Constraints and Views

Overview

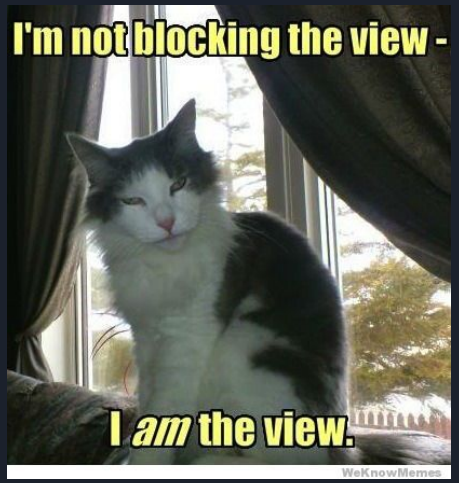
- Constraints.
- The check constraint.
- View:
  - What is a view.
  - Creating a view.
  - Viewing your views.
  - Inserting, Updating and Deleting a View.
  - An Updatable View.
  - View with a check option.

Checking Under Progress

- **Constraint:** A restriction on what you can insert into the DB.
- **CHECK:**
  - A column constraint.
  - To ensure that attribute values satisfy specified conditions.
  - **Syntax: check(P);**
  - **Ex: check(Age>=18);**
  - **P** : An arbitrary predicate which can include a subquery.
  - However, most of the widely used databases allow the predicate.
  - **Ex: check**(timeSlotId in (select timeSlotId from timeSlot));

What is a **View ?**

- A Virtual Relation defined by a query, It consists of the result of that query, Result is only computed when the virtual relation is being used.



Why ?

- You can create views, that hide information that isn’t needed by the user.
- Views turn complex commands into simple words.
- Help you modularize your database

Creating and Viewing a **View**

- create view **v** as **<query expression>**;
- **Ex:**

  create view faculty as select ID, name, deptname from instructor;

- Once defined,
  - Use View name to refer to it.
  - Just like a table.

Inserting, Updating and Deleting **View**

- How to translate to the actual relations.
- Different database systems specify different conditions under which they permit updates on view relations
- Secret is to treat view as a real table for updation and deletion.
- **Inserting:**
    - There are two approaches to dealing with this insertion:
        - Reject the insertion, and return an error message to the user.
        - Insert a tuple with null values where attributes are not present in the view.
- **Updating and Deleting:**
    - Only the tuples in the view that are returned by the query expression are affected

An **Updatable** View

- A view is said to be updatable if and only if:
  - From clause: one database relation.
  - Select clause: only attribute names of the relation and does not have:
    - Expressions
    - Aggregate Values
    - Distinct attributes
  - Attributes not listed in the select clause can be set to null
  - Query expression does not have group by / having clause.

View with a **check option**

- Views can be defined with a with check option clause at the end of the view definition.
- Then,
  - If a tuple inserted into the view **does not satisfy the view's where** clause condition, the insertion is **rejected by the database system.**

Enough of **Views** ?

drop view viewName;