ASHESI UNIVERSITY

CS424 ADVANCED DATABASE SYSTEMS

Summer 2024 – LAB #2

Triggers and Views

1. Datawarehousing applications deal with a huge amount of data for On-Line Analytic Processing (OLAP) for decision support systems. For example, companies such as WalMart may like to store all of it's sales transactions over all stores around the world in it's datawarehousing database for decision making at various levels. The following problem is to create a view, do a query on the view and implement a materialized view for datawarehousing applications. In data-warehousing the schema is called a star schema as shown below:

   (a) Create a view TotalSalesbyRegion (break up total sales by some smaller time intervals like by month) in MySQL where it gives the Total Sales for each product by Regions in USA.

   You may use only those tables and attributes of the star schema given that are needed to answer the next question and the question on materialized view.

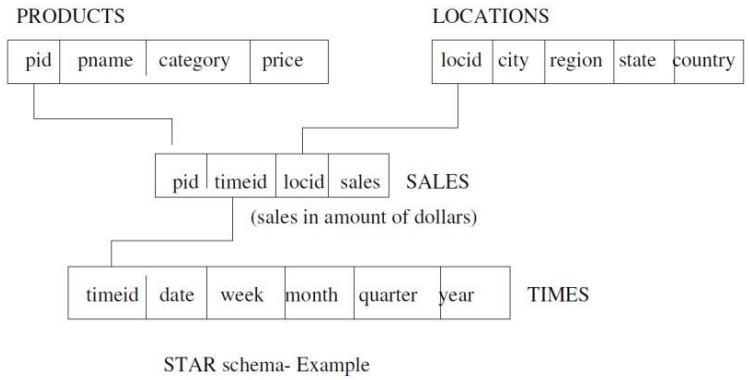

Figure 1:

View: TotalSalesbyRegion(productID, REGION, YEAR, MONTH, MONTHLYSALES)
TABLES:
SALES(pid, timeid, locid, sales) TIMES(timeid, date, week, month, quarter, year) LOCATIONS(locid, region, country)

(b) When the following query is applied on this view, what will be the resulting SQL statement that will be applied to the base tables to implement this query.

Get total sales of all those products that were sold in 2012 in the eastern region of USA.

SQL statement on the view:

```
SELECT productID AS ProductID, SUM(MONTHLYSALES) AS SALES
FROM TotalSalesbyRegion
WHERE year=2012 AND region="Eastern"
```

Resulting SQL that is going to be run by the system working on the base tables (i.e., the stored tables in the database,i.e., SALES, LOCATIONS and TIMES: