

Министерство образования Республики Беларусь

Учреждение образования
БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ
ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ

Факультет компьютерных систем и сетей

Кафедра программного обеспечения информационных технологий

ОТЧЕТ
по лабораторной работе №2
Вариант 1

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Проверил

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Выполнение лабораторной работы

Задание 1

- 1 Вывести на экран список сотрудников с указанием максимальной ставки, по которой им выплачивали денежные средства.

```
5 SELECT [Employee].[BusinessEntityID],
6        [Employee].[JobTitle],
7        MAX([HumanResources].[EmployeePayHistory].[Rate]) AS MAXRATE
8 FROM [HumanResources].[Employee]
9 LEFT JOIN [HumanResources].[EmployeePayHistory] ON [Employee].[BusinessEntityID] = [EmployeePayHistory].[BusinessEntityID]
10 GROUP BY [employee].[BusinessEntityID], [employee].[JobTitle];
```

	BusinessEntityID	JobTitle	MAXRATE
1	1	Chief Executive Officer	125.50
2	2	Vice President of Engineering	63.4615
3	3	Engineering Manager	43.2692
4	4	Senior Tool Designer	29.8462
5	5	Design Engineer	32.6923
6	6	Design Engineer	32.6923
7	7	Research and Development Manager	50.4808
8	8	Research and Development Engineer	40.8654
9	9	Research and Development Engineer	40.8654
10	10	Research and Development Manager	42.4808
11	11	Senior Tool Designer	28.8462
12	12	Tool Designer	25.00
13	13	Tool Designer	25.00
14	14	Senior Design Engineer	36.0577
15	15	Design Engineer	32.6923
16	16	Marketing Manager	37.50
17	17	Marketing Assistant	12.4615

Query executed successfully. DESKTOP-FV493C2 (15.0 RTM) DESKTOP-FV493C2\HP (61) AdventureWorks2012 00:00:00 290 rows

- 2 Разбить все почасовые ставки на группы таким образом, чтобы одинаковые ставки входили в одну группу. Номера групп должны быть распределены по возрастанию ставок. Назовите столбец [RankRate].

```
12 SELECT [EmployeePayHistory].[BusinessEntityID],
13         [Employee].[JobTitle],
14         [EmployeePayHistory].[Rate],
15         DENSE_RANK() OVER (ORDER BY [EmployeePayHistory].[Rate]) AS [RankRate]
16 FROM [HumanResources].[EmployeePayHistory]
17 LEFT JOIN [HumanResources].[Employee] ON [Employee].[BusinessEntityID] = [EmployeePayHistory].[BusinessEntityID]
18 ORDER BY [EmployeePayHistory].[Rate];
```

	BusinessEntityID	JobTitle	Rate	RankRate
1	167	Production Technician - WC30	6.50	1
2	170	Production Technician - WC30	6.50	1
3	172	Production Technician - WC30	6.50	1
4	175	Production Technician - WC30	6.50	1
5	176	Production Technician - WC30	6.50	1
6	177	Production Technician - WC30	6.50	1
7	178	Production Technician - WC30	6.50	1
8	174	Production Technician - WC30	6.75	2
9	178	Production Technician - WC30	7.00	3
10	174	Production Technician - WC30	7.25	4
11	175	Production Technician - WC30	7.25	4
12	177	Production Technician - WC30	7.25	4
13	176	Production Technician - WC30	7.25	4
14	172	Production Technician - WC30	7.25	4
15	170	Production Technician - WC30	7.25	4
16	167	Production Technician - WC30	7.25	4
17	4	Senior Tool Designer	8.62	5

Query executed successfully. DESKTOP-FV493C2 (15.0 RTM) DESKTOP-FV493C2\HP (61) AdventureWorks2012 00:00:00 316 rows

3

Вывести на экран информацию об отделах и работающих в них сотрудниках, отсортированную по полю ShiftID в отделе 'Document Control' и по полю BusinessEntityID во всех остальных отделах.

```

22 SELECT [Department].[Name] as [DepName],
23        [Employee].[BusinessEntityID],
24        [Employee].[JobTitle],
25        [EmployeeDepartmentHistory].[ShiftID]
26 FROM [HumanResources].[Department]
27 LEFT JOIN [HumanResources].[EmployeeDepartmentHistory] ON [EmployeeDepartmentHistory].[DepartmentID] = [Department].[DepartmentID]
28 LEFT JOIN [HumanResources].[Employee] ON [Employee].[BusinessEntityID] = [EmployeeDepartmentHistory].[BusinessEntityID]
29 WHERE [EmployeeDepartmentHistory].[EndDate] IS NULL
30 ORDER BY [Department].[Name],
31        CASE WHEN [Department].[Name] = 'Document Control' THEN [EmployeeDepartmentHistory].[ShiftID] ELSE [Employee].[BusinessEntityID] END;
32

```

	DepName	BusinessEntityID	JobTitle	ShiftID
1	Document Control	219	Document Control Assistant	1
2	Document Control	220	Document Control Assistant	1
3	Document Control	217	Document Control Manager	1
4	Document Control	221	Control Specialist	2
5	Document Control	218	Control Specialist	3
6	Engineering	2	Vice President of Engineering	1
7	Engineering	3	Engineering Manager	1
8	Engineering	5	Design Engineer	1
9	Engineering	6	Design Engineer	1
10	Engineering	14	Senior Design Engineer	1
11	Engineering	15	Design Engineer	1
12	Executive	1	Chief Executive Officer	1
13	Executive	234	Chief Financial Officer	1
14	Facilities and Maintenance	227	Facilities Manager	1
15	Facilities and Maintenance	228	Maintenance Supervisor	1
16	Facilities and Maintenance	229	Janitor	3

Query executed successfully. DESKTOP-FV493C2 (15.0 RTM) DESKTOP-FV493C2\HP (61) AdventureWorks2012 00:00:00 290 rows

Задание 2

a

Создайте таблицу dbo.Person с такой же структурой как Person.Person, кроме полей xml, uniqueidentifier, не включая индексы, ограничения и триггеры;

```

5 CREATE TABLE [dbo].[Person] (
6     [BusinessEntityID] INT,
7     [PersonType] nchar(2),
8     [NameStyle] NameStyle NULL,
9     [Title] nvarchar(8),
10    [FirstName] Name,
11    [MiddleName] Name,
12    [LastName] Name,
13    [Suffix] nvarchar(10),
14    [EmailPromotion] INT,
15    [ModifiedDate] datetime
16 );
17 GO

```

Commands completed successfully.

Completion time: 2020-09-29T23:13:39.2271275+03:00

<ul style="list-style-type: none"> AdventureWorks2012 <ul style="list-style-type: none"> Database Diagrams Tables <ul style="list-style-type: none"> System Tables FileTables External Tables Graph Tables dbo.AWBuildVersion dbo.DatabaseLog dbo.ErrorLog dbo.Person HumanResources.Department HumanResources.Employee HumanResources.Employee 	<ul style="list-style-type: none"> dbo.Person <ul style="list-style-type: none"> Columns <ul style="list-style-type: none"> BusinessEntityID (int, null) PersonType (nchar(2), null) NameStyle (NameStyle(bit), null) Title (nvarchar(8), null) FirstName (Name(nvarchar(50)), null) MiddleName (Name(nvarchar(50)), null) LastName (Name(nvarchar(50)), null) Suffix (nvarchar(10), null) EmailPromotion (int, null) ModifiedDate (datetime, null) Keys Constraints Triggers Indexes Statistics
---	---

b Используя инструкцию ALTER TABLE, добавьте в таблицу dbo.Person новое поле ID, которое является первичным ключом типа bigint и имеет свойство identity. Начальное значение для поля identity задайте 10 и приращение задайте 10;

```
--
20 ALTER TABLE [dbo].[Person]
21 ADD [ID] bigint PRIMARY KEY IDENTITY(10, 10);
22 GO
```

100 %

Messages

Commands completed successfully.

Completion time: 2020-09-29T23:17:38.1983566+03:00

dbo.Person
Columns
BusinessEntityID (int, null)
PersonType (nchar(2), null)
NameStyle (NameStyle(bit), null)
Title (nvarchar(8), null)
FirstName (Name(nvarchar(50)), null)
MiddleName (Name(nvarchar(50)), null)
LastName (Name(nvarchar(50)), null)
Suffix (nvarchar(10), null)
EmailPromotion (int, null)
ModifiedDate (datetime, null)
ID (PK, bigint, not null)

Name	ID
Data Type	bigint
System Type	bigint
Primary Key	True
Allow Nulls	False
Is Computed	False
Computed text	
Identity	True
Identity Seed	10
Identity Increment	10

с

Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Person ограничение для поля Title, чтобы заполнить его можно было только значениями 'Mr.' или 'Ms.';

```
25 ALTER TABLE [dbo].[Person]
26 ADD CONSTRAINT [CHK_Title] CHECK ([Title] IN ('Mr.', 'Ms.'));
27 GO
28
```

90 %

Messages

Commands completed successfully.

Completion time: 2020-09-29T23:20:01.8132400+03:00

dbo.Person

Columns

- BusinessEntityID (int, null)
- PersonType (nchar(2), null)
- NameStyle (NameStyle(bit), null)
- Title (nvarchar(8), null)
- FirstName (Name(nvarchar(50)), null)
- MiddleName (Name(nvarchar(50)), null)
- LastName (Name(nvarchar(50)), null)
- Suffix (nvarchar(10), null)
- EmailPromotion (int, null)
- ModifiedDate (datetime, null)
- ID (PK, bigint, not null)

Keys

Constraints

CHK_Title

Triggers

Indexes

Statistics

(General)

Expression ([Title]='Ms.' OR [Title]='Mr.')

Identity

(Name) CHK_Title

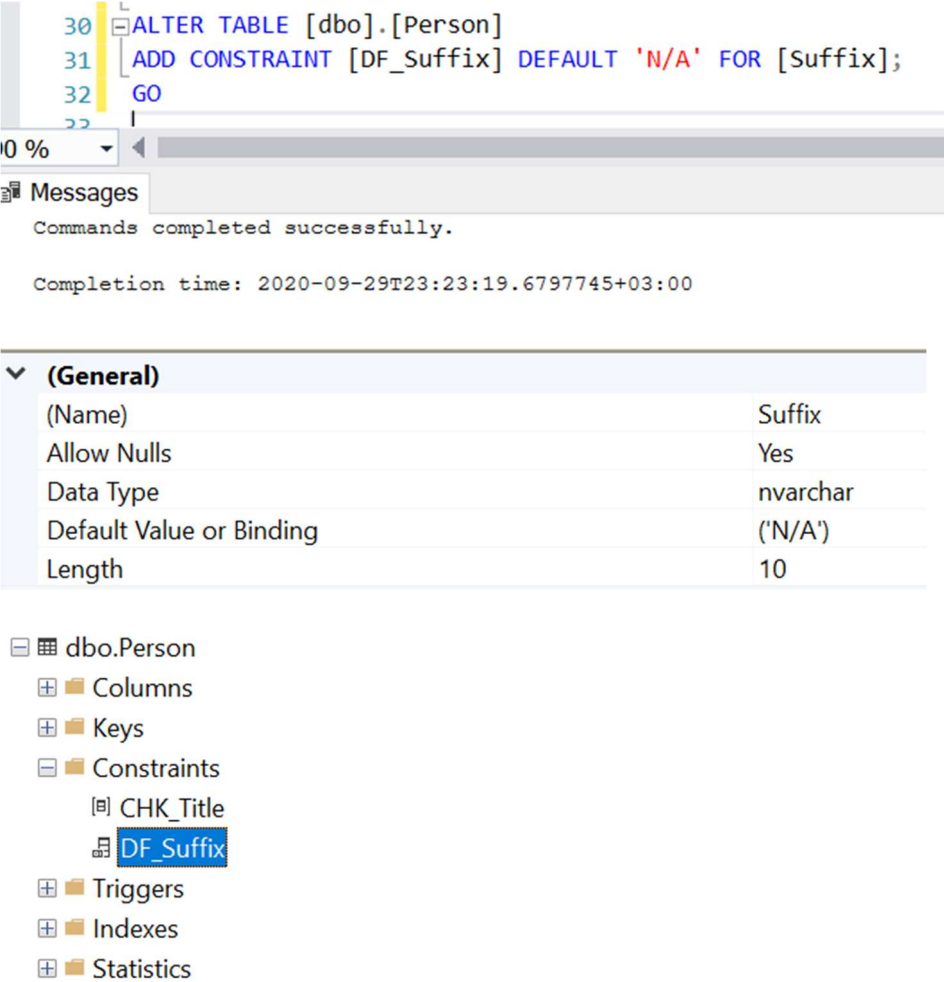
Description

Table Designer

Check Existing Data On Cr Yes

Enforce For INSERTs And I Yes

Enforce For Replication Yes

d	<p>Используя инструкцию ALTER TABLE, создайте для таблицы dbo.Person ограничение DEFAULT для поля Suffix, задайте значение по умолчанию 'N/A';</p>  <p>The screenshot shows a SQL query window with the following commands:</p> <pre> 30 ALTER TABLE [dbo].[Person] 31 ADD CONSTRAINT [DF_Suffix] DEFAULT 'N/A' FOR [Suffix]; 32 GO </pre> <p>Below the query window, the Messages pane displays:</p> <pre> Commands completed successfully. Completion time: 2020-09-29T23:23:19.6797745+03:00 </pre> <p>Below the Messages pane, the Properties window shows the (General) tab for the table dbo.Person:</p> <table border="1"> <thead> <tr> <th colspan="2">(General)</th> </tr> </thead> <tbody> <tr> <td>(Name)</td> <td>Suffix</td> </tr> <tr> <td>Allow Nulls</td> <td>Yes</td> </tr> <tr> <td>Data Type</td> <td>nvarchar</td> </tr> <tr> <td>Default Value or Binding</td> <td>('N/A')</td> </tr> <tr> <td>Length</td> <td>10</td> </tr> </tbody> </table> <p>Below the Properties window, the Object Explorer shows the structure of the database:</p> <ul style="list-style-type: none"> dbo <ul style="list-style-type: none"> Columns Keys Constraints <ul style="list-style-type: none"> CHK_Title DF_Suffix Triggers Indexes Statistics 	(General)		(Name)	Suffix	Allow Nulls	Yes	Data Type	nvarchar	Default Value or Binding	('N/A')	Length	10
(General)													
(Name)	Suffix												
Allow Nulls	Yes												
Data Type	nvarchar												
Default Value or Binding	('N/A')												
Length	10												
e	<p>Заполните новую таблицу данными из Person.Person только для тех сотрудников, которые существуют в таблице HumanResources.Employee, исключив сотрудников из отдела 'Executive';</p>												


```

35 INSERT INTO [dbo].[Person] (
36     [BusinessEntityID],
37     [PersonType],
38     [NameStyle],
39     [Title],
40     [FirstName],
41     [MiddleName],
42     [LastName],
43     [Suffix],
44     [EmailPromotion],
45     [ModifiedDate]
46 ) SELECT
47     [person].[BusinessEntityID],
48     [person].[PersonType],
49     [person].[NameStyle],
50     [person].[Title],
51     [person].[FirstName],
52     [person].[MiddleName],
53     [person].[LastName],
54     [person].[Suffix],
55     [person].[EmailPromotion],
56     [person].[ModifiedDate]
57 FROM [Person].[Person]
58 INNER JOIN [HumanResources].[Employee] ON [HumanResources].[Employee].[BusinessEntityID] = [Person].[Person].[BusinessEntityID]
59 LEFT JOIN [HumanResources].[EmployeeDepartmentHistory] ON [HumanResources].[EmployeeDepartmentHistory].[BusinessEntityID] = [HumanResources].[Employee].[BusinessEntityID]
60 LEFT JOIN [HumanResources].[Department] ON [HumanResources].[Department].[DepartmentID] = [HumanResources].[EmployeeDepartmentHistory].[DepartmentID]
61 WHERE
62     [HumanResources].[EmployeeDepartmentHistory].[EndDate] IS NULL
63     AND [HumanResources].[Department].[Name] <> 'Executive';
64

```

Messages

(288 rows affected)

Completion time: 2020-09-29T23:26:10.8403004+03:00

f Измените размерность поля Suffix, уменьшите размер поля до 5-ти СИМВОЛОВ.

```

66 ALTER TABLE [dbo].[Person]
67 ALTER COLUMN [Suffix] nvarchar(5);
68 GO

```

Messages

Commands completed successfully.

Completion time: 2020-09-29T23:27:28.5067379+03:00

dbo.Person

Columns

- BusinessEntityID (int, null)
- PersonType (nchar(2), null)
- NameStyle (NameStyle(bit), null)
- Title (nvarchar(8), null)
- FirstName (Name(nvarchar(50)), null)
- MiddleName (Name(nvarchar(50)), null)
- LastName (Name(nvarchar(50)), null)
- Suffix (nvarchar(5), null)**
- EmailPromotion (int, null)
- ModifiedDate (datetime, null)
- ID (PK, bigint, not null)