Week 7 Tutoring

CSE 180

Triggers

Assertion:

> CREATE ASSERTION <name>
>
> > CHECK (<condition>);

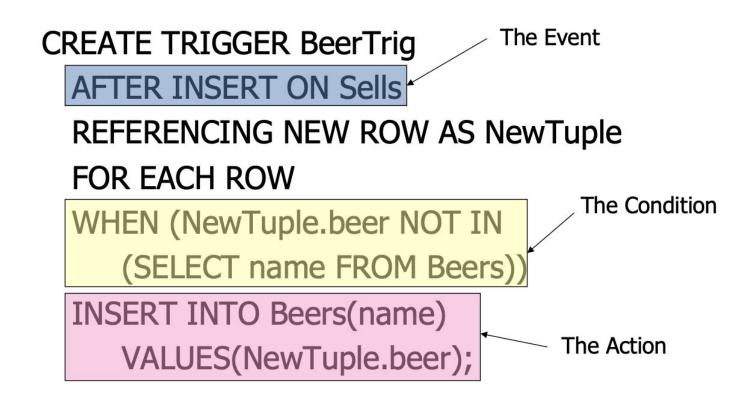- These are not implemented in Relational DBMS because they're too complicated and expensive

Instead... Triggers

- Triggers let the user determine when to check for conditions and decide what do do when these conditions occur

Event-Condition-Action Rules

ECA Rule:

- **Event**: Typically a database modification
  - Syntax: AFTER/BEFORE INSERT/DELETE/UPDATE
- **Condition**: Any SQL boolean-valued expression
  - Evaluation occurs before any trigger changes are executed
- **Action**: Any SQL statement
  - Syntax: surround statement by BEGIN… END if there is more than one
  - Statements should be modification statements (not queries)

CREATE TRIGGER BeerTrig
   AFTER INSERT ON Sells   ← The Event
   REFERENCING NEW ROW AS NewTuple
   FOR EACH ROW
   WHEN (NewTuple.beer NOT IN   ← The Condition
      (SELECT name FROM Beers))
   INSERT INTO Beers(name)
      VALUES(NewTuple.beer);   ← The Action

Syntax: CREATE TRIGGER <name> or CREATE OR REPLACE TRIGGER <name>

Row vs Statement

Row level trigger:

- Trigger is executed once for each modified tuple
- Syntax: FOR EACH ROW

Statement level-trigger:

- Trigger is executed just once for the entire SQL statement, no matter how many tuples are modified by that statement
- Syntax: Not having FOR EACH ROW indicate that it is statement-level