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

```
student_tracking=# CREATE VIEW student_subjects_view AS
SELECT s.e_name AS student_name, sub.sub_name AS subject_name
FROM student s
JOIN stu_sub ss ON s.id = ss.stu_id
JOIN subject sub ON ss.sub_id = sub.id;
CREATE VIEW
```

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

```
CREATE VIEW
student_tracking=# CREATE VIEW track_subjects_view AS
SELECT t.track_name, sub.sub_name AS subject_name
FROM track t
JOIN track_sub ts ON t.id = ts.track_id
JOIN subject sub ON ts.sub_id = sub.id;
CREATE VIEW
```

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

```
CREATE VIEW
student_tracking=# SELECT sub.sub_name
FROM subject sub
LEFT JOIN track_sub ts ON sub.id = ts.sub_id
WHERE ts.track_id IS NULL;
 sub_name
----------
```

Display name and age of each students

```
student_tracking=# SELECT e_name AS student_name,
       EXTRACT(YEAR FROM AGE(birth_date)) AS age
FROM student;
  student_name  | age
----------------+-----
 Mohammed Ali   |  34
 Ahmed Hassan   |  32
 Aisha Mohammed |  32
 Fatima Ahmed   |  29
 Mohammed Omar  |  35
 Ali Mohammed   |  33
```

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

```
CONTEXT:  PL/pgSQL function validate_grade() line 8 at RAISE
student_tracking=# SELECT s.e_name AS student_name,
       sub.sub_name AS subject_name,
       ROUND(g.grade) AS rounded_score,
       e.date AS exam_date
FROM student s
JOIN grades g ON s.id = g.stu_id
JOIN subject sub ON g.sub_id = sub.id
JOIN exam e ON g.exam_id = e.id;
 student_name |   subject_name   | rounded_score | exam_date
--------------+------------------+---------------+------------
 Mohammed Ali | Database Systems |            85 | 2023-01-15
(1 row)
```

Display the name of students with the year of Birthdate

```
student_tracking=# SELECT e_name AS student_name,
       EXTRACT(YEAR FROM birth_date) AS birth_year
FROM student;
  student_name  | birth_year
----------------+------------
 Mohammed Ali   |       1990
 Ahmed Hassan   |       1992
 Aisha Mohammed |       1993
 Fatima Ahmed   |       1995
 Mohammed Omar  |       1989
 Ali Mohammed   |       1991
(6 rows)
```

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

```
student_tracking=# INSERT INTO exam (date) VALUES (NOW()) RETURNING id;
 id
----
  4
(1 row)
```

```
student_tracking=#
INSERT INTO grades (stu_id, sub_id, exam_id, grade) VALUES
(1, 1, 4, 85),
(2, 3, 4, 90),
(3, 2, 4, 78);
INSERT 0 3
```

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

```
student_tracking=# SELECT s.e_name AS student_name,
       ROUND(AVG(g.grade), 2) AS average_grade
FROM student s
JOIN grades g ON s.id = g.stu_id
WHERE s.id = 1  -- Replace with specific student ID
GROUP BY s.e_name;
 student_name | average_grade
--------------+---------------
 Mohammed Ali |         85.00
(1 row)

student_tracking=#
```

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

```
student_tracking=# UPDATE student
SET email = REPLACE(email, 'example.com', 'iti.com')
WHERE email LIKE '%example.com';
UPDATE 6
student_tracking=#
```

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

```
student_tracking=# SELECT id AS exam_id,
       date AS exam_date,
       CURRENT_DATE - date AS days_difference
FROM exam;
 exam_id | exam_date  | days_difference
---------+------------+-----------------
       1 | 2023-01-15 |             837
       2 | 2023-02-20 |             801
       3 | 2023-03-10 |             783
       4 | 2025-05-01 |               0
(4 rows)

student_tracking=#
```

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

```
student_tracking=# SELECT e_name AS student_name, email,
       CASE WHEN email LIKE '%.com' THEN 'Yes' ELSE 'No' END AS ends_with_com
FROM student;
  student_name  |      email       | ends_with_com
----------------+------------------+---------------
 Mohammed Ali   | mohammed@iti.com | Yes
 Ahmed Hassan   | ahmed@iti.com    | Yes
 Aisha Mohammed | aisha@iti.com    | Yes
 Fatima Ahmed   | fatima@iti.com   | Yes
 Mohammed Omar  | omar@iti.com     | Yes
 Ali Mohammed   | ali@iti.com      | Yes
(6 rows)

student_tracking=#
```

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

```
student_tracking=# SELECT id AS exam_id,
       TO_CHAR(date, 'MM/DD/YYYY') AS formatted_date
FROM exam;
 exam_id | formatted_date
---------+----------------
       1 | 01/15/2023
       2 | 02/20/2023
       3 | 03/10/2023
       4 | 05/01/2025
(4 rows)

student_tracking=#
```

DB structure