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Subject ➔ *Database Management Systems Lab*

Subject Code ➔ *BCSC 0802*

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Qus 1 ➡ IDs and names of students who have applied to major in CS at some college.

CODE ➡

======

SQL Worksheet   ⬨ Clear   ⬙ Find | Actions ⌄ | | 🖫 Save | | Run ▶ |

```
1
2
3
4   select sid,sname from student where sid in (select sid from apply where major ='CS')
```

SID	SNAME
123	Amy
345	Craig
543	Craig
876	Irene
987	Helen

Download CSV
5 rows selected.

Qus 2 ➡ Find ID and name of student having same high school size as Jay.

CODE ➡

======

SQL Worksheet   ⬨ Clear   ⬙ Find | Actions ⌄ | | 🖫 Save | | Run ▶ |

```
1   select sid,sname from student where sizehs in (select sizehs from student where sname = 'Jay')
```

SID	SNAME
234	Bob
765	Jay

Download CSV
2 rows selected.

Qus 3 ➜ Find ID and name of student having same high school size as Jay but result should not include Jay.

CODE ➜

======

SQL Worksheet   ⬦ Clear   ✎ Find   Actions ∨   💾 Save   Run ▶

```
1   select sid,sname from student where sizehs in (select sizehs from student where sname = 'Jay') and sname != 'Jay';
```

SID	SNAME
234	Bob

Download CSV

Qus 4 ➜ Find the name of student with their GPA and Sid whose GPA not equal to GPA of Irene?

CODE ➜

======

SQL Worksheet   ⬦ Clear   ✎ Find   Actions ∨   💾 Save   Run ▶

```
1   select sid , sname ,GPA from student where sid in ( select sid from student where GPA != 3.9 and sname not in 'Irene');
2
3
4
5
```

SID	SNAME	GPA
234	Bob	3.6
345	Craig	3.5
567	Edward	2.9
678	Fay	3.8
789	Gary	3.4
987	Helen	3.7
765	Jay	2.9
543	Craig	3.4

Download CSV
8 rows selected.

Qus 5 ➜ Find college where any student having their name started from J have applied?

CODE ➜

======

SQL Worksheet   ◇ Clear   ⚒ Find | Actions ⌄ | | 🖫 Save | | Run ▶ |

```
1  select cname from Apply where sid in ( select sid from student where sname like 'J%');
2
3
4
5
```

CNAME
Cornell
Stanford
Cornell

Download CSV
3 rows selected.

Qus 6 ➜ Find all different major where Irene has applied?

CODE ➜

======

SQL Worksheet   ◇ Clear   ⚒ Find | Actions ⌄ | | 🖫 Save | | Run ▶ |

```
1  select distinct major from apply where sid in (select sid from student where sname = 'Irene')
```

MAJOR
marine biology
biology
CS

Download CSV
3 rows selected.

Qus 7 ➜ Find IDs of student and major who applied in any of major Irene had applied to?

CODE ➜

======

SQL Worksheet

```
1  select sid , major from apply where major in
2  (select major from Apply where sid in ( select sid from student where sname = 'Irene'))
3
4
5
```

SID	MAJOR
123	CS
123	CS
234	biology
345	CS
543	CS
876	CS
876	biology
876	marine biology
987	CS
987	CS

Download CSV
10 rows selected.

Qus 8 ➜ Find IDs of student and major who applied in any of major Irene had applied to? But this time exclude Irene sID.

CODE ➜

======

SQL Worksheet

```
1  select sid , major from apply where major in
2  (select major from apply where sid in
3  (select sid from student where sname = 'Irene'))
4  and sid not in  ( select sid from student where sname = 'Irene')
```

SID	MAJOR
543	CS
987	CS
987	CS
345	CS
234	biology
123	CS
123	CS

Download CSV
7 rows selected.

Qus 9 ➜ Give the number of colleges Jay applied to? (Remember count each college once no matter if he applied to same college twice with different major).

CODE ➜

======

SQL Worksheet   ◇ Clear   🔍 Find   Actions ∨   💾 Save   Run ▶

```
1  select count(distinct cname) from apply where sid in (select sid from student where sname = 'Jay')
```

COUNT(DISTINCTCNAME)
2

Download CSV

Qus 10 ➜ Find sID of student who applied to more or same number of college where Jay has applied?

CODE ➜

======

SQL Worksheet   ◇ Clear   🔍 Find   Actions ∨   💾 Save   Run ▶

```
1  select sid from apply where cname in (select cname from Apply where sid in (select sid from Student where sname = 'Jay'))
```

SID
123
123
123
345
345
345
678
765
765
765
876
987

Download CSV

12 rows selected.

Qus 11 ➜ Find details of Students who applied to major CS but not applied to major EE? (sID 987, 876, 543 should only be include in result).

CODE ➜

======

SQL Worksheet   ◇ Clear   ✎ Find   Actions ∨   ☐ Save   Run ▶

```sql
1  select * from student where sid in( select sid from apply where major = 'CS' minus select sid from apply where major = 'EE')
```

SID	SNAME	GPA	SIZEHS
987	Helen	3.7	800
876	Irene	3.9	400
543	Craig	3.4	2000

Download CSV
3 rows selected.

Qus 12 ➜ All colleges such that some other college is in same state. (Cornell should not be part of result as no other college in New York Hint: use exists).

CODE ➜

======

SQL Worksheet   ◇ Clear   ✎ Find   Actions ∨   ☐ Save   Run ▶

```sql
1  select distinct COLLEGENAME from college c1 where exists
2  (select COLLEGENAME from college c2 where c1.state=c2.state and  c1.COLLEGENAME!=c2.COLLEGENAME)
3
4
5
```

COLLEGENAME
Berkeley
Stanford
Harvard
MIT

Download CSV
4 rows selected.

Qus 13 ➤ Find the college with highest enrollment.

CODE ➤

======

SQL Worksheet   Clear   Find   Actions ⌄   Save   Run ▶

```sql
1  select collegename from college where enrollment in (select max(enrollment) from college )
2
3
4
5
```

COLLEGENAME
Harvard

Download CSV

Qus 14 ➤ Find name of student having lowest GPA.

CODE ➤

======

SQL Worksheet   Clear   Find   Actions ⌄   Save   R

```sql
1  select sname from student where GPA in (select min(GPA) from Student )
2
3
4
5
```

SNAME
Edward
Jay

Download CSV
2 rows selected.

Qus 15 ➔ Find the most popular major.

CODE ➔

======

SQL Worksheet   Clear   Find   Actions   Save   Run

```sql
select major from apply group by major having count(major) = (select max(count(major)) from Apply group by major)
```

MAJOR
CS

Download CSV

Qus 16 ➜ Find sID, sName, sizeHS of all students NOT from smallest HS.

CODE ➜

======

SQL Worksheet

◇ Clear   ⚲ Find   Actions ⌄   ⊟ Save   **Run** ▶

```
1  select  sid, sname, sizehs from student where sizehs != (select min(sizehs) from student);
2
```

SID	SNAME	SIZEHS
123	Amy	1000
234	Bob	1500
345	Craig	500
456	Doris	1000
567	Edward	2000
789	Gary	800
987	Helen	800
876	Irene	400
765	Jay	1500
654	Amy	1000
543	Craig	2000

Download CSV
11 rows selected.

Qus 17 ➔ Find the name of student who applies to all the colleges where sID 987 has applied? (Hint: see Query Find IDs of student applied to all colleges).

Run the following SQL script before next query

insert into Apply

select s1.sID, 'Berkeley', 'CSE', 'Y' from student s1

 where s1.sID IN (select s.sID from student s

 MINUS

select a.sID from apply a where a.cName = 'Berkeley');

CODE ➔

======

SQL Worksheet   ◇ Clear   ✎ Find   Actions ⌄   💾 Save   **Run** ▶

```
1  select sname from student where sid in ( select sid from apply where cname in
2  (select cname from apply where sid = 987));
```
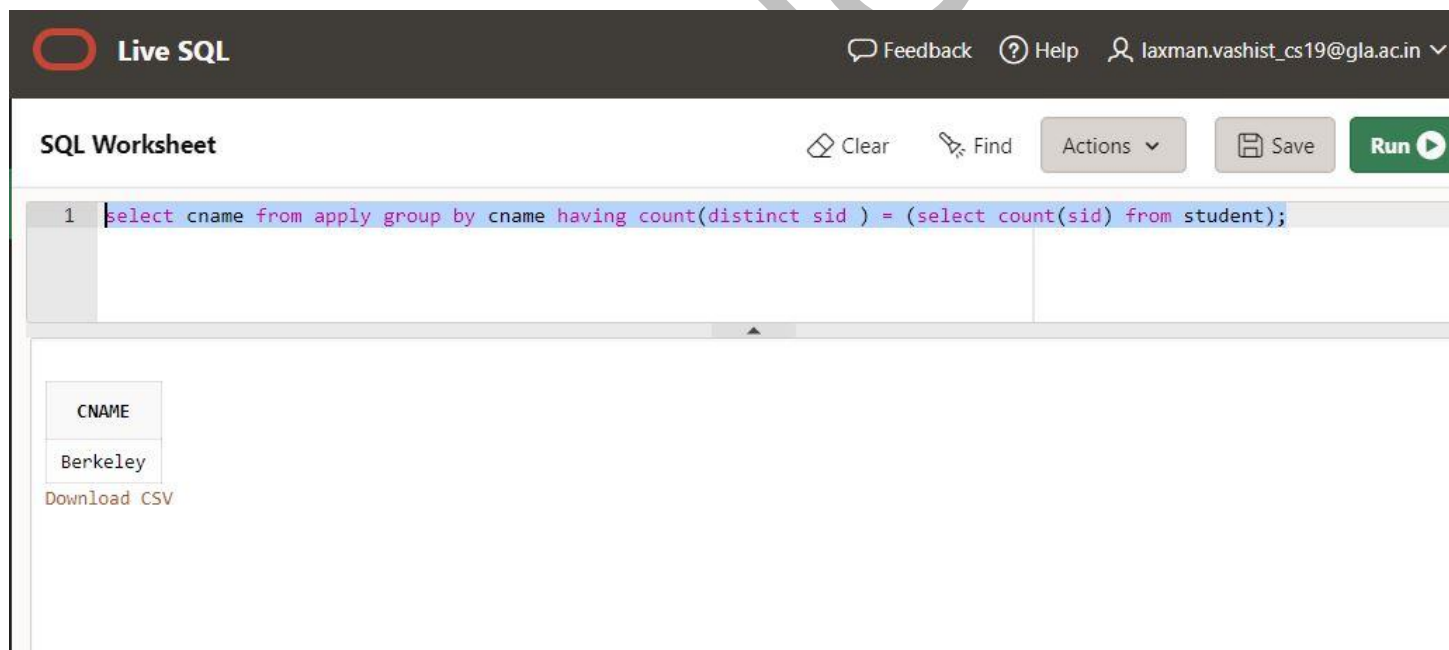
SNAME
Amy
Bob
Fay
Helen
Irene
Jay

Download CSV
6 rows selected.

Qus 18➔ Find college where all the student have applied.

CODE➔

======


```sql
select cname from apply group by cname having count(distinct sid ) = (select count(sid) from student);
```

CNAME
Berkeley

Download CSV

Qus 19 ➔ Find sid of student who have not applied to Stanford.

CODE ➔

======

SID
234
345
456
543
567
654
789

Download CSV

7 rows selected.

Qus 20 ➜ Find sid of Student that applied to both Stanford and Berkeley.

CODE ➜

======

SQL Worksheet   ⬦ Clear   ✎ Find   Actions ∨   💾 Save   **Run** ▶

```
1  select distinct sid from apply where cname  = 'Stanford' intersect
2  select distinct sid from apply where cname = 'Berkeley';
```

SID
123
678
765
876
987

Download CSV
5 rows selected.

Qus 21 ➔ Give list of all names including all names of colleges and students.

CODE ➔

======

SQL Worksheet   ◇ Clear   ✎ Find   Actions ⌄   💾 Save   Run ▶

```
1   select sname as name from student union select cname from college;
```

NAME
Amy
Berkeley
Bob
Cornell
Craig
Doris
Edward
Fay
Gary
Harvard
Helen
Irene
Jay
MIT
Stanford

Download CSV

15 rows selected.

Populate this table with appropriate data using insert command.

CODE ➜

======

Live SQL

💬 Feedback ⑦ Help 👤 laxman.vashist_cs19@gla.ac.in ⌄

SQL Worksheet

◇ Clear   ✎ Find   Actions ⌄   💾 Save   **Run** ▶

```
1  create table ApplicationInfo (sid int, sname varchar2 (10),number_of_application number(2));
2  insert into ApplicationInfo ( select a.sid, s.sname,count(a.sid) from student s inner join apply
3  a on a.sid=s.sid group by a.sid,s.sname);
4  select * from ApplicationInfo;
```

SID	SNAME	NUMBER_OF_APPLICATION
123	Amy	4
234	Bob	1
345	Craig	5
456	Doris	1
543	Craig	2
567	Edward	1
654	Amy	1
678	Fay	2
765	Jay	4
789	Gary	1
876	Irene	4
987	Helen	2

Download CSV
12 rows selected.

Qus 23➜ Create table ApplicationData and load with ID, name and college where they applied with state of college (remember to include details of ALL students that have applied or not applied) on runtime using single query.

CODE➜

======


```
1   create table Applicationdata (sid int, sname varchar2(10),gpa real,sizehs int,
2   college varchar2(10),state varchar2(10));
3
4
5   insert into Applicationdata(
6   select unique student.sid, student.sname,student.gpa ,  student.sizehs,apply.cname,
7   college.state from student
8   left join apply on student.sid = apply.sid
9   left join college on apply.cname = college.cname);
10  select * from Applicationdata;
```

SID	SNAME	GPA	SIZEHS	COLLEGE	STATE
123	Amy	3.9	1000	Stanford	CA
123	Amy	3.9	1000	Berkeley	CA
543	Craig	3.4	2000	Berkeley	CA
765	Jay	2.9	1500	Berkeley	CA
345	Craig	3.5	500	Cornell	NY
987	Helen	3.7	800	Stanford	CA
765	Jay	2.9	1500	Cornell	NY
876	Irene	3.9	400	Stanford	CA
234	Bob	3.6	1500	Berkeley	CA
345	Craig	3.5	500	Berkeley	CA
678	Fay	3.8	200	Stanford	CA

Qus 24 ➜ Stanford decide not to take any student who have also applied to its rival Berkeley turn their application decision to N.

CODE ➜

======


```
1  update apply set decision = 'N'
2  where cname = 'Stanford' and sid in (select unique sid from apply where cname= 'Berkeley');
3  select * from apply;
```

6 row(s) updated.

SID	CNAME	MAJOR	DECISION
123	Stanford	CS	N
123	Stanford	EE	N
123	Berkeley	CS	Y
123	Cornell	EE	Y
234	Berkeley	biology	N
345	MIT	bioengineering	Y
345	Cornell	bioengineering	N
345	Cornell	CS	Y
345	Cornell	EE	N
678	Stanford	history	N
987	Stanford	CS	N
987	Berkeley	CS	Y
876	Stanford	CS	N

Qus 25 ➜ Delete applications that are filed to city 'New York'.

CODE ➜

======


```
1  delete from apply where cname  in (select cname from college where state = 'NY');
2  select * from apply;
```

6 row(s) deleted.

SID	CNAME	MAJOR	DECISION
123	Stanford	CS	N
123	Stanford	EE	N
123	Berkeley	CS	Y
234	Berkeley	biology	N
345	MIT	bioengineering	Y
678	Stanford	history	N
987	Stanford	CS	N
987	Berkeley	CS	Y
876	Stanford	CS	N
876	MIT	biology	Y
876	MIT	marine biology	N
765	Stanford	history	N
543	MIT	CS	N

THNAK YOU

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