

Sheet No. – 02

Assignment No: 4

Queries and their solutions:

1. Retrieve the name of the students whose name starts with 'S' and contains 'r' as the second last character.

Query:

```
select name
from students
where name like 'S%r_';
```

Result:

```
+-----+
| name          |
+-----+
| Soumik Chandra |
| Sankalp Santra |
+-----+
2 rows in set (0.0007 sec)
```

2. Retrieve the name of the youngest student(s) from the 'CST' department along with the total marks obtained by him (them).

Query:

```
select name, sum(marks)
from students, crs_regd
where deptcode = 'CSE'
and crs_rollno = rollno
and bdate = ( select max(bdate)
              from students
              where deptcode = 'CSE')
group by name;
```

Result:

```
+-----+-----+
| name          | sum(marks) |
+-----+-----+
| Oishika Dutta |      870.00 |
+-----+-----+
1 row in set (0.0014 sec)
```

3. Find the age of all the students.

Query:

```
select rollno, name, TIMESTAMPDIFF(YEAR, bdate, CURDATE()) as age
from students;
```

Result:

rollno	name	age
92005101	Oishika Dutta	27
92005102	Lasiewdor Rapsang	26
92005108	Debargha Ghosh	26
92005201	Anish Banerjee	28
92005205	Fardeen Hossain	28
92005207	Ashish Kumar	26
92005208	Rahul Hansda	28
92005215	Tanis Ahamed	27
92005219	Sanmai Reddy	28
92005220	Anudeep Mondal	30
92005222	Ayush Yadav	27
92005224	Vinita Yadav	28
92005225	Joyabrata Acharyya	30
92005230	Tausif Islam	29
92005232	Swarnila Roy	27
92005234	Tanmoy Paul	27
92005242	Pushpender Singh	28
92005245	Sangita Basak	28
92005249	Devika Simlai	28
92005255	Soumik Chandra	28
92005257	Sankalp Santra	27
92005259	Ankita Das	28
92005260	Sudip Datta	27
92005264	Sayak Saha	28
92005267	Ishan Dasgupta	28
92005281	Sourik Saha	29
92005288	Vamsi Swarup	28
92005290	Ustav Kumar	28

28 rows in set (0.0006 sec)

Assignment No: 5

Queries and their solutions:

1. Retrieve the name of the student(s) who obtained second highest marks in 'DBMS'.

Query:

```
select rollno, name, marks, crs_cd
from students, crs_regd, crs_offrd
where
    crs_rollno = rollno
    and crs_cd = crs_code
    and crs_name = 'DBMS'
    and marks = ( select distinct(marks)
                  from crs_regd, crs_offrd
                  where crs_cd = crs_code
                    and crs_name = 'DBMS'
                  order by marks desc limit 1 offset 1);
```

Result:

rollno	name	marks	crs_cd
92005224	Vinita Yadav	95.00	CS207

1 row in set (0.0020 sec)

2. Find out the differences between highest and lowest marks obtained in each subject.

Query:

```
select crs_cd,max(marks) - min(marks) as mark_diff
from crs_regd
group by crs_cd
order by crs_cd;
```

Result:

crs_cd	mark_diff
CE201	50.00
CE204	30.00
CS101	23.00
CS201	37.00
CS207	47.00
EC202	21.00
EC203	24.00
EE101	51.00
EE201	36.00
IT106	30.00
IT201	33.00
ME208	10.00

12 rows in set (0.0007 sec)

3. Assuming the existence of several interdepartmental courses, retrieve the name of the student(s) who is(are) studying under at least one faculty from each department.

Query:

```
select rollno, name
from
    crs_offrd
    ,faculty
    ,crs_regd
    ,students
where
    crs_fac_cd=fac_code
    and crs_cd=crs_code
    and crs_rollno=rollno
group by name
having count(distinct(fac_dept)) = (select count(*) from depts);
```

Result:

name
Oishika Dutta
Rahul Hansda

2 rows in set (0.0038 sec)

4. Assuming the existence of several interdepartmental courses, retrieve the name of the student(s) who is(are) studying under the faculties only from his(their) own department.

Query:

```
select rollno, name
from students
where rollno not in (select distinct(rollno)
                    from crs_offrd, faculty, crs_regd, students
                    where crs_fac_cd=fac_code
                    and crs_cd=crs_code
                    and crs_rollno=rollno
                    and fac_dept!=deptcode
                    group by rollno

                    union
                    ((select rollno from students) except (select distinct crs_rollno from
crs_regd)));
```

Result:

rollno	name
92005102	Lasiewdor Rapsang
92005201	Anish Banerjee
92005205	Fardeen Hossain
92005207	Ashish Kumar
92005215	Tanis Ahamed
92005219	Sanmai Reddy
92005220	Anudeep Mondal
92005224	Vinita Yadav
92005225	Joyabrata Acharyya
92005232	Swarnila Roy
92005234	Tanmoy Paul
92005242	Pushpender Singh
92005245	Sangita Basak
92005249	Devika Simlai
92005255	Soumik Chandra
92005257	Sankalp Santra
92005259	Ankita Das
92005260	Sudip Datta
92005264	Sayak Saha
92005281	Sourik Saha
92005288	Vamsi Swarup
92005290	Ustav Kumar

22 rows in set (0.0024 sec)

Assignment No: 6

1. Display the highest parent incomes, in descending order, for each department excluding 'CSE' such that only those highest parent incomes will appear that are below 2,20,000.

Query:

```
select name, perent_inc
from students
where
    deptcode != 'CSE'
    AND perent_inc < 220000
order by perent_inc desc;
```

Result:

name	perent_inc
Rahul Hansda	150000.0
Sankalp Santra	120000.0
Joyabrata Acharyya	100000.0
Ankita Das	90000.0
Debargha Ghosh	88630.0
Sudip Datta	82000.0
Sanmai Reddy	80000.0

7 rows in set (0.0006 sec)

2. Retrieve the fifth highest parent income for hostel number 5.

Query:

```
select name, perent_inc
from students
where hostel = 5
order by perent_inc desc limit 1 offset 4;
```

Result:

name	perent_inc
Sanmai Reddy	80000.0

1 row in set (0.0005 sec)

3. Find the roll number of the students from each department who obtained highest total marks in their own department.

Query:

```
select name,deptcode,s.rollno
from students as s
where s.rollno = (
    select cr.crs_rollno
    from crs_regd as cr
    where s.deptcode = (
        select deptcode
        from students
        where rollno = cr.crs_rollno
    )
    group by cr.crs_rollno
    order by sum(cr.marks) desc
    limit 1
);
```

Result:

name	deptcode	rollno
Oishika Dutta	CSE	92005101
Ashish Kumar	IT	92005207
Rahul Hansda	MEC	92005208
Sanmai Reddy	ETC	92005219
Sangita Basak	CE	92005245
Vamsi Swarup	ELE	92005288

6 rows in set (0.0102 sec)