

DBMS Assignment - 2

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Section : B

Q1.

We first make the Tables :

FACULTY_ID	FACULTY_NAME	FACULTY_COURSE
1	123 Srinivas	BIOTECHNOLOGY
2	234 Sanjay	CSE
3	345 Ramakrishna	CSE
4	456 Madan	CSE
5	567 Sujit Das	CSE
6	789 Sarika	BIOTECHNOLOGY
7	890 Sudipta	BIOTECHNOLOGY

STUDENT_ID	STUDENT_NAME	COURSE_ID	RATING	COURSE_NAME
1	1 Aman	123	GOOD	SYNTHETIC BIOLOGY
2	2 Naman	234	GOOD	LP
3	3 Daksh	345	BAD	OOPS
4	4 Harshit	456	BAD	DSA
5	5 Ankit	567	GOOD	MOT
6	6 Divyansh	890	GOOD	BIOLOGY
7	7 Bipin	789	BAD	BIOLOGY
8	8 Deepak	890	GOOD	BIOLOGY
9	9 Bharadwaj	234	GOOD	LP
10	10 Amresh	456	BAD	DSA

a) Names of all the faculty members who have received utmost one bad rating :

```
SELECT * FROM FACULTY
WHERE ((SELECT COUNT (RATING) FROM STUDENTS WHERE (STUDENTS.COURSE_ID =FACULTY.FACULTY_ID AND RATING='BAD'))<=1);
```

Or

```
SELECT FACULTY_NAME FROM FACULTY
MINUS
SELECT FACULTY_NAME FROM FACULTY
JOIN STUDENTS ON FACULTY_ID = STUDENTS.COURSE_ID
WHERE RATING = 'BAD'
GROUP BY FACULTY_NAME
HAVING COUNT (RATING) > 1;
```

	FACULTY_ID	FACULTY_NAME	FACULTY_DEPT
1	123	Srinivas	BIOTECHNOLOGY
2	234	Sanjay	CSE
3	345	Ramakrishna	CSE
4	567	Sujit Das	CSE
5	789	Sarika	BIOTECHNOLOGY
6	890	Sudipta	BIOTECHNOLOGY

b) Name of faculty member who have not received a bad rating from any student :

```
SELECT * FROM FACULTY
WHERE ((SELECT COUNT (RATING) FROM STUDENTS WHERE (STUDENTS.COURSE_ID =FACULTY.FACULTY_ID AND RATING='BAD'))=0);
```

Or

```
SELECT FACULTY_NAME FROM FACULTY
MINUS
SELECT FACULTY_NAME FROM FACULTY
JOIN STUDENTS ON FACULTY_ID = STUDENTS.COURSE_ID
WHERE RATING = 'BAD'
GROUP BY FACULTY_NAME
HAVING COUNT(RATING) >= 1;
```

	FACULTY_ID	FACULTY_NAME	FACULTY_DEPT
1	123	Srinivas	BIOTECHNOLOGY
2	234	Sanjay	CSE
3	567	Sujit Das	CSE
4	890	Sudipta	BIOTECHNOLOGY

c) Names of faculty members with good ratings from all their students :

This will essentially be the same as the previous query cause the teachers who didn't get a single bad rating got all ratings as good.

```
SELECT * FROM FACULTY
WHERE ((SELECT COUNT (RATING) FROM STUDENTS WHERE (STUDENTS.COURSE_ID =FACULTY.FACULTY_ID AND RATING='BAD'))=0);
```

	FACULTY_ID	FACULTY_NAME	FACULTY_DEPT
1	123	Srinivas	BIOTECHNOLOGY
2	234	Sanjay	CSE
3	567	Sujit Das	CSE
4	890	Sudipta	BIOTECHNOLOGY

d) Name of faculty who have receiver bad rating from at least one of their student :

```
SELECT * FROM FACULTY
WHERE ((SELECT COUNT (RATING) FROM STUDENTS WHERE (STUDENTS.COURSE_ID =FACULTY.FACULTY_ID AND RATING='BAD'))>=1);
```

Or

```
SELECT FACULTY_NAME FROM FACULTY
JOIN STUDENTS ON FACULTY_ID = STUDENTS.COURSE_ID
WHERE RATING = 'BAD'
GROUP BY FACULTY_NAME
HAVING COUNT(RATING) >= 1;
```

	FACULTY_ID	FACULTY_NAME	FACULTY_DEPT
1	345	Ramakrishna	CSE
2	456	Madan	CSE
3	789	Sarika	BIOTECHNOLOGY

e)Name of faculty who have receiver good rating from at least one of their student :

```
SELECT * FROM FACULTY
WHERE ((SELECT COUNT (RATING) FROM STUDENTS WHERE (STUDENTS.COURSE_ID =FACULTY.FACULTY_ID AND RATING='GOOD'))>=1);
```

	FACULTY_ID	FACULTY_NAME	FACULTY_DEPT
1	123	Srinivas	BIOTECHNOLOGY
2	234	Sanjay	CSE
3	567	Sujit Das	CSE
4	890	Sudipta	BIOTECHNOLOGY

Q2)

We first make the respective tables :

S_ID	S_NAME	ADDRESS_SUPP
1	1 Smith Inc	123 Main St
2	2 Jones LLC	456 Market St
3	3 Johnson Enterprises	789 High St
4	4 Brown l	246 Elm St
5	5 Davis Inc	135 Oak Ave
6	6 Miller Corp	654 Pine Rd
7	7 Wilson Enterprises	321 Maple St
8	8 Anderson LLC	654 Cedar Blvd
9	9 Thomas Inc	982 Maple Rd
10	10 Jackson Ltd	246 Cedar St
11	11 White Enterprises	135 Oak Ave
12	12 Harris Corp	654 Elm Rd
13	13 Martin LLC	321 Pine St
14	14 Thompson Inc	982 Cedar Blvd
15	15 Young Ltd	246 Oak Ave

P_ID	P_NAME	COLOR
1	1 Screw	Blue
2	2 Nail	Black
3	3 Bolt	Blue
4	4 Washer	Blue
5	5 Nut	Gold
6	6 Hinge	Bronze
7	7 Latch	Brass
8	8 Handle	Chrome
9	9 Knob	Bronze
10	10 Lock	Blue
11	11 Chain	Gold
12	12 Rivet	Blue
13	13 Clasp	Gold
14	14 Key	Bronze
15	15 Padlock	Chrome

S_ID	P_ID	COST
1	1	100
2	1	8
3	2	2
4	3	3
5	4	4
6	5	5
7	6	6
8	7	7
9	8	8
10	9	9
11	10	10
12	11	11
13	12	12
14	13	13
15	14	14
16	15	15

a) Find out who has supplied a non-blue part :

Code :

```
-- Part 1
SELECT S_NAME FROM CATALOGUE
JOIN PARTS ON CATALOGUE.P_ID=PARTS.P_ID
JOIN SUPPLIERS ON CATALOGUE.S_ID=SUPPLIERS.S_ID
WHERE PARTS.COLOR <> 'Blue';
```

Output :

S_NAME
1 Smith Inc
2 Jones LLC
3 Davis Inc
4 Miller Corp
5 Wilson Enterprises
6 Anderson LLC
7 Thomas Inc
8 White Enterprises
9 Martin LLC
10 Thompson Inc
11 Young Ltd

b) Look up the names of all the vendors who haven't delivered a non-blue part.

Code :

```
-- Part 2
SELECT S_NAME FROM CATALOGUE
JOIN PARTS ON CATALOGUE.P_ID=PARTS.P_ID
JOIN SUPPLIERS ON CATALOGUE.S_ID=SUPPLIERS.S_ID
WHERE PARTS.COLOR = 'Blue';
```

Output :

S_NAME
1 Smith Inc
2 Johnson Enterprises
3 Brown l
4 Jackson Ltd
5 Harris Corp

c) Find all the vendors who have supplied blue components exclusively.

Code :

```
--Part 3
SELECT S_NAME FROM CATALOGUE
JOIN PARTS ON CATALOGUE.P_ID=PARTS.P_ID
JOIN SUPPLIERS ON CATALOGUE.S_ID=SUPPLIERS.S_ID
GROUP BY S_NAME
HAVING COUNT(DISTINCT PARTS.COLOR)=1 AND S_NAME IN
(SELECT S_NAME FROM CATALOGUE
JOIN PARTS ON CATALOGUE.P_ID=PARTS.P_ID
JOIN SUPPLIERS ON CATALOGUE.S_ID=SUPPLIERS.S_ID
WHERE PARTS.COLOR = 'Blue');
```

Output :

S_NAME
1 Johnson Enterprises
2 Harris Corp
3 Brown l
4 Jackson Ltd

d) Find all suppliers who haven't supplied blue parts exclusively.

```

---Part 4
SELECT S_NAME FROM CATALOGUE
JOIN PARTS ON CATALOGUE.P_ID=PARTS.P_ID
JOIN SUPPLIERS ON CATALOGUE.S_ID=SUPPLIERS.S_ID
WHERE PARTS.COLOR = 'Blue'
MINUS
SELECT S_NAME FROM CATALOGUE
JOIN PARTS ON CATALOGUE.P_ID=PARTS.P_ID
JOIN SUPPLIERS ON CATALOGUE.S_ID=SUPPLIERS.S_ID
GROUP BY S_NAME
HAVING COUNT(DISTINCT PARTS.COLOR)=1 AND S_NAME IN
(SELECT S_NAME FROM CATALOGUE
JOIN PARTS ON CATALOGUE.P_ID=PARTS.P_ID
JOIN SUPPLIERS ON CATALOGUE.S_ID=SUPPLIERS.S_ID
WHERE PARTS.COLOR = 'Blue');

```

Output :

S_NAME
1 Smith Inc

Q3.) We first make the tables.

	SCHOOL_ID	SCHOOL_ROLL_NO	STUDENT_NAME	STUDENT_ADDRESS
1	1001	1	John Doe	123 Main St, New York, NY
2	1002	2	Jane Smith	456 Oak Ave, Los Angeles, CA
3	1002	3	Michael Johnson	789 Birch Rd, Chicago, IL
4	1002	4	Jennifer Wilson	246 Pine St, Houston, TX
5	1003	5	David Davis	135 Maple Dr, Philadelphia, PA
6	1003	6	Sarah Martinez	369 Cedar Ln, Phoenix, AZ
7	1004	7	Steven Anderson	159 Oak Blvd, San Antonio, TX
8	1004	8	Elizabeth Thomas	963 Elm St, San Diego, CA
9	1004	9	William Jackson	753 Pine Ave, Dallas, TX
10	1004	10	Heather White	841 Cedar Rd, San Jose, CA
11	1004	11	Robert Brown	420 Elm Ave, Miami, FL
12	1005	12	Emily Davis	711 Cedar Blvd, Seattle, WA
13	1005	13	William Johnson	900 Pine St, Denver, CO
14	1006	14	Sarah Lee	111 Maple Ave, Atlanta, GA
15	1006	15	Michael Martinez	222 Elm St, Dallas, TX
16	1006	16	James Anderson	333 Oak Ave, Houston, TX

	SCHOOL_ID	SCHOOL_ROLL_NO	ROLL_NO	EXAM_NAME
1	1001	1	1	SCIENCE
2	1002	2	2	MATHS
3	1002	3	3	SCIENCE
4	1002	4	4	ECONOMICS
5	1003	5	5	ECONOMICS
6	1003	6	6	MATHS
7	1004	7	7	ECONOMICS
8	1004	8	8	SCIENCE
9	1004	9	9	ECONOMICS
10	1004	10	10	BIOLOGY
11	1004	11	11	SCIENCE
12	1005	12	12	MATHS
13	1005	13	13	BIOLOGY
14	1006	14	14	BIOLOGY
15	1006	15	15	MATHS
16	1006	16	16	BIOLOGY
17	1006	15	15	SCIENCE

	ROLL_NO	EXAM_NAME	MARKS
1	1	SCIENCE	100
2	2	MATHS	98
3	3	SCIENCE	72
4	4	ECONOMICS	100
5	5	ECONOMICS	100
6	6	MATHS	67
7	7	ECONOMICS	100
8	8	SCIENCE	95
9	9	ECONOMICS	100
10	10	BIOLOGY	87
11	11	SCIENCE	90
12	12	MATHS	43
13	13	BIOLOGY	76
14	14	BIOLOGY	100
15	15	MATHS	100
16	15	SCIENCE	100
17	16	BIOLOGY	55

	SCHOOL_ID	SCHOOL_NAME	SCHOOL_ADDRESS	SCHOOL_PHONE
1	1001	Central High School	123 Main St, New York, NY	5555551212
2	1002	Westside Elementary	456 Oak Ave, Los Angeles, CA	5555551213
3	1003	Northridge Middle School	789 Birch Rd, Chicago, IL	5555551214
4	1004	Southgate High School	246 Pine St, Houston, TX	5555551215
5	1005	Eastside Elementary	135 Maple Dr, Philadelphia, PA	5555551216
6	1006	Riverdale Middle School	369 Cedar Ln, Phoenix, AZ	5555551217

a.)The name of the school and the number of 100s obtained by its students for each school with more than 200 students taking examinations.

```
SELECT SCHOOL_NAME, COUNT(SCHOOL_NAME) TOPPERS FROM SCHOOL
JOIN ENROLMENT ON SCHOOL.SCHOOL_ID=ENROLMENT.SCHOOL_ID
JOIN RESULT ON ENROLMENT.ROLL_NO=RESULT.ROLL_NO AND ENROLMENT.EXAM_NAME=RESULT.EXAM_NAME
WHERE RESULT.MARKS=100 AND SCHOOL_NAME IN
(
SELECT SCHOOL_NAME FROM SCHOOL
JOIN ENROLMENT ON SCHOOL.SCHOOL_ID=ENROLMENT.SCHOOL_ID
GROUP BY SCHOOL_NAME
HAVING COUNT(DISTINCT ENROLMENT.ROLL_NO)>=3
)
GROUP BY SCHOOL_NAME;
```

Output :

	SCHOOL_NAME	TOPPERS
1	Westside Elementary	1
2	Southgate High School	2
3	Riverdale Middle School	3

b.)

```
SELECT SCHOOL_NAME, COUNT(SCHOOL_NAME) TOPPERS FROM SCHOOL
JOIN ENROLMENT ON SCHOOL.SCHOOL_ID=ENROLMENT.SCHOOL_ID
JOIN RESULT ON ENROLMENT.ROLL_NO=RESULT.ROLL_NO AND ENROLMENT.EXAM_NAME=RESULT.EXAM_NAME
WHERE RESULT.MARKS=100
GROUP BY SCHOOL_NAME
HAVING SCHOOL_NAME IN(
SELECT SCHOOL_NAME FROM SCHOOL
JOIN ENROLMENT ON SCHOOL.SCHOOL_ID=ENROLMENT.SCHOOL_ID
GROUP BY SCHOOL_NAME
HAVING COUNT(SCHOOL_NAME)>=3
);
```

Output :

	SCHOOL_NAME	TOPPERS
1	Westside Elementary	1
2	Southgate High School	2
3	Riverdale Middle School	3

c.) The names of schools with more than 200 students as well as the number of students who scored 100 on at least one exam.