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.

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1. **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.

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1. **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.

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1. **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.

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