Лабораторная работа №2

Задание 1

1. Вывести на экран время работы каждого сотрудника.

```
select Employee.BusinessEntityID, JobTitle, Name, StartTime, EndTime
from HumanResources.Employee
inner join HumanResources.EmployeeDepartmentHistory
       on Employee.BusinessEntityID = EmployeeDepartmentHistory.BusinessEntityID
inner join HumanResources.Shift
       on EmployeeDepartmentHistory.ShiftID = Shift.ShiftID
where EmployeeDepartmentHistory.EndDate is null;
go
```

Результат выполнения запроса:

	BusinessEntit...	JobTitle	Na...	StartTime	EndTime
1	1	Chief Executive Officer	Day	07:00:00.0000000	15:00:00.0000000
2	2	Vice President of Engineering	Day	07:00:00.0000000	15:00:00.0000000
3	3	Engineering Manager	Day	07:00:00.0000000	15:00:00.0000000
4	4	Senior Tool Designer	Day	07:00:00.0000000	15:00:00.0000000
5	4	Senior Tool Designer	Day	07:00:00.0000000	15:00:00.0000000
6	5	Design Engineer	Day	07:00:00.0000000	15:00:00.0000000
7	6	Design Engineer	Day	07:00:00.0000000	15:00:00.0000000
8	7	Research and Development Manager	Day	07:00:00.0000000	15:00:00.0000000
9	8	Research and Development Engineer	Day	07:00:00.0000000	15:00:00.0000000
10	9	Research and Development Engineer	Day	07:00:00.0000000	15:00:00.0000000
11	10	Research and Development Manager	Day	07:00:00.0000000	15:00:00.0000000
12	11	Senior Tool Designer	Day	07:00:00.0000000	15:00:00.0000000
13	12	Tool Designer	Day	07:00:00.0000000	15:00:00.0000000
14	13	Tool Designer	Day	07:00:00.0000000	15:00:00.0000000
15	14	Senior Design Engineer	Day	07:00:00.0000000	15:00:00.0000000
16	15	Design Engineer	Day	07:00:00.0000000	15:00:00.0000000
17	16	Marketing Manager	Day	07:00:00.0000000	15:00:00.0000000

2. Вывести на экран количество сотрудников в каждой группе отделов.

```
select Department.GroupName,
       COUNT(EmployeeDepartmentHistory.BusinessEntityID) as EmpCount
from HumanResources.Department
inner join HumanResources.EmployeeDepartmentHistory
       on EmployeeDepartmentHistory.DepartmentID = Department.DepartmentID
where EmployeeDepartmentHistory.EndDate is null
group by Department.GroupName;
go
```

Результат выполнения запроса

	GroupName	EmpCount
1	Executive General and Administration	35
2	Inventory Management	18
3	Manufacturing	185
4	Quality Assurance	11
5	Research and Development	14
6	Sales and Marketing	27

3. Вывести на экран почасовые ставки сотрудников, с указанием максимальной ставки для каждого отдела в столбце [MaxInDepartment]. В рамках каждого отдела разбейте все ставки на группы, таким образом, чтобы ставки с одинаковыми значениями входили в состав одной группы.

```
with data as (
	select Dep.DepartmentID, PayHist.BusinessEntityID, Name, Rate,
DepHist.EndDate
	from HumanResources.EmployeeDepartmentHistory as DepHist
	inner join HumanResources.Department as Dep
		on DepHist.DepartmentID = Dep.DepartmentID
	inner join HumanResources.EmployeePayHistory as PayHist
		on DepHist.BusinessEntityID = PayHist.BusinessEntityID
)
select Name, BusinessEntityID, Rate, MaxInDepartment,
	dense_rank() over(partition by data.DepartmentID order by Rate) RateGroup
from data
inner join (/*Calculating MaxInDepartment value for each Dep*/
	select DepartmentID, MAX(Rate) as MaxInDepartment
	from data
	where EndDate is null
	group by DepartmentID
) MaxInDeps
on data.DepartmentID = MaxInDeps.DepartmentID
where EndDate is null
order by Name, Rate;
go
```

Результат выполнения запроса:

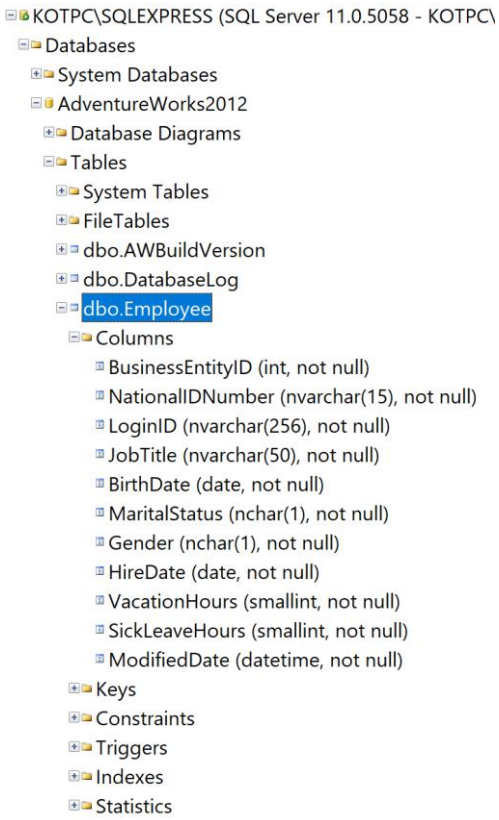
	Name	BusinessEntityID	Rate	MaxInDepartment	RateGroup
1	Document Control	219	10,25	17,7885	1
2	Document Control	220	10,25	17,7885	1
3	Document Control	221	16,8269	17,7885	2
4	Document Control	218	16,8269	17,7885	2
5	Document Control	217	17,7885	17,7885	3
6	Engineering	5	32,6923	63,4615	1
7	Engineering	6	32,6923	63,4615	1
8	Engineering	15	32,6923	63,4615	1
9	Engineering	14	36,0577	63,4615	2
10	Engineering	3	43,2692	63,4615	3
11	Engineering	2	63,4615	63,4615	4
12	Executive	234	39,06	125,50	1
13	Executive	234	48,5577	125,50	2
14	Executive	234	60,0962	125,50	3
15	Executive	1	125,50	125,50	4
16	Facilities and Maintenance	229	9,25	24,0385	1
17	Facilities and Maintenance	230	9,25	24,0385	1
18	Facilities and Maintenance	231	9,25	24,0385	1
19	Facilities and Maintenance	232	9,25	24,0385	1
20	Facilities and Maintenance	233	9,75	24,0385	2
21	Facilities and Maintenance	228	20,4327	24,0385	3
22	Facilities and Maintenance	227	24,0385	24,0385	4
23	Finance	262	13,4615	43,2692	1
24	Finance	246	19,00	43,2692	2
25	Finance	247	19,00	43,2692	2

Задание 2

a) Создайте таблицу dbo.Employee с такой же структурой как HumanResources.Employee, кроме полей OrganizationLevel, SalariedFlag, CurrentFlag, а также кроме полей с типом hierarchyid, uniqueidentifier, не включая индексы, ограничения и триггеры.

```
create table dbo.Employee(
	BusinessEntityID int NOT NULL,
	NationalIDNumber nvarchar(15) NOT NULL,
	LoginID nvarchar(256) NOT NULL,
	JobTitle nvarchar(50) NOT NULL,
	BirthDate date NOT NULL,
	MaritalStatus nchar(1) NOT NULL,
	Gender nchar(1) NOT NULL,
	HireDate date NOT NULL,
	VacationHours smallint NOT NULL,
	SickLeaveHours smallint NOT NULL DEFAULT ((0)),
	ModifiedDate datetime NOT NULL DEFAULT (getdate())
);
go
```

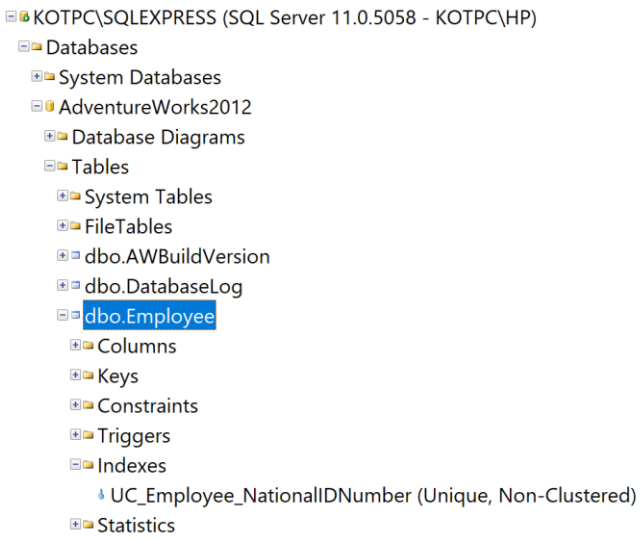
Результат выполнения запроса:



b) Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Employee ограничение UNIQUE для поля NationalIDNumber.

```
alter table dbo.Employee
       add constraint UC_Employee_NationalIDNumber
       unique(NationalIDNumber);
go
```

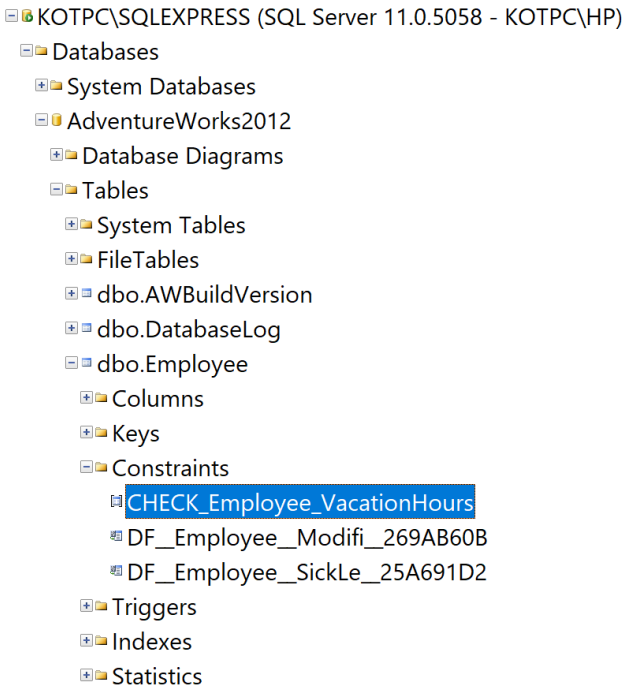
Результат выполнения запроса:



c) Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Employee ограничение для поля VacationHours, запрещающее заполнение этого поля значениями меньшими или равными 0.

```
alter table dbo.Employee
       add constraint CHECK_Employee_VacationHours
       check (VacationHours > 0);
go
```

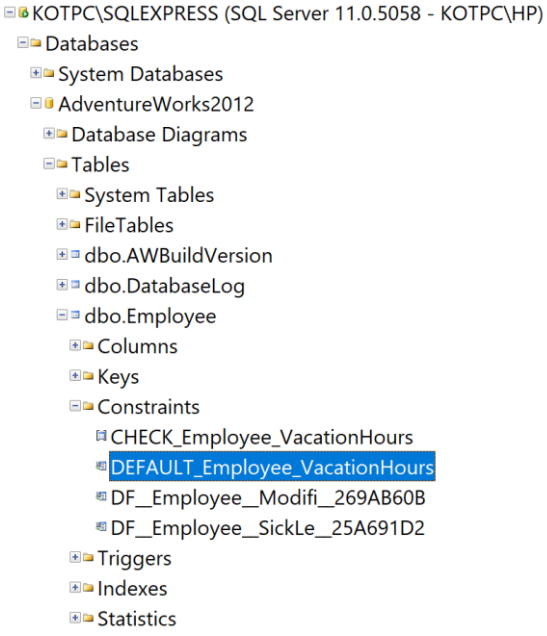
Результат выполнения запроса:



d) Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Employee ограничение DEFAULT для поля VacationHours, задайте значение по умолчанию 144.

```
alter table dbo.Employee
       add constraint DEFAULT_Employee_VacationHours
       default '144' for VacationHours;
go
```

Результат выполнения запроса:



e) Заполните новую таблицу данными из HumanResources.Employee о сотрудниках на позиции ‘Buyer’. Не указывайте для выборки поле VacationHours, чтобы оно заполнилось значениями по умолчанию.

```
insert into dbo.Employee (
       BusinessEntityID,
       NationalIDNumber,
       LoginID,
       JobTitle,
       BirthDate,
       MaritalStatus,
       Gender,
       HireDate,
       SickLeaveHours,
       ModifiedDate)
select
       BusinessEntityID,
       NationalIDNumber,
       LoginID,
       JobTitle,
       BirthDate,
       MaritalStatus,
       Gender,
       HireDate,
       SickLeaveHours,
       ModifiedDate
from HumanResources.Employee
       where JobTitle = 'Buyer';
go
```

Результат выполнения запроса:

	BusinessEntit...	NationalIDNum...	LoginID	JobTi...	BirthDate
1	251	603686790	adventure-works\mikael0	Buyer	1984-08-17
2	252	792847334	adventure-works\arvind0	Buyer	1974-08-21
3	253	407505660	adventure-works\linda2	Buyer	1970-11-30
4	254	482810518	adventure-works\fukiko0	Buyer	1970-11-24
5	255	466142721	adventure-works\gordon0	Buyer	1966-11-29
6	256	367453993	adventure-works\frank2	Buyer	1952-05-12
7	257	381073001	adventure-works\eric2	Buyer	1972-09-17
8	258	785853949	adventure-works\erin0	Buyer	1971-01-04
9	259	20269531	adventure-works\ben0	Buyer	1973-06-03

MaritalStat...	Gen...	HireDate	VacationHo...	SickLeaveHo...	ModifiedDate
S	M	2009-02-10	144	49	2014-06-30 00:00:00.000
M	M	2009-02-28	144	50	2014-06-30 00:00:00.000
M	F	2009-12-17	144	48	2014-06-30 00:00:00.000
M	M	2010-01-04	144	48	2014-06-30 00:00:00.000
M	M	2010-01-11	144	46	2014-06-30 00:00:00.000
M	M	2010-01-23	144	49	2014-06-30 00:00:00.000
S	M	2010-01-27	144	47	2014-06-30 00:00:00.000
S	F	2010-01-31	144	46	2014-06-30 00:00:00.000
M	M	2010-03-09	144	47	2014-06-30 00:00:00.000

f) Измените тип поля ModifiedDate на DATE и разрешите добавление null значений для него.

```
alter table dbo.Employee
	drop constraint DF__Employee__Modifi__269AB60B;
go

alter table dbo.Employee
	alter column ModifiedDate date null;
go

alter table dbo.Employee
	add constraint DEFAULT_Employee_ModifiedDate
	default (getdate()) for ModifiedDate;
go
```

Результат выполнения запроса: