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USN : 1BM19CS070
DATE : 23/06/21

DBMS LAB PROGRAM – 7

7. SUPPLIERS DATABASE

QUESTION :

CONSIDER THE FOLLOWING SCHEMA:

SUPPLIERS (SID: INTEGER, SNAME: STRING, ADDRESS: STRING)

PARTS (PID: INTEGER, PNAME: STRING, COLOR: STRING)

CATALOG (SID: INTEGER, PID: INTEGER, COST: REAL)

THE CATALOG RELATION LISTS THE PRICES CHARGED FOR PARTS BY SUPPLIERS. WRITE THE FOLLOWING QUERIES IN SQL:

- I. FIND THE PNAMEs OF PARTS FOR WHICH THERE IS SOME SUPPLIER.
- II. FIND THE SNAMEs OF SUPPLIERS WHO SUPPLY EVERY PART.
- III. FIND THE SNAMEs OF SUPPLIERS WHO SUPPLY EVERY RED PART.
- IV. FIND THE PNAMEs OF PARTS SUPPLIED BY ACME WIDGET SUPPLIERS AND BY NO ONE ELSE.
- V. 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).
- VI. FOR EACH PART, FIND THE SNAME OF THE SUPPLIER WHO CHARGES THE MOST FOR THAT PART.
- VII. FIND THE SIDs OF SUPPLIERS WHO SUPPLY ONLY RED PARTS.

PROGRAM CODE :

```
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;
/* 1 - FIND THE PNAME OF PARTS FOR WHICH THERE IS SOME SUPPLIER. */
SELECT DISTINCT P.PNAME
FROM PARTS P, CATALOG C
WHERE P.PID = C.PID;

/* FIND THE SNAME OF SUPPLIERS WHO SUPPLY EVERY PART */
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));

/* FIND THE SNAME OF SUPPLIERS WHO SUPPLY EVERY RED PART. */
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)));

/* FIND THE PNAME OF PARTS SUPPLIED BY ACME WIDGET SUPPLIERS AND BY NO ONE ELSE */
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');

/* 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 );

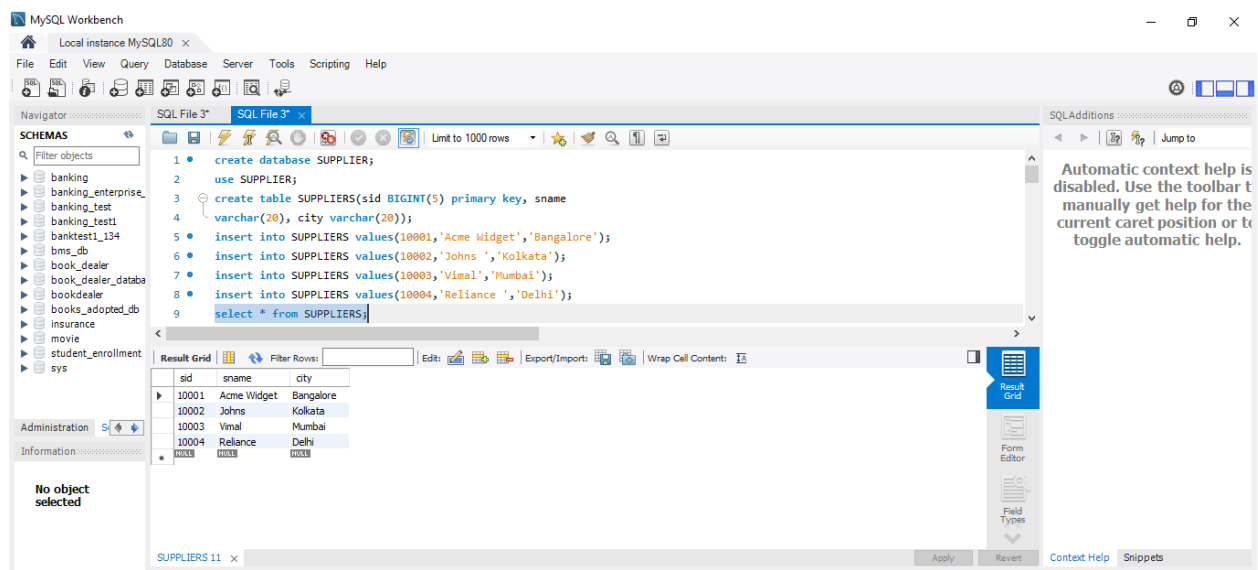
/* FOR EACH PART, FIND THE SNAME OF THE SUPPLIER WHO CHARGES THE MOST FOR THAT PART.*/
SELECT P.PID, S.SNAME
FROM PARTS P, SUPPLIERS S, CATALOG C
WHERE C.PID = P.PID
AND C.SID = S.SID
AND C.COST = (SELECT MAX(C1.COST)
FROM CATALOG C1
WHERE C1.PID = P.PID);

/* FIND THE SIDS OF SUPPLIERS WHO SUPPLY ONLY RED PARTS.*/
SELECT DISTINCT C.SID
FROM CATALOG C
WHERE NOT EXISTS ( SELECT *
FROM PARTS P
WHERE P.PID = C.PID AND P.COLOR <> 'RED' );

```

SCREENSHOTS OF THE PROGRAM OUTPUT :

→ CREATION AND INSERTION OF VALUES



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

```

1 • create database SUPPLIER;
2 • use SUPPLIER;
3 • create table SUPPLIERS(sid BIGINT(5) primary key, sname
4 • varchar(20), city varchar(20));
5 • insert into SUPPLIERS values(10001,'Acme Widget','Bangalore');
6 • insert into SUPPLIERS values(10002,'Johns ','Kolkata');
7 • insert into SUPPLIERS values(10003,'Vimal','Mumbai');
8 • insert into SUPPLIERS values(10004,'Reliance ','Delhi');
9 • select * from SUPPLIERS;

```

The Result Grid shows the output of the SELECT statement:

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

The SQL editor also shows the following message:

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

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator new SQL tab for executing queries

SQL File 3*

Limit to 1000 rows

SQLAdditions

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SCHEMAS

Filter objects

banking
banking_enterprise
banking_test
banking_test1
banktest1_134
bms_db
book_dealer
book_dealer_data
bookdealer
books_adopted_db
insurance
movie
student_enrollment
sys

Administration

Information

No object selected

```

9 select * from SUPPLIERS;
10 create table PARTS(pid BIGINT(5) primary key, pname varchar(20),
11 color varchar(10));
12 insert into PARTS values(20001,'Book','RED');
13 insert into PARTS values(20002,'Pen','RED');
14 insert into PARTS values(20003,'Pencil','Green');
15 insert into PARTS values(20004,'Mobile ','Green');
16 insert into PARTS values(20005,'Charger','Black');
17 select * from PARTS;

```

Result Grid

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

Result Grid
Form Editor
Field Types

MySQL Workbench

Local instance MySQL80

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book_dealer_data
bookdealer
books_adopted_db
insurance
movie
student_enrollment
sys

Administration

Information

No object selected

```

24 insert into CATALOG values(10001,20004,10);
25 insert into CATALOG values(10001,20005,10);
26 insert into CATALOG values(10002,20001,10);
27 insert into CATALOG values(10002,20002,20);
28 insert into CATALOG values(10003,20003,30);
29 insert into CATALOG values(10004,20003,40);
30 select * from CATALOG;
31 /* 1 - Find the pnames of parts for which there is some supplier. */
32 SELECT DISTINCT P.pname

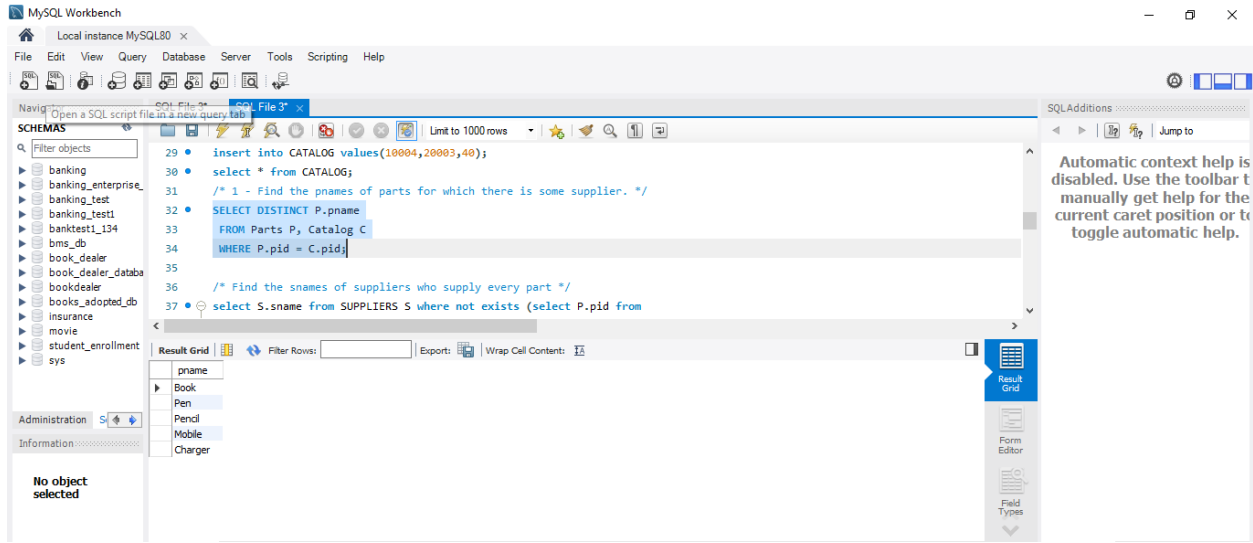
```

Result Grid

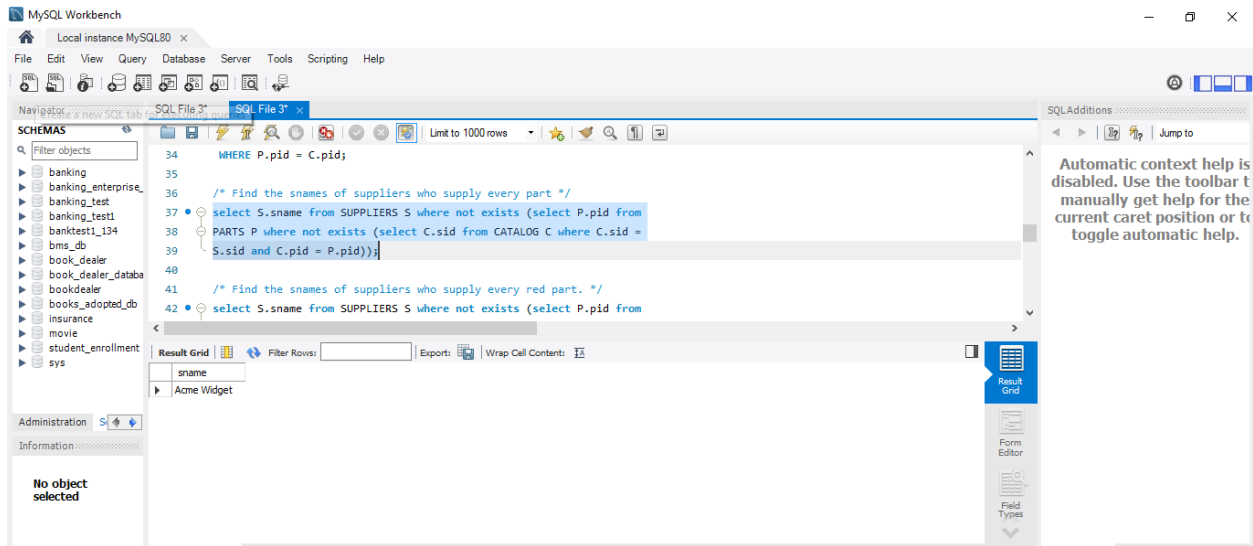
sid	pid	cost
10001	20001	10
10001	20002	10
10001	20003	30
10001	20004	10
10001	20005	10
10002	20001	10
10002	20002	20
10003	20003	30
10004	20003	40

Result Grid
Form Editor
Field Types

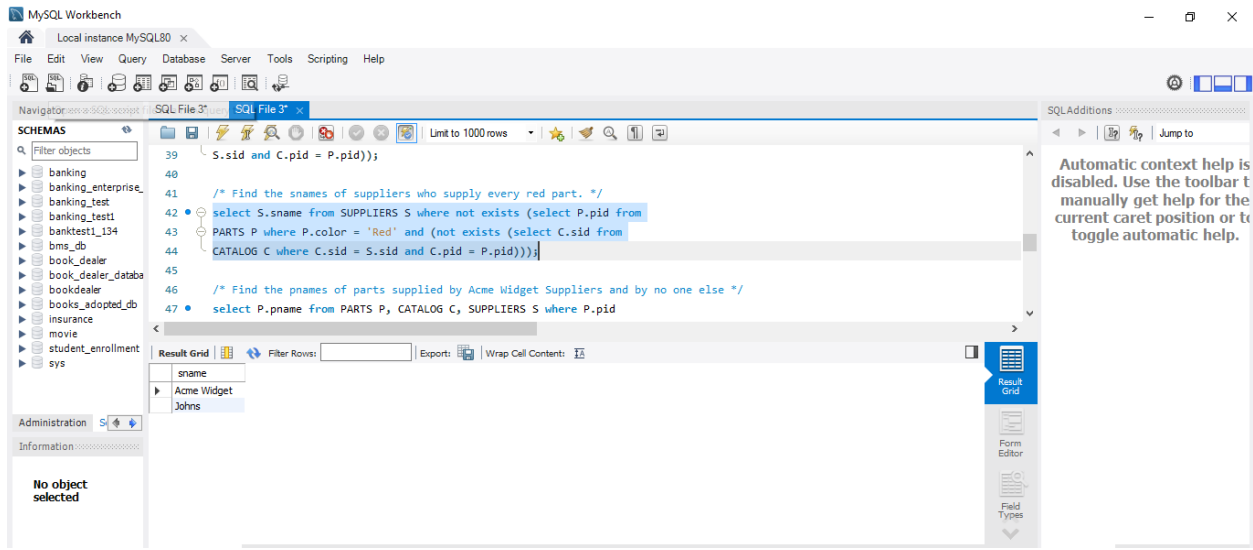
1. FIND THE PNAMEs OF PARTS FOR WHICH THERE IS SOME SUPPLIER.



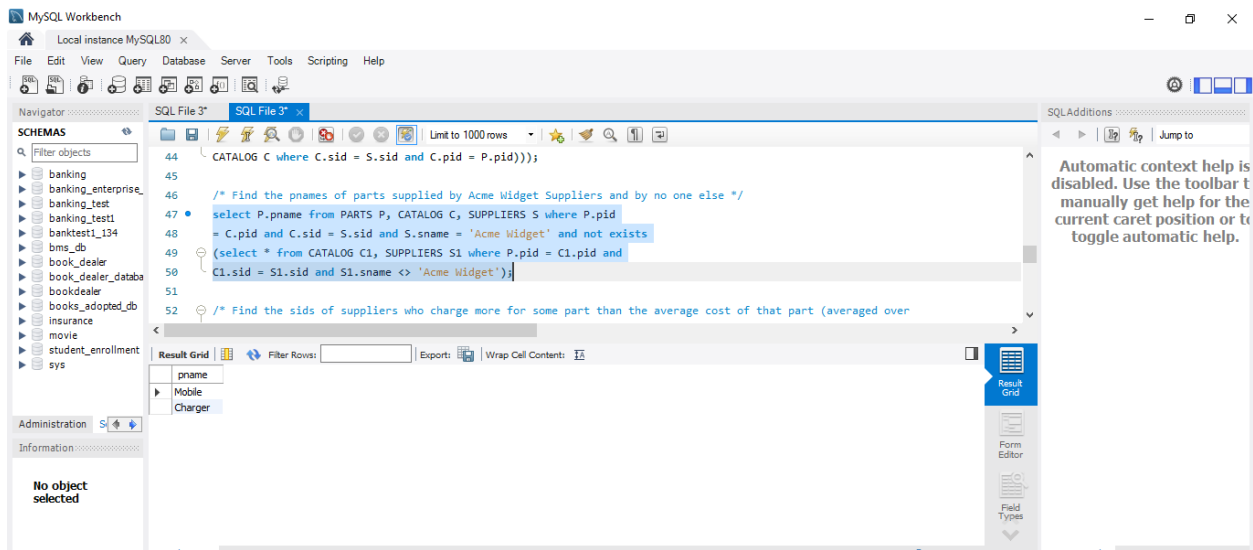
2 - FIND THE SNAME OF SUPPLIERS WHO SUPPLY EVERY PART.



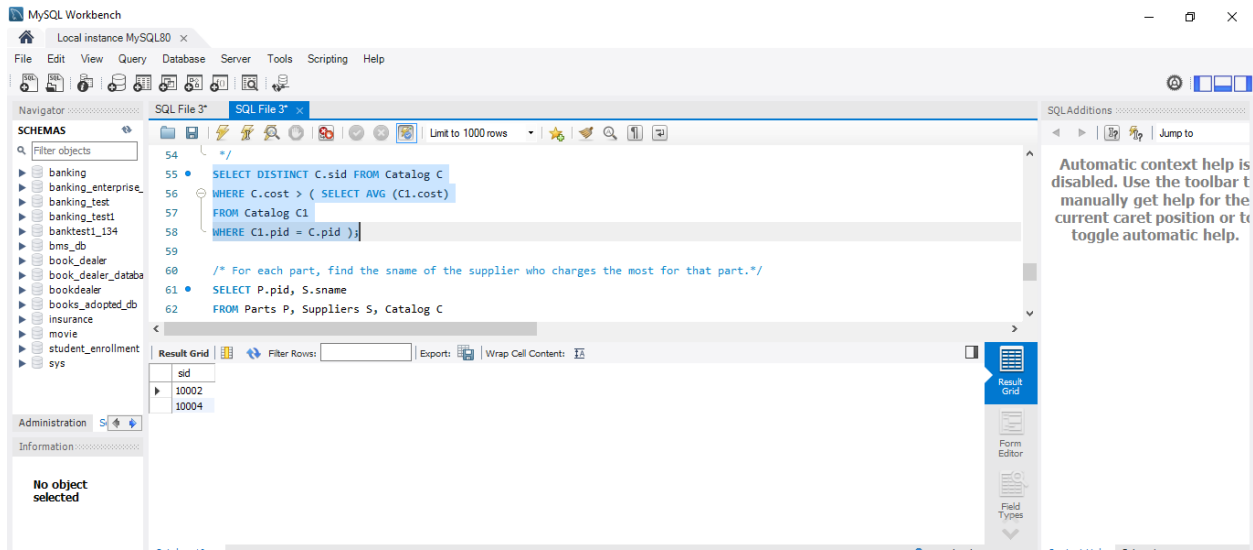
3 - FIND THE SNAME OF SUPPLIERS WHO SUPPLY EVERY RED PART.



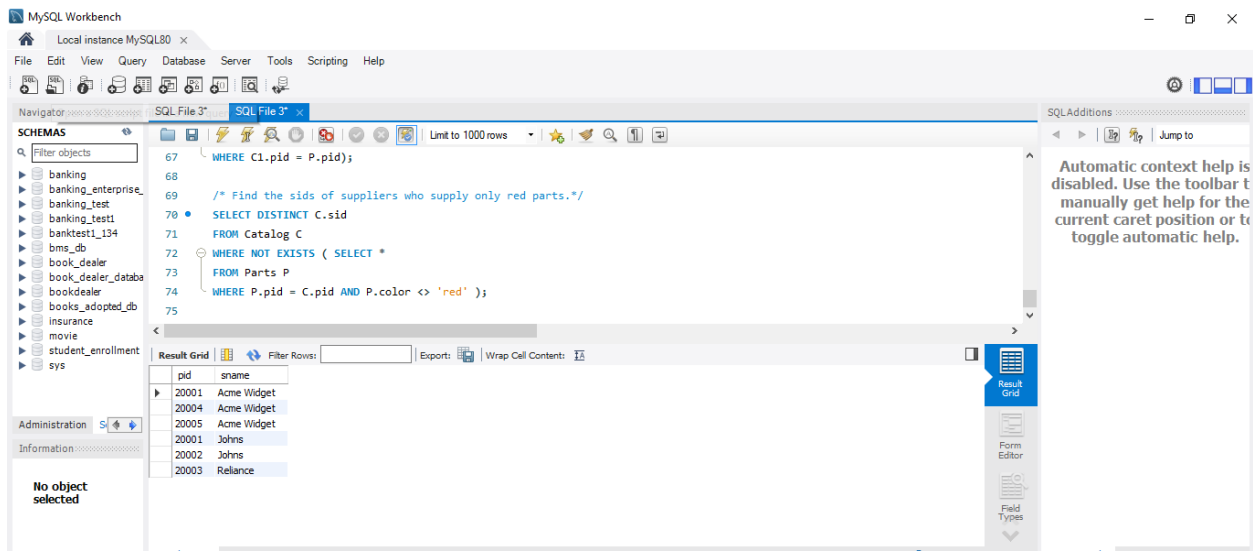
4 - FIND THE PNAMES OF PARTS SUPPLIED BY ACME WIDGET SUPPLIERS AND BY NO ONE ELSE



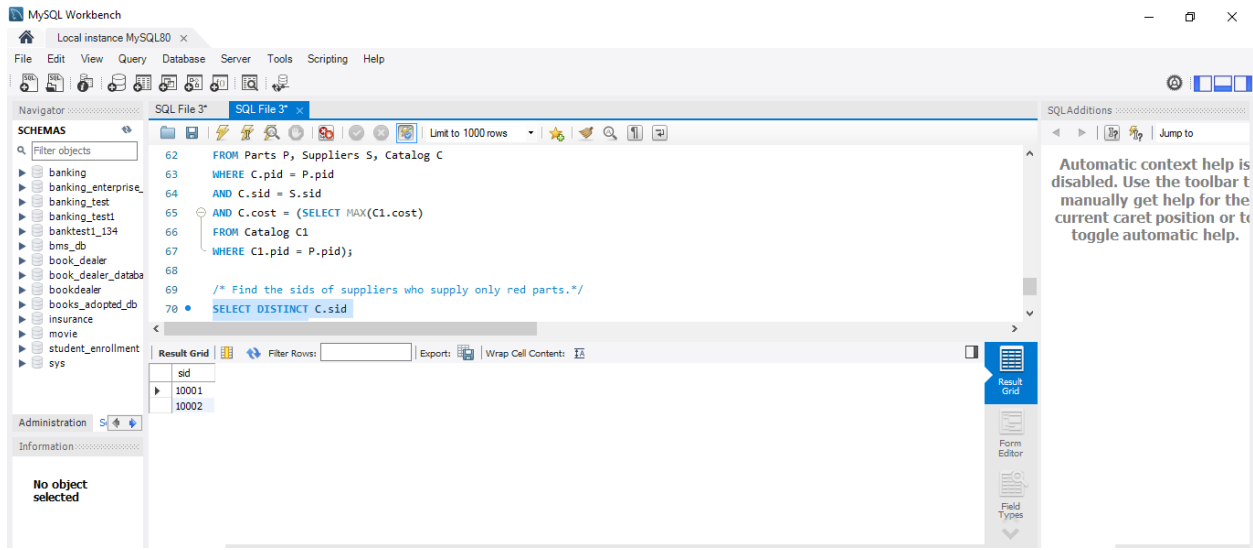
5 - FIND THE SIDS OF SUPPLIERS WHO CHARGE MORE FOR SOME PART THAN THE AVERAGE COST OF THAT PART (AVERAGED OVER ALL THE SUPPLIERS WHO SUPPLY THAT PART).



6 - FOR EACH PART, FIND THE SNAME OF THE SUPPLIER WHO CHARGES THE MOST FOR THAT PART



7 - FIND THE SIDS OF SUPPLIERS WHO SUPPLY ONLY RED PARTS



**** END OF WEEK7 PROGRAM ****