

Лабораторная работа №5

Вариант 8

1. Создайте scalar-valued функцию, которая будет принимать в качестве входного параметра id подкатегории для продукта (Production.ProductSubcategory.ProductSubcategoryID) и возвращать количество продуктов указанной подкатегории (Production.Product).

```
/*
CREATE FUNCTION Production.getProductsBySubcategory(@dID INT)
RETURNS INT
AS
BEGIN
    RETURN (
        SELECT COUNT(*)
        FROM Production.Product
        WHERE ProductSubcategoryID = @dID
    );
END;
GO

PRINT Production.getProductsBySubcategory(1);
GO
```

```
SELECT *
FROM Production.Product
WHERE ProductSubcategoryID = 1;
GO
```

	ProductID	Name	ProductNumber	MakeFlag	FinishedGoodsFlag	Color	SafetyStockLevel	R
4	774	Mountain-100 Silver, 48	BK-M82S-48	1	1	Silver	100	7!
5	775	Mountain-100 Black, 38	BK-M82B-38	1	1	Black	100	7!
6	776	Mountain-100 Black, 42	BK-M82B-42	1	1	Black	100	7!
7	777	Mountain-100 Black, 44	BK-M82B-44	1	1	Black	100	7!
8	778	Mountain-100 Black, 48	BK-M82B-48	1	1	Black	100	7!
9	779	Mountain-200 Silver, 38	BK-M68S-38	1	1	Silver	100	7!
10	780	Mountain-200 Silver, 42	BK-M68S-42	1	1	Silver	100	7!
11	781	Mountain-200 Silver, 46	BK-M68S-46	1	1	Silver	100	7!
12	782	Mountain-200 Black, 38	BK-M68B-38	1	1	Black	100	7!
13	783	Mountain-200 Black, 42	BK-M68B-42	1	1	Black	100	7!
14	784	Mountain-200 Black, 46	BK-M68B-46	1	1	Black	100	7!
15	785	Mountain-300 Black, 38	BK-M47B-38	1	1	Black	100	7!
16	786	Mountain-300 Black, 40	BK-M47B-40	1	1	Black	100	7!
17	787	Mountain-300 Black, 44	BK-M47B-44	1	1	Black	100	7!
18	788	Mountain-300 Black, 48	BK-M47B-48	1	1	Black	100	7!
19	789	Mountain-400 Silver, 38	BK-M28S-38	1	1	Silver	100	7!

2. Создайте inline table-valued функцию, которая будет принимать в качестве входного параметра id подкатегории для продукта (Production.ProductSubcategory.ProductSubcategoryID), а возвращать список продуктов

указанной подкатегории из Production.Product, стоимость которых более 1000 (StandardCost).

CREATE FUNCTION Production.getProducts(@dID INT)
RETURNS TABLE
AS
RETURN (
SELECT * FROM Production.Product
WHERE ProductSubcategoryID = @dID AND StandardCost > 1000
);
GO

SELECT * FROM Production.getProducts(1);
GO

ProductID	Name	ProductNumber	MakeFlag	FinishedGoodsFlag	Color	SafetyStockLevel	ReorderPoint	StandardCost	ListPrice	Size
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
772	Mountain-100 Silver, 42	BK-M82S-42	1	1	Silver	100	75	1912,1544	3399,99	42
773	Mountain-100 Silver, 44	BK-M82S-44	1	1	Silver	100	75	1912,1544	3399,99	44
774	Mountain-100 Silver, 48	BK-M82S-48	1	1	Silver	100	75	1912,1544	3399,99	48
775	Mountain-100 Silver, 38	BK-M82B-38	1	1	Black	100	75	1898,0944	3374,99	38
776	Mountain-100 Black, 42	BK-M82B-42	1	1	Black	100	75	1898,0944	3374,99	42
777	Mountain-100 Black, 44	BK-M82B-44	1	1	Black	100	75	1898,0944	3374,99	44
778	Mountain-100 Black, 48	BK-M82B-48	1	1	Black	100	75	1898,0944	3374,99	48
779	Mountain-200 Silver, 38	BK-M68S-38	1	1	Silver	100	75	1265,6195	2319,99	38
780	Mountain-200 Silver, 42	BK-M68S-42	1	1	Silver	100	75	1265,6195	2319,99	42
781	Mountain-200 Silver, 46	BK-M68S-46	1	1	Silver	100	75	1265,6195	2319,99	46
782	Mountain-200 Black, 38	BK-M68B-38	1	1	Black	100	75	1251,9813	2294,99	38
783	Mountain-200 Black, 42	BK-M68B-42	1	1	Black	100	75	1251,9813	2294,99	42
784	Mountain-200 Black, 46	BK-M68B-46	1	1	Black	100	75	1251,9813	2294,99	46

3. Вызовите функцию для каждой подкатегории, применив оператор CROSS APPLY.
Вызовите функцию для каждой подкатегории, применив оператор OUTER APPLY.

SELECT * FROM Production.Product AS pr
CROSS APPLY
Production.getProducts(pr.ProductSubcategoryID) as prsub
ORDER BY pr.ProductSubcategoryID;
GO

ProductID	Name	ProductNumber	MakeFlag	FinishedGoodsFlag	Color	SafetyStockLevel	ReorderPoint	StandardCost	ListPrice	Size
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38

SELECT * FROM Production.Product AS pr
OUTER APPLY
Production.getProducts(pr.ProductSubcategoryID) as prsub
ORDER BY pr.ProductSubcategoryID;
GO

ProductID	Name	ProductNumber	MakeFlag	FinishedGoodsFlag	Color	SafetyStockLevel	ReorderPoint	StandardCost	ListPrice	Size
1	Adjustable Race	AR-5381	0	0	NULL	1000	750	0,00	0,00	NULI
2	Bearing Ball	BA-8327	0	0	NULL	1000	750	0,00	0,00	NULI
3	BB Ball Bearing	BE-2349	1	0	NULL	800	600	0,00	0,00	NULI
4	Headset Ball Bearings	BE-2908	0	0	NULL	800	600	0,00	0,00	NULI
5	Blade	BL-2036	1	0	NULL	800	600	0,00	0,00	NULI
6	LL Crankarm	CA-5965	0	0	Black	500	375	0,00	0,00	NULI
7	ML Crankarm	CA-6738	0	0	Black	500	375	0,00	0,00	NULI
8	HL Crankarm	CA-7457	0	0	Black	500	375	0,00	0,00	NULI
9	Chainring Bolts	CB-2903	0	0	Silver	1000	750	0,00	0,00	NULI
10	Chainring Nut	CN-6137	0	0	Silver	1000	750	0,00	0,00	NULI
11	Chainring	CR-7833	0	0	Black	1000	750	0,00	0,00	NULI
12	Crank Pedal	CP-9881	0	0	NULL	1000	750	0,00	0,00	NULI

4. Измените созданную inline table-valued функцию, сделав ее multistatement table-valued (предварительно сохранив для проверки код создания inline table-valued функции).

```

/ **
BEGIN
    INSERT INTO @products
    SELECT *
    FROM Production.Product
    WHERE ProductSubcategoryID = @dID AND StandardCost > 1000
    RETURN;
END;
GO

SELECT *
FROM Production.getProductsMulti(1);
GO

```

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Результаты Сообщения

	ProductID	Name	ProductNumber	MakeFlag	FinishedGoodsFlag	Color	SafetyStockLevel	ReorderPoint	StandartCost	ListPrice	Size
1	771	Mountain-100 Silver, 38	BK-M82S-38	1	1	Silver	100	75	1912,1544	3399,99	38
2	772	Mountain-100 Silver, 42	BK-M82S-42	1	1	Silver	100	75	1912,1544	3399,99	42
3	773	Mountain-100 Silver, 44	BK-M82S-44	1	1	Silver	100	75	1912,1544	3399,99	44
4	774	Mountain-100 Silver, 48	BK-M82S-48	1	1	Silver	100	75	1912,1544	3399,99	48
5	775	Mountain-100 Black, 38	BK-M82B-38	1	1	Black	100	75	1898,0944	3374,99	38
6	776	Mountain-100 Black, 42	BK-M82B-42	1	1	Black	100	75	1898,0944	3374,99	42
7	777	Mountain-100 Black, 44	BK-M82B-44	1	1	Black	100	75	1898,0944	3374,99	44
8	778	Mountain-100 Black, 48	BK-M82B-48	1	1	Black	100	75	1898,0944	3374,99	48
9	779	Mountain-200 Silver, 38	BK-M68S-38	1	1	Silver	100	75	1265,6195	2319,99	38
10	780	Mountain-200 Silver, 42	BK-M68S-42	1	1	Silver	100	75	1265,6195	2319,99	42