CIT6114 - Database Fundamentals

Lab 8

Part A
SQL - Triggers

Objective: To create simple triggers in DB2 and examine the effects when the triggers are activated. Since different DBMSs provide different ways of creating triggers, this practical is intended to give just a 'flavour' of triggers. You will need to find out from the DBMS that you use how triggers can be created. For DB2, more details can be found from the Information Centre.

1. Create the following table and insert five records into the table as shown in the table below:

p_code	p_descript	p_onhand	p_min	p_price	p_discount	p_min_order	p_reorder
A0001	Book	8	5	12.67	0.00	25	0
A0002	Pencil	10	15	0.50	0.05	50	0
A0003	Ruler	18	12	0.80	0.00	50	0
A0004	Eraser	15	8	0.30	0.00	35	0
A0005	Pen	23	5	1.20	0.05	25	0

2. Enter the following commands to create a trigger. When will this trigger be activated? What will happen to the database?

3. Type '**SELECT * FROM PRODUCT**' to examine the contents of the table. Take note of the p_reorder column.

4. Insert the following record into the table:

p_code	p_descript	p_onhand	p_min	p_price	p_discount	p_min_order	p_reorder
A0006	Bag	8	10	22.75	0.05	25	0

Insert into product values ('A0006', 'Bag', 8, 10, 22.75, 0.05, 25, 0)

5. Type '**SELECT * FROM PRODUCT**' to examine the contents of the table. What has happened to the p_reorder column?

6. In DB2, you need to create different triggers for different events. Create the following trigger for the same table.

7. Execute the following SQL to command to change the quantity on hand of item 'A0001':

8. Type '**SELECT * FROM PRODUCT**' to examine the contents of the table. Is the p_reorder column updated for the item 'A0001'?

9. Recreate the product table and name it as Product2:

10. Insert the following records into Product2 table:

11. Remove trigger reorder2 using the command '**DROP TRIGGER REORDER2**'. Rewrite the trigger as the following:

12. Execute the following SQL command to change the quantity on hand of item 'A0007'.

13. Type '**SELECT * FROM PRODUCT2**'. What is the value of p_reorder column for item 'A0007'?

14. This time execute another SQL command to change the p_min of item 'A0007'.

15. Type '**SELECT * FROM PRODUCT2**'. Again, what is the value of p_reorder column for item 'A0007' now?

Part B

Please use the **_Product_** table for the following exercises:

1. Remove the trigger reorder1 using the command '**DROP TRIGGER REORDER1**'.

    Rewrite the trigger so that p_reorder is also updated when p_onhand is less than p_min_order. Create and test the trigger.

2. Create a new trigger that will set the discount of an item automatically when a new item record is _inserted._ The discount is 0.05 for item price below 15.00 and discount is 0.10 for price 15.00 and above.

3. What is the value of _p_discount_ when the following record is inserted:

p_code	p_descript	p_onhand	p_min	p_price	p_discount	p_min_order	p_reorder
A0010	Calendar	15	11	29.90	0.00	50	0

    INSERT INTO Product VALUES ('A0010', 'Calendar', 15, 11, 29.99, 0.00, 50, 0)