Department of Computer Science
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EPL342 –Databases

Lab 10

SQL-DML 3

(Views, Triggers, Functions)

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http://www.cs.ucy.ac.cy/courses/EPL342

Before We Begin

- Start the SQL Server Management Studio
  - Start →
    All Programs →
    Microsoft SQL Server →
    SQL Server Management Studio

  Server: APOLLO

  Authentication: SQL Server Authentication

  Username: <your username>

  Password: <your password>

Northwind Database Queries

Create the following views:

1. **view_EmployeeFullNames**: Displays the ID and Full Name (Last name + Firstname) of each employee
2. **view_NumberOfEmployeesByCity**: create a view that displays the city and number of employees that live in
3. **view_TotalSalesByCustomerCity**: create a view that displays the total number of sales and total number of orders for all customer's cities
4. Execute the following sql statement

   sp_helptext 'view_TotalSalesByCustomerCity'
5. To avoid displaying the sql text of view 3, enforce encryption and execute sp_helptext again to see that you have done it properly

TRIGGERS

Whenever a trigger is executed two tables are utilized:

- The **inserted** table:

  used for INSERT and UPDATE triggers

- The **deleted** table

  used for DELETE and UPDATE triggers

Both tables are valid only for the duration of the trigger

TRIGGERS (inserted, deleted tables) - Example

ID	Name
1	John
2	Anne
3	Marius
4	Steven

INSERT INTO table
VALUES(5,'Potter')

inserted

ID	Name
5	Potter

deleted

ID	Name

ID	Name
1	John
2	Anne
3	Marius
4	Steven
5	Potter

DELETE FROM table
WHERE ID = 1

inserted

ID	Name

deleted

ID	Name
1	John

ID	Name
2	Anne
3	Marius
4	Steven
5	Potter

UPDATE table
SET Name='Harry'
WHERE ID = 5

inserted

ID	Name
5	Harry

deleted

ID	Name
5	Potter

ID	Name
2	Anne
3	Marius
4	Steven
5	Harry

Northwind Database Queries

Create the following triggers:

1. **tr_AUDIT_Employees -** We need to track down **when** and by **who** a new employee is inserted to the database or a current employee is updated.
   - Create 4 new columns to the Employee table (CREATE_ID, CREATE_DATE, UPDATE_ID, UPDATE_DATE)
   - To get the current date use the GetDate() function
   - To get the current user logged in use (SELECT **USER**)
   - After you finish the trigger, test it by adding new employees and by changing employee names.
2. **tr_ORDER_TOTAL -** We need to update the total amount for each order automatically.
   - Create a new column (TOTAL type: money) to the **Orders** table
   - This column must update the total amount for each order (Lab 10-Query 9) whenever an order detail is inserted or updated

Northwind Database Queries

Create the following functions:

1. **fn_ABS -** input: int, output: positive int
2. **fn_DATE_ONLY -** input: datetime, output: string (10 chars) with the format dd/mm/yyyy
3. **fn_LEFT -** input: string A, int B, output: substring of string A, from char 0 to B
   (e.g., fn_LEFT('Harry Potter', 5)='Harry'
4. **fn_REVERSE** – input: string A, output: reverse string A
   (e.g., fn_REVERSE('*Avada Kedavra*')='arvadeK adavA')