Отчет по лабораторной работе №2

Батышев А. Д.

гр. 751002
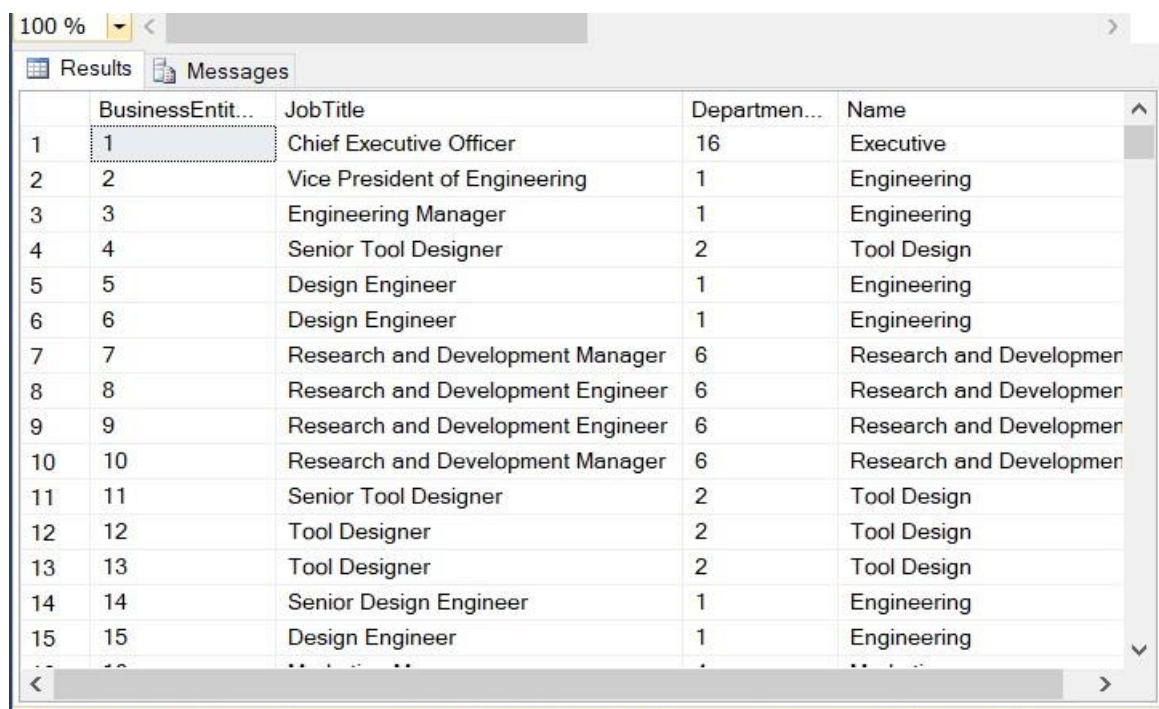
Вариант 3

Задание 1:

1) Задание:

Вывести на экран название отдела, где работает каждый сотрудник в настоящий момент

Запрос:

```sql
SELECT HumanResources.Employee.BusinessEntityID, JobTitle,
HumanResources.Department.DepartmentID, Name
FROM HumanResources.EmployeeDepartmentHistory
INNER JOIN HumanResources.Employee
ON HumanResources.Employee.BusinessEntityID =
HumanResources.EmployeeDepartmentHistory.BusinessEntityID
AND HumanResources.EmployeeDepartmentHistory.EndDate is NULL
INNER JOIN HumanResources.Department
ON HumanResources.Department.DepartmentID =
HumanResources.EmployeeDepartmentHistory.DepartmentID
GO
```

Результат:

	BusinessEntit...	JobTitle	Departmen...	Name
1	1	Chief Executive Officer	16	Executive
2	2	Vice President of Engineering	1	Engineering
3	3	Engineering Manager	1	Engineering
4	4	Senior Tool Designer	2	Tool Design
5	5	Design Engineer	1	Engineering
6	6	Design Engineer	1	Engineering
7	7	Research and Development Manager	6	Research and Developmen
8	8	Research and Development Engineer	6	Research and Developmen
9	9	Research and Development Engineer	6	Research and Developmen
10	10	Research and Development Manager	6	Research and Developmen
11	11	Senior Tool Designer	2	Tool Design
12	12	Tool Designer	2	Tool Design
13	13	Tool Designer	2	Tool Design
14	14	Senior Design Engineer	1	Engineering
15	15	Design Engineer	1	Engineering

2) Задание:

Вывести на экран количество сотрудников в каждом отделе

Запрос:

```
SELECT HumanResources.Department.DepartmentID, Name, EmpCount=COUNT(*)
FROM HumanResources.Department
INNER JOIN HumanResources.EmployeeDepartmentHistory
ON HumanResources.EmployeeDepartmentHistory.DepartmentID =
HumanResources.Department.DepartmentID
GROUP BY HumanResources.Department.DepartmentID, Name GO
```

Результат:

	Departmen...	Name	EmpCount
1	1	Engineering	7
2	2	Tool Design	4
3	3	Sales	18
4	4	Marketing	10
5	5	Purchasing	13
6	6	Research and Development	4
7	7	Production	180
8	8	Production Control	6
9	9	Human Resources	6
10	10	Finance	11
11	11	Information Services	10
12	12	Document Control	5
13	13	Quality Assurance	7
14	14	Facilities and Maintenance	7
15	15	Shipping and Receiving	6
16	16	Executive	2

3) Задание:

Вывести на экран отчет истории изменения почасовых ставок как показано в примере

Запрос:

```
SELECT JobTitle, Rate, RateChangeDate,
        Report=CONCAT('The rate for ', JobTitle, ' was set to ', Rate, ' at ',
FORMAT(CAST(RateChangeDate AS DATE), 'dd MMM yyyy '))
```

```sql
FROM HumanResources.Employee
INNER JOIN HumanResources.EmployeePayHistory
ON HumanResources.Employee.BusinessEntityID =
HumanResources.EmployeePayHistory.BusinessEntityID;
GO
```

Результат:

	JobTitle	Rate	RateChangeDate	Report
1	Chief Executive Officer	125,50	2003-02-15 00:00:00.000	The rate for Chief Executive Officer was set to 125.50 at 15 Feb 2003
2	Vice President of Engineering	63,4615	2002-03-03 00:00:00.000	The rate for Vice President of Engineering was set to 63.46 at 03 Mar 2002
3	Engineering Manager	43,2692	2001-12-12 00:00:00.000	The rate for Engineering Manager was set to 43.27 at 12 Dec 2001
4	Senior Tool Designer	8,62	2002-01-05 00:00:00.000	The rate for Senior Tool Designer was set to 8.62 at 05 Jan 2002
5	Senior Tool Designer	23,72	2004-07-01 00:00:00.000	The rate for Senior Tool Designer was set to 23.72 at 01 Jul 2004
6	Senior Tool Designer	29,8462	2006-01-15 00:00:00.000	The rate for Senior Tool Designer was set to 29.85 at 15 Jan 2006
7	Design Engineer	32,6923	2002-02-06 00:00:00.000	The rate for Design Engineer was set to 32.69 at 06 Feb 2002
8	Design Engineer	32,6923	2002-02-24 00:00:00.000	The rate for Design Engineer was set to 32.69 at 24 Feb 2002
9	Research and Development Manager	50,4808	2003-03-12 00:00:00.000	The rate for Research and Development Manager was set to 50.48 at 12 Mar 2003
10	Research and Development Engineer	40,8654	2003-01-30 00:00:00.000	The rate for Research and Development Engineer was set to 40.87 at 30 Jan 2003
11	Research and Development Engineer	40,8654	2003-02-17 00:00:00.000	The rate for Research and Development Engineer was set to 40.87 at 17 Feb 2003
12	Research and Development Manager	42,4808	2003-06-04 00:00:00.000	The rate for Research and Development Manager was set to 42.48 at 04 Jun 2003
13	Senior Tool Designer	28,8462	2005-01-05 00:00:00.000	The rate for Senior Tool Designer was set to 28.85 at 05 Jan 2005
14	Tool Designer	25,00	2002-01-11 00:00:00.000	The rate for Tool Designer was set to 25.00 at 11 Jan 2002
15	Tool Designer	25,00	2005-01-23 00:00:00.000	The rate for Tool Designer was set to 25.00 at 23 Jan 2005
16	Senior Design Engineer	36,0577	2005-01-30 00:00:00.000	The rate for Senior Design Engineer was set to 36.06 at 30 Jan 2005

Задание 2:

а) Задание:

Создайте таблицу dbo.Address с такой же структурой как Person.Address, кроме полей geography, uniqueidentifier, не включая индексы, ограничения и триггеры
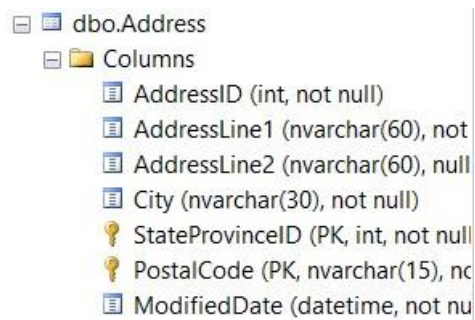
Запрос:

```sql
CREATE TABLE dbo.Address
(
    AddressID        INT                 NOT NULL,
    AddressLine1     nvarchar(60) not null,
AddressLine2     nvarchar(60),
    City             nvarchar(30) not null,
    StateProvinceID  int                 not null,
    PostalCode       nvarchar(15) not null,
    ModifiedDate     datetime            not null
)
GO
```

Результат:

b) Задание:

Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Address составной первичный ключ из полей StateProvinceID и PostalCode

Запрос:

```sql
ALTER TABLE dbo.Address
ADD CONSTRAINT PK_Address Primary Key (PostalCode, StateProvinceID); GO
```

Результат:

c) Задание:

Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Address ограничение для поля PostalCode, запрещающее заполнение этого поля буквами

Запрос:

```sql
ALTER TABLE dbo.Address
ADD CONSTRAINT VLDT_Address_PostalCode CHECK (LOWER(PostalCode) NOT LIKE '%[a-z]%');
GO
```

Результат:

d) Задание:

Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Address ограничение DEFAULT для поля ModifiedDate, задайте значение по умолчанию текущую дату и время

Запрос:

```sql
ALTER TABLE dbo.Address
ADD CONSTRAINT DFLT_Address_ModifiedDate DEFAULT GETDATE() FOR ModifiedDate;
GO
```

Результат:
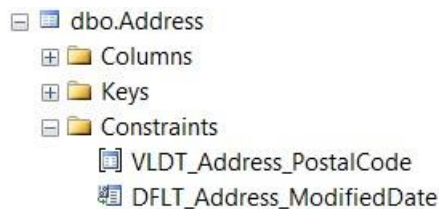
e) Задание:

Заполните новую таблицу данными из Person.Address. Выберите для вставки только те адреса, где значение поля CountryRegionCode = 'US' из таблицы StateProvince. Также исключите данные, где PostalCode содержит буквы. Для группы данных из полей StateProvinceID и PostalCode выберите только строки с максимальным AddressID (это можно осуществить с помощью оконных функций)

Запрос:

```sql
INSERT INTO dbo.Address
(AddressID,
 AddressLine1,
 AddressLine2,
 City,
 StateProvinceID,
 PostalCode,
 ModifiedDate)
SELECT PA.AddressID,
       PA.AddressLine1,
       PA.AddressLine2,
       PA.City,
       PA.StateProvinceID,
       PA.PostalCode,
       PA.ModifiedDate
FROM (
            SELECT AddressID,
                   MAX(AddressID) OVER ( PARTITION BY PostalCode,
Address.StateProvinceID) AS MaxAddressId,
                   Address.AddressLine1,
                   Address.AddressLine2,
                   Address.City,
                   Address.StateProvinceID,
                   PostalCode,
                   Address.ModifiedDate
            FROM AdventureWorks2012.Person.Address) PA
INNER JOIN AdventureWorks2012.Person.StateProvince AS StPr
ON PA.StateProvinceID = StPr.StateProvinceID
AND StPr.CountryRegionCode = 'US'
AND (LOWER(PA.PostalCode) NOT LIKE '%[a-z]%')
AND MaxAddressId = AddressID;
GO
```

Результат:

f) Задание:

Уменьшите размер поля City на NVARCHAR(20)

Запрос:

```sql
ALTER TABLE Address
    ALTER COLUMN City NVARCHAR(20);
GO
```

Результат:

City (nvarchar(20), null)