NAME : KUSUM M R
USN : 1BM19CS077
DATE : 22/06/21

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');
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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 PNAMES OF PARTS FOR WHICH THERE IS SOME SUPPLIER. */
SELECT DISTINCT P.PNAME
 FROM PARTS P, CATALOG C
 WHERE P.PID = C.PID;

/* FIND THE SNAMES 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 SNAMES 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 PNAMES 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
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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' );
```
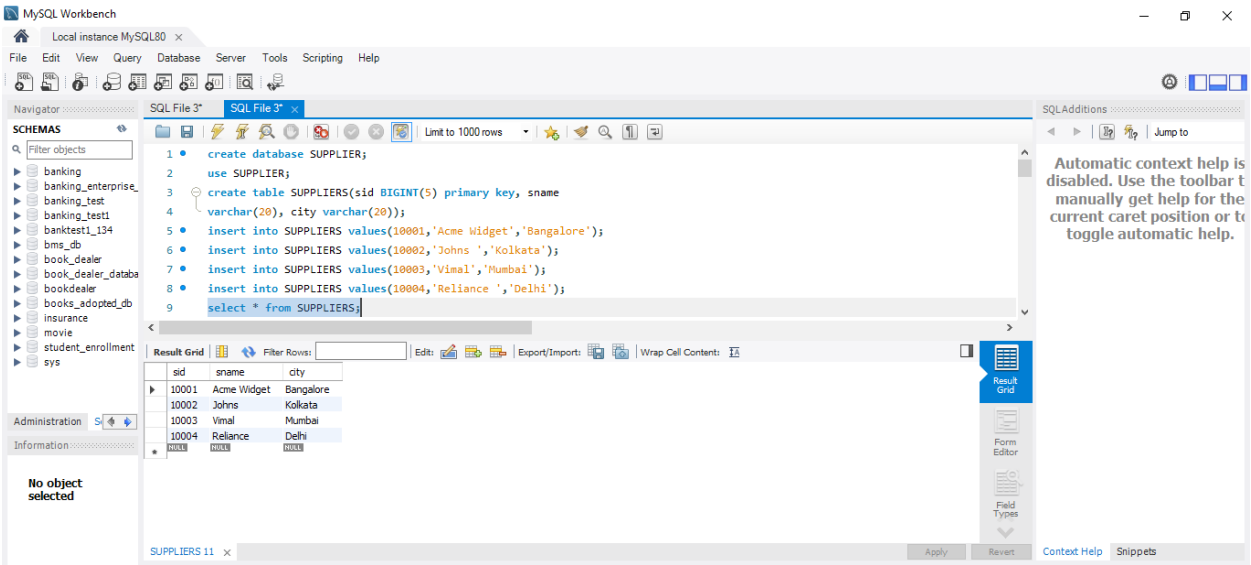
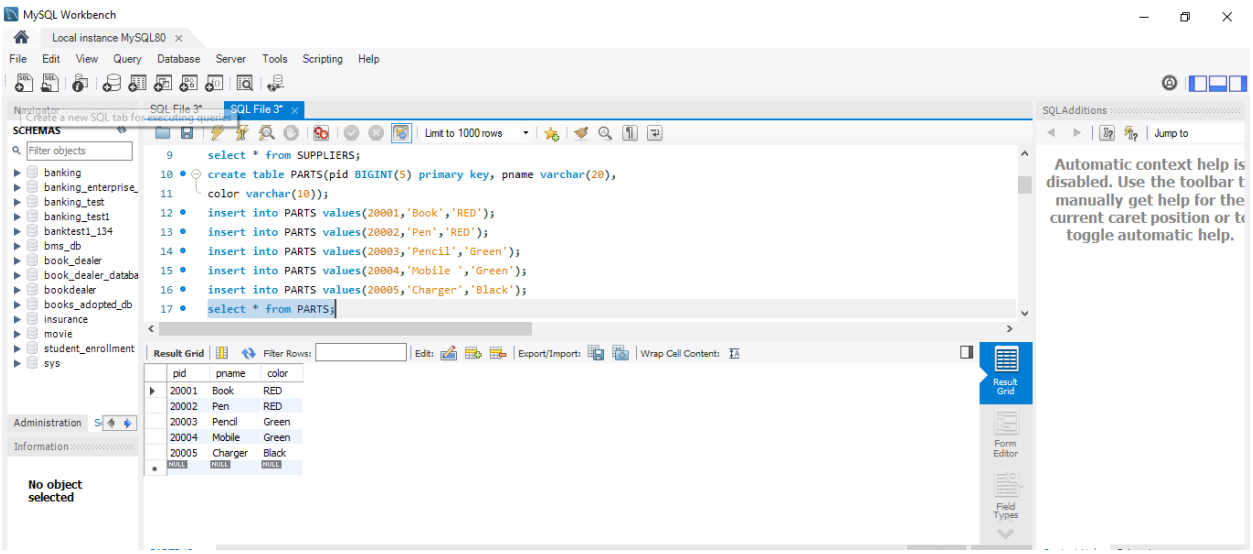
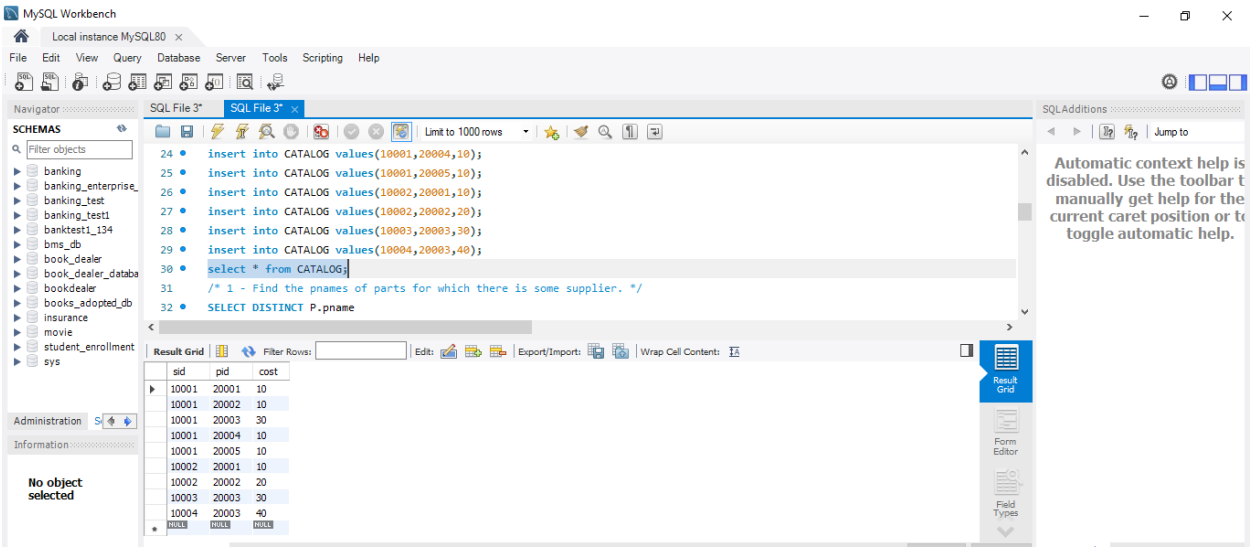

SCREENSHOTS OF THE PROGRAM OUTPUT :

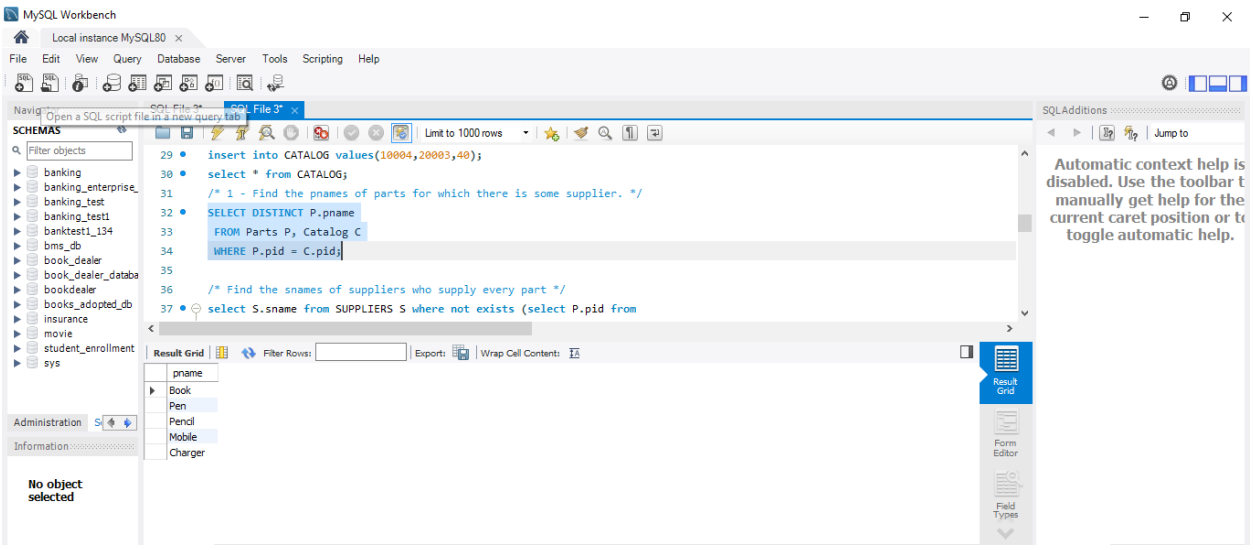
➔ CREATION AND INSERTION OF VALUES



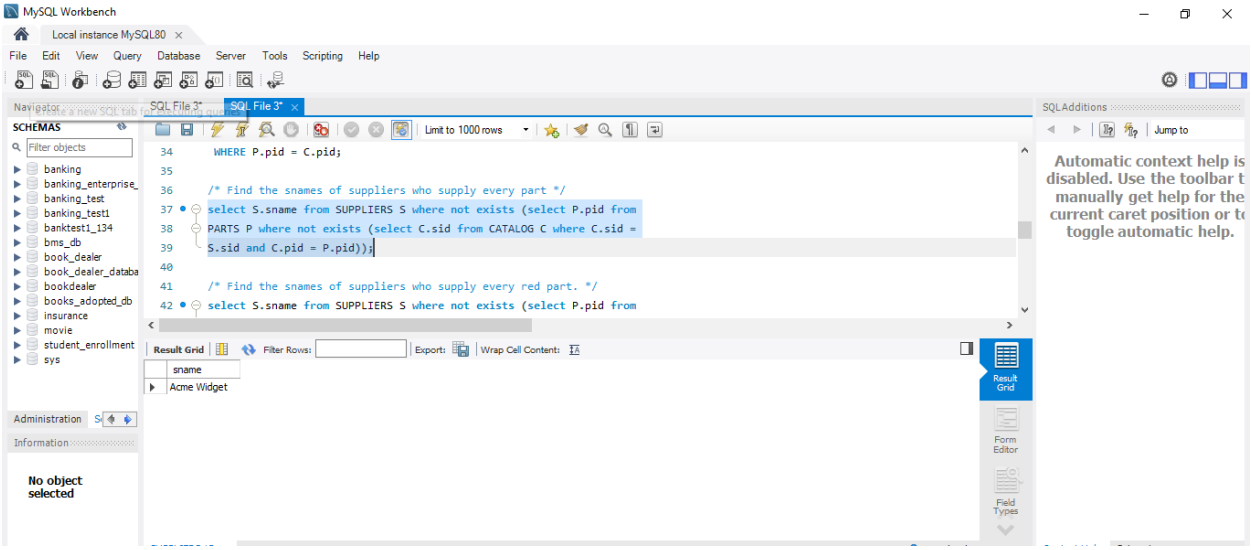




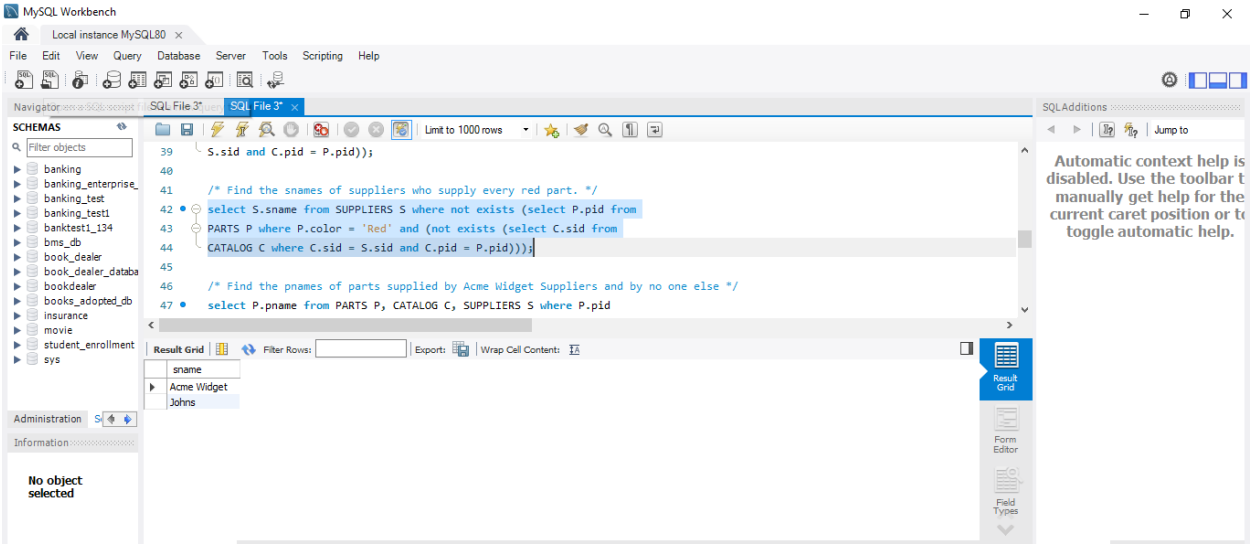
1. FIND THE PNAMES OF PARTS FOR WHICH THERE IS SOME SUPPLIER.



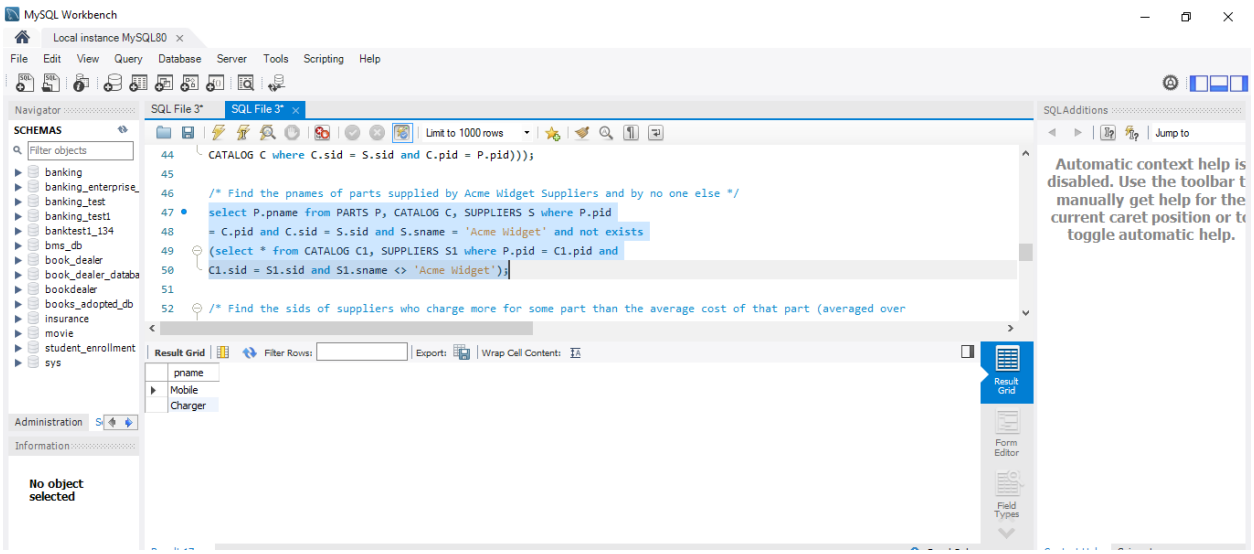
2 - FIND THE SNAMES OF SUPPLIERS WHO SUPPLY EVERY PART.



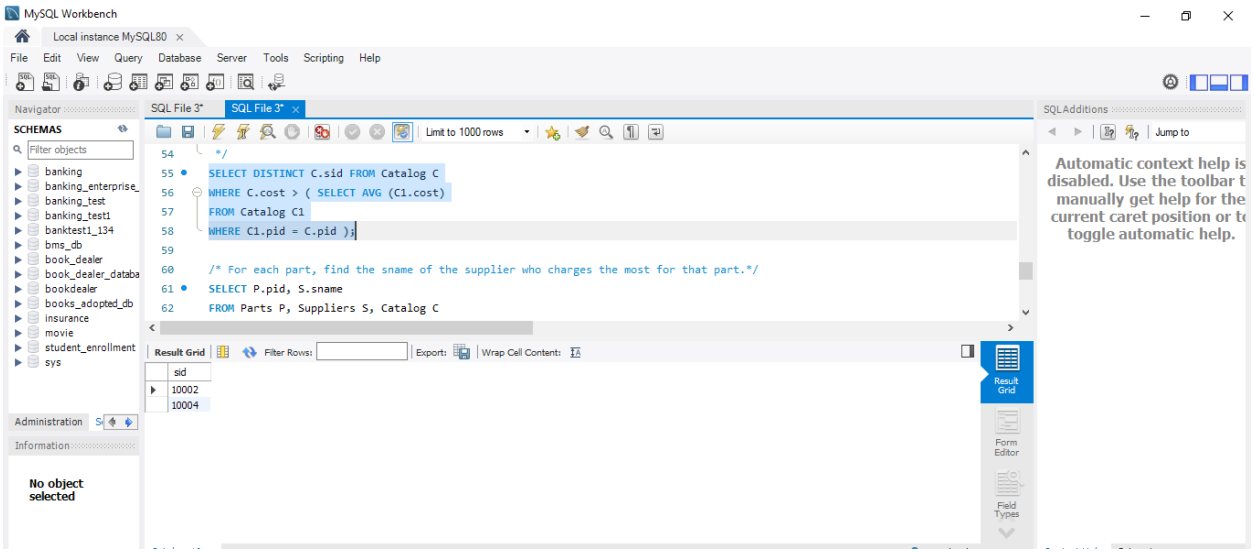
3 - FIND THE SNAMES OF SUPPLIERS WHO SUPPLY EVERY RED PART.



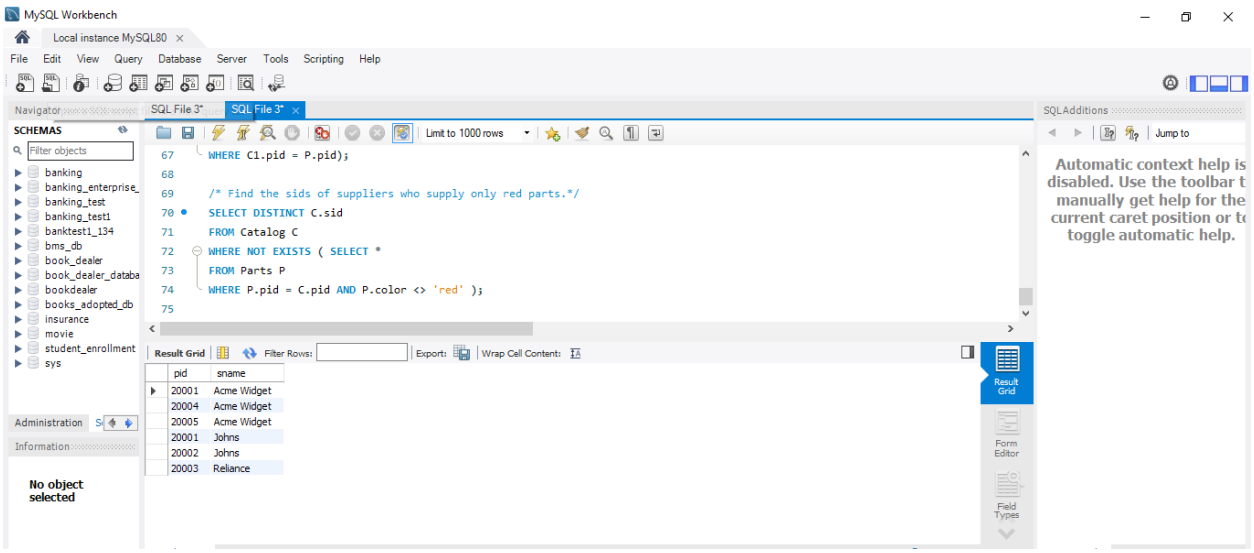
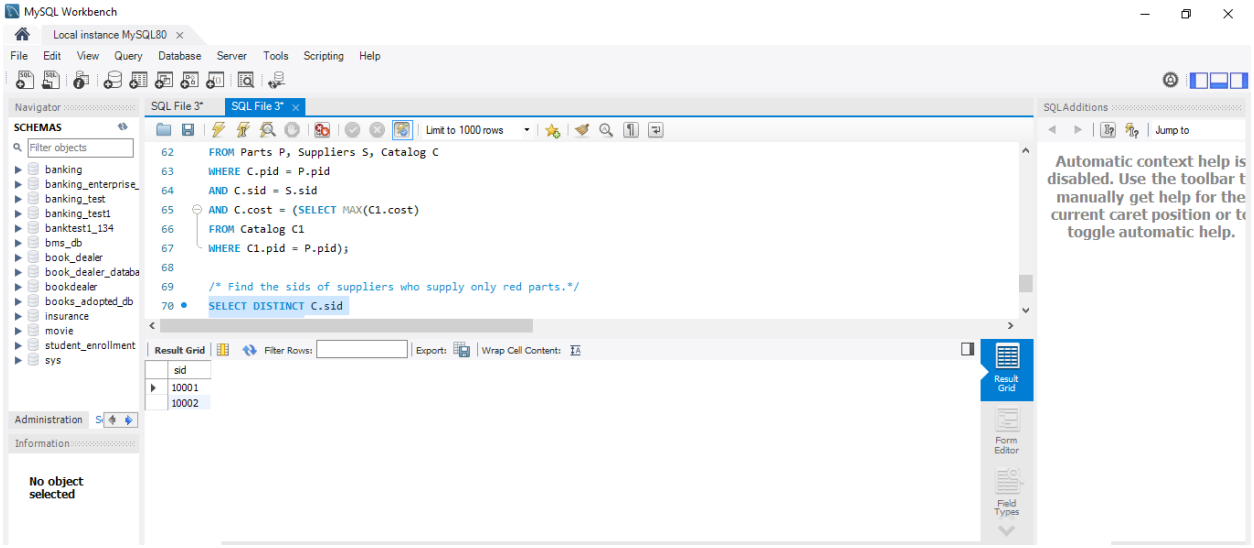
4 - FIND THE PNAMES OF PARTS SUPPLIED BY ACME WIDGET SUPPLIERS AND BY NO ONE ELSE



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