1. Problem: Find Authors Who Viewed Their Own Articles

Table: Views

Column Name	Type
article_id	int
author_id	int
viewer_id	int
view_date	date

Each row represents a viewer viewing an article written by an author on a specific date. If author_id equals viewer_id, it means the author viewed their own article.

SQL Query

```
SELECT DISTINCT(author_id)as 'id' FROM Views WHERE author_id = viewer_id ORDER BY author_id ASC
```

Explanation

- The query filters the Views table for rows where the author_id matches the viewer_id, indicating that the author viewed their own article.
- The DISTINCT keyword is used to ensure that each author is only listed once, even if they viewed their own articles multiple times.
- The ORDER BY id clause sorts the result in ascending order by author ID.

Input

Views =

article_id	author_id	viewer_id	view_date
1	3	5	2019-08-01
1	3	6	2019-08-02
2	7	7	2019-08-01
2	7	6	2019-08-02
4	7	1	2019-07-22
3	4	4	2019-07-21
3	4	4	2019-07-21

Output

id
4
7

Expected

id
4
7

2. Problem: Find Big Countries

Table: World

Column Name	Type
name	varchar
continent	varchar
area	int
population	int
gdp	bigint

Each row in this table provides information about a country's name, continent, area, population, and GDP. The name column is the primary key.

Big Country Definition

A country is considered **big** if:

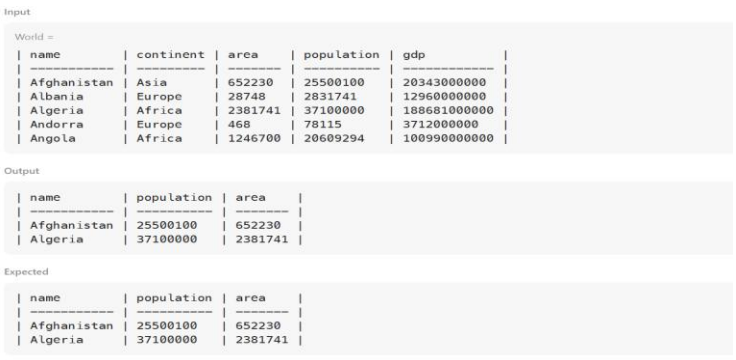
1. It has an area of at least 3 million square kilometers (i.e., area >= 3000000), **or**
2. It has a population of at least 25 million (i.e., population >= 25000000).

SQL Query

```
SELECT name, population, area
FROM World
WHERE area >= 3000000 OR population >= 25000000;
```

Explanation

- The query filters the World table using the given conditions for area and population to identify countries that are considered "big."
- The SELECT statement returns the name, population, and area of countries meeting either of the criteria.



3. Problem: Find Products that are Both Low Fat and Recyclable

Table: Products

Column Name	Type
product_id	int
low_fats	enum
recyclable	enum

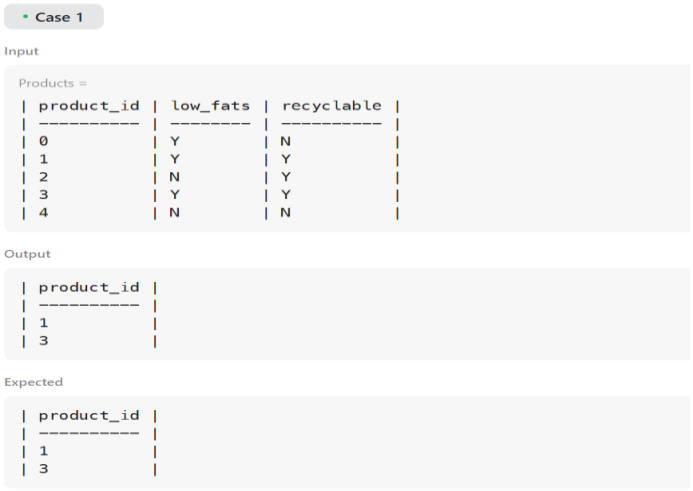
- product_id is the primary key (column with unique values) for this table.
- low_fats is an ENUM (category) of type ('Y', 'N'), where 'Y' means this product is low fat and 'N' means it is not.
- recyclable is an ENUM (category) of types ('Y', 'N'), where 'Y' means this product is recyclable and 'N' means it is not.

SQL Query

```
SELECT product_id
FROM Products
WHERE low_fats = 'Y' AND recyclable = 'Y';
```

Explanation

- The query selects the product_id from the Products table where both low_fats is 'Y' and recyclable is 'Y'.
- This ensures that only products that are both low fat and recyclable are included in the result.



4. Problem: Find Customers Not Referred by Customer with ID = 2

Table: Customer

Column Name	Type
id	int
name	varchar
referee_id	int

Each row of this table indicates a customer's id, their name, and the referee_id, which is the ID of the customer who referred them.

SQL Query

```
SELECT name
FROM Customer
WHERE referee_id != 2 OR referee_id IS NULL;
```

Explanation

- The query filters out customers who were referred by the customer with id = 2 by using the condition referee_id != 2.
- We also handle cases where referee_id is NULL, which means that the customer was not referred by anyone.
- The query selects the name column to return the names of the customers who were not referred by id = 2.

Input

Customer =

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

Output

```
| name |
| ---- |
| Will |
| Jane |
| Bill |
| Zack |
```

Expected

```
| name |
| ---- |
| Will |
| Jane |
| Bill |
| Zack |
```