## 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)

### CREATION:

CREATE TABLE STUDENT(
USN VARCHAR(10) PRIMARY KEY,
SNAME VARCHAR(25),
ADDRESS VARCHAR(25),
PHONE INTEGER,
GENDER CHAR(1));

CREATE TABLE SEMSEC( SSID VARCHAR(5) PRIMARY KEY, SEM INTEGER, SEC CHAR(1));

CREATE TABLE CLASS( USN VARCHAR(10) PRIMARY KEY, SSID VARCHAR(5), FOREIGN KEY(USN) REFERENCES STUDENT(USN), FOREIGN KEY(SSID) REFERENCES SEMSEC(SSID));

CREATE TABLE SUBJECT(
SUBCODE VARCHAR(8) PRIMARY KEY,
TITLE VARCHAR(20),
SEM INTEGER,
CREDITS INTEGER);

CREATE TABLE IAMARKS(
USN VARCHAR(10),
SUBCODE VARCHAR(8),
SSID VARCHAR(5),
TEST1 INTEGER,
TEST2 INTEGER,
TEST3 INTEGER,
FINALIA INTEGER,
PRIMARY KEY(SUBCODE, USN, SSID),
FOREIGN KEY(USN) REFERENCES STUDENT(USN),
FOREIGN KEY(SUBCODE) REFERENCES SUBJECT(SUBCODE),
FOREIGN KEY(SSID) REFERENCES SEMSEC(SSID));

#### INSERTION:

INSERT INTO STUDENT VALUES ('1BI13CS020','ANAND','BELAGAVI', 1233423,'M');

INSERT INTO STUDENT VALUES

('1BI13CS062','BABIITHA','BENGALURU',43123,'F');

INSERT INTO STUDENT VALUES ('1BI15CS101','CHETHAN','BENGALURU', 534234,'M');

INSERT INTO STUDENT VALUES

('1BI13CS066','DIVYA','MANGALURU',534432,'F');

INSERT INTO STUDENT VALUES ('1BI14CS010','EESHA','BENGALURU', 345456,'F');

INSERT INTO STUDENT VALUES

('1BI14CS032','GANESH','BENGALURU',574532,'M');

INSERT INTO STUDENT VALUES ('1BI14CS025','HARISH','BENGALURU', 235464,'M');

INSERT INTO STUDENT VALUES ('1BI15CS011','ISHA','TUMKUR', 764343,'F'); INSERT INTO STUDENT VALUES ('1BI15CS029','JOEY','DAVANGERE', 235653.'M'):

INSERT INTO STUDENT VALUES ('1BI15CS045','KAVYA','BELLARY', 865434,'F');

INSERT INTO STUDENT VALUES

('1BI15CS091','MALINI','MANGALURU',235464,'F');

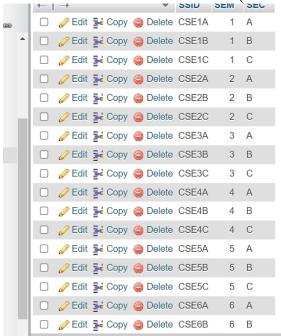
INSERT INTO STUDENT VALUES ('1BI16CS045','NEEL','KALBURGI', 856453,'M');

INSERT INTO STUDENT VALUES ('1BI16CS088','PARTHA','SHIMOGA', 234546,'M');

INSERT INTO STUDENT VALUES ('1BI16CS122', 'REEMA', 'CHIKAMAGALUR', 853333, 'F');

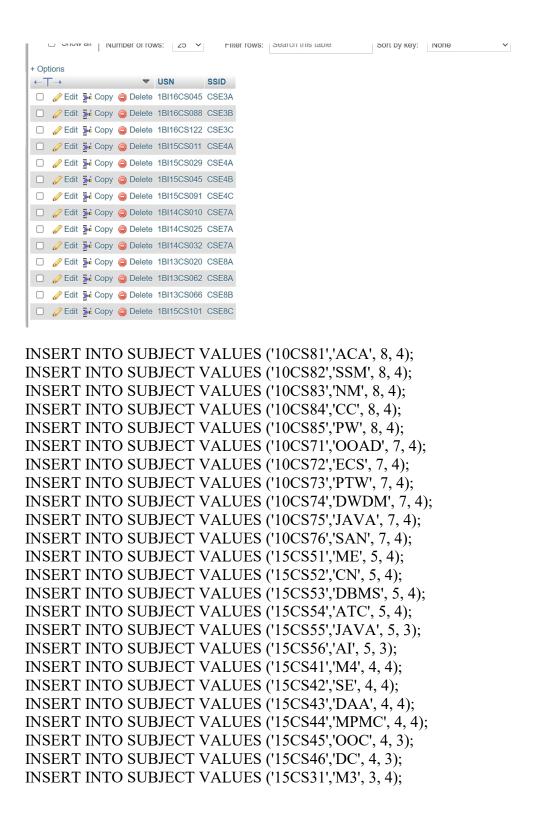
+ Options						
← <del>T</del> →	$\nabla$	USN	SNAME	ADDRESS	PHONE	GENDER
☐ 🥜 Edit 💤 Copy	Delete	1BI13CS020	ANAND	BELAGAVI	1233423	M
□ 🔗 Edit 👫 Copy	Delete	1BI13CS062	BABIITHA	BENGALURU	43123	F
☐ 🥜 Edit 👫 Copy	Delete	1BI13CS066	DIVYA	MANGALURU	534432	F
□ 🔗 Edit 👫 Copy	Delete	1BI14CS010	EESHA	BENGALURU	345456	F
□ 🥜 Edit 👫 Copy	Delete	1BI14CS025	HARISH	BENGALURU	235464	M
□ 🔗 Edit 👫 Copy	Delete	1BI14CS032	GANESH	BENGALURU	574532	M
☐ 🥜 Edit 👫 Copy	Delete	1BI15CS011	ISHA	TUMKUR	764343	F
□ 🔗 Edit 👫 Copy	Delete	1BI15CS029	JOEY	DAVANGERE	235653	M
□	Delete	1BI15CS045	KAVYA	BELLARY	865434	F
□ 🔗 Edit 👫 Copy	Delete	1BI15CS091	MALINI	MANGALURU	235464	F
☐ 🥜 Edit 👫 Copy	Delete	1BI15CS101	CHETHAN	BENGALURU	534234	M
□ 🔗 Edit 👫 Copy	Delete	1BI16CS045	NEEL	KALBURGI	856453	M
☐ 🥜 Edit 👫 Copy	Delete	1BI16CS088	PARTHA	SHIMOGA	234546	M
☐ 🔗 Edit 👫 Copy	Delete	1BI16CS122	REEMA	CHIKAMAGALUR	853333	F

```
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');
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,'A');
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');
```

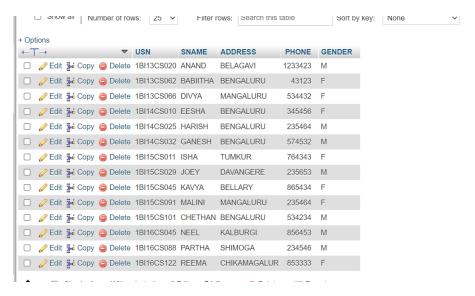


```
INSERT INTO CLASS VALUES ('1BI13CS020','CSE8A'); INSERT INTO CLASS VALUES ('1BI13CS062','CSE8A'); INSERT INTO CLASS VALUES ('1BI13CS066','CSE8B'); INSERT INTO CLASS VALUES ('1BI15CS101','CSE8C'); INSERT INTO CLASS VALUES ('1BI14CS010','CSE7A'); INSERT INTO CLASS VALUES ('1BI14CS025','CSE7A'); INSERT INTO CLASS VALUES ('1BI14CS032','CSE7A');
```

```
INSERT INTO CLASS VALUES ('1BI15CS011','CSE4A'); INSERT INTO CLASS VALUES ('1BI15CS029','CSE4A'); INSERT INTO CLASS VALUES ('1BI15CS045','CSE4B'); INSERT INTO CLASS VALUES ('1BI15CS091','CSE4C'); INSERT INTO CLASS VALUES ('1BI16CS045','CSE3A'); INSERT INTO CLASS VALUES ('1BI16CS088','CSE3B'); INSERT INTO CLASS VALUES ('1BI16CS122','CSE3C');
```



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 ('1BI15CS101','10CS81','CSE8C', 15, 16, 18); INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1BI15CS101','10CS82','CSE8C', 12, 19, 14); INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1BI15CS101','10CS83','CSE8C', 19, 15, 20); INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1BI15CS101','10CS84','CSE8C', 20, 16, 19); INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1BI15CS101','10CS85','CSE8C', 15, 15, 12);



Write SQL queries to

i. List all the student details studying in fourth semester 'C' section.

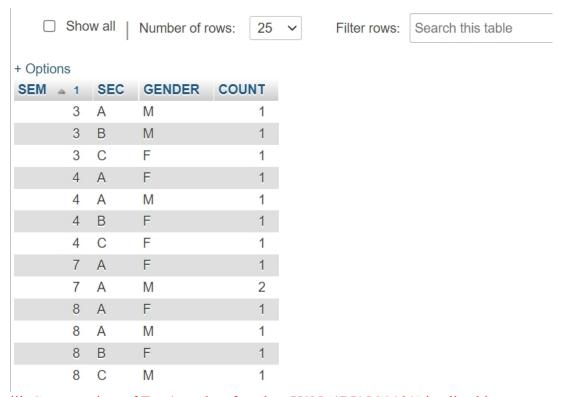
SELECT S.\*, SS.SEM, SS.SEC FROM STUDENT S, SEMSEC SS, CLASS C WHERE S.USN = C.USN AND

# SS.SSID = C.SSID AND SS.SEM = 4 AND SS.SEC='C';

SELECT 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'								
□ Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh]								
Show all Number of rows: 25 v Filter rows: Search this table								
USN SNAME ADDRESS PHONE GENDER SEM SEC								
1BI15CS091 MALINI MANGALURU 235464 F								
Show all   Number of rows: 25 v Filter rows: Search this table								

ii. Compute the total number of male and female students in each semester and in each section.

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;



iii. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.

CREATE VIEW STUDENT\_TEST1\_MARKS\_V

AS

SELECT TEST1, SUBCODE

FROM IAMARKS

WHERE USN = '1BI15CS101';

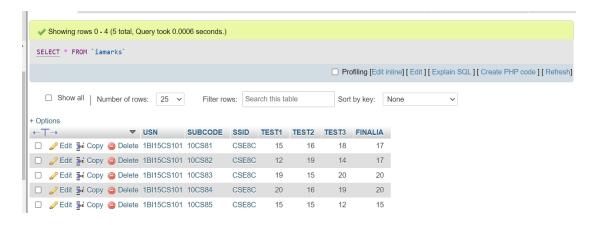
l								
ı	SELECT * FROM `student_te	st1_marks_v`						
ı				☐ Profiling [Edit inline] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh				
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	<b>←</b>	TEST1 SUBCOD	E					
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	□ // Edit 1 Copy    Opelet	e 15 10CS85						
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iv. Calculate the FinalIA (average of best two test marks) and update the corresponding table for all students.

```
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();



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.

SELECT S.USN,S.SNAME,S.ADDRESS,S.PHONE,S.GENDER, IA.SUBCODE, (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

