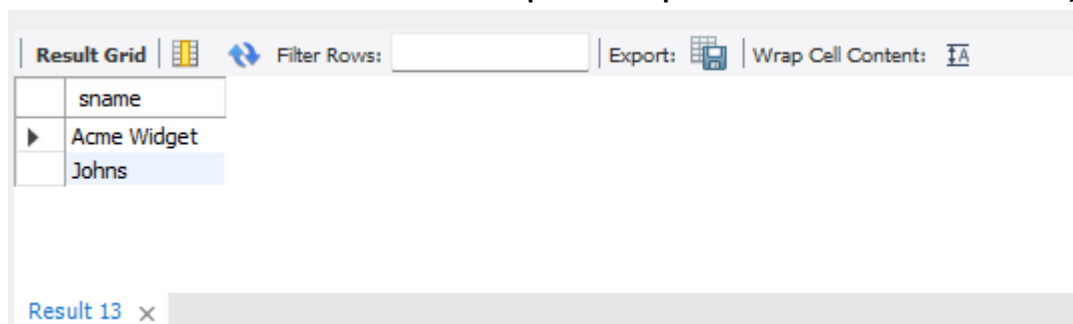where C1.sid = C.sid and C1.pid = P.pid));

sname
Acme Widget

Result 12 ×

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"));

sname
Acme Widget
Johns

Result 13 ×

6) <u>Find the pnames of parts supplied by Acme Widget Suppliers and by no one else.</u>

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

Result 14 ✕

7) <u>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).</u>

select distinct C.sid from Catalog C
where C.cost > (select AVG(C1.cost)
from Catalog C1 where C1.pid = C.pid);

	sid
▶	10002
	10004

Catalog 15 ✕

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 ✕