Факультет информационных технологий

Кафедра компьютерной инжинерий

Дисциплина: Проектирование и администрирование базы данных

Лабораторная работа №2 и №3

**НОВЫЕ ОПЕРАТОРЫ ЯЗЫКА МАНИПУЛИРОВАНИЯ ДАННЫМИ (DML)**

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Алматы- 2010

create table Parfums(

parfum\_name varchar(20),

parfum\_id int,

parfum\_type varchar(20),

price int,

use\_time datetime,

destination varchar(20),

primary key(parfum\_id)

)

insert into Parfums

values ('Eclat',100,'Cold aroma',5600,'10/5/2010','For women')

insert into Parfums

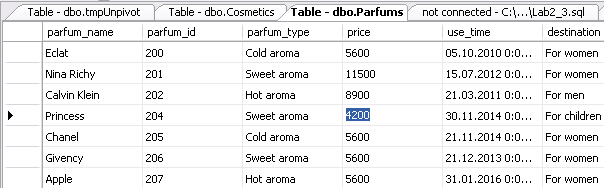
values ('Nina Richy',101,'Sweet aroma',11500,'7/15/2012','For women')

insert into Parfums

values ('Calvin Klein',102,'Hot aroma',8900,'3/21/2011','For men')

insert into Parfums

values ('Princess',104,'Sweet aroma',4200,'11/30/2014','For children')



create table Cosmetics(

cosmetic\_id int,

cosmetic\_name varchar(20),

cosmetic\_type varchar(20),

price int,

amount int,

use\_time datetime,

firma varchar(20),

representive varchar (20)

)

insert into Cosmetics

values(200,'Garnier Light','Day cream',1900,120,'3/8/2011','Avon','Nurzhanova Asel')

insert into Cosmetics

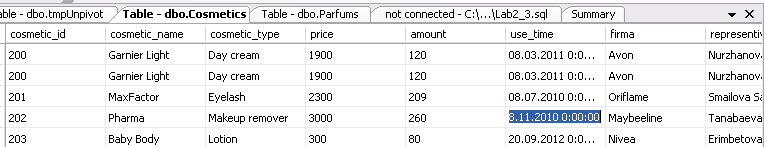
values(201,'MaxFactor','Eyelash',2300,209,'7/8/2010','Oriflame','Smailova Saya')

insert into Cosmetics

values(202,'Pharma','Makeup remover',3000,260,'11/18/2010','Maybeeline','Tanabaeva Gulzada')

insert into Cosmetics

values(203,'Baby Body','Lotion',300,80,'9/20/2012','Nivea','Erimbetova Laura')



**1) CTE- выражения для упрощения читаемости запросов**

with first as

(

select \*

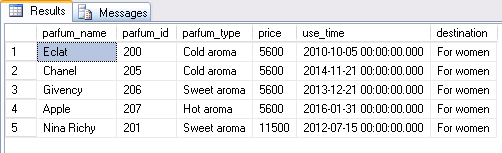
from Parfums

where destination like 'for women'

)

select \* from first

order by price;



**2) Однократный вызов CTE**

WITH

maxi AS (SELECT (max (amount))AS v FROM Cosmetics),

mini AS (SELECT (min (price))AS v FROM Cosmetics)

SELECT cosmetic\_id, cosmetic\_name, amount, price

FROM Cosmetics as co, mini, maxi

WHERE co.amount=maxi.v or co.price= mini.v;



**3) Использование CTE для рекурсивного прохода по дереву**

WITH alphavit AS(

SELECT ASCII('A') code, CHAR(ASCII('A')) letter

UNION ALL

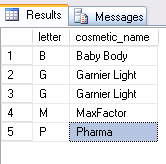
SELECT code+1, CHAR(code+1) FROM alphavit

WHERE code+1 <= ASCII('Z')

)

SELECT letter, cosmetic\_name FROM alphavit,Cosmetics

where cosmetic\_name like letter+'%';



**4) Оператор PIVOT**

SELECT cosmetic\_name, [Avon],[Oriflame],[Nivea]

--INTO tmpUnpivot

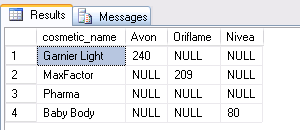
FROM Cosmetics

PIVOT (

sum(amount)

FOR [firma] IN ([Avon],[Oriflame],[Nivea])

)PVT;



**5) Оператор UNPIVOT**

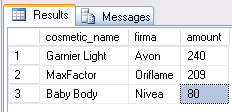
SELECT cosmetic\_name, firma, amount

FROM tmpUnpivot pvt

UNPIVOT ( amount FOR firma

IN([Avon],[Oriflame],[Nivea])

)unpvt;



**6) Оператор CROSS APPLY**

alter FUNCTION parf (@cos\_id as int)

RETURNS TABLE AS

RETURN

SELECT top(1) cosmetic\_name,cosmetic\_type

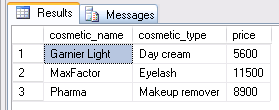
FROM Cosmetics

WHERE cosmetic\_id=@cos\_id;

SELECT mro.\*,price

FROM Parfums

CROSS APPLY parf(parfum\_id) as mro;

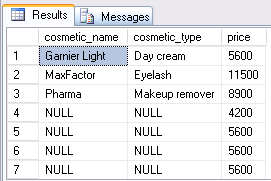


**7) Оператор OUTER APPLY**

SELECT mro.\*,price

FROM Parfums

OUTER APPLY parf(parfum\_id) as mro;



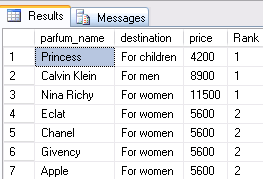
**8) Функции ранжирования**

select parfum\_name,destination, price,Rank()

over (Partition BY destination order by price DESC)

as Rank

from Parfums



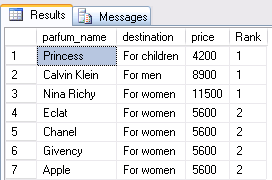
9) **DENSE\_RANK()**

select parfum\_name,destination, price,DENSE\_RANK()

over (Partition BY destination order by price DESC)

as Rank

from Parfums



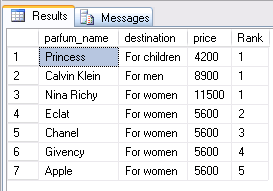
10) **Row\_Number()**

select parfum\_name,destination, price,Row\_Number()

over (Partition BY destination order by price DESC)

as Rank

from Parfums



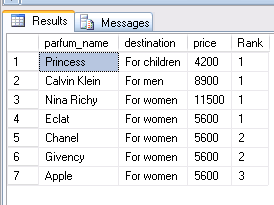
**11) Ntile()**

select parfum\_name,destination, price, Ntile(3)

over (Partition BY destination order by price DESC)

as Rank

from Parfums



**12) Оператор TOP**

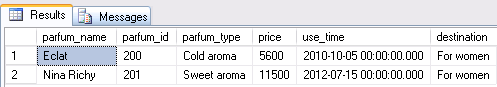
DECLARE @var1 AS int , @var2 AS int;

SET @var1=1;

SET @var2=2;

SELECT TOP (@var1\*@var2) \*

FROM Parfums;



**13) Использование предложения TABLESAMPLE**

SELECT \*

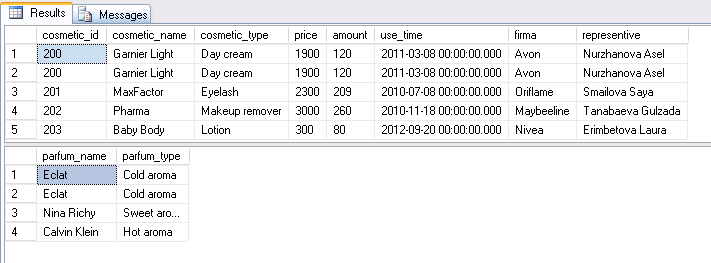
FROM Cosmetics SYSTEM TABLESAMPLE (100 PERCENT);

SELECT parfum\_name,parfum\_type

FROM Parfums p TABLESAMPLE(100 percent)

join Cosmetics c TABLESAMPLE(100 percent)

on c.cosmetic\_id=p.parfum\_id



**14) Создание хранимой процедуры с использованием нового обработчика ошибок**

CREATE PROCEDURE saya

AS

BEGIN

BEGIN TRY

SELECT \* FROM Parfums;

END TRY

BEGIN CATCH

SELECT

ERROR\_NUMBER() AS ErrorNumber,

ERROR\_SEVERITY() AS ErrorSeverity

,ERROR\_STATE() AS ErrorState

,ERROR\_PROCEDURE() AS ErrorProcedure

,ERROR\_LINE() AS ErrorLine

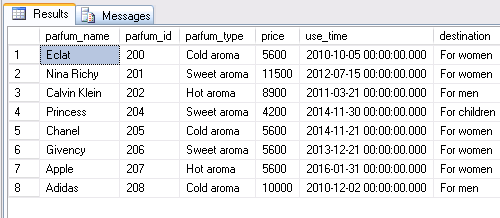
,ERROR\_MESSAGE()

END CATCH

END;

GO

exec saya



**15) Создание хранимой процедуры с использованием функции, возвращающей состояние транзакции**

CREATE PROCEDURE lovely

AS

BEGIN TRY

SELECT \* FROM Cosmetics;

END TRY

BEGIN CATCH

IF (XACT\_STATE())= -1 ROLLBACK TRANSACTION;

IF (XACT\_STATE())= 1 COMMIT TRANSACTION;

END CATCH

