

ASSIGNMENT – 3

Name – Kanhaiya

Roll No. - 244CA022

1. List all students with a total credit count of 0.

SQL> select * from student

2 where tot_cred = 0;

| ID | NAME | DEPT_NAME | TOT_CRED |
|-------|----------|------------|----------|
| 14032 | Belhadji | Elec. Eng. | 0 |
| 81610 | Ching | Languages | 0 |
| 81175 | Zelek | Biology | 0 |
| 4582 | Zaniolo | Math | 0 |
| 93571 | Kato | Psychology | 0 |
| 59908 | Cox | Civil Eng. | 0 |
| 48053 | Macias | Comp. Sci. | 0 |
| 82646 | Nirenbu | Biology | 0 |
| 39157 | Loull | Accounting | 0 |
| 11201 | Bianchi | Statistics | 0 |
| 70924 | Rajnov | Civil Eng. | 0 |

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

SQL> select * from course where dept_name = 'Geology';

| COURSE_I | TITLE | DEPT_NAME |
|----------|-----------------------|-----------|
| | CREDITS | |
| 241 | Biostatistics 3 | Geology |
| 704 | Marine Mammals 4 | Geology |
| 127 | Thermodynamics 3 | Geology |
| 864 | Heat Transfer 3 | Geology |
| 735 | Greek Tragedy 3 | Geology |
| 493 | Music of the 50s 3 | Geology |

3. Retrieve the names of all instructors who earn exactly ₹50,000.

SQL> select name from instructor where salary = 50000;

```
NAME
-----
Gustafsson
Kean
```

4. List all classrooms with a capacity of exactly 100.

SQL> select * from classroom where capacity = 100;

```
BUILDING    ROOM_NU  CAPACITY
-----
Garfield    119      100
```

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

```
SQL> SELECT COUNT(course_id), semester
2  FROM section
3  WHERE semester = 'Summer'
4  GROUP BY semester;
```

```
SQL> SELECT COUNT(course_id), semester
2  FROM section
3  WHERE semester = 'Summer'
4  GROUP BY semester;

no rows selected
```

6. List all students who have taken exactly 30 total credits.

SQL> select * from student where tot_cred= 30;

| ID | NAME | DEPT_NAME | TOT_CRED |
|-------|---------|-------------|----------|
| ----- | | | |
| 53805 | Ludwig | Cybernetics | 30 |
| 76291 | Dellwo | Physics | 30 |
| 7390 | Stone | Accounting | 30 |
| 5925 | Maw | Languages | 30 |
| 36845 | Okaf | Math | 30 |
| 81638 | Chiu | Statistics | 30 |
| 38899 | Murphy | Marketing | 30 |
| 28952 | Kennedy | Accounting | 30 |
| 61127 | Tuki | Physics | 30 |
| 68712 | Hill | Civil Eng. | 30 |
| 52866 | Loull | Math | 30 |
| ----- | | | |
| ID | NAME | DEPT_NAME | TOT_CRED |
| ----- | | | |
| 5381 | Diana | Languages | 30 |
| 83003 | Nam | Psychology | 30 |
| 72177 | Eller | Mech. Eng. | 30 |

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

| COURSE_I | TITLE | DEPT_NAME |
|----------|-------------------------------|------------|
| ----- | | |
| CREDITS | | |
| ----- | | |
| 760 | How to Groom your Cat 3 | Accounting |
| 408 | Bankruptcy 3 | Accounting |
| 598 | Number Theory 4 | Accounting |
| ----- | | |
| COURSE_I | TITLE | DEPT_NAME |
| ----- | | |
| CREDITS | | |
| ----- | | |
| 200 | The Music of the Ramones 4 | Accounting |
| 416 | Data Mining 3 | Accounting |
| 974 | Astronautics 3 | Accounting |

8. Retrieve the names of all instructors who earn more than ₹100,000.

SQL> select name from instructor where salary > 100000;

```
NAME
-----
Mird
Shuming
Voronina
Arias
Mingoz
Kenje
Jaekel
Bondi
Lent
Sakurai
Bietzk

NAME
-----
Wieland
```

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

SQL> select * from classroom where building = 'Taylor';

```
BUILDING      ROOM_NU  CAPACITY
-----
Taylor        183      71
Taylor        812     115
```

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

SQL> select count(distinct course_id) from section
2 where semester = 'Fall';

```
COUNT(DISTINCTCOURSE_ID)
-----
46
```

11. List all students who have taken courses with a grade of "C" or lower.

```
SELECT DISTINCT student.name
FROM student
JOIN takes ON student.ID = takes.ID
WHERE takes.grade IN ('C', 'C-', 'D')
AND ROWNUM < 10;
```

```

NAME
-----
Kamata
Strader
Tabor
Allen
Aiken
Neld
Clifford
Allard
Zeng

```

12. Retrieve the names of instructors who have taught in the "Fall" semester of 2022.

```

SELECT instructor.name
FROM instructor
JOIN teaches ON instructor.id = teaches.id
WHERE teaches.semester = 'Fall'
AND teaches.year = 2022;

```

```

SELECT instructor.name
FROM instructor
JOIN teaches ON instructor.id = teaches.id
WHERE teaches.semester = 'Fall'
      5  AND teaches.year = 2022;

no rows selected

```

13. Find the average capacity of classrooms in each building.

```

SQL> select avg(capacity),building from classroom
      2 group by building;

```

```

AVG(CAPACITY) BUILDING
-----
          97 Painter
         113 Stabler
          92 Nassau
        10.5 Chandler
          76 Whitman
        36.5 Alumni
          26 Main
          11 Power
         100 Garfield
          93 Taylor
        49.3333333 Saucon

AVG(CAPACITY) BUILDING
-----
        37.5 Gates
         27 Fairchild
         28 Polya
         34 Grace
         12 Bronfman
         51 Lambeau
         10 Lamberton
         18 Drown
         60 Rathbone

```

14. List all courses that have more than 3 credits

SQL> select * from course 2 where credits > 3;

| COURSE_I | TITLE | DEPT_NAME |
|----------|-------------------|------------|
| CREDITS | | |
| 787 | C Programming | Mech. Eng. |
| 278 | Greek Tragedy | Statistics |
| 972 | Greek Tragedy | Psychology |
| CREDITS | | |
| 400 | Visual BASIC | Psychology |
| 762 | The Monkeys | History |
| 482 | FOCAL Programming | Psychology |

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

SQL> select student.name from student

2 JOIN department ON student.dept_name = department.dept_name

3 where department.building = 'Chandler';

```
NAME
-----
Jovicic
Llam
John
Snif
Ponnambalam
Okaf
Rossettin
Yagit
Tanzi
Pampal
Juan

NAME
-----
Sagawe
Breuer
Mohamed
Ortmann
Loc
Dism
Xiao
Hay
Fickl
Kamata
Barkov
```

16. Find the total number of students advised by each instructor.

```
SQL> select count(distinct s_id),i_id from advisor
2 group by i_id;
```

| COUNT(DISTINCTS_ID) | I_ID |
|---------------------|-------|
| 33 | 99052 |
| 48 | 52647 |
| 46 | 79653 |
| 31 | 63395 |
| 31 | 59795 |
| 38 | 65931 |
| 40 | 81991 |
| 41 | 95030 |
| 49 | 48570 |
| 46 | 73623 |
| 34 | 43779 |

| COUNT(DISTINCTS_ID) | I_ID |
|---------------------|-------|
| 40 | 22591 |
| 41 | 41930 |
| 44 | 28400 |
| 54 | 35579 |
| 39 | 14365 |
| 54 | 77346 |
| 43 | 80759 |
| 44 | 4233 |
| 24 | 90643 |
| 38 | 25946 |
| 40 | 79081 |

17. List all sections that do not have a classroom assigned.

```
SELECT s.sec_id, s.course_id, s.semester, s.year
FROM section s
LEFT JOIN classroom c ON s.room_number = c.room_number
WHERE c.room_number IS NULL;
```

```
SELECT s.sec_id, s.course_id, s.semester, s.year
FROM section s
LEFT JOIN classroom c ON s.room_number = c.room_number
4 WHERE c.room_number IS NULL;

no rows selected
```

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

```
SELECT student.name
FROM student
JOIN takes ON student.id = takes.id
JOIN course ON takes.course_id = course.course_id
WHERE course.credits = (
SELECT MAX(credits) FROM course)
```

and rownum < 10;

```
NAME
-----
Manber
Manber
Manber
Manber
Manber
Manber
Manber
Manber
Zelty
```

19. Find the departments with the highest average instructor salary.

SQL> select avg(salary),dept_name from instructor

2 having avg(salary) > ALL (select avg(salary) from instructor group by dept_name)group by dept_name;

```
SQL> select avg(salary),dept_name from instructor
2 having avg(salary) > ALL (select avg(salary) from instructor group by dept_name)group by
dept_name;

no rows selected
```

20. List all courses that have been taught by more than one instructor.

SQL> select course_id from teaches

2 group by course_id

3 having count(id)>1;

```
COURSE_I
-----
867
169
443
338
158
200
105
960
362
735
400

COURSE_I
-----
468
408
237

14 rows selected.
```


21. List all students who have taken courses with a grade of "A" in the "Fall" semester of 2002.

```
SQL> select name from student
2 join takes on student.id = takes.id
3 where grade = 'A' and semester = 'Fall' and year = 2002;
```

```
SQL> select name from student
2 join takes on student.id = takes.id
3 where grade = 'A' and semester = 'Fall' and year = 2002;

no rows selected
```

22. Retrieve the names of instructors who have taught in the "Spring" semester of 2023.

```
SELECT instructor.name
FROM instructor
JOIN teaches ON instructor.id = teaches.id
WHERE teaches.semester = 'Spring'
AND teaches.year = 2023;
```

```
SELECT instructor.name
FROM instructor
JOIN teaches ON instructor.id = teaches.id
WHERE teaches.semester = 'Spring'
5 AND teaches.year = 2023;

no rows selected
```

23. Find the average number of students enrolled in each course.

```
SQL> select avg(cnt),course_id from
2 (select count(distinct id) as cnt,course_id from takes group by course_id)
3 group by course_id;
```

| AVG(CNT) | COURSE_I |
|----------|----------|
| 536 | 169 |
| 535 | 443 |
| 332 | 274 |
| 312 | 795 |
| 296 | 808 |
| 280 | 972 |
| 325 | 702 |
| 331 | 802 |
| 264 | 415 |
| 301 | 631 |
| 295 | 401 |

| AVG(CNT) | COURSE_I |
|----------|----------|
| 583 | 867 |
| 307 | 679 |
| 335 | 747 |
| 531 | 158 |
| 296 | 482 |
| 304 | 137 |
| 300 | 604 |
| 338 | 192 |
| 309 | 692 |
| 315 | 445 |
| 291 | 591 |

24. List all courses that have exactly 4 credits.

```
SQL> select * from course
2 where credits = 4 and rownum < 15;
```

| COURSE_I | TITLE | DEPT_NAME |
|----------|-------------------|------------|
| ----- | | |
| CREDITS | | |
| ----- | | |
| 787 | C Programming | Mech. Eng. |
| | 4 | |
| 278 | Greek Tragedy | Statistics |
| | 4 | |
| 972 | Greek Tragedy | Psychology |
| | 4 | |
| | | |
| COURSE_I | TITLE | DEPT_NAME |
| ----- | | |
| CREDITS | | |
| ----- | | |
| 400 | Visual BASIC | Psychology |
| | 4 | |
| 762 | The Monkeys | History |
| | 4 | |
| 482 | FOCAL Programming | Psychology |
| | 4 | |

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

```
SQL> select distinct student.id, student.name from student join takes on student.id = takes.id
2   join section on takes.course_id = section.course_id and takes.sec_id = section.sec_id and
3   section.building = 'whitman';
```

```
SQL> select distinct student.id, student.name from student join takes on student.id = takes.id join section on takes.course_id = section.course_id and takes.sec_id = section.sec_id and section.building='Whitman';
```

| ID | NAME |
|-------|------------|
| ----- | |
| 92839 | Cirsto |
| 21395 | Leuen |
| 90567 | Tomason |
| 57985 | Weller |
| 33651 | Seike |
| 58889 | Collet |
| 70572 | Andrews |
| 77289 | Kok |
| 19582 | Canas |
| 2419 | Hirakuri |
| 18808 | Snlf |
| | |
| ID | NAME |
| ----- | |
| 91063 | Dair |
| 62549 | Komatsu |
| 32245 | Saariluoma |
| 17831 | Srivastava |
| 28738 | Birkett |
| 3651 | Narayanan |
| 69960 | Ratev |
| 36494 | Baccou |
| 79446 | Frost |
| 1087 | Roses |
| 46769 | Kivv |