MySQL Equivalents

Edward Bramanti

November 10, 2014

1. Triggers

   (a) Syntax

   ```
   CREATE
       [DEFINER = { user | CURRENT_USER }]
       TRIGGER trigger_name
       trigger_time trigger_event
       ON tbl_name FOR EACH ROW
       trigger_body

   trigger_time: { BEFORE | AFTER }

   trigger_event: { INSERT | UPDATE | DELETE }
   ```

   (b) Example in DB Project

   ```
   DELIMITER //
   CREATE TRIGGER check_date BEFORE UPDATE
   ON employee
   FOR EACH ROW
   BEGIN
       IF NEW.startdate < company.founded_date THEN
           SET NEW.startdate = company.founded_date;
       END IF;
   END;//
   DELIMITER ;
   ```

2. Assertions
   There is no syntax for assertions in MySQL. Assertions are not available
   in MySQL, which requires using triggers in order to obtain an assertion-
   like result. This means assertions can be written using the trigger syntax
   above in MySQL.

3. Check constraints

   (a) Syntax
       Check constraints can be created in MySQL using triggers.

       ```
       CREATE TRIGGER <for_insert> BEFORE INSERT ON <table> FOR EACH ROW
       IF NOT <some_constraint> THEN
       CALL <some_function>;  -- use this to raise error


       CREATE TRIGGER <for_update> BEFORE UPDATE ON <table> FOR EACH ROW
       IF NOT <some_constraint> THEN
       CALL <some_function>;  -- use this to raise error
       ```

   (b) Example in DB Project

       ```
       DELIMITER //

       CREATE TRIGGER check_date_insert BEFORE INSERT ON employee FOR EACH ROW
       IF NOT (NEW.startdate > company.founded_date) THEN
         CALL invalid_date;  -- error
       END IF//

       CREATE TRIGGER check_date_update BEFORE UPDATE ON employee FOR EACH ROW
       IF NOT (NEW.startdate > company.founded_date) THEN
         CALL invalid_noise_level;  -- error
       END IF//

       DELIMITER ;
       ```

4. Stored Procedures

   (a) Syntax
       Here is an example provided from the MySQL website for changing
       a country's head of state.

```
DELIMITER //
CREATE PROCEDURE country_hos
(IN con CHAR(20))
BEGIN
  SELECT Name, HeadOfState FROM Country
  WHERE Continent = con;
END //
DELIMITER ;
```

   (b) Example in DB Project

```
DELIMITER //
CREATE PROCEDURE get_thanks_given
(IN from VARCHAR(30))
BEGIN
  SELECT * FROM thanks AS t
  WHERE t.from = from;
END //
DELIMITER ;
```

5. User-defined data types or domains
   There are no user-defined data types in MySQL. More information can be
   found in the MySQL documentation about the data types that are avail-
   able in MySQL5.5 here: http://dev.mysql.com/doc/refman/5.5/en/data-
   types.html

6. Foreign key constraint qualifiers

   (a) on DELETE|UPDATE cascade

       i. Syntax

```
ALTER TABLE <table>
ADD FOREIGN KEY <fk>
REFERENCES <some_table>(<fk>)
ON [DELETE|UPDATE] CASCADE
;
```

ii. Example in DB Project
```
ALTER TABLE thanks
ADD FOREIGN KEY (eid)
REFERENCES employee(eid)
ON DELETE CASCADE
;
```

(b) on DELETE|UPDATE restrict

    i. Syntax
```
ALTER TABLE <table>
ADD FOREIGN KEY <fk>
REFERENCES <some_table>(<fk>)
ON [DELETE|UPDATE] RESTRICT
;
```

    ii. Example in DB Project
```
ALTER TABLE thanks
ADD FOREIGN KEY (eid)
REFERENCES employee(eid)
ON DELETE RESTRICT
;
```

(c) on DELETE|UPDATE nullify

    i. Syntax
```
ALTER TABLE <table>
ADD FOREIGN KEY <fk>
REFERENCES <some_table>(<fk>)
ON [DELETE|UPDATE] NULLIFY
;
```

    ii. Example in DB Project
```
ALTER TABLE thanks
ADD FOREIGN KEY (eid)
REFERENCES employee(eid)
ON DELETE NULLIFY
;
```