

NAME: KUSUM M R
USN: 1BM19CS077
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, FinallA)

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 FinallA (average of best two test marks) and update the corresponding table for all students.
 - v. Categorize students based on the following criterion:
If FinallA = 17 to 20 then CAT = 'Outstanding'
If FinallA = 12 to 16 then CAT = 'Average'
If FinallA < 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');
INSERT INTO SEMSEC VALUES ('CSE5B', 5,'B');

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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', 'DWD', 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);
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:

The screenshot shows a SQL IDE interface with a query editor and a result grid. The query editor contains the following SQL code:

```
148 • INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3)VALUES  
149   ('1RN13CS091','10CS85','CSE8C', 15, 15,12);  
150 • SELECT * FROM STUDENT;  
151 • SELECT * FROM SEMSEC;  
152 • SELECT * FROM CLASS;  
153 • SELECT * FROM SUBJECT;  
154 • SELECT * FROM IAMARKS;  
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
```

The result grid shows the output of the query. It has 7 columns: USN, SNAME, ADDRESS, PHONE, GENDER, SEM, and SEC. The first row of data is:

USN	SNAME	ADDRESS	PHONE	GENDER	SEM	SEC
1RN15CS091	SANTOSH	MANGALURU	8812332	M	4	C

The interface also shows a status bar at the bottom indicating 100% zoom, 13:161, and 20 errors found. On the right side, there are buttons for 'Result Grid' and 'Form Editor'.

LAB6_MOVIES SQL File 3* SQL File 4*

Limit to 1000 rows

```

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% 1:169 20 errors found

Result Grid Filter Rows: Search 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

Result Grid Form Editor Field Types

LAB6_MOVIES SQL File 3* SQL File 4*

Limit to 1000 rows

```

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: Search 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

Result Grid Form Editor Field Types

