

DBMS Lab 10 - Triggers and Functions

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09TH NOVEMBER 2021

1. Triggers for order item and order summary tables

Creation of database, order_summary table, and order_item table

```
pes1ug19cs213@pes1ug19cs213: ~  
postgres=# create database ord;  
CREATE DATABASE  
postgres=# \c ord  
You are now connected to database "ord" as user "postgres".  
ord=# create table order_summary (numItems INT, totalPrice INT, ID VARCHAR(5), PRIMARY KEY (ID));  
CREATE TABLE  
ord=# \d order_summary  
Table "public.order_summary"  
Column | Type | Collation | Nullable | Default  
-----+-----+-----+-----+-----  
numitems | integer | | | |  
totalprice | integer | | | |  
id | character varying(5) | | not null |  
Indexes:  
"order_summary_pkey" PRIMARY KEY, btree (id)  
ord=# create table order_item (name VARCHAR(15), qty INT, unitPrice INT, ID VARCHAR(5), PRIMARY KEY (name), FOREIGN KEY (ID) REFERENCES order_summary(ID));  
CREATE TABLE  
ord=# \d order_item  
Table "public.order_item"  
Column | Type | Collation | Nullable | Default  
-----+-----+-----+-----+-----  
name | character varying(15) | | not null |  
qty | integer | | | |  
unitprice | integer | | | |  
id | character varying(5) | | | |  
Indexes:  
"order_item_pkey" PRIMARY KEY, btree (name)  
Foreign-key constraints:  
"order_item_id_fkey" FOREIGN KEY (id) REFERENCES order_summary(id)
```

Creation of increment and decrement functions and triggers

```
pes1ug19cs213@pes1ug19cs213: ~  
ord=# create function inc_213() returns trigger as $$  
begin  
update order_summary set totalPrice = totalPrice + (NEW.qty * NEW.unitPrice)  
where order_summary.ID = NEW.ID;  
update order_summary set numItems = numItems + 1  
where order_summary.ID = NEW.ID;  
return NEW;  
end;  
$$ LANGUAGE plpgsql;  
CREATE FUNCTION  
ord=# create trigger increment_213  
after insert on order_item  
for each row  
execute procedure inc_213();  
CREATE TRIGGER  
ord=# create function dec_213() returns trigger as $$  
begin  
update order_summary set totalPrice = totalPrice - (OLD.qty * OLD.unitPrice)  
where order_summary.ID = OLD.ID;  
update order_summary set numItems = numItems + 1  
where order_summary.ID = OLD.ID;  
return OLD;  
end;  
$$ LANGUAGE plpgsql;  
CREATE FUNCTION  
ord=# create trigger decrement_213  
after delete on order_item  
for each row  
execute procedure dec_213();  
CREATE TRIGGER  
ord=#
```

Insertion of values into tables, displaying incremented values

```
pes1ug19cs213@pes1ug19cs213: ~  
ord=# INSERT into order_summary values (0, 0, '12345');  
INSERT into order_summary values (0, 0, '21345');  
INSERT into order_summary values (0, 0, '31245');  
INSERT 0 1  
INSERT 0 1  
INSERT 0 1  
ord=# INSERT into order_item values ('Hyde', 1, 2, '12345');  
INSERT into order_item values ('Jekyll', 2, 1, '12345');  
INSERT into order_item values ('Enfield', 3, 4, '21345');  
INSERT into order_item values ('Utterson', 5, 3, '31245');  
INSERT 0 1  
INSERT 0 1  
INSERT 0 1  
INSERT 0 1  
ord=# select * from order_summary;  
 numitems | totalPrice | id  
-----+-----+-----  
         2 |          4 | 12345  
         1 |         12 | 21345  
         1 |         15 | 31245  
(3 rows)
```

Displaying decremented values

```
pes1ug19cs213@pes1ug19cs213: ~  
ord=# delete from order_item where name = 'Utterson';  
DELETE 1  
ord=# select * from order_summary;  
 numitems | totalprice | id  
-----+-----+-----  
         2 |          4 | 12345  
         1 |         12 | 21345  
         2 |          0 | 31245  
(3 rows)
```