Exercise 4

- Question 1:

Let's take the example presented in wikipedia.
Schema :
- Fact : Relation Editions(Editor, Article, number of views)
- Dimesions : Editor(name, ….), Article (Title, ...)

Let's imagine the table Edit contains (Database instance):

Editor
John Doe
Joshua A. Norton
Sarah Johnson
Charles Ponzi
Emma Lee-Choon

Article
Formal Logic
Formal Logic
Introduction to Spatial Databases
Formal Logic
Formal Logic

Editor	Article	Number of views
John Doe	Formal Logic	10
Joshua A. Norton	Formal Logic	34
Sarah Johnson	Introduction to Spatial Databases	56
Charles Ponzi	Formal Logic	7
Emma Lee-Choon	Formal Logic	87

Also suppose we compute the view V

V	
Editor	**Article**
John Doe	Formal Logic
Joshua A. Norton	Formal Logic
Sarah Johnson	Introduction to Spatial Databases
Charles Ponzi	Formal Logic
Emma Lee-Choon	Formal Logic

We have the query Q : Find editors who have not edited the article Formal Logic

→ under the closed-world assumption given the extensions of the views in V, Q(D) = “Sarah Johnson”
→ under the open-world assumption given the extensions of the views in V, Q(D) is unknown because we there might be others editors not listed in the view or other articles edited by “Sarah Johnson” not listed

- Question 2:

Let's have the view V

V	
Editor	**Article**
John Doe	Formal Logic
Joshua A. Norton	Formal Logic
Sarah Johnson	Introduction to Spatial Databases
Charles Ponzi	Formal Logic
Emma Lee-Choon	Formal Logic
Fab le magnifique	Homework 4

We want to answer the query Q : Find editor who have edited “Introduction to Spatial Databases” or “Homework 4”
The Language L we want to use does not implement the neither the OR nor the UNION (SQL without OR and UNION), then there is no maximally contained rewriting of Q using V with respect to L.

- Question 3:
To resolve the problem, we will simply add the OR and the UNION to the language L

Also suppose

Let's im
In the closed-world assumption, the table is assumed to be complete (it lists all editor-article relationships), and Sarah Johnson is the only editor who has not edited the article on Formal Logic. In contrast, with the open-world assumption the table is not assumed to contain all editor-article tuples, and the answer to who has not edited the Formal Logic article is unknown. There is an unknown number of editors not listed in the table, and an unknown number of articles edited by Sarah Johnson that are also not listed in the table.

- Question 2: SQL queries

SELECT pid, timeid, SUM(sales)

```
FROM Sales
GROUP BY pid, timeid

SELECT pid, SUM(sales)
FROM Sales
GROUP BY pid

SELECT timeid, SUM(sales)
FROM Sales
GROUP BY  timeid

SELECT SUM(sales)
FROM Sales
```

- Question 3: Pivoting on PID and LocID