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USN: 1BM19CS079
DATE: 23/06/21

COLLEGE DATABASE

Consider the schema for College Database:
STUDENT(USN, SName, Address, Phone, Gender)
SEMSEC(SSID, Sem, Sec)
CLASS(USN, SSID)
SUBJECT(Subcode, Title, Sem, Credits)
IAMARKS(USN, Subcode, SSID, Test1, Test2, Test3, FinalIA)
Write SQL queries to
i. List all the student details studying in fourth semester 'C' section.
ii. Compute the total number of male and female students in each semester and in each section.
iii. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.
iv. Calculate the FinalIA (average of best two test marks) and update the corresponding table for all students.
v. Categorize students based on the following criterion:
If FinalIA = 17 to 20 then CAT = 'Outstanding'
If FinalIA = 12 to 16 then CAT = 'Average'
If FinalIA< 12 then CAT = 'Weak'
Give these details only for 8th semester A, B, and C section students.

CODE:

```
create database college;
use college;
CREATE TABLE STUDENT (
USN VARCHAR (10) PRIMARY KEY,
SNAME VARCHAR (25),
ADDRESS VARCHAR (25),
PHONE real,
GENDER CHAR (1));
CREATE TABLE SEMSEC (
SSID VARCHAR (5) PRIMARY KEY,
SEM INT (2),
SEC CHAR (1));
CREATE TABLE CLASS (
USN VARCHAR (10),
SSID VARCHAR (5), PRIMARY
KEY (USN, SSID),
FOREIGN KEY (USN) REFERENCES STUDENT (USN),
FOREIGN KEY (SSID) REFERENCES SEMSEC (SSID));
CREATE TABLE SUBJECT (
SUBCODE VARCHAR (8),
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TITLE VARCHAR (20),
SEM INT (2),
CREDITS INT (2),
PRIMARY KEY (SUBCODE));
CREATE TABLE IAMARKS (
USN VARCHAR (10),
SUBCODE VARCHAR (8),
SSID VARCHAR(5),
TEST1 INT(2),
TEST2 INT(2),
TEST3 INT(2),
FINALIA INT (2),
PRIMARY KEY (USN, SUBCODE, SSID),
FOREIGN KEY (USN) REFERENCES STUDENT (USN),
FOREIGN KEY (SUBCODE) REFERENCES SUBJECT (SUBCODE),
FOREIGN KEY (SSID) REFERENCES SEMSEC (SSID));
INSERT INTO STUDENT VALUES('1RN13CS020','AKSHAY','BELAGAVI',8877881122,'M');
INSERT INTO STUDENT VALUES('1RN13CS062','SANDHYA','BENGALURU',7722829912,'F');
INSERT INTO STUDENT VALUES('1RN13CS091','TEESHA','BENGALURU',7712312312,'F');
INSERT INTO STUDENT VALUES('1RN13CS066','SUPRIYA','MANGALURU',8877881122,'F');
INSERT INTO STUDENT VALUES('1RN14CS010','ABHAY','BENGALURU',9900211201,'M');
INSERT INTO STUDENT
VALUES('1RN14CS032','BHASKAR','BENGALURU',9923211099,'M');
INSERT INTO STUDENT VALUES ('1RN14CS025','ASMI','BENGALURU', 7894737377,'F');
INSERT INTO STUDENT VALUES ('1RN15CS011','AJAY','TUMKUR', 9845091341,'M');
INSERT INTO STUDENT VALUES ('1RN15CS029','CHITRA','DAVANGERE',7696772121,'F');
INSERT INTO STUDENT VALUES ('1RN15CS045','JEEVA','BELLARY', 9944850121,'M');
INSERT INTO STUDENT VALUES
('1RN15CS091','SANTOSH','MANGALURU',8812332201,'M');
INSERT INTO STUDENT VALUES('1RN16CS045','ISMAIL','KALBURGI',9900232201,'M');
INSERT INTO STUDENT VALUES ('1RN16CS088','SAMEERA','SHIMOGA',9905542212,'F');
INSERT INTO STUDENT VALUES
('1RN16CS122','VINAYAKA','CHIKAMAGALUR',8800880011,'M');

INSERT INTO SEMSEC VALUES ('CSE8A', 8,'A');
INSERT INTO SEMSEC VALUES ('CSE8B', 8,'B');
INSERT INTO SEMSEC VALUES ('CSE8C',8,'C');
INSERT INTO SEMSEC VALUES ('CSE7A',7,'A');
INSERT INTO SEMSEC VALUES ('CSE7B',7,'B');
INSERT INTO SEMSEC VALUES ('CSE7C',7,'C');
INSERT INTO SEMSEC VALUES ('CSE6A',6,'A');
INSERT INTO SEMSEC VALUES ('CSE6B', 6,'B');
INSERT INTO SEMSEC VALUES ('CSE6C', 6,'C');
INSERT INTO SEMSEC VALUES ('CSE5A', 5,'A');
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INSERT INTO SEMSEC VALUES ('CSE5B', 5,'B');
INSERT INTO SEMSEC VALUES ('CSE5C', 5,'C');
INSERT INTO SEMSEC VALUES ('CSE4A',4,'A');
INSERT INTO SEMSEC VALUES ('CSE4B', 4,'B');
INSERT INTO SEMSEC VALUES('CSE4C',4,'C');
INSERT INTO SEMSEC VALUES ('CSE3A', 3,'A');
INSERT INTO SEMSEC VALUES ('CSE3B', 3,'B');
INSERT INTO SEMSEC VALUES('CSE3C',3,'C');
INSERT INTO SEMSEC VALUES ('CSE2A', 2,'C');
INSERT INTO SEMSEC VALUES ('CSE2B', 2,'B');
INSERT INTO SEMSEC VALUES ('CSE2C', 2,'C');
INSERT INTO SEMSEC VALUES ('CSE1A', 1,'A');
INSERT INTO SEMSEC VALUES ('CSE1B', 1,'B');
INSERT INTO SEMSEC VALUES ('CSE1C', 1,'C');

INSERT INTO CLASS VALUES('1RN13CS020','CSE8A');
INSERT INTO CLASS VALUES('1RN13CS062','CSE8A');
INSERT INTO CLASS VALUES('1RN13CS066','CSE8B');
INSERT INTO CLASS VALUES('1RN13CS091','CSE8C');
INSERT INTO CLASS VALUES('1RN14CS010','CSE7A');
INSERT INTO CLASS VALUES('1RN14CS025','CSE7A');
INSERT INTO CLASS VALUES('1RN14CS032','CSE7A');
INSERT INTO CLASS VALUES('1RN15CS011','CSE4A');
INSERT INTO CLASS VALUES('1RN15CS029','CSE4A');
INSERT INTO CLASS VALUES('1RN15CS045','CSE4B');
INSERT INTO CLASS VALUES('1RN15CS091','CSE4C');
INSERT INTO CLASS VALUES('1RN16CS045','CSE3A');
INSERT INTO CLASS VALUES('1RN16CS088','CSE3B');
INSERT INTO CLASS VALUES('1RN16CS122','CSE3C');

INSERT INTO SUBJECT VALUES ('10CS81','ACA', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS82','SSM', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS83','NM', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS84','CC', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS85','PW', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS71','OOAD', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS72','ECS', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS73','PTW', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS74','DWDM', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS75','JAVA', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS76','SAN', 7, 4);
INSERT INTO SUBJECT VALUES ('15CS51', 'ME', 5, 4);
INSERT INTO SUBJECT VALUES ('15CS52','CN', 5, 4);
INSERT INTO SUBJECT VALUES ('15CS53','DBMS', 5, 4);
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INSERT INTO SUBJECT VALUES ('15CS54','ATC', 5, 4);
INSERT INTO SUBJECT VALUES ('15CS55','JAVA', 5, 3);
INSERT INTO SUBJECT VALUES ('15CS56','AI', 5, 3);
INSERT INTO SUBJECT VALUES ('15CS41','M4', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS42','SE', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS43','DAA', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS44','MPMC', 4, 4);
INSERT INTO SUBJECT VALUES ('15CS45','OOC', 4, 3);
INSERT INTO SUBJECT VALUES ('15CS46','DC', 4, 3);
INSERT INTO SUBJECT VALUES ('15CS31','M3', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS32','ADE', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS33','DSA', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS34','CO', 3, 4);
INSERT INTO SUBJECT VALUES ('15CS35','USP', 3, 3);
INSERT INTO SUBJECT VALUES ('15CS36','DMS', 3, 3);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)VALUES
('1RN13CS091','10CS81','CSE8C', 15, 16,18);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)VALUES
('1RN13CS091','10CS82','CSE8C', 12, 19,14);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)VALUES
('1RN13CS091','10CS83','CSE8C', 19, 15,20);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)VALUES
('1RN13CS091','10CS84','CSE8C', 20, 16,19);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)VALUES
('1RN13CS091','10CS85','CSE8C', 15, 15,12);
SELECT * FROM STUDENT;
SELECT * FROM SEMSEC;
SELECT * FROM CLASS;
SELECT * FROM SUBJECT;
SELECT * FROM IAMARKS;

SELECT S.*, SS.SEM, SS.SEC
FROM STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN AND
SS.SSID = C.SSID AND
SS.SEM = 4 AND
SS.SEc='C';

SELECT SS.SEM, SS.SEC, S.GENDER, COUNT(S.GENDER) AS COUNT
FROM STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN AND
SS.SSID = C.SSID
GROUP BY SS.SEM, SS.SEC, S.GENDER
```
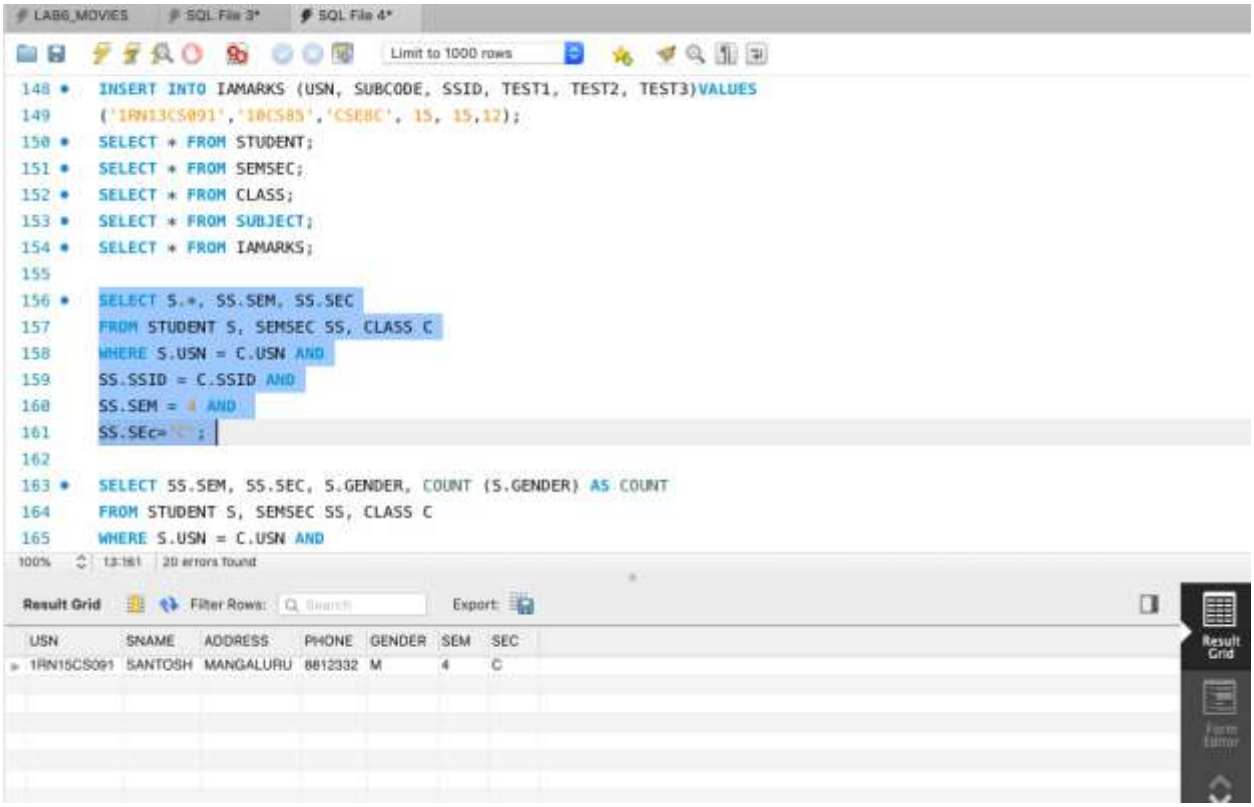
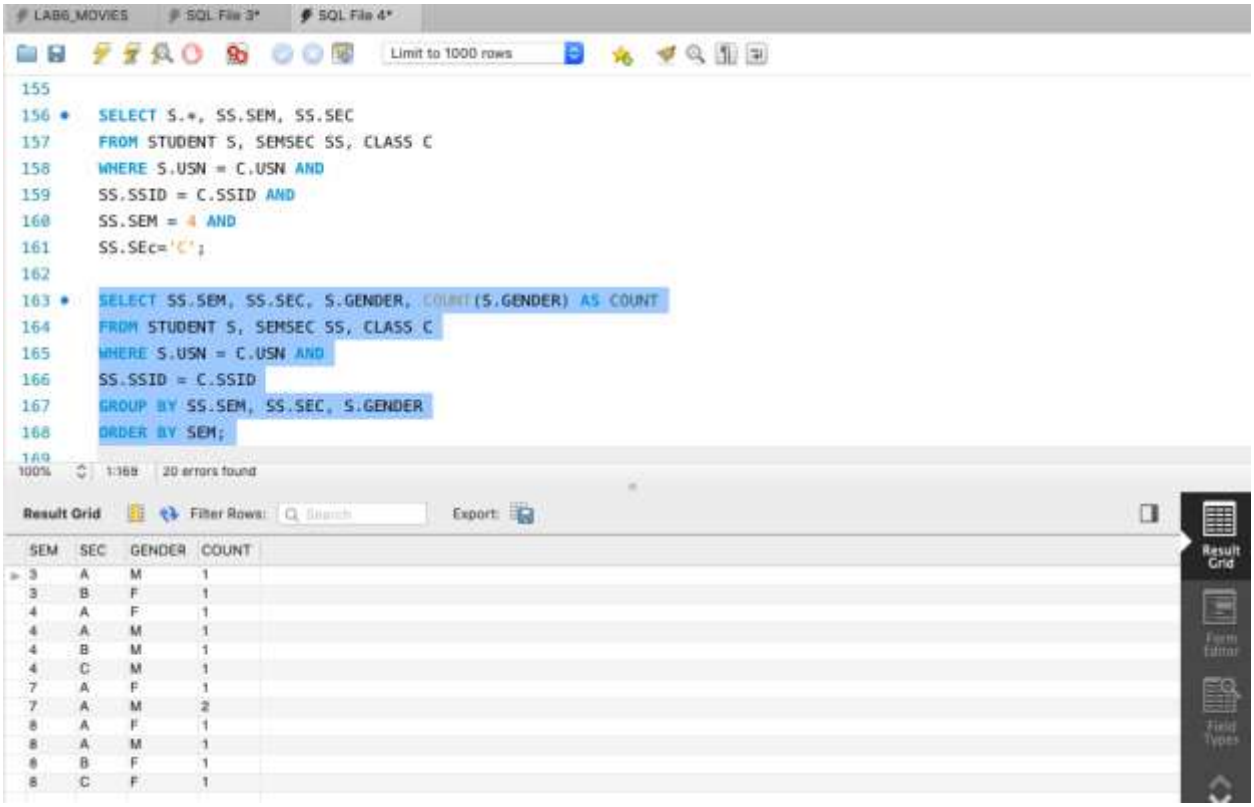

```
ORDER BY SEM;

CREATE VIEW STU_TEST1_MARKS_VIEW
AS
SELECT TEST1, SUBCODE
FROM IAMARKS
WHERE USN = '1RN13CS091';

-- QUERY 4

DELIMITER //

CREATE PROCEDURE AVG_MARKS()
BEGIN
DECLARE C_A INTEGER;
DECLARE C_B INTEGER;
DECLARE C_C INTEGER;
DECLARE C_SUM INTEGER;
DECLARE C_AVG INTEGER;
DECLARE C_USN VARCHAR(10);
DECLARE C_SUBCODE VARCHAR(8);
DECLARE C_SSID VARCHAR(5);
DECLARE C_IAMARKS CURSOR FOR
SELECT GREATEST(TEST1,TEST2) AS A, GREATEST(TEST1,TEST3) AS B,
GREATEST(TEST3,TEST2) AS C, USN, SUBCODE, SSID
FROM IAMARKS
WHERE FINALIA IS NULL
FOR UPDATE;
OPEN C_IAMARKS;
LOOP
FETCH C_IAMARKS INTO C_A, C_B, C_C, C_USN, C_SUBCODE, C_SSID;
IF (C_A != C_B) THEN
 SET C_SUM=C_A+C_B;
ELSE
 SET C_SUM=C_A+C_C;
END IF;
SET C_AVG=C_SUM/2;
UPDATE IAMARKS SET FINALIA = C_AVG
WHERE USN = C_USN AND SUBCODE = C_SUBCODE AND SSID = C_SSID;
END LOOP;
CLOSE C_IAMARKS;
END;
//
```

```
CALL AVG_MARKS();

SELECT * FROM IAMARKS;
-- QUERY 5

SELECT S.USN,S.SNAME,S.ADDRESS,S.PHONE,S.GENDER,
(CASE
WHEN IA.FINALIA BETWEEN 17 AND 20 THEN 'OUTSTANDING'
WHEN IA.FINALIA BETWEEN 12 AND 16 THEN 'AVERAGE'
ELSE 'WEAK'
END) AS CAT
FROM STUDENT S, SEMSEC SS, IAMARKS IA, SUBJECT SUB
WHERE S.USN = IA.USN AND
SS.SSID = IA.SSID AND
SUB.SUBCODE = IA.SUBCODE AND
SUB.SEM = 8;
```

OUTPUT:



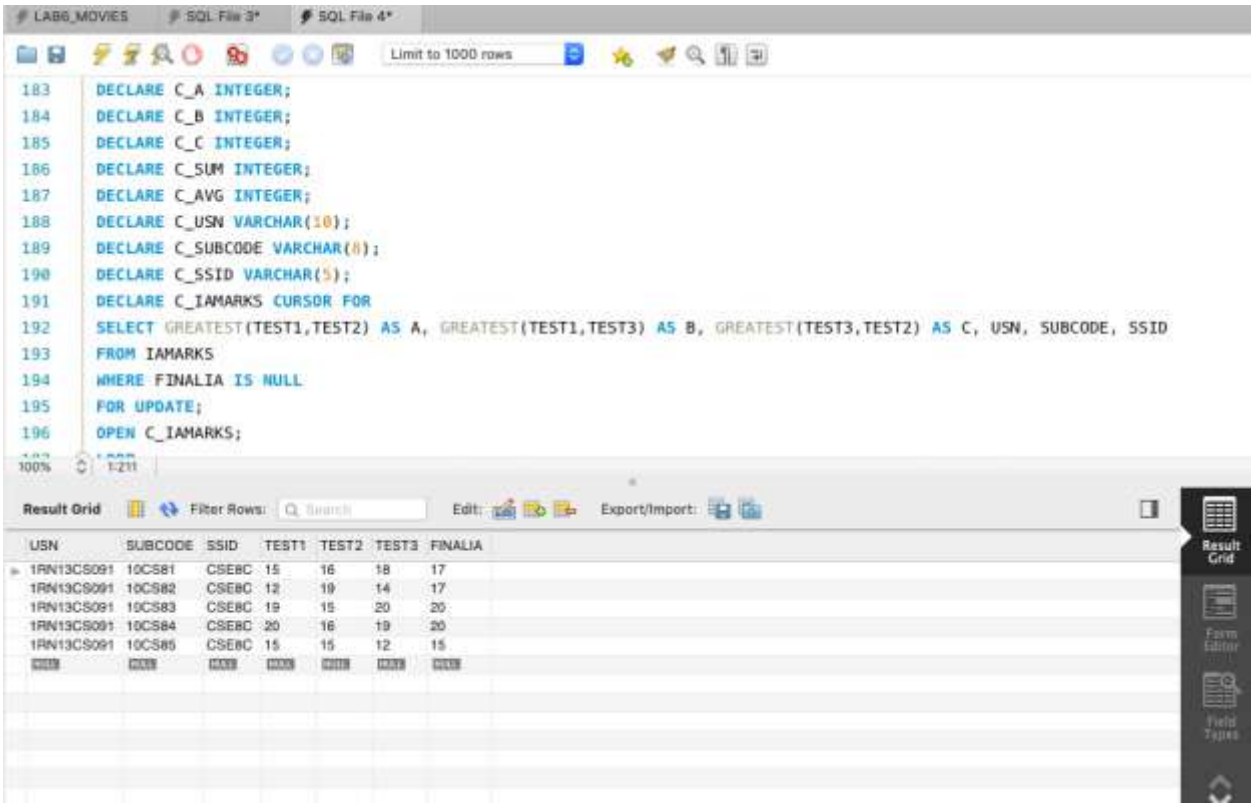


```
155
156 •  SELECT S.*, SS.SEM, SS.SEC
157    FROM STUDENT S, SEMSEC SS, CLASS C
158    WHERE S.USN = C.USN AND
159    SS.SSID = C.SSID AND
160    SS.SEM = 4 AND
161    SS.SEc='C';
162
163 •  SELECT SS.SEM, SS.SEC, S.GENDER, COUNT(S.GENDER) AS COUNT
164    FROM STUDENT S, SEMSEC SS, CLASS C
165    WHERE S.USN = C.USN AND
166    SS.SSID = C.SSID
167    GROUP BY SS.SEM, SS.SEC, S.GENDER
168    ORDER BY SEM;
```

100% 1:168 20 errors found

Result Grid | Filter Rows: | Export:

SEM	SEC	GENDER	COUNT
3	A	M	1
3	B	F	1
4	A	F	1
4	A	M	1
4	B	M	1
4	C	M	1
7	A	F	1
7	A	M	2
8	A	F	1
8	A	M	1
8	B	F	1
8	C	F	1

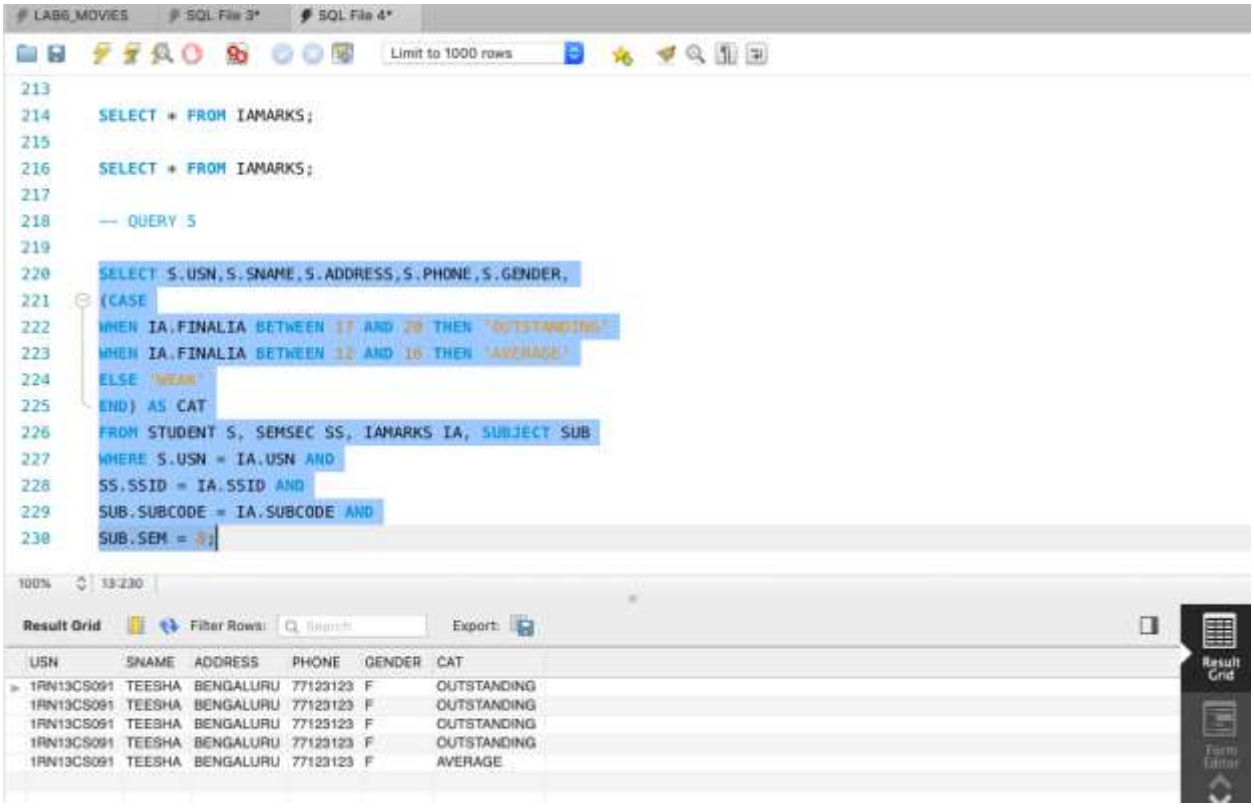


```
183  DECLARE C_A INTEGER;
184  DECLARE C_B INTEGER;
185  DECLARE C_C INTEGER;
186  DECLARE C_SUM INTEGER;
187  DECLARE C_AVG INTEGER;
188  DECLARE C_USN VARCHAR(10);
189  DECLARE C_SUBCODE VARCHAR(8);
190  DECLARE C_SSID VARCHAR(5);
191  DECLARE C_IAMARKS CURSOR FOR
192  SELECT GREATEST(TEST1,TEST2) AS A, GREATEST(TEST1,TEST3) AS B, GREATEST(TEST3,TEST2) AS C, USN, SUBCODE, SSID
193  FROM IAMARKS
194  WHERE FINALIA IS NULL
195  FOR UPDATE;
196  OPEN C_IAMARKS;
```

100% 1:211

Result Grid | Filter Rows: | Edit: | Export/Import:

USN	SUBCODE	SSID	TEST1	TEST2	TEST3	FINALIA
1RN13CS091	10CS81	CSE8C	15	16	18	17
1RN13CS091	10CS82	CSE8C	12	19	14	17
1RN13CS091	10CS83	CSE8C	19	15	20	20
1RN13CS091	10CS84	CSE8C	20	16	19	20
1RN13CS091	10CS85	CSE8C	15	15	12	15
NULL	NULL	NULL	NULL	NULL	NULL	NULL


LAB6_MOVIES
SQL File 3*
SQL File 4*
Limit to 1000 rows
213
214 SELECT * FROM IAMARKS;
215
216 SELECT * FROM IAMARKS;
217
218 -- QUERY 5
219
220 SELECT S.USN,S.SNAME,S.ADDRESS,S.PHONE,S.GENDER,
221 (CASE
222 WHEN IA.FINALIA BETWEEN 17 AND 20 THEN 'OUTSTANDING'
223 WHEN IA.FINALIA BETWEEN 12 AND 16 THEN 'AVERAGE'
224 ELSE 'WEAK'
225 END) AS CAT
226 FROM STUDENT S, SEMSEC SS, IAMARKS IA, SUBJECT SUB
227 WHERE S.USN = IA.USN AND
228 SS.SSID = IA.SSID AND
229 SUB.SUBCODE = IA.SUBCODE AND
230 SUB.SEM = 5;
100%
13:230
Result Grid
Filter Rows:
Export:
USN SNAME ADDRESS PHONE GENDER CAT
1RN13CS091 TEESHA BENGALURU 77123123 F OUTSTANDING
1RN13CS091 TEESHA BENGALURU 77123123 F OUTSTANDING
1RN13CS091 TEESHA BENGALURU 77123123 F OUTSTANDING
1RN13CS091 TEESHA BENGALURU 77123123 F OUTSTANDING
1RN13CS091 TEESHA BENGALURU 77123123 F AVERAGE
Result Grid
Form Editor