

## Задание №1

1) Создайте scalar-valued функцию, которая будет принимать в качестве входного параметра id заказа (Sales.SalesOrderHeader.SalesOrderID) и возвращать итоговую сумму для заказа (сумма по полям SubTotal, TaxAmt, Freight).

```
5  -- Creating a function for order sum
6  create function Sales.CalculateOrderCost (@SalesOrderID int)
7  returns money
8  as
9  begin
10     declare @totalSum money;
11     select @totalSum = (SubTotal + TaxAmt + Freight)
12         from Sales.SalesOrderHeader
13         where SalesOrderID = @SalesOrderID;
14
15     return @totalSum;
16 end;
17 go
18
```

Messages

Commands completed successfully.

Completion time: 2020-10-29T13:57:29.5502004+03:00

2) Создайте inline table-valued функцию, которая будет принимать в качестве входного параметра id заказа на производство (Production.WorkOrder.WorkOrderID), а возвращать детали заказа из Production.WorkOrderRouting.

```
19
20 -- Creating an inline function for getting order details
21 create function Production.GetOrderDetail (@WorkOrderId int)
22 returns table
23 as
24 return (
25     select wor.* from
26         Production.WorkOrderRouting as wor
27         where wor.WorkOrderID = @WorkOrderId
28 );
29 go
30
```

Messages

Commands completed successfully.

Completion time: 2020-10-29T19:16:19.3066538+03:00

3) Вызовите функцию для каждого заказа, применив оператор CROSS APPLY. Вызовите функцию для каждого заказа, применив оператор OUTER APPLY.

Вызов скалярной функции:

Создание multistatement табличной функции:

```

43 -- Creating a multistatement function for getting order details
44 create function Production.GetOrderDetailMS (@WorkOrderId int)
45 returns @orderDetails table (
46     WorkOrderID int not null
47     , ProductID int not null
48     , OperationSequence smallint not null
49     , LocationID smallint not null
50     , ScheduledStartDate datetime not null
51     , ScheduledEndDate datetime not null
52     , ActualStartDate datetime null
53     , ActualEndDate datetime null
54     , ActualResourceHrs decimal(9, 4) null
55     , PlannedCost money not null
56     , ActualCost money null
57     , ModifiedDate datetime not null
58 )
59 as
60 begin
61     insert @orderDetails
62     select wor.* from
63         Production.WorkOrderRouting as wor
64         where wor.WorkOrderID = @WorkOrderId;
65     return;
66
67 end;
68 go

```

%

#### Messages

Commands completed successfully.

Completion time: 2020-10-29T19:21:33.2363888+03:00

Вызовы multistatement и inline табличных функций (для сравнения результатов):

Cross apply:

```

70 -- Calling the functions again and comaring the results
71 select * from Production.WorkOrder as wo
72 cross apply Production.GetOrderDetail(wo.WorkOrderID);
73
74 select * from Production.WorkOrder as wo
75 cross apply Production.GetOrderDetailMS(wo.WorkOrderID);
76

```

	WorkOrderID	ProductID	OrderQty	StockedQty	ScrappedQty	StartDate	EndDate	DueDate	ScrapReasonID	ModifiedDate	WorkOrderID	ProductID	OperationSequence	LocationID	ScheduledStartDate	S
1	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	1	10	2005-07-04 00:00:00.000	2
2	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	2	20	2005-07-04 00:00:00.000	2
3	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	3	30	2005-07-04 00:00:00.000	2
4	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	4	40	2005-07-04 00:00:00.000	2
5	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	5	50	2005-07-04 00:00:00.000	2
6	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	6	60	2005-07-04 00:00:00.000	2
7	14	748	2	2	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	14	748	1	10	2005-07-04 00:00:00.000	2
8	14	748	2	2	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	14	748	2	20	2005-07-04 00:00:00.000	2
9	14	748	2	2	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	14	748	3	30	2005-07-04 00:00:00.000	2
10	14	748	2	2	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	14	748	5	45	2005-07-04 00:00:00.000	2
11	14	748	2	2	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	14	748	6	50	2005-07-04 00:00:00.000	2
12	14	748	2	2	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	14	748	7	60	2005-07-04 00:00:00.000	2
13	15	749	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	15	749	7	60	2005-07-04 00:00:00.000	2
14	16	753	14	14	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	16	753	7	60	2005-07-04 00:00:00.000	2
15	17	754	27	27	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	17	754	7	60	2005-07-04 00:00:00.000	2
16	18	755	11	11	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	18	755	7	60	2005-07-04 00:00:00.000	2
17	19	756	14	14	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	19	756	7	60	2005-07-04 00:00:00.000	2

Query executed successfully. SQLSERVER (14.0 RTM) AdventureWorks2012 00:00:09 134,262 rows

Outer apply:

```

78 select * from Production.WorkOrder as wo
79 outer apply Production.GetOrderDetail(wo.WorkOrderID);
80
81 select * from Production.WorkOrder as wo
82 outer apply Production.GetOrderDetailMS(wo.WorkOrderID);
83

```

	WorkOrderID	ProductID	OrderQty	StockedQty	ScrappedQty	StartDate	EndDate	DueDate	ScrapReasonID	ModifiedDate	WorkOrderID	ProductID	OperationSequence	LocationID	ScheduledStartDate	Sche
1	1	722	8	8	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
2	1	722	15	15	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
3	3	726	9	9	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
4	4	729	16	16	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
5	5	730	14	14	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
6	6	732	16	16	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
7	7	733	4	4	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
8	8	738	19	19	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
9	9	741	2	2	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
10	10	742	3	3	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
11	11	743	1	1	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
12	12	745	1	1	0	2005-07-04 00:00:00.000	2005-07-14 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-14 00:00:00.000	NULL	NULL	NULL	NULL	NULL	NUL
13	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	1	10	2005-07-04 00:00:00.000	200
14	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	2	20	2005-07-04 00:00:00.000	200
15	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	3	30	2005-07-04 00:00:00.000	200
16	13	747	4	4	0	2005-07-04 00:00:00.000	2005-07-20 00:00:00.000	2005-07-15 00:00:00.000	NULL	2005-07-20 00:00:00.000	13	747	4	40	2005-07-04 00:00:00.000	200

Query executed successfully. SQLSERVER (14.0 RTM) AdventureWorks2012 00:00:11 194,194 rows