

MA611 – 2nd Semester MCA, 2024-2025
DATABASE SYSTEMS LAB
Assignment-4

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1. List all students who have taken exactly 60 total credits.

ID	NAME	DEPT_NAME	TOT_CRED
6712	Westphal	Math	60
42956	Ram	Physics	60
58919	Schroeder	Languages	60
50038	Urano	Languages	60
57787	Alexandri	Marketing	60
71389	Vegt	Mech. Eng.	60
62373	Cheed	Accounting	60
2133	Nardi	Accounting	60
71628	Amann	Psychology	60

20 rows selected.

2. Find the names of all courses offered by the "Electrical Engineering" department.

```
SQL> select title from course where dept_name = 'Elec. Eng.';

TITLE
-----
Compiler Design
Quantum Mechanics
Marine Mammals
The Music of Dave Edmunds
Logic
Compiler Design
Plasma Physics
The Music of Donovan

8 rows selected.
```

3. Retrieve the names of all instructors who earn less than ₹40,000.

```
SQL> select name from instructor where salary < 40000;

NAME
-----
Konstantinides
Lembr
Vicentino
Kean
```

4. List all classrooms located in the "Main" building.

```
SQL> select * from classroom where building = 'Main';
```

BUILDING	ROOM_NU	CAPACITY
Main	425	22
Main	45	30

5. Find the total number of courses offered in the "Fall" semester.

```
SQL> select count(semester) from section where semester = 'Fall';
```

COUNT(SEMESTER)
51

6. List all students who have taken exactly 90 total credits.

```
SQL> select name from student where tot_cred = 90;
```

NAME
Chanon
Hazemi
Dowey
Deshpande
Ohyama
Kyriakopoulos
Pircher
Pavlovico
Douss
Elias
Zander

7. Find the names of all courses offered by the "Mechanical Engineering" department.

```
SQL> select * from course where dept_name = 'Mech. Eng.';
```

COURSE_I	TITLE	DEPT_NAME	CREDITS
787	C Programming	Mech. Eng.	4
238	The Music of Donovan	Mech. Eng.	3
608	Electron Microscopy	Mech. Eng.	3
272	Geology	Mech. Eng.	3
887	Latin	Mech. Eng.	3
546	Creative Writing	Mech. Eng.	4
101	Diffusion and Phase Transformation	Mech. Eng.	3
123	Differential Equations	Mech. Eng.	3
411	Music of the 80s	Mech. Eng.	4
841	Fractal Geometry	Mech. Eng.	4
958	Fiction Writing	Mech. Eng.	3

8. Retrieve the names of all instructors who earn exactly ₹75,000.

```
SQL> select name from instructor where salary >= 75000;
```

NAME
McKinnon
Mird
Luo
Levine
Shuming
Sullivan
Voronina
Arias
Mingoz
Yazdi
Valtchev

9. List all classrooms located in the "Lamberton" building.

```
SQL> select * from classroom where building = 'Lamberton';
```

BUILDING	ROOM_NU	CAPACITY
Lamberton	134	10
Lamberton	143	10

10. Find the total number of courses offered in the "Spring" semester.

```
SQL> select count(*) from section where semester = 'Spring';

COUNT(*)
-----
         49
```

11. List all students who have taken courses with a grade of "B" in the "Spring" semester of 2003.

```
SQL> select name from student join takes on takes.id = student.id where takes.grade like 'B%' and takes.semester = 'Spring' and takes.year = 2003;

NAME
-----
Makarychev
Makarychev
Ariav
Snif
Snif
Kaminsky
Thimm
Lacruz
Baba
Vieira
Vieira
```

12. Retrieve the names of instructors who have taught in the "Fall" semester of 2002.

```
SQL> select name from instructor join teaches on teaches.id = instructor.id where teaches.semester = 'Fall' and teaches.year = 2002;

NAME
-----
Queiroz
Sullivan
Choll
Ullman
Liley
Gustafsson
Bondi
Romero
Dale
```

13. Find the average number of credits offered by each department.

```
SQL> select dept_name, avg(credits) from course group by dept_name;
```

DEPT_NAME	AVG(CREDITS)
-----	-----
Elec. Eng.	3.5
Physics	3.8
Accounting	3.33333333
Astronomy	3.7
Cybernetics	3.35
Athletics	3.33333333
Mech. Eng.	3.33333333
Comp. Sci.	3.7
Pol. Sci.	3.83333333
English	3.5
Languages	3.7

14. List all courses that have exactly 3 credit.

```
SQL> select * from course where credits = 3;
```

COURSE_I	TITLE	DEPT_NAME	CREDITS
-----	-----	-----	-----
238	The Music of Donovan	Mech. Eng.	3
608	Electron Microscopy	Mech. Eng.	3
539	International Finance	Comp. Sci.	3
391	Virology	Biology	3
814	Compiler Design	Elec. Eng.	3
272	Geology	Mech. Eng.	3
612	Mobile Computing	Physics	3
237	Surfing	Cybernetics	3
313	International Trade	Marketing	3
887	Latin	Mech. Eng.	3
328	Composition and Literature	Cybernetics	3

15. Retrieve the names of students who have taken courses in the "Painter" building.

```
SQL> select name from student join department on student.dept_name = department.dept_name where
department.building = 'Palmer';
```

NAME

Ariav
Larsson
Loher
Godfrey
Kerz
Rowe
Breed
Whitley
Bayn
Soni
Nishida

16. Find the total number of students enrolled in each course.

```
SQL> select title, count(*) from course join takes on course.course_id = takes.course_id group
by course.title;
```

TITLE	COUNT(*)
Martian History	312
Calculus	313
The Music of Donovan	282
Manufacturing	304
Numerical Methods	264
Tort Law	908
Colloid and Surface Chemistry	294
Marine Mammals	898
Bankruptcy	591
Accounting	304
Systems Software	550

17. List all sections that are held in rooms with a capacity of more than 100.

```
SQL> select distinct sec_id from section join classroom on classroom.room_number = section.room
_number where classroom.capacity > 100;
```

SEC_ID
1
2

18. Retrieve the names of students who have taken courses with the highest number of credits in their department.

```
SQL> select distinct name from student s join takes t on s.id = t.id join course c1 on t.course_id =
c1.course_id where credits = (select max(credits) from course c2 where c1.dept_name = c2.dept_name g
roup by c2.dept_name);
```

NAME
Manber
Chaney
Yihn
Lewis
Finney
Abu-B
Shuming
Hawkins
Tillmann
Klimasauskas
Abraham

19. Find the departments with the highest total budget.

```
SQL> select dept_name from department where budget = (select max(budget) from department);  
  
DEPT_NAME  
-----  
Physics
```

20. List all courses that have been taught by more than 2 instructors.

```
SQL> select course_id from teaches group by course_id having count(distinct id) >= 2;  
  
COURSE_I  
-----  
867  
158  
200  
960  
468
```

21. List all students who have taken courses with a grade of "C" in the "Spring" semester of 2003.

```
SQL> select distinct name from student join takes on takes.id = student.id where grade like 'C%' and  
semester = 'Spring' and year = 2003;  
  
NAME  
-----  
Shevade  
Finney  
Lum  
Mozayani  
Sud  
Nicol  
Reuter  
Duong  
Liang  
Ray  
Farahvash
```

22. Retrieve the names of instructors who have taught in the "Fall" semester of 2002.

```
SQL> select name from instructor join teaches on instructor.id = teaches.id where semester = 'Fall'  
and year = 2002;  
  
NAME  
-----  
Queiroz  
Sullivan  
Choll  
Ullman  
Liley  
Gustafsson  
Bondi  
Romero  
Dale  
  
9 rows selected.
```

23. Find the average number of sections taught per course.

```
SQL> select avg(count_sec) from (select count(sec_id) as count_sec from section join course on section.course_id = course.course_id group by title);

AVG(COUNT_SEC)
-----
1.36986301
```

24. List all courses that have exactly 3 credits.

```
SQL> select * from course where credits = 3;
```

COURSE_I	TITLE	DEPT_NAME	CREDITS
238	The Music of Donovan	Mech. Eng.	3
608	Electron Microscopy	Mech. Eng.	3
539	International Finance	Comp. Sci.	3
391	Virology	Biology	3
814	Compiler Design	Elec. Eng.	3
272	Geology	Mech. Eng.	3
612	Mobile Computing	Physics	3
237	Surfing	Cybernetics	3
313	International Trade	Marketing	3
887	Latin	Mech. Eng.	3
328	Composition and Literature	Cybernetics	3

25. Retrieve the names of students who have taken courses in the "Taylor" building.

```
SQL> select distinct s.id, s.name from student s join takes t on s.id = t.id join section sc on t.course_id = sc.course_id where sc.building = 'Taylor';
```

ID	NAME
7956	Brandsd
10033	Zelty
10076	Duan
10481	Grosch
35498	Lanfr
35588	John
35685	Usi
20180	Reyes
20974	Hawkins
68263	Roessler
68453	Kjellmer