Lab 2:

6. Create a view for student names with their subjects' names which they will study.

```
iti=# create view stu_sub_view as
iti-# select student.e_name , subject.sub_name
from student join stu_sub on student.id = stu_sub.stu_id
join subject on stu_sub.sub_id = subject.id ;
CREATE VIEW
iti=# select * from stu_sub_view;
 e_name |    sub_name
--------+----------------
 Hajar  | oop
 Hajar  | data structure
 Hajar  | os
(3 rows)

iti=#
```

7. Create a view for tracks names and the subjects which belong to it.

```
iti=# create view track_sub_view as
select track.track_name , subject.sub_name
from track join track_sub on track.id = track_sub.track_id
join subject on track_sub.sub_id = subject.id ;
CREATE VIEW
iti=# select * from track_sub_view;
 track_name |    sub_name
------------+----------------
 python     | data structure
 java       | oop
 c++        | os
(3 rows)

iti=#
```

Lab 3

1-Write a query to find out which subjects are not associated with any track.

```
iti=# select sub_name
iti-# from subject
iti-# where id not in (
iti(# select sub_id
iti(# from track_sub
iti(# );
 sub_name
----------
(0 rows)
```

2- Display name and age of each students

```
iti=# SELECT e_name,( current_date - birth_date)/365 as age FROM student;
 e_name | age
--------+-----
 Hajar  |
 Amira  |
 Sara   |
 Ahmed  |  23
 Ali    |  23
(5 rows)

iti=#
```

3-Display the name of students with their rounded score in each subject

```
from student join grades on student.id =grades.student_id
join subject on grades.sub_id = subject.id;
 e_name |    sub_name    | rounded_grad
--------+----------------+--------------
 Hajar  | oop            |           85
 Hajar  | data structure |           95
 Hajar  | os             |           93
(3 rows)

iti=#
```

4-Display the name of students with the year of Birthdate

```
iti=# select e_name ,extract(year from birth_date)as dirthyear
iti-# from student;
 e_name | dirthyear
--------+-----------
 Hajar  |
 Amira  |
 Sara   |
 Ahmed  |      2001
 Ali    |      2002
(5 rows)
```

5-Add new exam result, in date column use NOW() function

```
iti=# insert into exam values(4,now());
INSERT 0 1
iti=# select * from exam
iti-# ;
 id | exam_date
----+------------
  1 | 2025-01-15
  2 | 2025-01-16
  3 | 2025-01-17
  4 | 2025-04-30
(4 rows)
```

6-Write a query to calculate the average grade obtained by a specific student across all exams.

```
iti=# CREATE OR REPLACE FUNCTION get_student_avg_grade(u_id INT)
RETURNS NUMERIC AS $$
DECLARE
    avg_grade NUMERIC;
BEGIN
    SELECT avg(grade)
    INTO avg_grade
    FROM grades
    WHERE student_id = u_id;

    RETURN avg_grade;
END;
$$ LANGUAGE plpgsql;
CREATE FUNCTION
iti=# select get_student_avg_grade(1);
 get_student_avg_grade
-----------------------
   91.0000000000000000
(1 row)
```

7-Write a query to replace all occurrences of 'gmail.com' in email addresses with 'iti.com'.

```
iti=# update student
set email = REPLACE(email, 'gmail.com', 'iti.com')
where email LIKE '%gmail.com';
UPDATE 4
iti=# select * from student
iti-# ;
 id | e_name |     email     | address | track_id | birth_date | gender
----+--------+---------------+---------+----------+------------+--------
  4 | Ahmed  | ahmed         | cairo   |        2 | 2001-11-13 | male
  1 | Hajar  | hajar@iti.com | Assuit  |        3 |            |
  2 | Amira  | amira@iti.com | Assuit  |        1 |            |
  3 | Sara   | sara@iti.com  | Alex    |        1 |            |
  5 | Ali    | ali@iti.com   | Aswan   |        3 | 2002-04-05 | male
(5 rows)
```

8-Write a query to calculate the difference in days between the current date and each exam date.

```
iti=# select  subject.sub_name , exam.exam_date,( CURRENT_DATE-exam.exam_date) A
S days_difference
from grades join subject on grades.sub_id = subject.id
join exam on grades.exam_id = exam.id;
    sub_name    | exam_date  | days_difference
----------------+------------+-----------------
 oop            | 2025-01-15 |             106
 data structure | 2025-01-16 |             105
 os             | 2025-01-17 |             104
(3 rows)
```

9-Write a query to check if each student's email address ends with '.com'.

```
iti=# select e_name,email like('%.com')
iti-# from student
iti-# ;
 e_name | ?column?
--------+----------
 Ahmed  | f
 Hajar  | t
 Amira  | t
 Sara   | t
 Ali    | t
(5 rows)
```

10-Display each exam date like ‘MM/DD/YYYY’.

```
iti=# select  subject.sub_name ,exam.exam_date,TO_CHAR(exam.exam_date,'MM/DD/YYYY')
from grades join subject on grades.sub_id = subject.id
join exam on grades.exam_id = exam.id;_id = subject.id
    sub_name    | exam_date  |  to_char
----------------+------------+------------
 oop            | 2025-01-15 | 01/15/2025
 data structure | 2025-01-16 | 01/16/2025
 os             | 2025-01-17 | 01/17/2025
(3 rows)
```