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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 :

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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));
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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 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).

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*/
SELECT DISTINCT C.SID FROM CATALOG C
WHERE C.COST > ( SELECT AVG (C1.COST)
FROM CATALOG C1
WHERE C1.PID = C.PID );

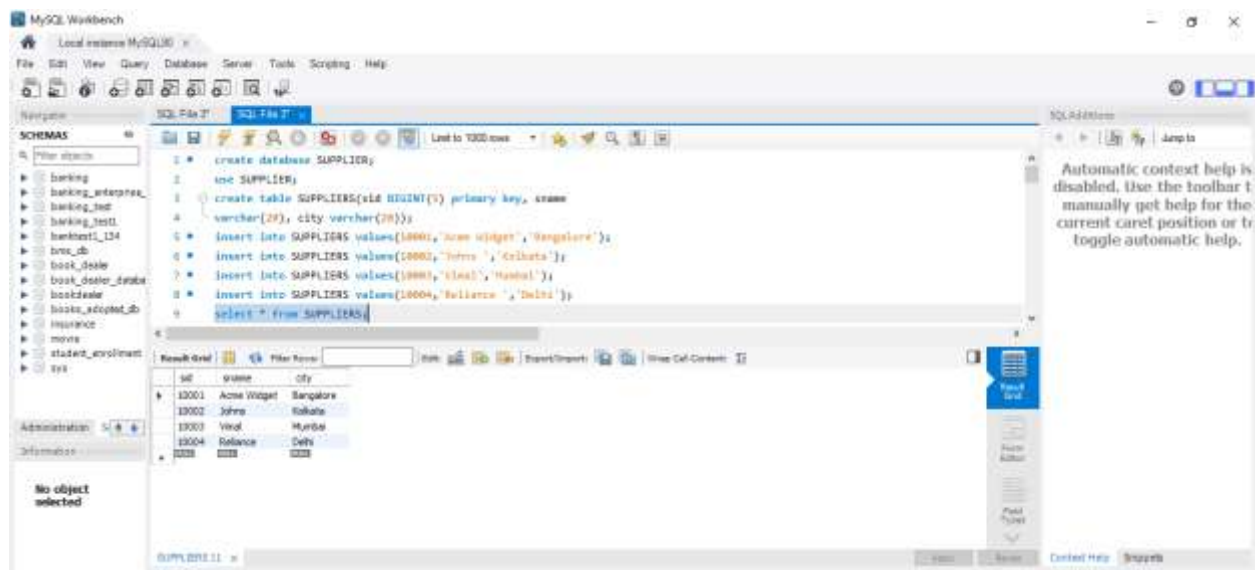
/* FOR EACH PART, FIND THE SNAME OF THE SUPPLIER WHO CHARGES THE MOST FOR THAT PART.*/
SELECT P.PID, S.SNAME
FROM PARTS P, SUPPLIERS S, CATALOG C
WHERE C.PID = P.PID
AND C.SID = S.SID
AND C.COST = (SELECT MAX(C1.COST)
FROM CATALOG C1
WHERE C1.PID = P.PID);

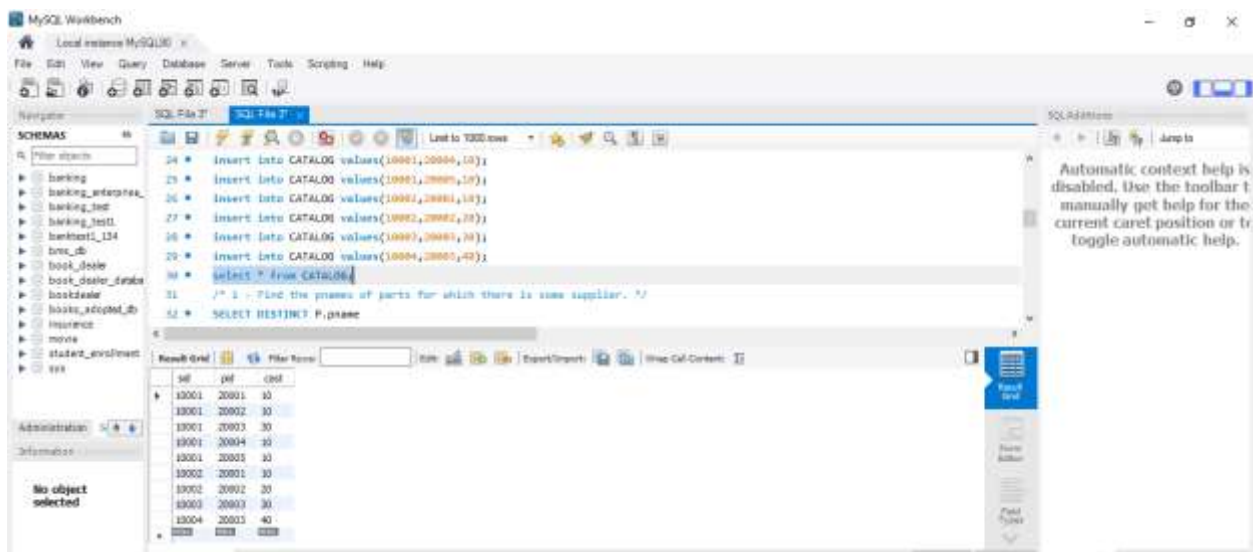
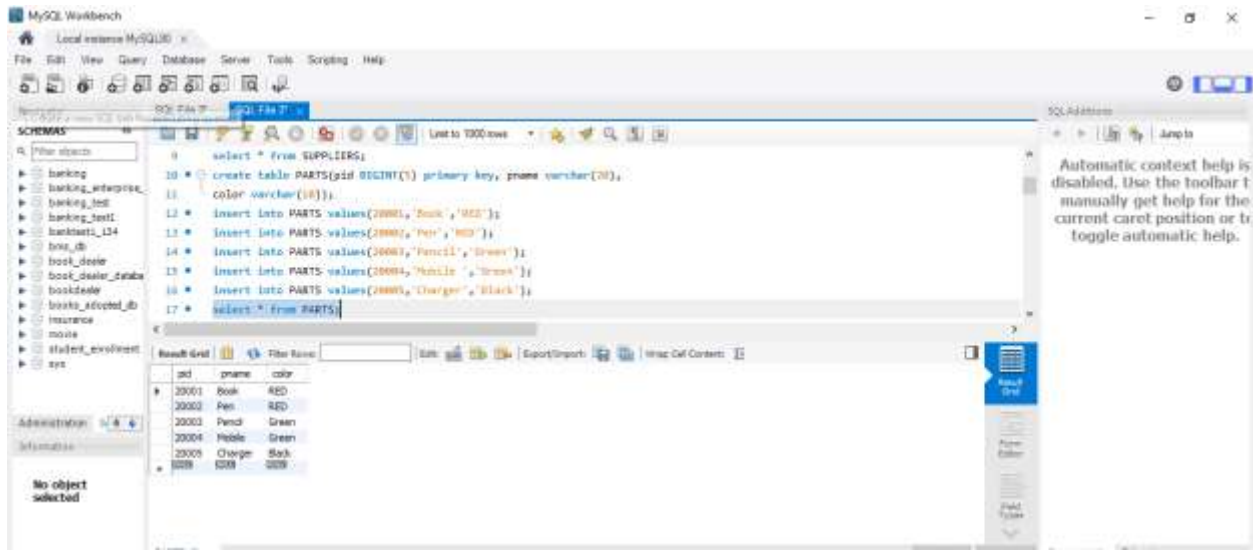
/* FIND THE SIDS OF SUPPLIERS WHO SUPPLY ONLY RED PARTS.*/
SELECT DISTINCT C.SID
FROM CATALOG C
WHERE NOT EXISTS ( SELECT *
FROM PARTS P
WHERE P.PID = C.PID AND P.COLOR <> 'RED' );

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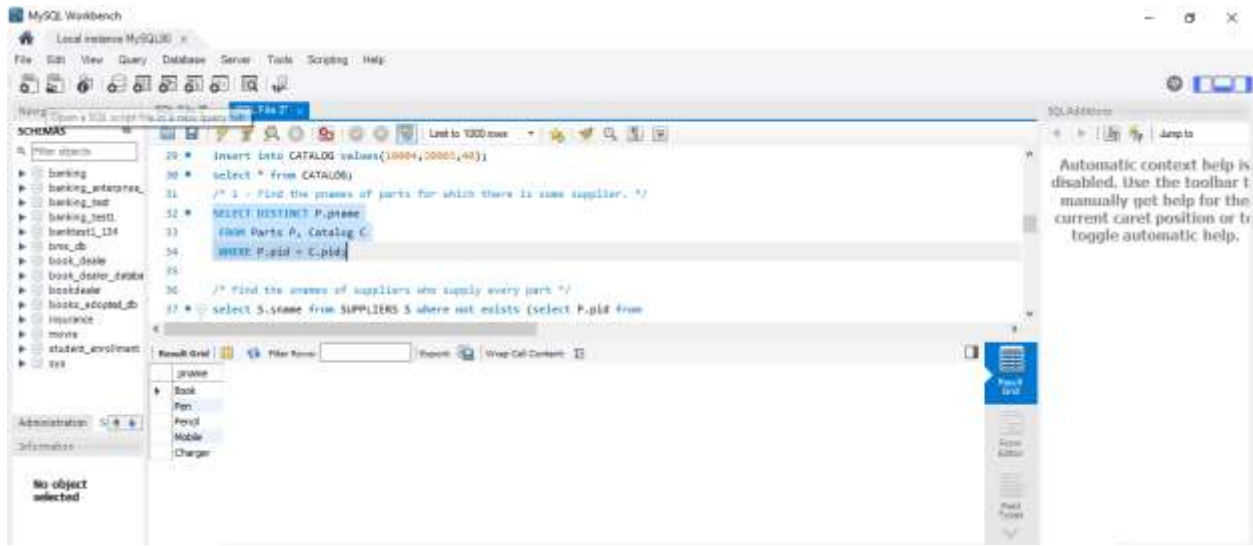
SCREENSHOTS OF THE PROGRAM OUTPUT :

→ CREATION AND INSERTION OF VALUES

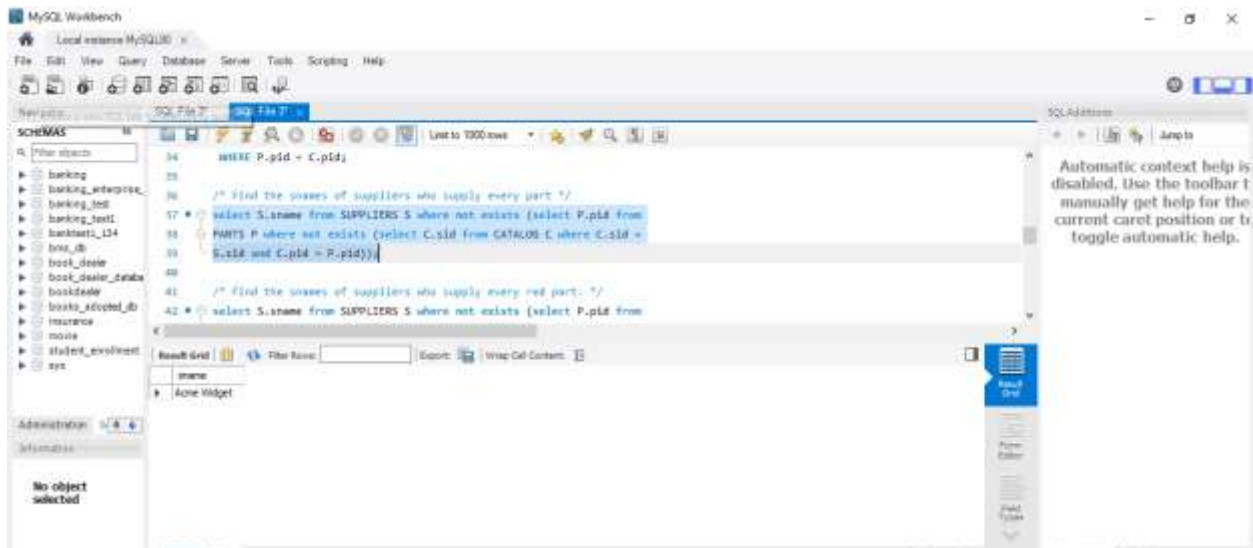




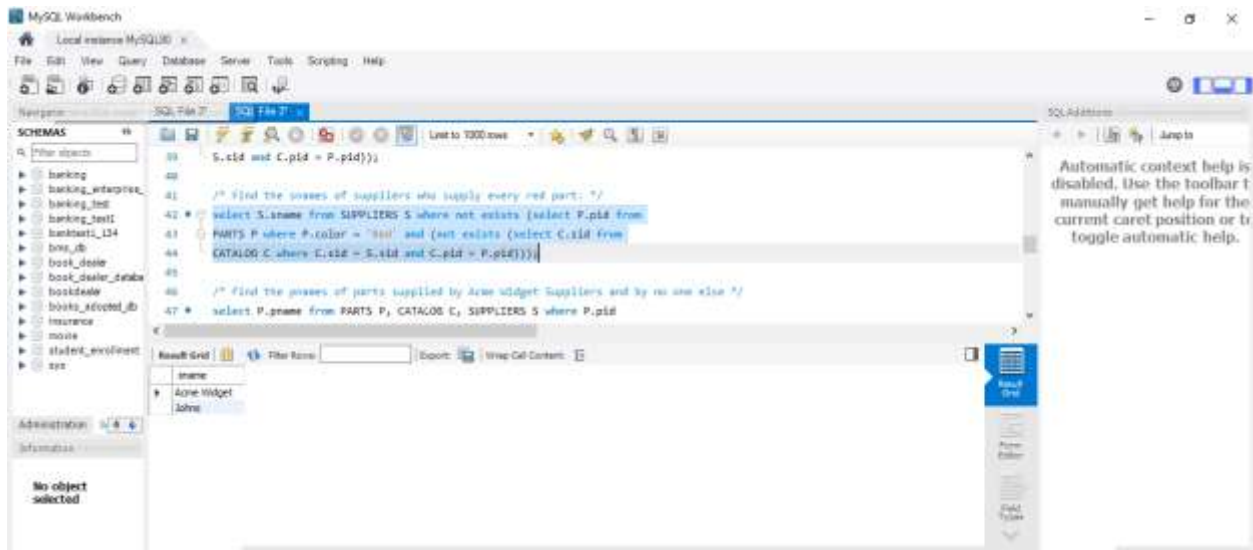
1. FIND THE PNAMES OF PARTS FOR WHICH THERE IS SOME SUPPLIER.



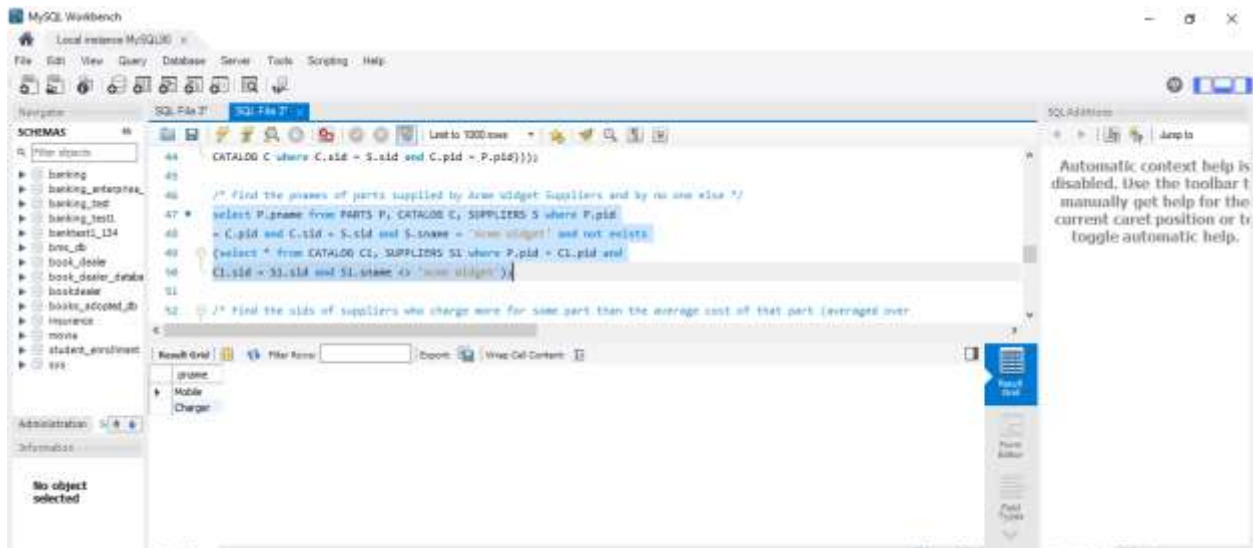
2 - FIND THE SNAME OF SUPPLIERS WHO SUPPLY EVERY PART.



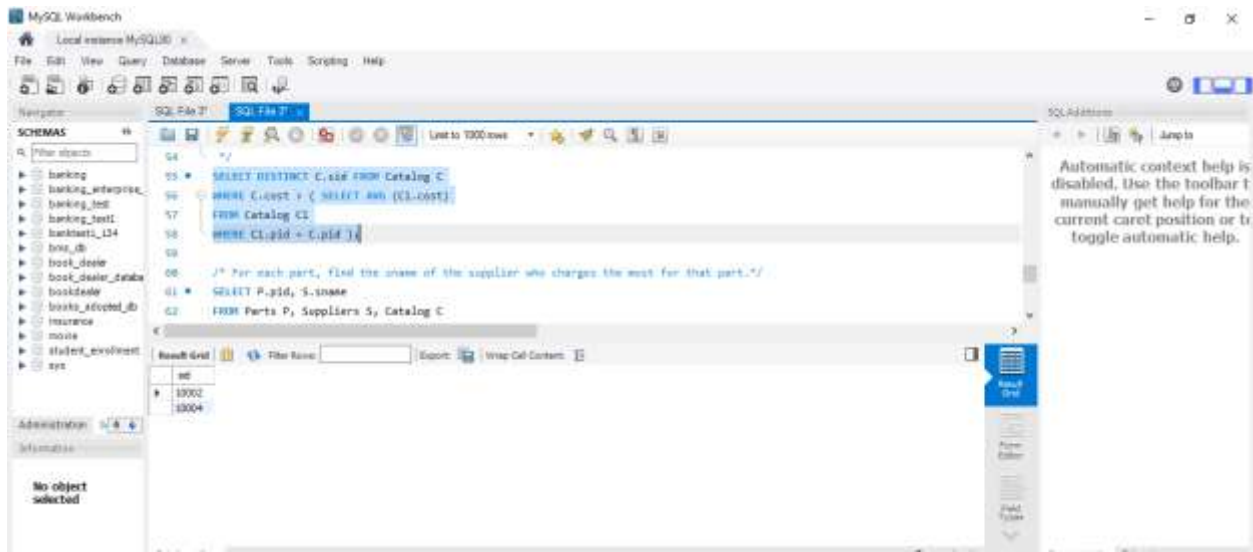
3 - FIND THE SNAME OF SUPPLIERS WHO SUPPLY EVERY RED PART.



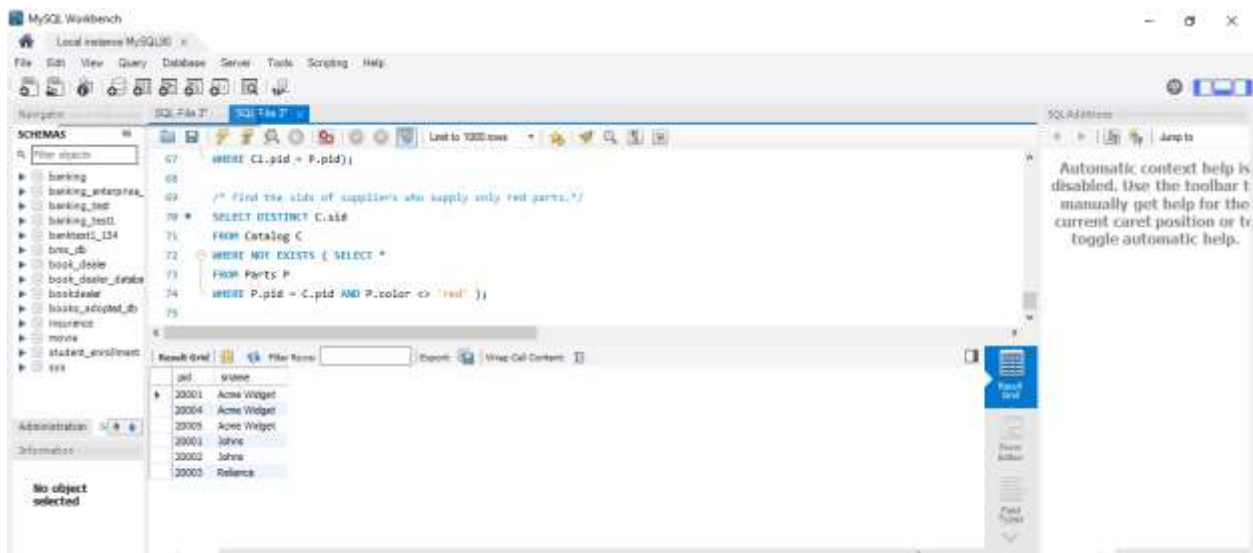
4 - FIND THE PNAMES OF PARTS SUPPLIED BY ACME WIDGET SUPPLIERS AND BY NO ONE ELSE



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 ****