

Биткин Н.С., гр. 751001.  
Лабораторная №2, Вариант 3.

Задание 2.1

Задание 2.1.1

```
--SELECT [e].[BusinessEntityID],
[e].[JobTitle],
[d].[DepartmentID],
[d].[Name]
FROM [HumanResources].[Employee] [e]
INNER JOIN [HumanResources].[EmployeeDepartmentHistory] [edh] ON [e].[BusinessEntityID] = [edh].[BusinessEntityID]
INNER JOIN [HumanResources].[Department] [d] ON [edh].[DepartmentID] = [d].[DepartmentID]
WHERE [edh].[EndDate] IS NULL --maybe as well end date == today??

-- end task 1

-- task 2

--SELECT [d].[DepartmentID],
COUNT([edh].[DepartmentID]) AS [EmpCount]
FROM [HumanResources].[Department] [d]
INNER JOIN [HumanResources].[EmployeeDepartmentHistory] [edh] ON [d].[DepartmentID] = [edh].[DepartmentID]
WHERE [edh].[EndDate] IS NULL
GROUP BY [d].[DepartmentID]

--end task 2

-- task 3
```

BusinessEntityID	JobTitle	DepartmentID	Name
1	Chief Executive Officer	16	Executive
2	Vice President of Engineering	1	Engineering
3	Engineering Manager	1	Engineering
4	Senior Tool Designer	2	Tool Design
5	Design Engineer	1	Engineering
6	Design Engineer	1	Engineering
7	Research and Development Manager	6	Research and Development
8	Research and Development Engineer	6	Research and Development
9	Research and Development Engineer	6	Research and Development
10	Research and Development Manager	6	Research and Development
11	Senior Tool Designer	2	Tool Design
12	Tool Designer	2	Tool Design
13	Tool Designer	2	Tool Design
14	Senior Design Engineer	1	Engineering
15	Design Engineer	1	Engineering
16	Marketing Manager	4	Marketing
17	Marketing Assistant	4	Marketing
18	Marketing Specialist	4	Marketing
19	Marketing Assistant	4	Marketing
20	Marketing Assistant	4	Marketing

Query executed successfully. DESKTOP-E52TM3C\SQLSERVER... DESKTOP-E52TM3C\Nikita... AdventureWorks 00:00:00 290 rows

Задача 2.1.2.

```
--SELECT [d].[DepartmentID],
COUNT([edh].[DepartmentID]) AS [EmpCount]
FROM [HumanResources].[Department] [d]
INNER JOIN [HumanResources].[EmployeeDepartmentHistory] [edh] ON [d].[DepartmentID] = [edh].[DepartmentID]
WHERE [edh].[EndDate] IS NULL
GROUP BY [d].[DepartmentID]

--end task 2

-- task 3
```

DepartmentID	EmpCount
1	6
2	4
3	18
4	9
5	12
6	4
7	179
8	6
9	6
10	10
11	10
12	5
13	6
14	7
15	6
16	2

### Задача 2.1.3

```

SELECT [e].[JobTitle],
       [eph].[Rate],
       [eph].[RateChangeDate],
       ('The rate for ' + [e].[JobTitle] +
        ' was set to ' + CAST([eph].[Rate] AS nvarchar) +
        ' at ' + CONVERT(nvarchar, [eph].[RateChangeDate], 106)) AS [Report]
FROM [HumanResources].[Employee] [e]
INNER JOIN [HumanResources].[EmployeePayHistory] [eph]
ON [e].[BusinessEntityID] = [eph].[BusinessEntityID];
-- end task 3

```

JobTitle	Rate	RateChangeDate	Report
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
Design Engineer	32.6923	2005-02-18 00:00:00.000	The rate for Design Engineer was set to 32.69 at 18 Feb 2005
Marketing Manager	24.00	2002-01-20 00:00:00.000	The rate for Marketing Manager was set to 24.00 at 20 Jan 2002
Marketing Manager	28.75	2003-08-16 00:00:00.000	The rate for Marketing Manager was set to 28.75 at 16 Aug 2003
Marketing Manager	27.60	2006-06-01 00:00:00.000	The rate for Marketing Manager was set to 27.60 at 01 Jun 2006

Query executed successfully.

### Задание 2.2.

#### Задание а.

Object Explorer

- DESKTOP-E52TM3C\SQLEXPRESS (SQL Server 15.0.2000 - DESKTOP-E52TM3C)
  - Databases
    - System Databases
    - Database Snapshots
    - AdventureWorks
      - Database Diagrams
      - Tables
        - System Tables
        - FileTables
        - External Tables
        - Graph Tables
        - dbo.Address
          - Columns
            - AddressID (int, not null)
            - AddressLine1 (nvarchar(60), not null)
            - AddressLine2 (nvarchar(60), null)
            - City (nvarchar(30), not null)
            - StateProvinceID (int, not null)
            - PostalCode (nvarchar(15), not null)
            - ModifiedDate (datetime, not null)
          - Keys
          - Constraints
          - Triggers
          - Indexes
          - Statistics
        - dbo.AWBuildVersion
        - dbo.DatabaseLog
        - dbo.ErrorLog

V3\_1.sql - DESKTOP-...Nikita Bitkin (55)

```

USE [AdventureWorks]
GO

-- task a

CREATE TABLE [dbo].[Address](
    [AddressID] INT NOT NULL,
    [AddressLine1] NVARCHAR(60) NOT NULL,
    [AddressLine2] NVARCHAR(60) NULL,
    [City] NVARCHAR(30) NOT NULL,
    [StateProvinceID] INT NOT NULL,
    [PostalCode] NVARCHAR(15) NOT NULL,
    [ModifiedDate] datetime NOT NULL,
);
GO

-- end task a

-- task b

ALTER TABLE [dbo].[Address]
ADD CONSTRAINT [PK_StateProvinceID_PostalCode]
PRIMARY KEY ([StateProvinceID], [PostalCode]);

```

110 %

Messages

Commands completed successfully.

Completion time: 2020-09-30T22:02:06.1650553+03:00

## Задания b, c, d

The screenshot shows the SQL Server Enterprise Manager interface on the left and the SQL Server Enterprise Console on the right. The Enterprise Manager displays the database schema for 'AdventureWorks' and 'AdventureWorksLT'. The 'dbo.Address' table is highlighted, showing columns: AddressID (int, not null), AddressLine1 (nvarchar(60), not null), AddressLine2 (nvarchar(60), null), City (nvarchar(30), not null), StateProvinceID (PK, int, not null), PostalCode (PK, nvarchar(15), not null), and ModifiedDate (datetime, not null). The 'Keys' section shows the primary key 'PK\_StateProvinceID\_PostalCode'. The 'Constraints' section shows 'CH\_PostalCode' and 'DF\_ModifiedDate'. The 'Indexes' section shows 'PK\_StateProvinceID\_PostalCode (Clustered)'. The 'Statistics' section shows 'PK\_StateProvinceID\_PostalCode'. The Enterprise Console on the right shows the execution of four tasks (a, b, c, d) in a batch file. Task b adds a primary key constraint, task c adds a check constraint, and task d adds a default constraint. The console shows the commands completed successfully and the completion time: 2020-09-30T22:03:06.4444301+03:00.

```
-- end task a
-- task b
ALTER TABLE [dbo].[Address]
ADD CONSTRAINT [PK_StateProvinceID_PostalCode]
PRIMARY KEY ([StateProvinceID], [PostalCode]);
-- end task b
-- task c
ALTER TABLE [dbo].[Address]
ADD CONSTRAINT [CH_PostalCode]
CHECK ([PostalCode] LIKE '%[^A-Za-zA-Яa-я]');
-- end task c
-- task d
ALTER TABLE [dbo].[Address]
ADD CONSTRAINT [DF_ModifiedDate]
DEFAULT GETDATE() FOR [ModifiedDate];
-- end task d
```

100 %  
Messages  
Commands completed successfully.  
Completion time: 2020-09-30T22:03:06.4444301+03:00

## Задание e.

```
INSERT INTO [dbo].[Address] (
    [AddressID],
    [AddressLine1],
    [AddressLine2],
    [City],
    [StateProvinceID],
    [PostalCode],
    [ModifiedDate])
SELECT
    [temp].[AddressID],
    [temp].[AddressLine1],
    [temp].[AddressLine2],
    [temp].[City],
    [temp].[StateProvinceID],
    [temp].[PostalCode],
    [temp].[ModifiedDate]
FROM
    (SELECT
        [a].[AddressID],
        [a].[AddressLine1],
        [a].[AddressLine2],
        [a].[City],
        [a].[StateProvinceID],
        [a].[PostalCode],
        [a].[ModifiedDate],
        MAX([a].[AddressID]) OVER(PARTITION BY [a].[StateProvinceID], [a].[PostalCode] AS [MaxAddressID]
        FROM [Person].[Address] [a]
        INNER JOIN [Person].[StateProvince] [sp] ON [a].[StateProvinceID] = [sp].[StateProvinceID]
        WHERE [sp].[CountryRegionCode] = 'US' AND [a].[PostalCode] LIKE '%[^A-Za-zA-Яa-я]')
        ) AS [temp]
WHERE [temp].[AddressID] = [temp].[MaxAddressID];

-- end task e
```

299 rows affected  
Completion time: 2020-09-30T22:29:35.9661713+03:00

SELECT \* FROM [dbo].[Address]

-- task f

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Results Messages

	AddressID	AddressLine1	AddressLine2	City	StateProvinceID	PostalCode	ModifiedDate
1	18752	3235 Mi Casa Court	NULL	Birmingham	3	35203	2008-03-11 10:17:21.587
2	932	656 Cox Creek Pkwy.	NULL	Florence	3	35630	2008-03-11 10:17:21.587
3	951	Parkway City Mall	NULL	Huntsville	3	35801	2008-03-11 10:17:21.587
4	944	574 Atlanta Highway	NULL	Montgomery	3	36104	2008-03-11 10:17:21.587
5	929	39950 Airport Blvd.	NULL	Mobile	3	36602	2008-03-11 10:17:21.587
6	1068	7709 West Virginia Avenue	NULL	Phoenix	6	85004	2008-03-11 10:17:21.587
7	1065	Factory Stores Of America	NULL	Mesa	6	85201	2008-03-11 10:17:21.587
8	26956	4584 Hamilton Ave.	NULL	Chandler	6	85225	2008-03-11 10:17:21.587
9	1082	2551 East Wamer Road	NULL	Gilbert	6	85233	2008-03-11 10:17:21.587
10	345	6441 Co Road	NULL	Lemon Grove	6	85252	2008-03-11 10:17:21.587
11	1094	25250 N 90th St	NULL	Scottsdale	6	85257	2008-03-11 10:17:21.587
12	349	3294 Buena Vista	NULL	Lemon Grove	6	85284	2008-03-11 10:17:21.587
13	1087	253731 West Bell Road	NULL	Surprise	6	85374	2008-03-11 10:17:21.587
14	1072	6500 East Grant Road	NULL	Tucson	6	85701	2008-03-11 10:17:21.587
15	29724	7496 Sunset Meadows	NULL	Los Angeles	9	90012	2008-03-11 10:17:21.587
16	12144	7243 St. George Dr.	NULL	City Of Com...	9	90040	2008-03-11 10:17:21.587
17	20417	7527 Brook Way	NULL	Bell Gardens	9	90201	2008-03-11 10:17:21.587
18	29877	1726 Hacienda	NULL	Beverly Hills	9	90210	2008-03-11 10:17:21.587
19	1040	Fox Hills	NULL	Culver City	9	90232	2008-03-11 10:17:21.587
20	29812	451 Buskirk Ave.	NULL	Downey	9	90241	2008-03-11 10:17:21.587
21	1097	Corp Ofc Accts Payable	NULL	El Segundo	9	90245	2008-03-11 10:17:21.587
22	29819	8354 Ponderosa Drive	NULL	Santa Moni...	9	90401	2008-03-11 10:17:21.587

Задание f.

dbo.Address

Columns

- AddressID (int, not null)
- AddressLine1 (nvarchar(60), not null)
- AddressLine2 (nvarchar(60), null)
- City (nvarchar(20), null)
- StateProvinceID (PK, int, not null)
- PostalCode (PK, nvarchar(15), not null)
- ModifiedDate (datetime, not null)

Keys

Constraints

Triggers

Indexes

Statistics

dbo.AWBuildVersion

dbo.DatabaseLog

dbo.ErrorLog

HumanResources.Department

HumanResources.Employee

HumanResources.EmployeeDepartmentHistory

HumanResources.EmployeePayHistory

HumanResources.JobCandidate

HumanResources.Shift

Person.Address

Person.AddressType

Person.BusinessEntity

Person.BusinessEntityAddress

Person.BusinessEntityContact

SELECT \* FROM [dbo].[Address]

-- task f

ALTER TABLE [dbo].[Address]

ALTER COLUMN [City] NVARCHAR(20);

-- end task f

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Messages

Commands completed successfully.

Completion time: 2020-09-20T22:20:13.1316521+03:00