DBMS Holiday Assignment

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TASK FROM LEETCODE:

1.Game Play Analysis (Solve it in LeetCode)

Table: Activity

Create a Activity table and Insert the given below values and Write a Query for below question :-

1. Write a solution to find the **first login date** for each player from table .

2. Return the result table in **any order**

The result format is in the following example.

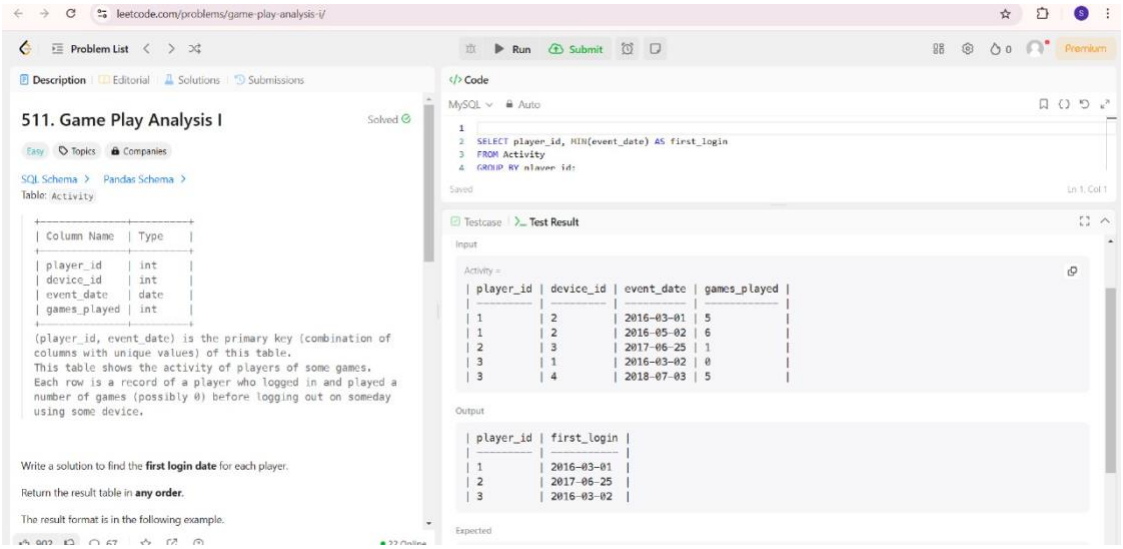
Example 1:

Input:

Activity table:

```
+-----------+-----------+------------+--------------+
| player_id | device_id | event_date | games_played |
+-----------+-----------+------------+--------------+
| 1         | 2         | 2016-03-01 | 5            |
| 1         | 2         | 2016-05-02 | 6            |
| 2         | 3         | 2017-06-25 | 1            |
| 3         | 1         | 2016-03-02 | 0            |
| 3         | 4         | 2018-07-03 | 5            |
+-----------+-----------+------------+--------------+
|
```

Ans:



TASK-2

Find Customer Referee((Solve it in LeetCode)

Find the names of the customer that are **not referred by** the customer with id = 2.

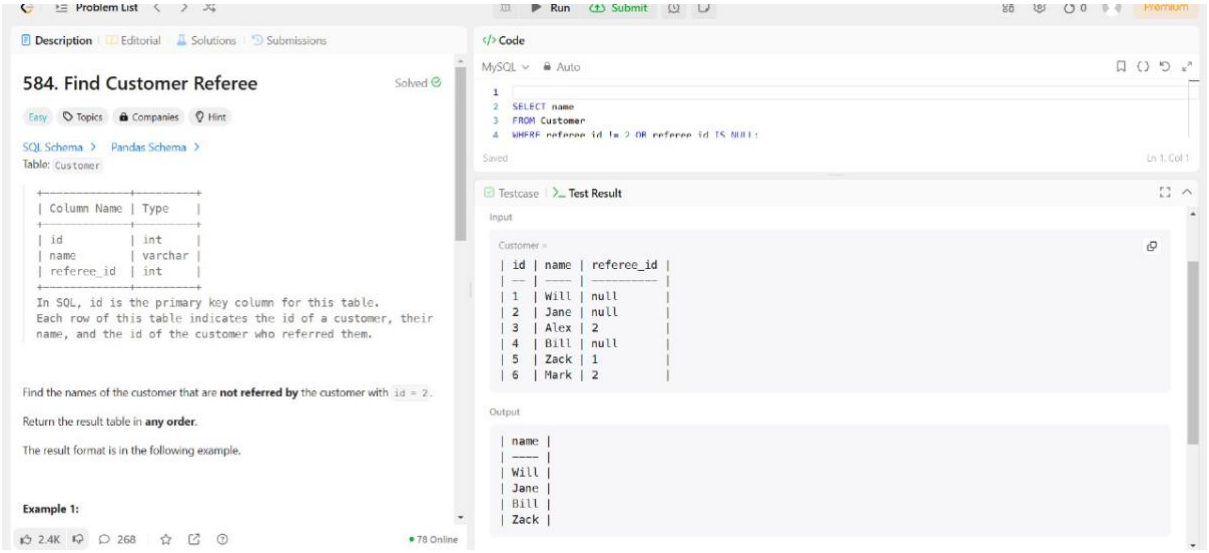
Return the result table in **any order**.

Input:

Customer table:

id	name	referee_id
1	Will	null
2	Jane	null
3	Alex	2
4	Bill	null
5	Zack	1
6	Mark	2

Ans.



TASK-3

Big Countries (Solve it in LeetCode)

A country is **big** if:

- it has an area of at least three million (i.e., 3000000 km^2), or
- it has a population of at least twenty-five million (i.e., 25000000).

Write a solution to find the name, population, and area of the **big countries**.

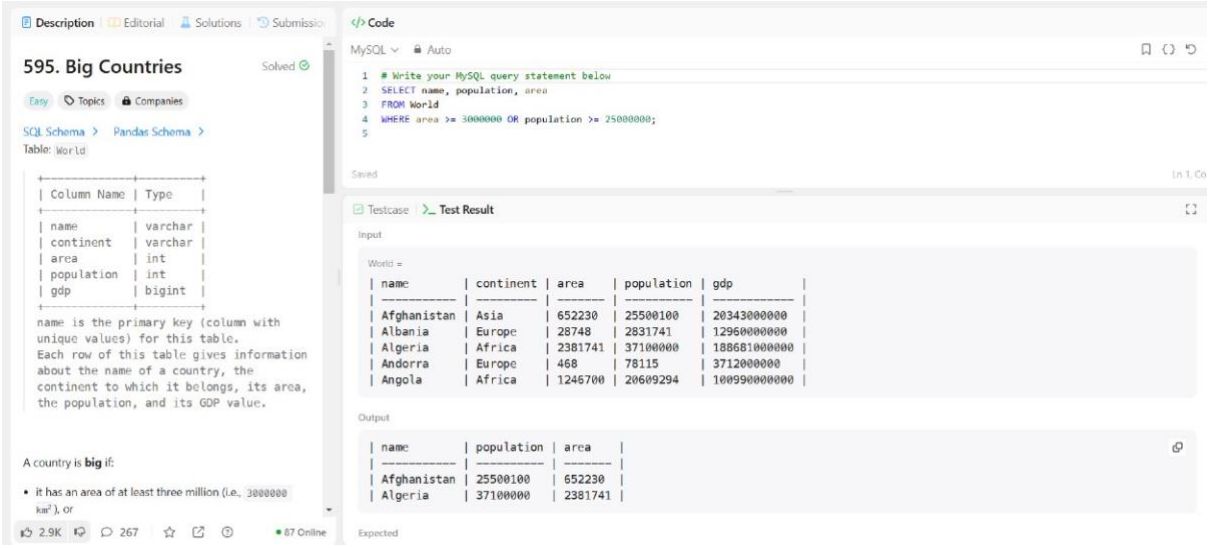
Return the result table in **any order**.

Input:

World table:

name	continent	area	population	gdp
Afghanistan	Asia	652230	25500100	20343000000
Albania	Europe	28748	2831741	12960000000
Algeria	Africa	2381741	37100000	188681000000
Andorra	Europe	468	78115	3712000000
Angola	Africa	1246700	20609294	100990000000

Ans.



TASK-4

Recyclable and low fat products (Solve it in LeetCode)

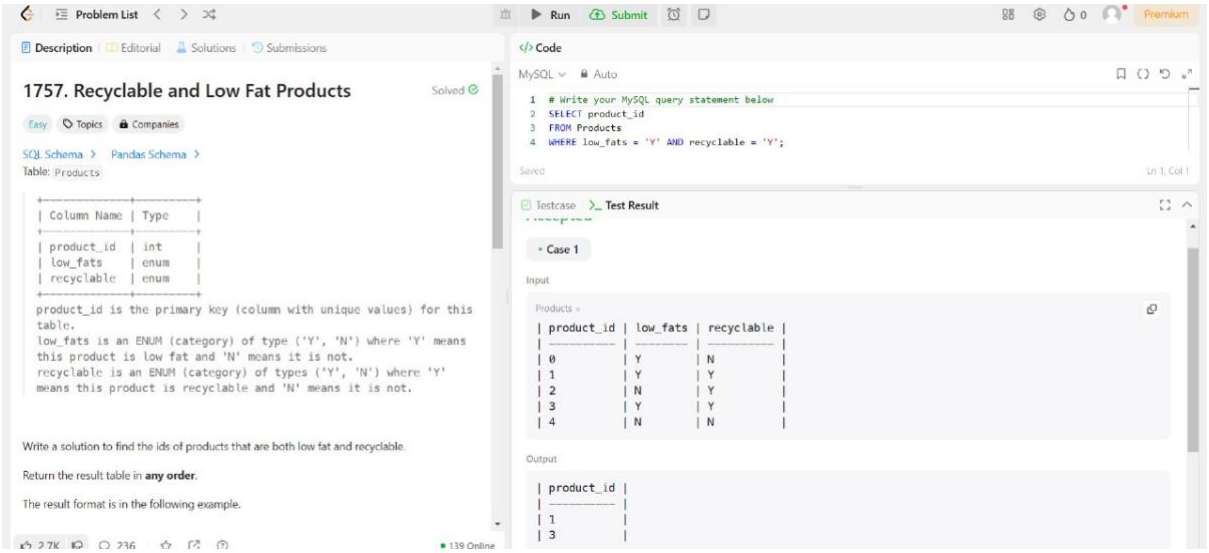
Write a solution to find the ids of products that are both low fat and recyclable.

Return the result table in **any order**.

Input:
Products table:

product_id	low_fats	recyclable
0	Y	N
1	Y	Y
2	N	Y
3	Y	Y
4	N	N

Ans.



TASK-5

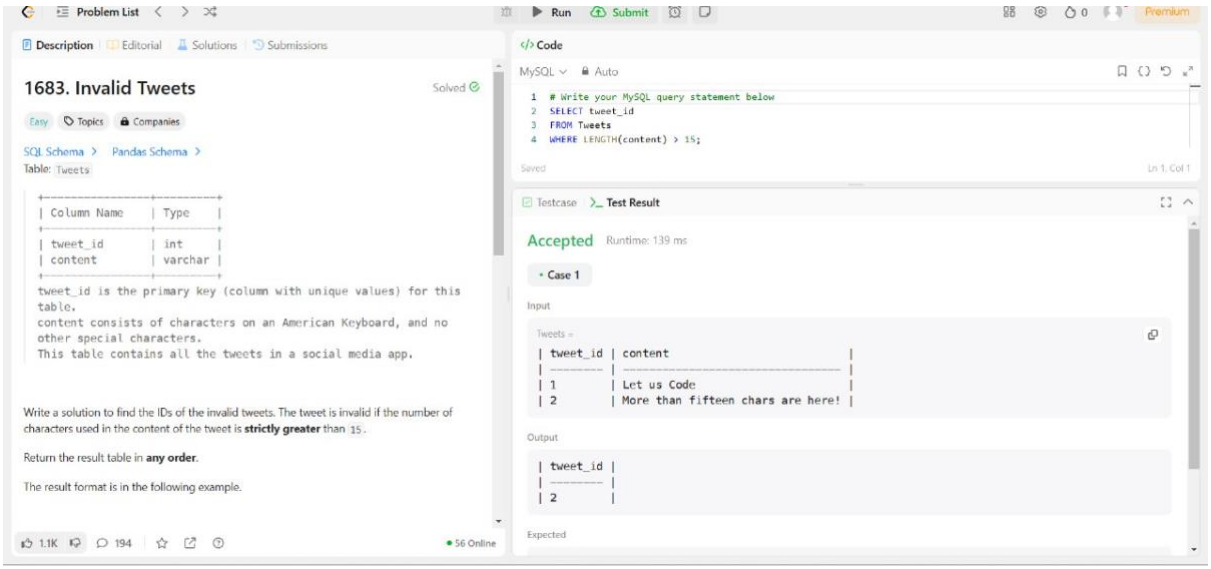
Write a solution to find the IDs of the invalid tweets. The tweet is invalid if the number of characters used in the content of the tweet is **strictly greater** than 15.

Input:

Tweets table:

```
+----------+----------------------------------+
| tweet_id | content                          |
+----------+----------------------------------+
| 1        | Let us Code                      |
| 2        | More than fifteen chars are here! |
+----------+----------------------------------+
```

Ans.



Case Study Question: School Database

Scenario:

You are tasked with designing a database for a small school. The school has students, teachers, and classes. The database should help manage the following information:

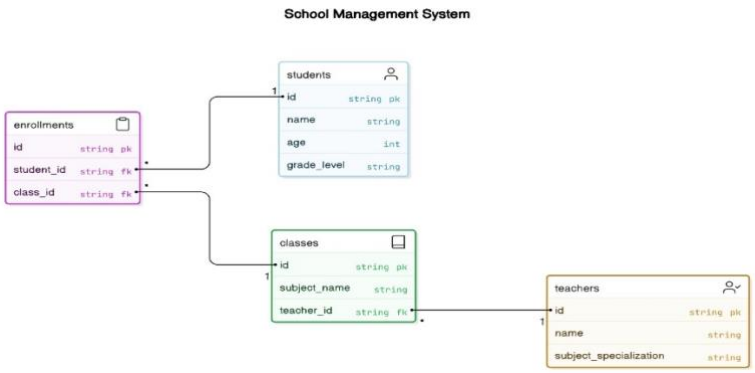
1. Students' details: Unique ID, name, age, and grade level.
2. Teachers' details: Unique ID, name, and subject specialization.
3. Classes: Each class has a unique ID, subject name, and a teacher assigned.
4. Enrollments: Students enrolled in specific classes.

Tasks:

1. **ER Diagram**: Design an ER diagram showing the relationships between Students, Teachers, Classes, and Enrollments.(**Use SmartDraw Tool**)
2. **Schema Design**:
   Write SQL to create the following tables:
   - Students (StudentId, Name, Age, GradeLevel)
   - Teachers (TeacherId, Name, SubjectSpecialization)
   - Classes (ClassId, SubjectName, TeacherId)
   - Enrollments (EnrollmentId, StudentId, ClassId)

Ans.

1)



2)

```
mysql> desc student;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| studentId  | int         | YES  |     | NULL    |       |
| name       | varchar(35) | YES  |     | NULL    |       |
| age        | int         | YES  |     | NULL    |       |
| gradeLevel | int         | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)

mysql> desc teachers;
+----------------------+-------------+------+-----+---------+-------+
| Field                | Type        | Null | Key | Default | Extra |
+----------------------+-------------+------+-----+---------+-------+
| teacherId            | int         | YES  |     | NULL    |       |
| name                 | varchar(35) | YES  |     | NULL    |       |
| subjectSpecialization | varchar(26) | YES  |     | NULL    |       |
+----------------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> desc classes;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| classId     | int         | YES  |     | NULL    |       |
| subjectName | varchar(20) | YES  |     | NULL    |       |
| teacherId   | int         | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> desc enrollments;
+--------------+------+------+-----+---------+-------+
| Field        | Type | Null | Key | Default | Extra |
+--------------+------+------+-----+---------+-------+
| enrollmentId | int  | YES  |     | NULL    |       |
| studentId    | int  | YES  |     | NULL    |       |
| classId      | int  | YES  |     | NULL    |       |
+--------------+------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```