

TRISHUL M

D1

13/05/21

SUPPLIER DATABASE:

create database SUPPLIER;

use SUPPLIER;

create table SUPPLIERS(sid BIGINT(5) primary key, sname varchar(20), city varchar(20));

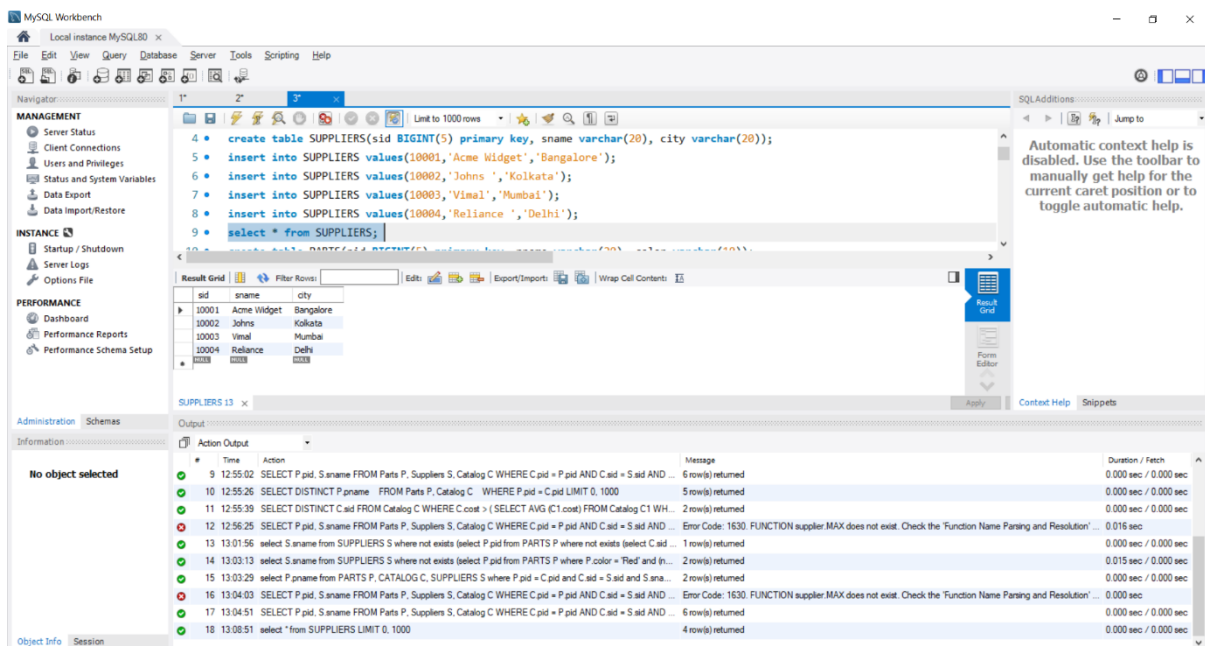
insert into SUPPLIERS values(10001,'Acme Widget','Bangalore');

insert into SUPPLIERS values(10002,'Johns ','Kolkata');

insert into SUPPLIERS values(10003,'Vimal','Mumbai');

insert into SUPPLIERS values(10004,'Reliance ','Delhi');

select * from SUPPLIERS;



create table PARTS(pid BIGINT(5) primary key, pname varchar(20), color varchar(10));

insert into PARTS values(20001,'Book','RED');

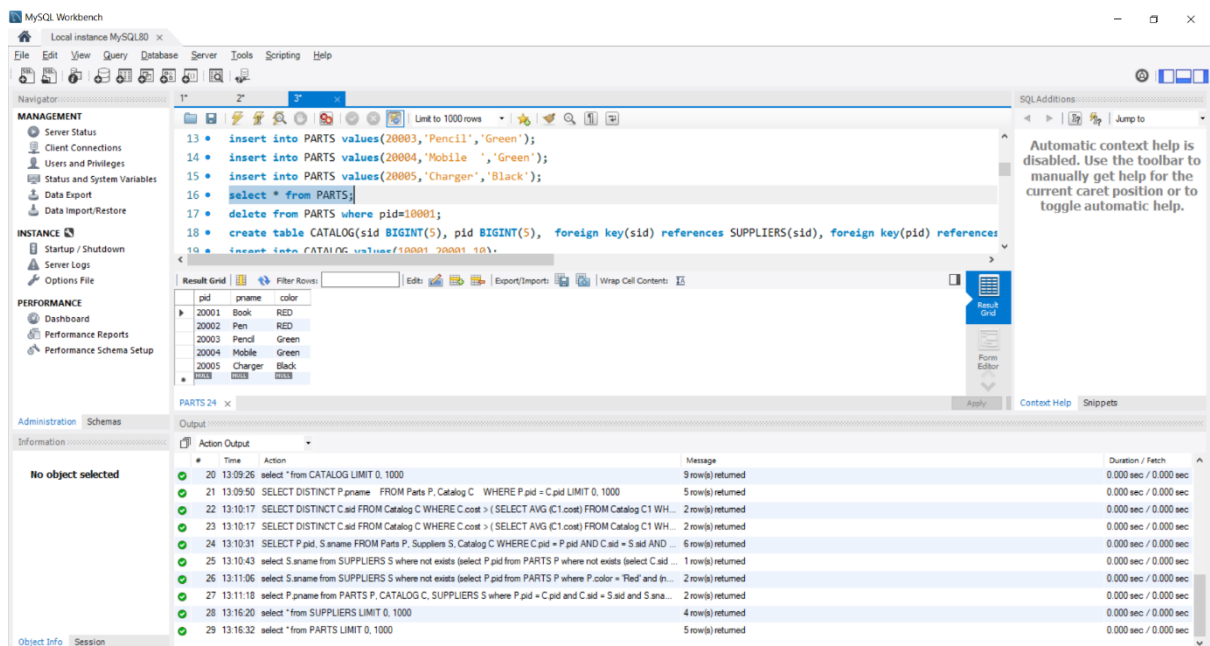
insert into PARTS values(20002,'Pen','RED');

insert into PARTS values(20003,'Pencil','Green');

insert into PARTS values(20004,'Mobile ','Green');

insert into PARTS values(20005,'Charger','Black');

select * from PARTS;



create table CATALOG(sid BIGINT(5), pid BIGINT(5), foreign key(sid) references SUPPLIERS(sid), foreign key(pid) references PARTS(pid), cost float(6), primary key(sid, pid));

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);

select * from CATALOG;

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following queries:

```
25 • insert into CATALOG values(10002,20002,20);
26 • insert into CATALOG values(10003,20003,30);
27 • insert into CATALOG values(10004,20003,40);
28 • select * from CATALOG;
```

The Result Grid displays the data from the CATALOG table:

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

The Output tab shows the execution log:

#	Time	Action	Message	Duration / Fetch
21	13:09:50	SELECT DISTINCT P.pname FROM Parts P, Catalog C WHERE P.pid = C.pid LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
22	13:10:17	SELECT DISTINCT C.aid FROM Catalog C WHERE C.cost > (SELECT AVG (C1.cost) FROM Catalog C1 WHERE C1.aid = C.aid)	2 row(s) returned	0.000 sec / 0.000 sec
23	13:10:17	SELECT DISTINCT C.aid FROM Catalog C WHERE C.cost > (SELECT AVG (C1.cost) FROM Catalog C1 WHERE C1.aid = C.aid)	2 row(s) returned	0.000 sec / 0.000 sec
24	13:10:31	SELECT P.pid, S.sname FROM Parts P, Suppliers S, Catalog C WHERE C.pid = P.pid AND C.aid = S.aid AND S.sname = 'Red'	6 row(s) returned	0.000 sec / 0.000 sec
25	13:10:43	select S.sname from Suppliers S where not exists (select P.pid from Parts P where not exists (select C.aid from Catalog C where C.pid = P.pid and C.aid = S.aid and S.sname = 'Red'))	1 row(s) returned	0.000 sec / 0.000 sec
26	13:11:06	select S.sname from Suppliers S where not exists (select P.pid from Parts P where P.color = 'Red' and P.pname = 'Red')	2 row(s) returned	0.000 sec / 0.000 sec
27	13:11:18	select P.pname from Parts P, Catalog C, Suppliers S where P.pid = C.pid and C.aid = S.aid and S.sname = 'Red'	2 row(s) returned	0.000 sec / 0.000 sec
28	13:16:20	select * from Suppliers LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
29	13:16:32	select * from Parts LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
30	13:16:48	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec

```
/* 1 */
```

```
SELECT DISTINCT P.pname
```

```
FROM Parts P, Catalog C
```

```
WHERE P.pid = C.pid;
```

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

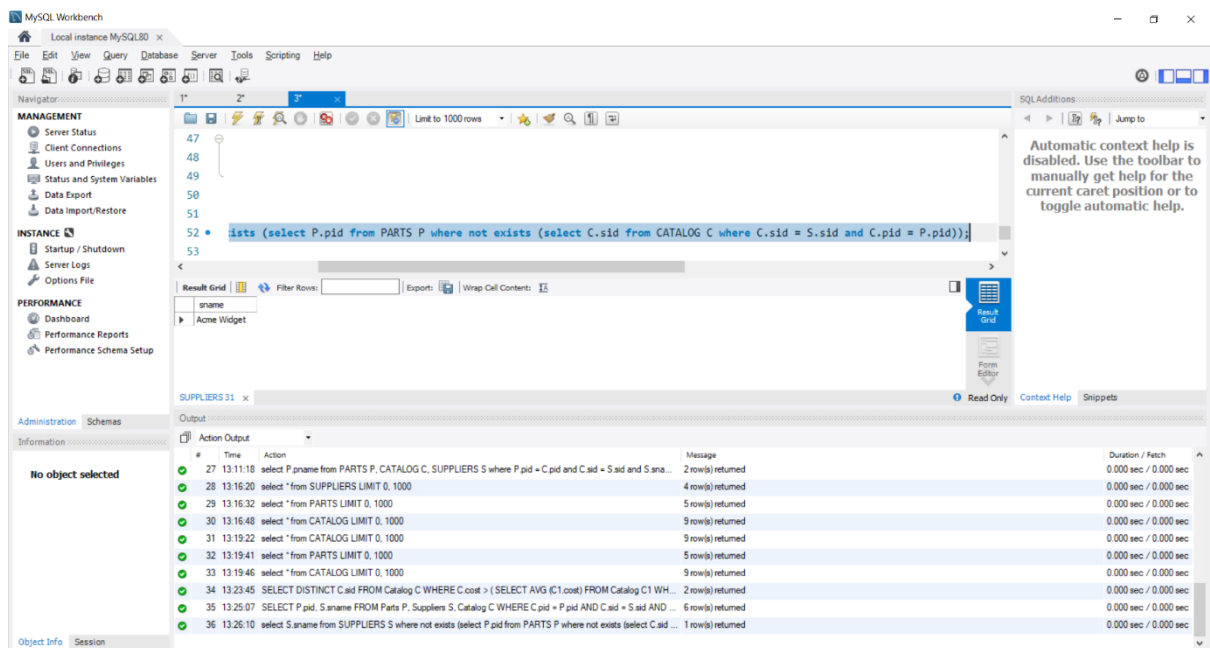
```
28 select * from CATALOG;
29 /* 1 */
30 SELECT DISTINCT P.pname
31 FROM Parts P, Catalog C
32 WHERE P.pid = C.pid;
33 /* 2
34 SELECT S.sname FROM SUPPLIERS S
```

The Results tab shows a table with one column, `pname`, and one row containing the value `Book`. The Output tab shows a list of actions and their results, including several errors:

#	Time	Action	Message	Duration / Fetch
12	12:56:25	SELECT P.pid, S.sname FROM Parts P, Suppliers S, Catalog C WHERE C.pid = P.pid AND C.aid = S.aid AND ...	Error Code: 1630: FUNCTION supplier.MAX does not exist. Check the 'Function Name Parsing and Resolution' ...	0.016 sec
13	13:01:56	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where not exists (select C.aid ...	1 row(s) returned	0.000 sec / 0.000 sec
14	13:03:13	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where P.color = 'Red' and in ...	2 row(s) returned	0.015 sec / 0.000 sec
15	13:03:29	select P.pname from PARTS P, CATALOG C, SUPPLIERS S where P.pid = C.pid and C.aid = S.aid and S.sna...	2 row(s) returned	0.000 sec / 0.000 sec
16	13:04:03	SELECT P.pid, S.sname FROM Parts P, Suppliers S, Catalog C WHERE C.pid = P.pid AND C.aid = S.aid AND ...	Error Code: 1630: FUNCTION supplier.MAX does not exist. Check the 'Function Name Parsing and Resolution' ...	0.000 sec
17	13:04:51	SELECT P.pid, S.sname FROM Parts P, Suppliers S, Catalog C WHERE C.pid = P.pid AND C.aid = S.aid AND ...	6 row(s) returned	0.000 sec / 0.000 sec
18	13:08:51	select * from SUPPLIERS LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
19	13:09:07	select * from PARTS LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
20	13:09:26	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
21	13:09:50	SELECT DISTINCT P.pname FROM Parts P, Catalog C WHERE P.pid = C.pid LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

-- Query 2

select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where not exists (select C.sid from CATALOG C where C.sid = S.sid and C.pid = P.pid));



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
121  select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where not exists (select C.sid from CATALOG C where C.sid = S.sid and C.pid = P.pid));
```

The Results tab is active, showing the output of the query. The table structure is as follows:

Table	Field	Type	Null	Index
SUPPLIERS	sname	VARCHAR(45)	NO	PRIMARY

The data returned is:

id	sname
1	Acme Widget

The Output tab is also visible, showing the execution of the query. The output is as follows:

#	Time	Action	Message	Duration / Fetch
27	13:11:18	select P.pname from PARTS P, CATALOG C, SUPPLIERS S where P.pid = C.pid and C.sid = S.sid and S.sname = 'Acme Widget'	2 row(s) returned	0.000 sec / 0.000 sec
28	13:16:20	select * from SUPPLIERS LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
29	13:16:32	select * from PARTS LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
30	13:16:48	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
31	13:19:22	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
32	13:19:41	select * from PARTS LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
33	13:19:46	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
34	13:23:45	SELECT DISTINCT C.sid FROM Catalog C WHERE C.cost > (SELECT AVG (C1.cost) FROM Catalog C1 WHERE C1.cost > C.cost)	2 row(s) returned	0.000 sec / 0.000 sec
35	13:25:07	SELECT P.pid, S.sname FROM Parts P, Suppliers S, Catalog C WHERE C.pid = P.pid AND C.sid = S.sid AND S.sname = 'Acme Widget'	6 row(s) returned	0.000 sec / 0.000 sec
36	13:26:10	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where not exists (select C.sid from CATALOG C where C.sid = S.sid and C.pid = P.pid));	1 row(s) returned	0.000 sec / 0.000 sec

-- Query 3

select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where P.color = 'Red' and (not exists (select C.sid from CATALOG C where C.sid = S.sid and C.pid = P.pid)));

The screenshot shows the MySQL Workbench interface. The main window displays a SQL query in the editor. The query is a complex nested query using the `NOT EXISTS` operator. The query is as follows:

```
49 WHERE C1.pid = P.pid);
50
51 -- Query 2
52 select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where not exists (select C.sid from CATALOG C
53 -- Query 3
54 select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where P.color = 'Red' and (not exists (select C
55 -- Query 4
```

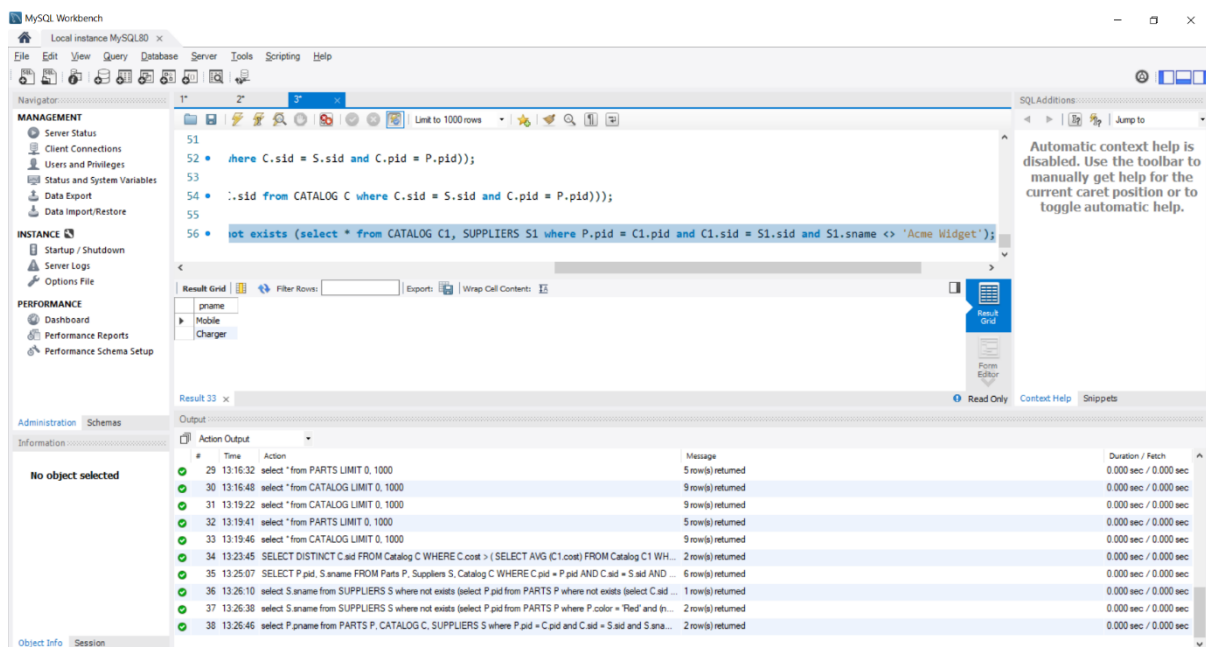
The results grid shows the output of the query, which is a single column named `sname` with one row containing the value `Johns`.

The bottom panel shows the `Output` tab, which displays the execution progress of the query. The output is as follows:

#	Time	Action	Message	Duration / Fetch
28	13:16:20	select * from SUPPLIERS LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
29	13:16:32	select * from PARTS LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
30	13:16:48	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
31	13:19:22	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
32	13:19:41	select * from PARTS LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
33	13:19:46	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
34	13:23:45	SELECT DISTINCT C.sid FROM Catalog C WHERE C.cost > (SELECT AVG (C1.cost) FROM Catalog C1 WH...	2 row(s) returned	0.000 sec / 0.000 sec
35	13:25:07	SELECT P.pid, S.sname FROM Parts P, Suppliers S, Catalog C WHERE C.pid = P.pid AND C.sid = S.sid AND ...	6 row(s) returned	0.000 sec / 0.000 sec
36	13:26:10	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where not exists (select C...	1 row(s) returned	0.000 sec / 0.000 sec
37	13:26:38	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where P.color = 'Red' and (n...	2 row(s) returned	0.000 sec / 0.000 sec

-- Query 4

select P.pname from PARTS P, CATALOG C, SUPPLIERS S where P.pid = C.pid and C.sid = S.sid and S.sname = 'Acme Widget' and not exists (select * from CATALOG C1, SUPPLIERS S1 where P.pid = C1.pid and C1.sid = S1.sid and S1.sname <> 'Acme Widget');



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
51
52 .here C.sid = S.sid and C.pid = P.pid));
53
54 .:sid from CATALOG C where C.sid = S.sid and C.pid = P.pid));
55
56 not exists (select * from CATALOG C1, SUPPLIERS S1 where P.pid = C1.pid and C1.sid = S1.sid and S1.sname <> 'Acme Widget');
```

The Results tab shows the output of the query. The output is a table with the following columns: #, Time, Action, Message, and Duration / Fetch. The output shows the execution of the query and the results returned.

#	Time	Action	Message	Duration / Fetch
29	13:16:32	select * from PARTS LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
30	13:16:48	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
31	13:19:22	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
32	13:19:41	select * from PARTS LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
33	13:19:46	select * from CATALOG LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
34	13:23:45	SELECT DISTINCT C.sid FROM Catalog C WHERE C.cost > (SELECT AVG (C1.cost) FROM Catalog C1 WH...	2 row(s) returned	0.000 sec / 0.000 sec
35	13:25:07	SELECT P.pid, S.sname FROM Parts P, Suppliers S, Catalog C WHERE C.pid = P.pid AND C.sid = S.sid AND...	6 row(s) returned	0.000 sec / 0.000 sec
36	13:26:10	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where not exists (select C.sid ...	1 row(s) returned	0.000 sec / 0.000 sec
37	13:26:30	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where P.color = 'Red' and (n...	2 row(s) returned	0.000 sec / 0.000 sec
38	13:26:46	select P.pname from PARTS P, CATALOG C, SUPPLIERS S where P.pid = C.pid and C.sid = S.sid and S.sname...	2 row(s) returned	0.000 sec / 0.000 sec

-- Query 5

```
SELECT DISTINCT C.sid FROM Catalog C
WHERE C.cost > ( SELECT AVG (C1.cost)
FROM Catalog C1
WHERE C1.pid = C.pid );
```

The screenshot displays the MySQL Workbench interface. The main editor window shows the following SQL query:

```
-- Query 5
35 SELECT DISTINCT C.sid FROM Catalog C
36 WHERE C.cost > ( SELECT AVG (C1.cost)
37 FROM Catalog C1
38 WHERE C1.pid = C.pid );
```

The query is executed, and the results are displayed in the 'Result Grid' tab. The results show two rows:

sid
10002
10004

The 'Output' tab at the bottom shows the execution log, including the time taken for each step and the number of rows returned. The final step (34) shows that 2 rows were returned.

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

-- Query 6

SELECT P.pid, S.sname

FROM Parts P, Suppliers 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);

The screenshot displays the MySQL Workbench interface. The central editor shows the following SQL query:

```
-- Query 6
SELECT P.pid, S.sname
FROM Parts P, Suppliers 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);
```

The 'Result Grid' tab is active, showing the following data:

pid	sname
20001	Acme Widget
20004	Acme Widget
20005	Acme Widget
20001	Johns
20002	Johns
20003	Reliance

The 'Output' tab is also visible, showing a list of actions and their durations. The first action is:

#	Time	Action	Message	Duration / Fetch
26	13:11:06	select S.sname from SUPPLIERS S where not exists (select P.pid from PARTS P where P.color = 'Red' and (S...	2 row(s) returned	0.000 sec / 0.000 sec