CSC 355 Database Systems
Lecture 17

Eric J. Schwabe

School of Computing, DePaul University

Spring 2020

Today:

- ◆ Views

Views

- Result of a query can be stored in a view

  CREATE [OR REPLACE] VIEW *VNAME*
  AS *query*;

  - Columns can be renamed using AS
  - Views can be used like tables in later queries
  - Dynamic views are updated each time they are used so that they always reflect the current state of the base table(s)

Updating Views Directly

- To update a dynamic view directly, every update must be traceable to a unique update operation in the base table

- An updatable view must:
  - be defined from just one base table
  - not use GROUP BY, DISTINCT, or any aggregate function
  - not involve a subquery on the base table

Updating Views Directly

◆ If a view is updatable, all updates are allowed by default

  ▪ WITH READ ONLY forbids all updates

  ▪ WITH CHECK OPTION forbids all updates that would cause a row to be removed from the view

◆ Even if a view is directly updatable, we may not be able to insert new rows to it directly, unless it includes all attributes of the primary key…

Triggers for Modifying Views

- If a view cannot be updated or inserted to directly, we can define a trigger to do it
  - The trigger fires INSTEAD OF the update or insert operation
  - The trigger will modify the base table(s) in such a way that the view will be modified as needed

Materialized Views

- ◆ Materialized views are stored independently:

  CREATE MATERIALIZED VIEW *MVNAME*
      AS *query*;

  - Give faster access than default views

  - Update frequency:
    - REFRESH ON COMMIT – end of transaction
    - REFRESH ON DEMAND – by procedure call
    - NEVER REFRESH

Next:

- Course Review
    - Final Exam information
    - Review outline will be posted before lecture
    - Review Assignment 5 (and Assignment 6?)