

## Отчет по лабораторной работе №2

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Вариант 3

### Задание 1:

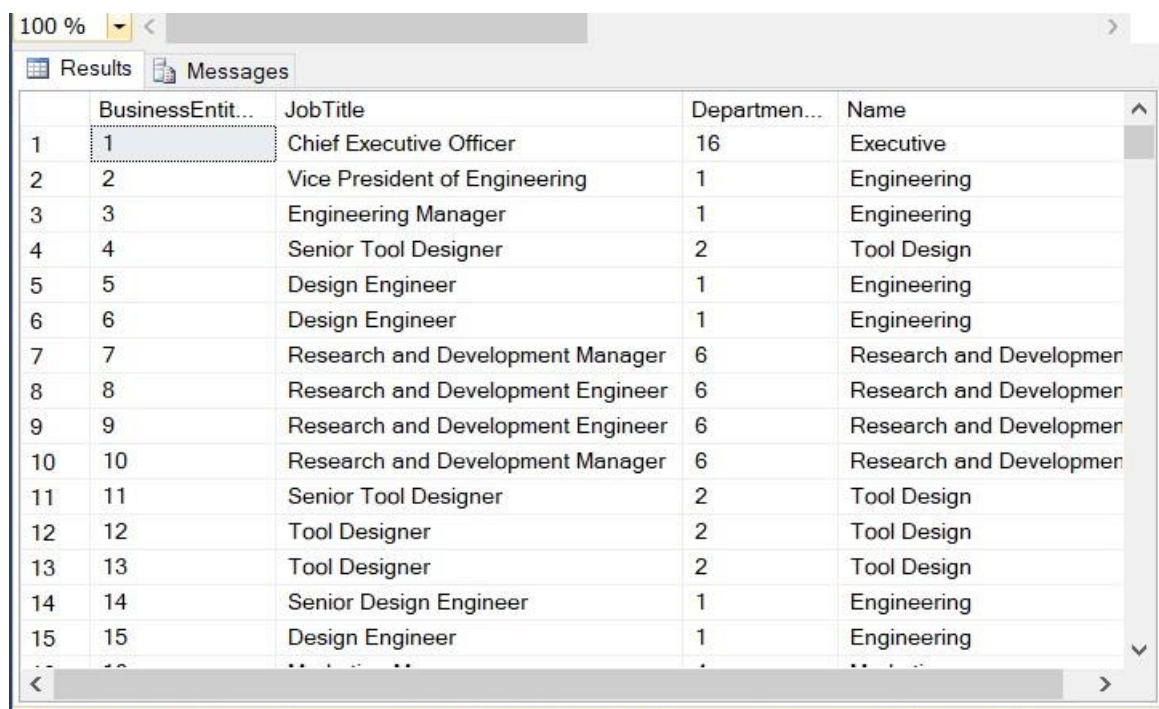
1) Задание:

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

Запрос:

```
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:

| Results |              | Messages                   |          |
|---------|--------------|----------------------------|----------|
|         | 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 '))
```

```

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

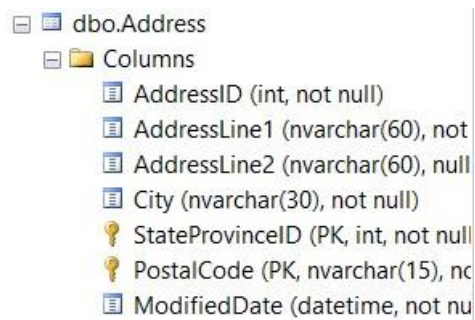
Запрос:

```

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:

```
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:

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

Результат:



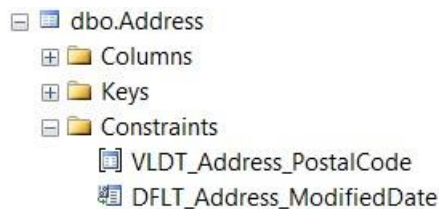
d) Задание:

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

Запрос:

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

Результат:



е) 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:

```
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:

| Results Messages |            |                            |               |               |                 |             |                         |
|------------------|------------|----------------------------|---------------|---------------|-----------------|-------------|-------------------------|
|                  | Address... | AddressLine1               | AddressLin... | City          | StateProvinc... | PostalCo... | ModifiedDate            |
| 1                | 804        | Ames Plaza                 | NULL          | Saugus        | 30              | 01906       | 2006-08-01 00:00:00.000 |
| 2                | 759        | 99 Edgewater Drive         | NULL          | Norwood       | 30              | 02062       | 2007-09-01 00:00:00.000 |
| 3                | 815        | Wrentham Village           | NULL          | Wrentham      | 30              | 02093       | 2007-09-01 00:00:00.000 |
| 4                | 381        | 7682 Fern Leaf Lane        | NULL          | Boston        | 30              | 02113       | 2006-03-05 00:00:00.000 |
| 5                | 39         | 3997 Via De Luna           | NULL          | Cambridge     | 30              | 02139       | 2006-10-25 00:00:00.000 |
| 6                | 13597      | 5458 Gladstone Drive       | NULL          | Braintree     | 30              | 02184       | 2007-05-09 00:00:00.000 |
| 7                | 765        | 58 Teed Drive              | NULL          | Randolph      | 30              | 02368       | 2005-08-01 00:00:00.000 |
| 8                | 772        | 675 East Ave.              | NULL          | Warwick       | 65              | 02889       | 2005-11-01 00:00:00.000 |
| 9                | 757        | 2532 Fairgrounds Road      | NULL          | West Kingston | 65              | 02892       | 2007-07-01 00:00:00.000 |
| 10               | 811        | Walnut Hill Plaza          | NULL          | Woonsocket    | 65              | 02895       | 2007-08-01 00:00:00.000 |
| 11               | 820        | Westside Plaza             | NULL          | Nashua        | 46              | 03064       | 2006-07-01 00:00:00.000 |
| 12               | 809        | Granite State Marketplace  | NULL          | Hooksett      | 46              | 03106       | 2005-09-01 00:00:00.000 |
| 13               | 816        | Lake Region Factory Outlet | NULL          | Tilton        | 46              | 03276       | 2005-08-01 00:00:00.000 |
| 14               | 821        | Stateline Plaza            | NULL          | Plaistow      | 46              | 03865       | 2005-07-01 00:00:00.000 |
| 15               | 824        | Dansk Square               | NULL          | Kittery       | 33              | 03904       | 2006-08-01 00:00:00.000 |

Query executed successfully.

f) Задание:

Уменьшите размер поля City на NVARCHAR(20)

Запрос:

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

Результат:

City (nvarchar(20), null)