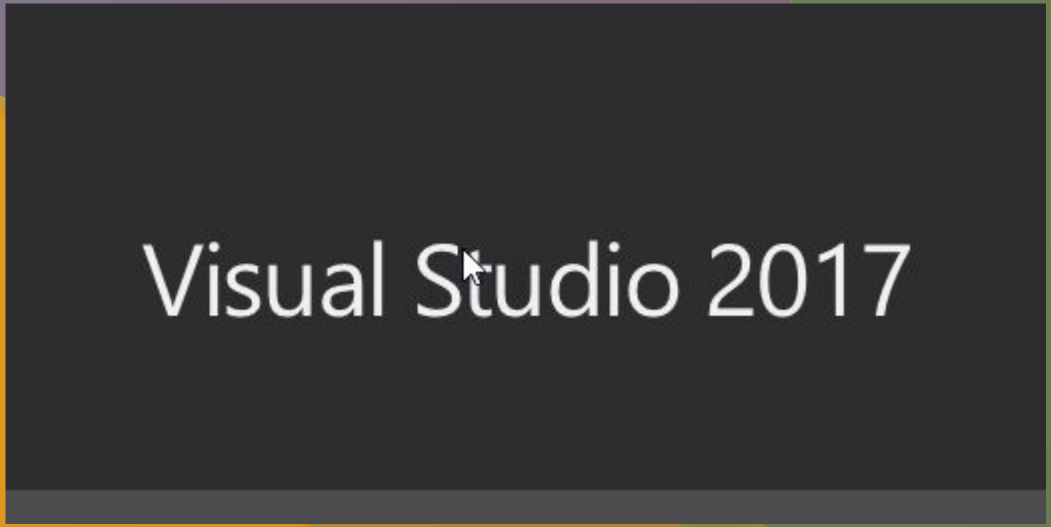
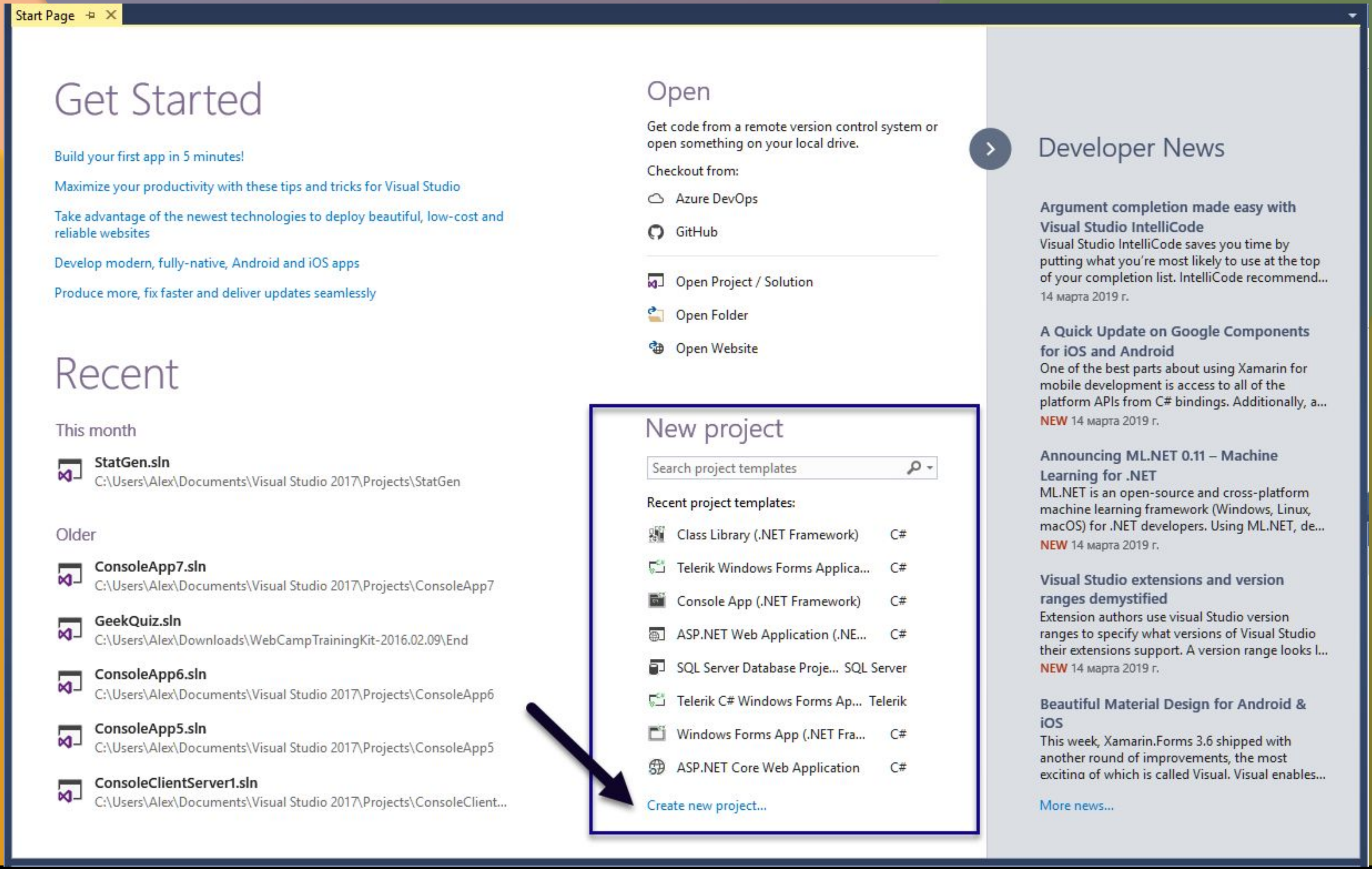
Создание и отображение базы данных

Создание проекта



Visual Studio 2017



Get Started

Build your first app in 5 minutes!

Maximize your productivity with these tips and tricks for Visual Studio

Take advantage of the newest technologies to deploy beautiful, low-cost and reliable websites

Develop modern, fully-native, Android and iOS apps

Produce more, fix faster and deliver updates seamlessly

Recent

This month

StatGen.sln
C:\Users\Alex\Documents\Visual Studio 2017\Projects\StatGen

Older

ConsoleApp7.sln
C:\Users\Alex\Documents\Visual Studio 2017\Projects\ConsoleApp7

GeekQuiz.sln
C:\Users\Alex\Downloads\WebCampTrainingKit-2016.02.09\End

ConsoleApp6.sln
C:\Users\Alex\Documents\Visual Studio 2017\Projects\ConsoleApp6

ConsoleApp5.sln
C:\Users\Alex\Documents\Visual Studio 2017\Projects\ConsoleApp5

ConsoleClientServer1.sln
C:\Users\Alex\Documents\Visual Studio 2017\Projects\ConsoleClient...

Open

Get code from a remote version control system or open something on your local drive.

Checkout from:

- Azure DevOps
- GitHub

- Open Project / Solution
- Open Folder
- Open Website

New project

Search project templates

Recent project templates:

Class Library (.NET Framework)	C#
Telerik Windows Forms Applica...	C#
Console App (.NET Framework)	C#
ASP.NET Web Application (.NE...	C#
SQL Server Database Proje...	SQL Server
Telerik C# Windows Forms Ap...	Telerik
Windows Forms App (.NET Fra...	C#
ASP.NET Core Web Application	C#

Create new project...

Developer News

Argument completion made easy with Visual Studio IntelliCode
Visual Studio IntelliCode saves you time by putting what you're most likely to use at the top of your completion list. IntelliCode recommend...
14 марта 2019 г.

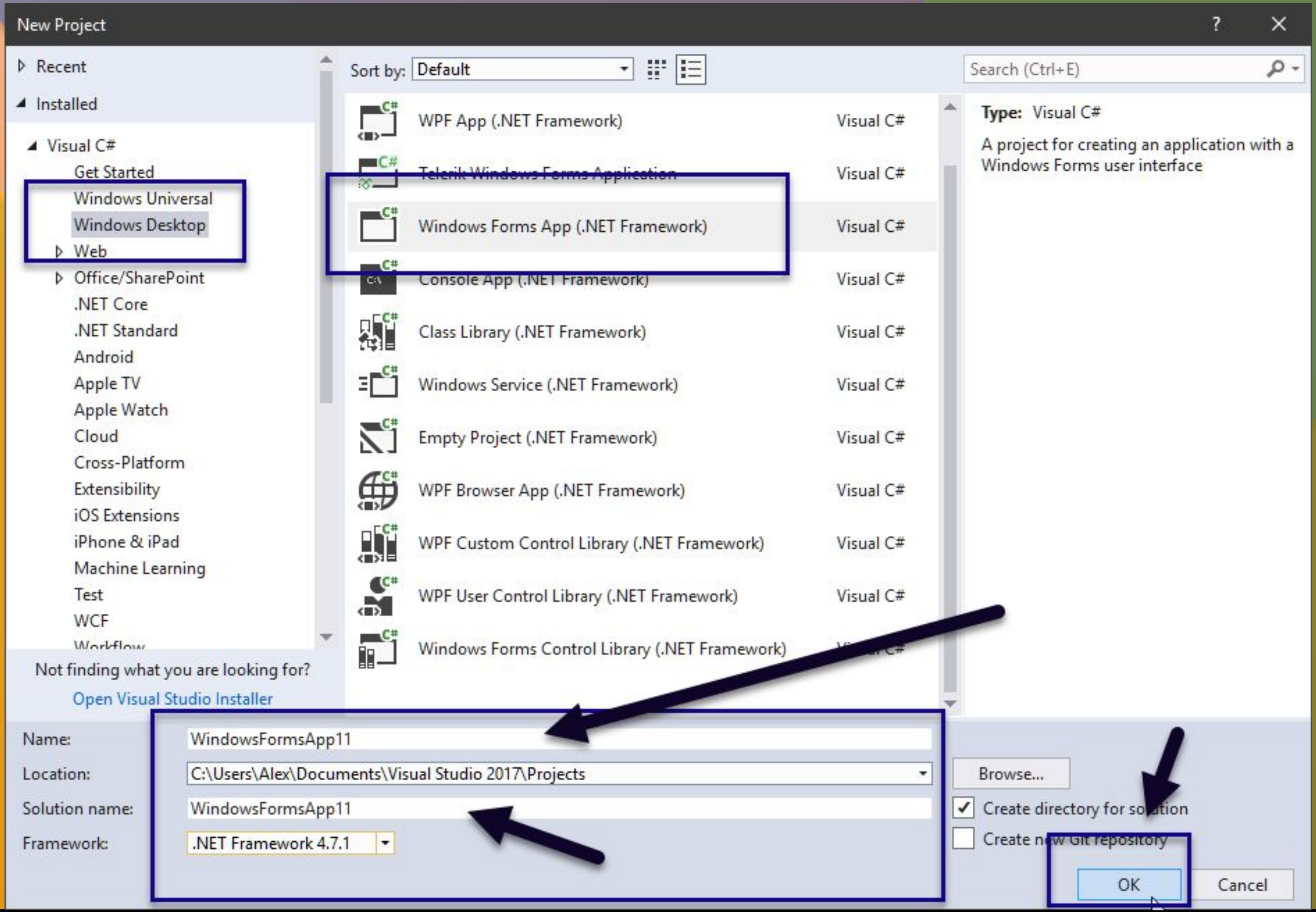
A Quick Update on Google Components for iOS and Android
One of the best parts about using Xamarin for mobile development is access to all of the platform APIs from C# bindings. Additionally, a...
NEW 14 марта 2019 г.

Announcing ML.NET 0.11 – Machine Learning for .NET
ML.NET is an open-source and cross-platform machine learning framework (Windows, Linux, macOS) for .NET developers. Using ML.NET, de...
NEW 14 марта 2019 г.

Visual Studio extensions and version ranges demystified
Extension authors use visual Studio version ranges to specify what versions of Visual Studio their extensions support. A version range looks l...
NEW 14 марта 2019 г.

Beautiful Material Design for Android & iOS
This week, Xamarin.Forms 3.6 shipped with another round of improvements, the most exciting of which is called Visual. Visual enables...

More news...


New Project
?
✕
Recent
Installed
Visual C#
Get Started
Windows Universal
Windows Desktop
Web
Office/SharePoint
.NET Core
.NET Standard
Android
Apple TV
Apple Watch
Cloud
Cross-Platform
Extensibility
iOS Extensions
iPhone & iPad
Machine Learning
Test
WCF
Workflow
Not finding what you are looking for?
Open Visual Studio Installer
Sort by: Default
WPF App (.NET Framework) Visual C#
Telerik Windows Forms Application Visual C#
Windows Forms App (.NET Framework) Visual C#
Console App (.NET Framework) Visual C#
Class Library (.NET Framework) Visual C#
Windows Service (.NET Framework) Visual C#
Empty Project (.NET Framework) Visual C#
WPF Browser App (.NET Framework) Visual C#
WPF Custom Control Library (.NET Framework) Visual C#
WPF User Control Library (.NET Framework) Visual C#
Windows Forms Control Library (.NET Framework) Visual C#
Search (Ctrl+E)
Browse...
OK
Cancel

Type: Visual C#

A project for creating an application with a Windows Forms user interface

Name: WindowsFormsApp11

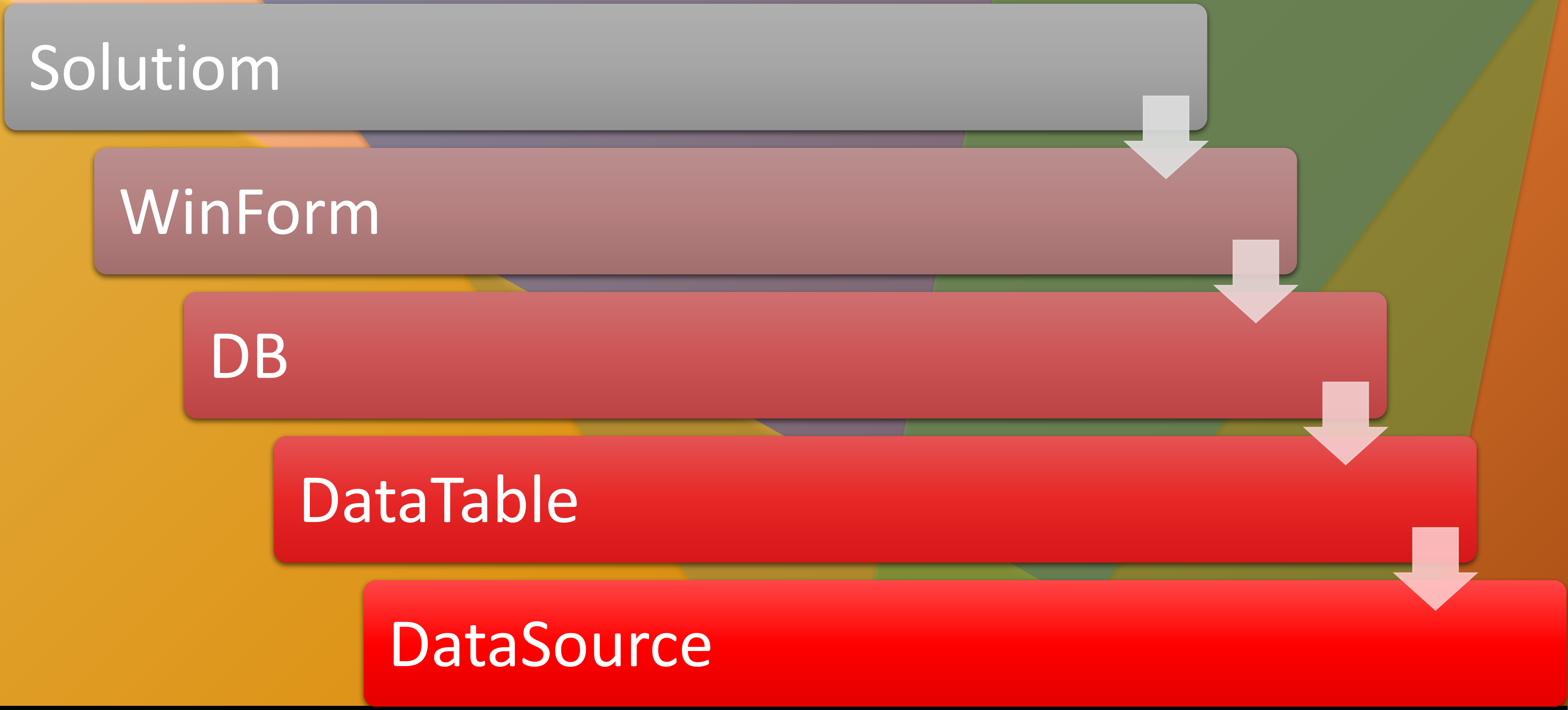
Location: C:\Users\Alex\Documents\Visual Studio 2017\Projects

Solution name: WindowsFormsApp11

Framework: .NET Framework 4.7.1

☑ Create directory for solution

☐ Create new Git repository



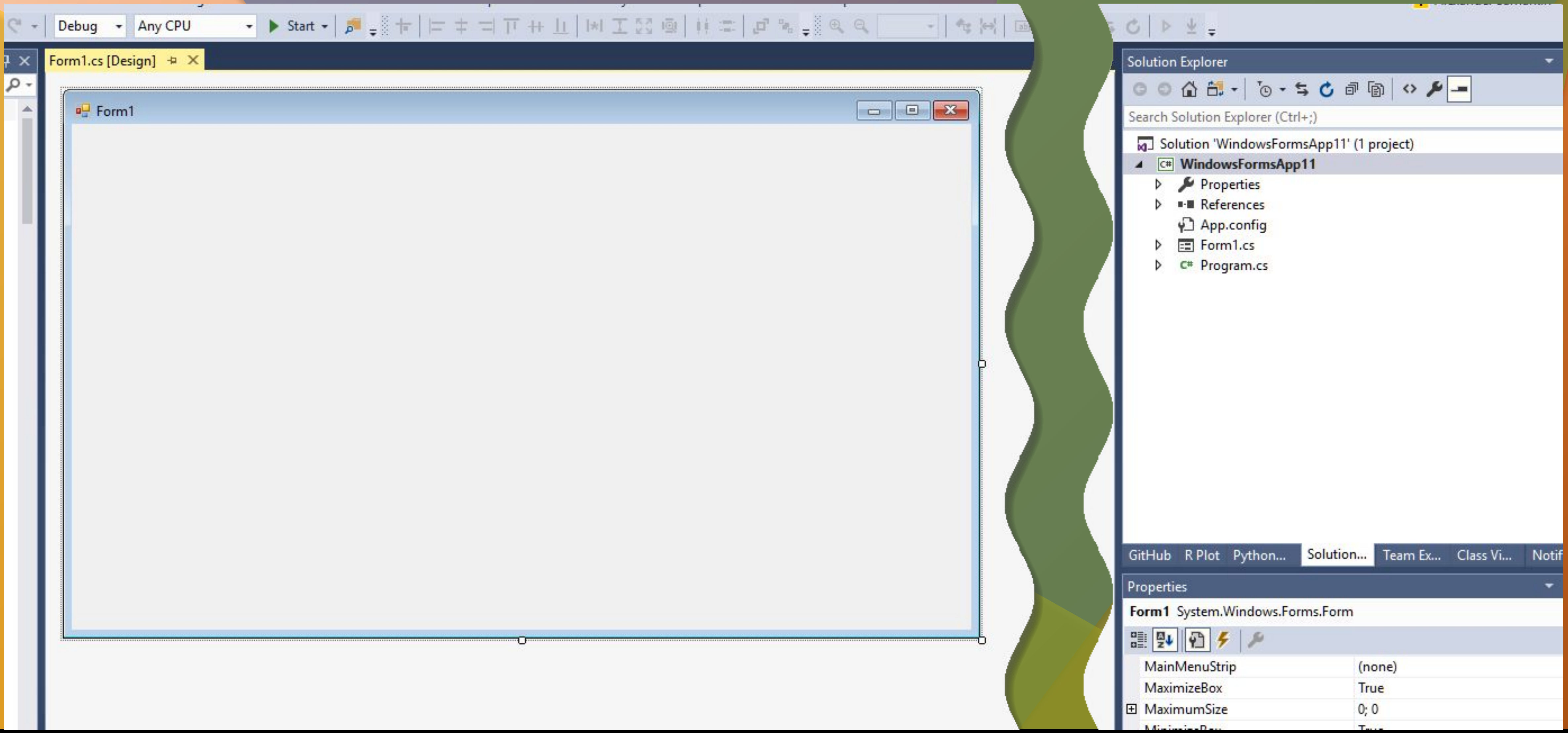
Solutiom

WinForm

DB

DataTable

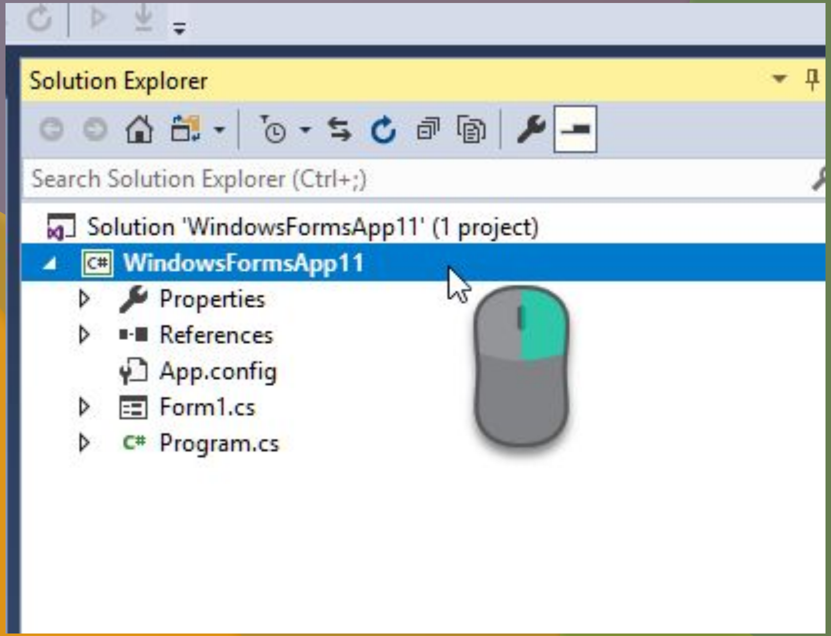
DataSource

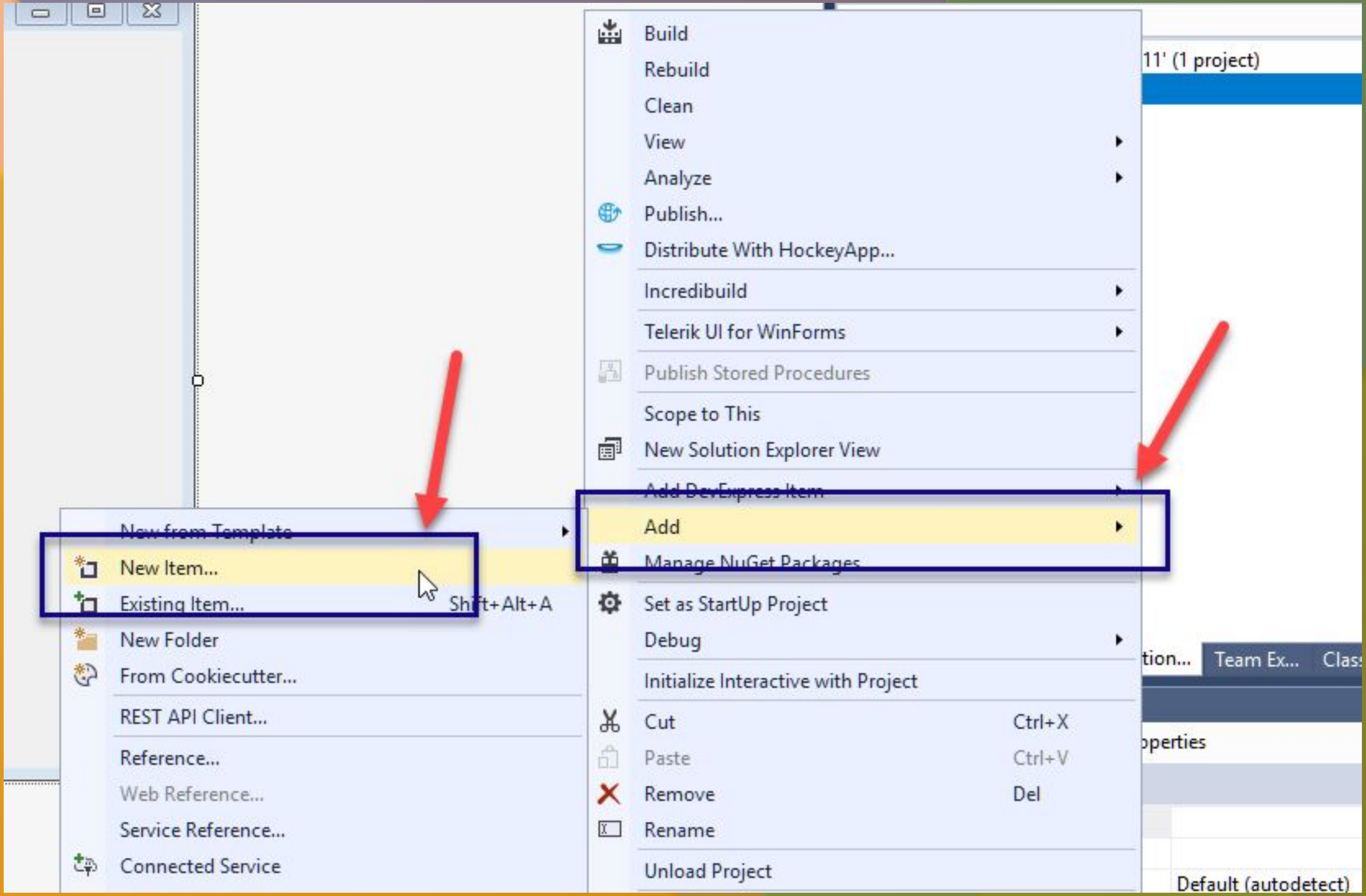

Debug
Any CPU
Start
Form1.cs [Design]
Form1
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
Program.cs
GitHub
R Plot
Python...
Solution...
Team Ex...
Class Vi...
Notif
Properties

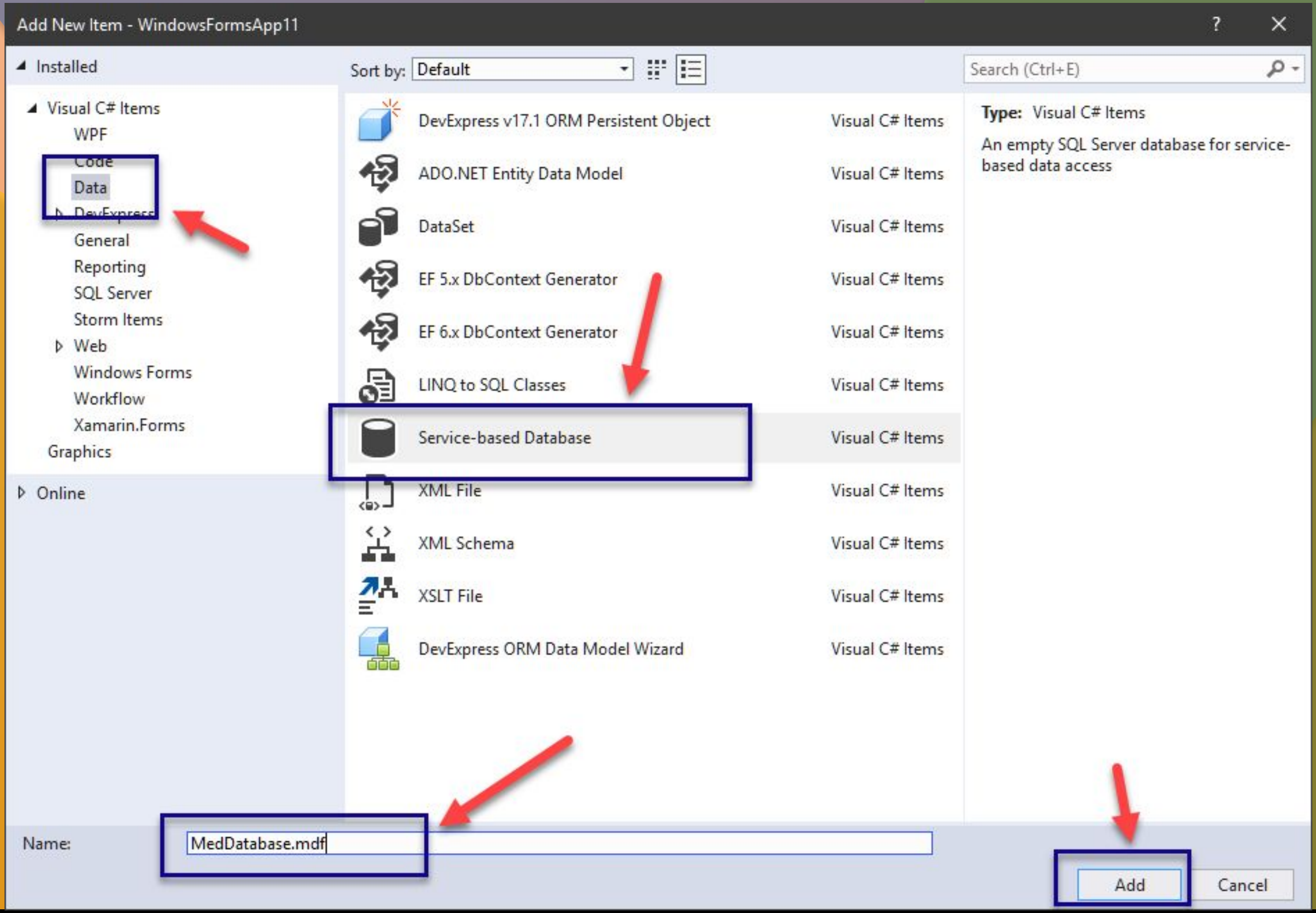
Form1 System.Windows.Forms.Form

MainMenuStrip	(none)
MaximizeBox	True
MaximumSize	0; 0

Создание базы данных


Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
Program.cs


Build
Rebuild
Clean
View
Analyze
Publish...
Distribute With HockeyApp...
Incredibuild
Telerik UI for WinForms
Publish Stored Procedures
Scope to This
New Solution Explorer View
Add DevExpress Item
Add
Manage NuGet Packages
Set as StartUp Project
Debug
Initialize Interactive with Project
Cut Ctrl+X
Paste Ctrl+V
Remove Del
Rename
Unload Project
New from Template
New Item...
Existing Item... Shift+Alt+A
New Folder
From Cookiecutter...
REST API Client...
Reference...
Web Reference...
Service Reference...
Connected Service
11' (1 project)
tion...
Team Ex...
Class
perties
Default (autodetect)

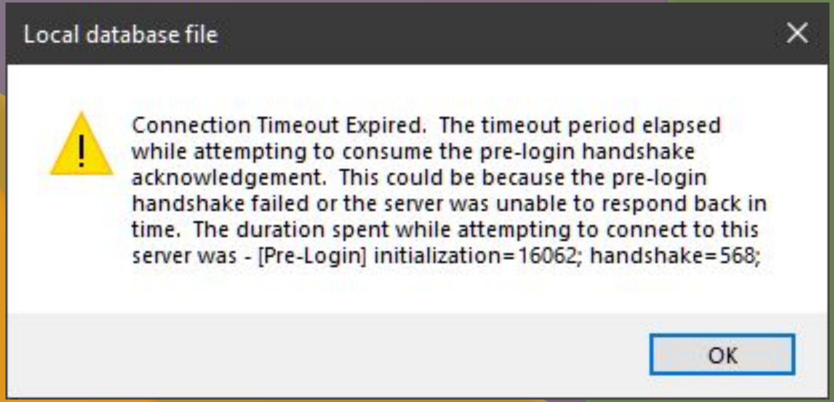

Add New Item - WindowsFormsApp11
?
Installed
Visual C# Items
WPF
Code
Data
DevExpress
General
Reporting
SQL Server
Storm Items
Web
Windows Forms
Workflow
Xamarin.Forms
Graphics
Online
Sort by:
Default
Search (Ctrl+E)
Add
Cancel

DevExpress v17.1 ORM Persistent Object	Visual C# Items
ADO.NET Entity Data Model	Visual C# Items
DataSet	Visual C# Items
EF 5.x DbContext Generator	Visual C# Items
EF 6.x DbContext Generator	Visual C# Items
LINQ to SQL Classes	Visual C# Items
Service-based Database	Visual C# Items
XML File	Visual C# Items
XML Schema	Visual C# Items
XSLT File	Visual C# Items
DevExpress ORM Data Model Wizard	Visual C# Items

Type: Visual C# Items

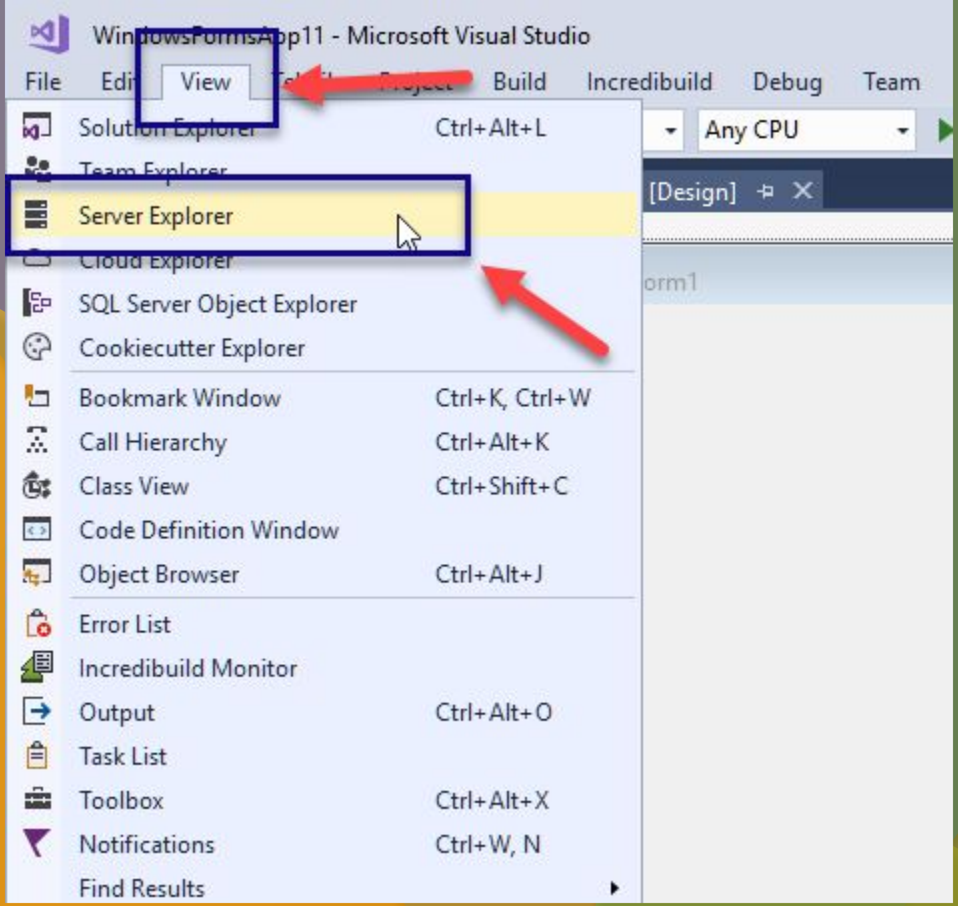
An empty SQL Server database for service-based data access

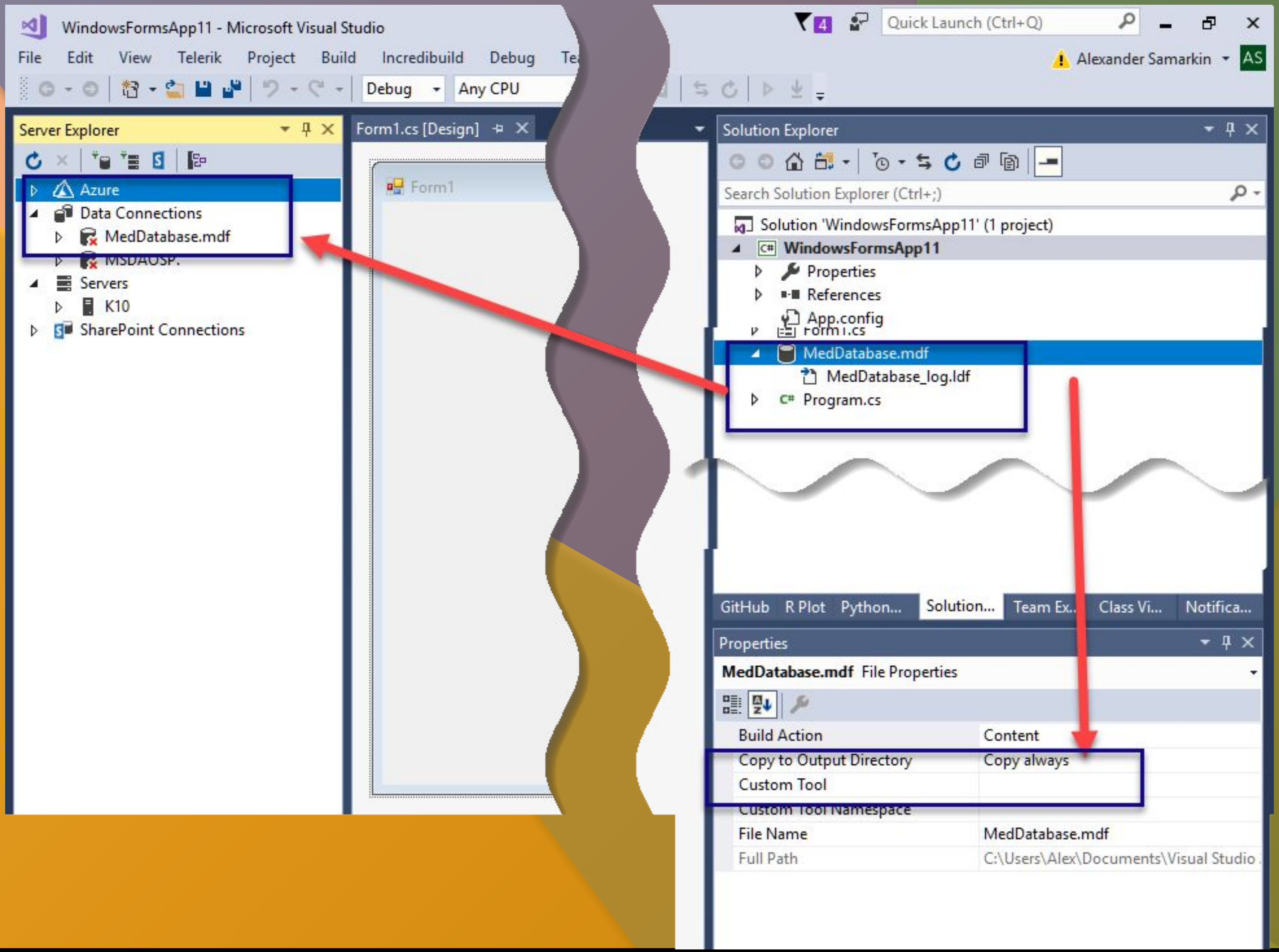
Name: MedDatabase.mdf



Connection Timeout Expired. The timeout period elapsed while attempting to consume the pre-login handshake acknowledgement. This could be because the pre-login handshake failed or the server was unable to respond back in time. The duration spent while attempting to connect to this server was - [Pre-Login] initialization=16062; handshake=568;

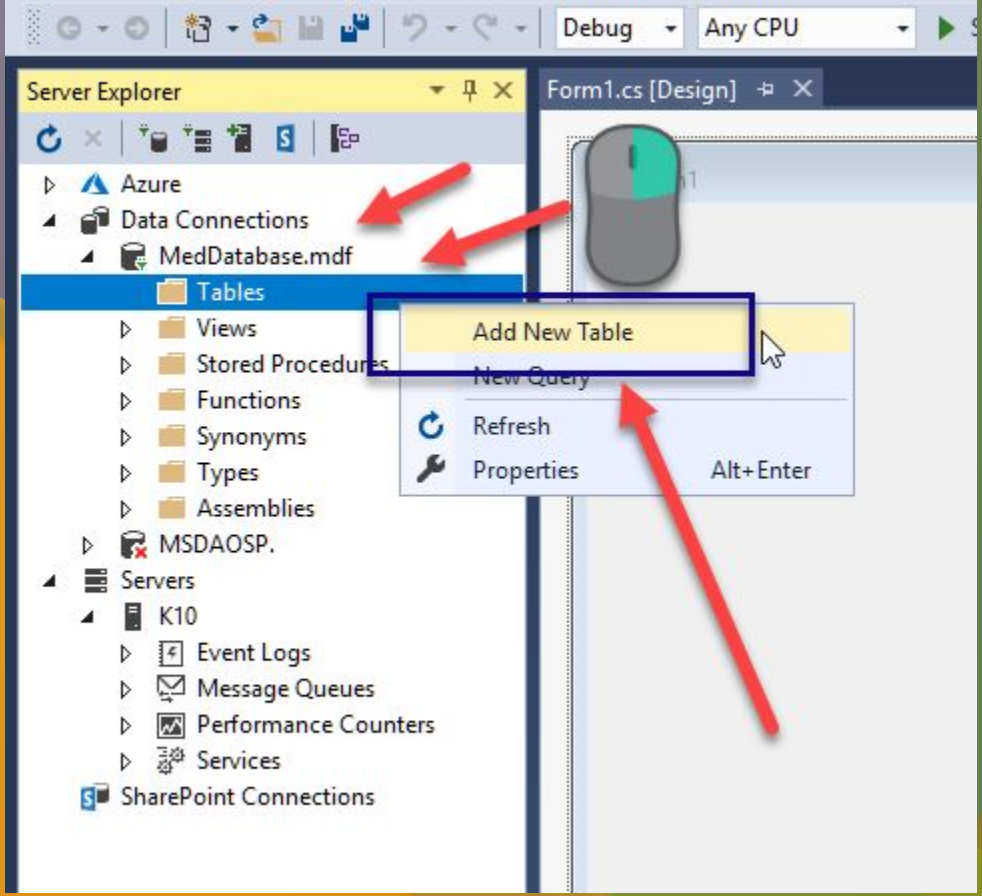
Если будет такое сообщение – подождать и повторить

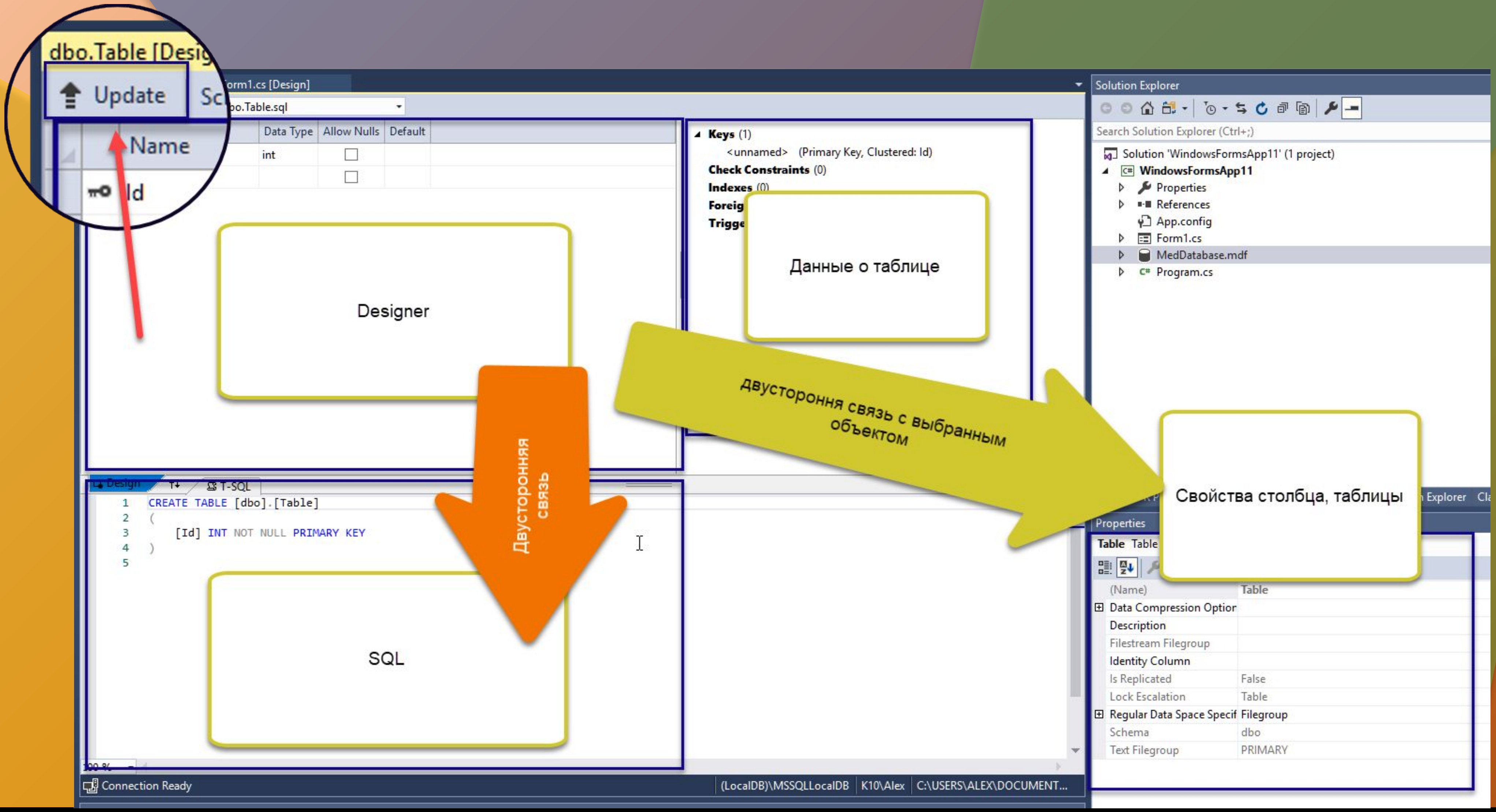

WindowsFormsApp11 - Microsoft Visual Studio
File
Edit
View
Build
Incredibuild
Debug
Team
Any CPU
[Design]
orm1
Solution Explorer Ctrl+Alt+L
Team Explorer
Server Explorer
Cloud Explorer
SQL Server Object Explorer
Cookiecutter Explorer
Bookmark Window Ctrl+K, Ctrl+W
Call Hierarchy Ctrl+Alt+K
Class View Ctrl+Shift+C
Code Definition Window
Object Browser Ctrl+Alt+J
Error List
Incredibuild Monitor
Output Ctrl+Alt+O
Task List
Toolbox Ctrl+Alt+X
Notifications Ctrl+W, N
Find Results


WindowsFormsApp11 - Microsoft Visual Studio
File
Edit
View
Telerik
Project
Build
Incredibuild
Debug
Debug
Any CPU
Quick Launch (Ctrl+Q)
Alexander Samarkin
AS
Server Explorer
Azure
Data Connections
MedDatabase.mdf
MSDAOSP.
Servers
K10
SharePoint Connections
Form1.cs [Design]
Form1
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
MedDatabase.mdf
MedDatabase_log.ldf
Program.cs
GitHub
R Plot
Python...
Solution...
Team Ex...
Class Vi...
Notifica...
Properties
MedDatabase.mdf File Properties

Build Action	Content
Copy to Output Directory	Copy always
Custom Tool	
Custom Tool Namespace	
File Name	MedDatabase.mdf
Full Path	C:\Users\Alex\Documents\Visual Studio

Создан файл базы данных


Debug
Any CPU
Server Explorer
Form1.cs [Design]
Azure
Data Connections
MedDatabase.mdf
Tables
Views
Stored Procedures
Functions
Synonyms
Types
Assemblies
MSDAOSP.
Servers
K10
Event Logs
Message Queues
Performance Counters
Services
SharePoint Connections
Add New Table
New Query
Refresh
Properties
Alt+Enter


dbo.Table [Design]
Update
Form1.cs [Design]
dbo.Table.sql
Name
Data Type
Allow Nulls
Default
Id
int
☐
☐
Design
T-SQL
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
MedDatabase.mdf
Program.cs
Properties
Table Table
100 %
Connection Ready
(LocalDB)\MSSQLLocalDB
K10\Alex
C:\USERS\ALEX\DOCUMENT...

Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign
Triggers

```
CREATE TABLE [dbo].[Table]
(
    [Id] INT NOT NULL PRIMARY KEY
)
```

(Name)	Table
Data Compression Option	
Description	
Filestream Filegroup	
Identity Column	
Is Replicated	False
Lock Escalation	Table
Regular Data Space Specif	Filegroup
Schema	dbo
Text Filegroup	PRIMARY

Designer

SQL

Двусторонняя связь

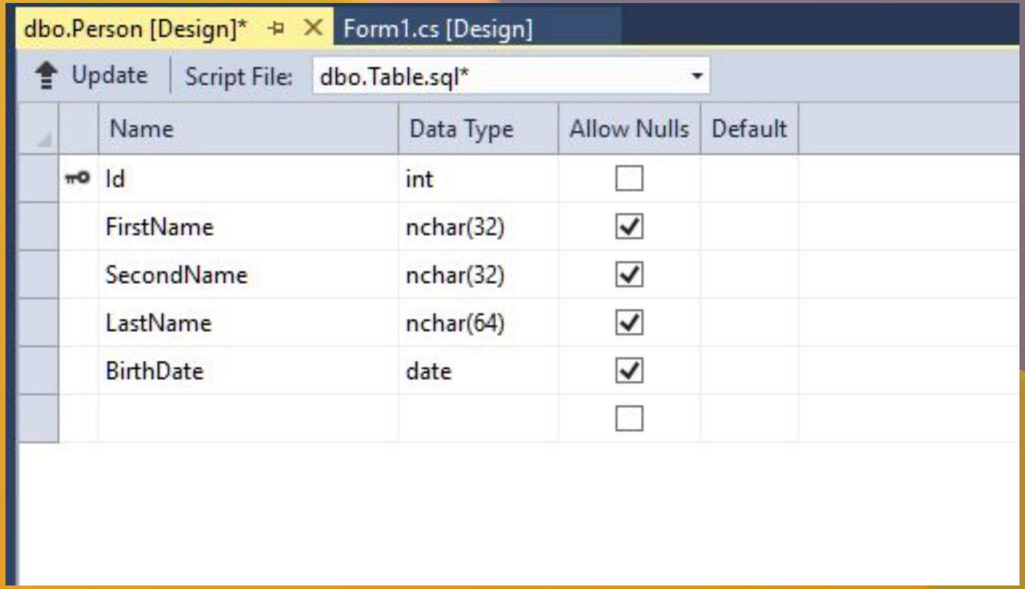
Данные о таблице

двустороння связь с выбранным объектом

Свойства столбца, таблицы

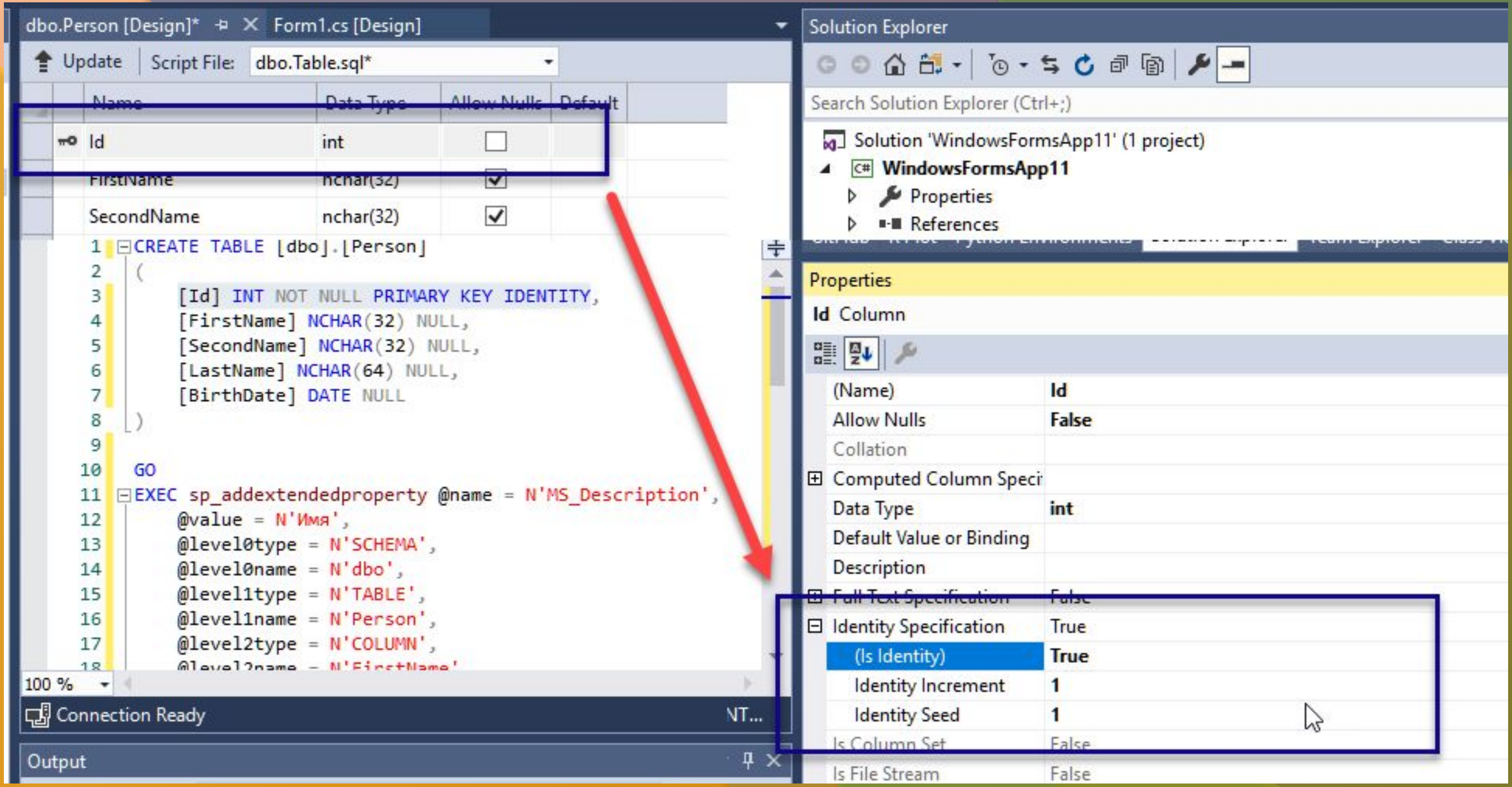
Редактор таблиц

Задайте следующие поля


dbo.Person [Design]*
Form1.cs [Design]
Update
Script File: dbo.Table.sql*

	Name	Data Type	Allow Nulls	Default
🔑	Id	int	☐	
	FirstName	nchar(32)	☑	
	SecondName	nchar(32)	☑	
	LastName	nchar(64)	☑	
	BirthDate	date	☑	
			☐	

Состав столбцов таблицы	
Id	Первичный ключ (создан автоматически)
Имя, отчество и фамилия	nchar – строка указанной длины
Дата рождения	Специальный тип date


dbo.Person [Design]*
Form1.cs [Design]
Update
Script File:
dbo.Table.sql*
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
Properties
Id Column
100 %
Connection Ready
Output

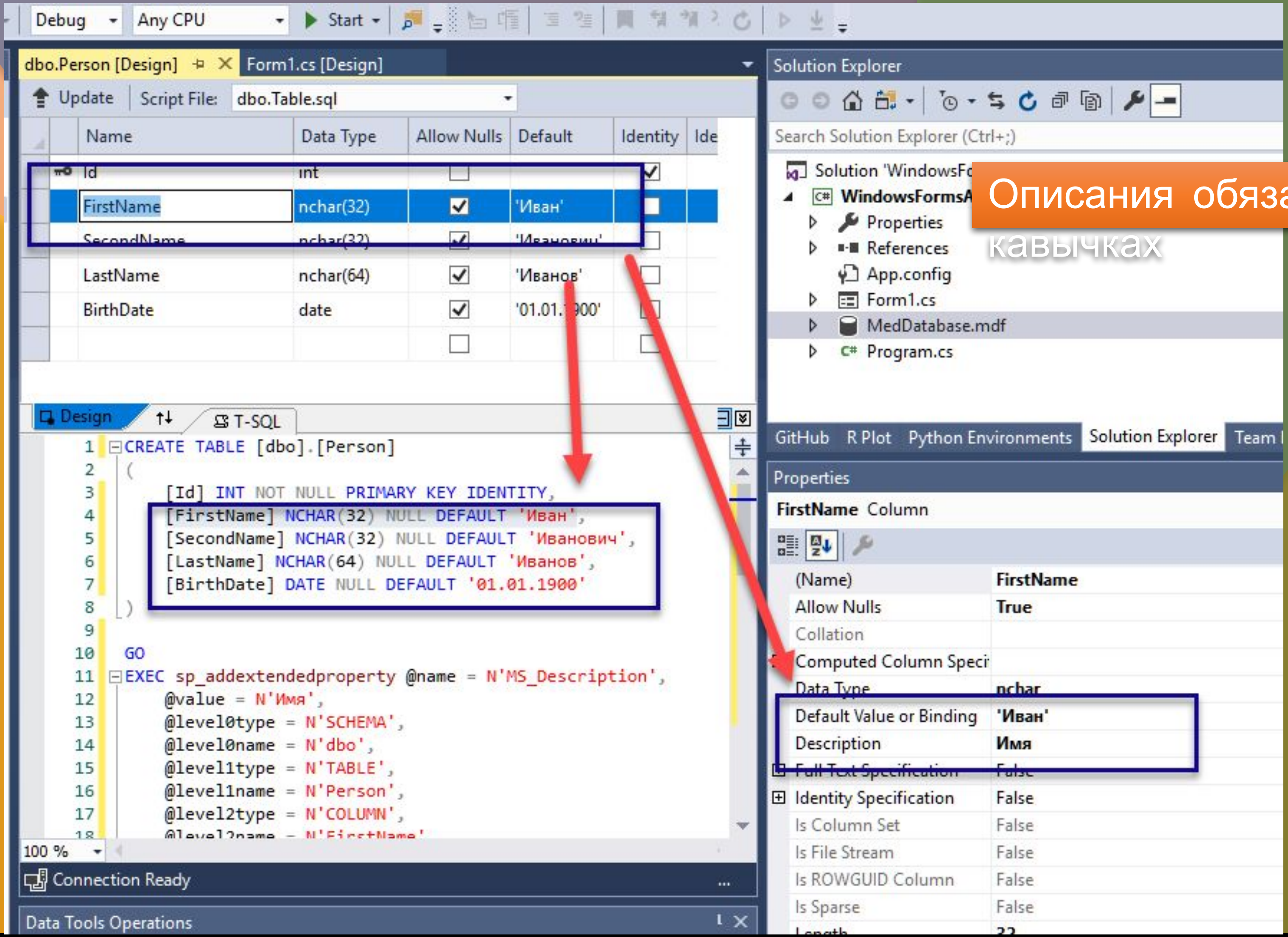
Name	Data Type	Allow Nulls	Default
Id	int	☐	
FirstName	nchar(32)	☑	
SecondName	nchar(32)	☑	

```sql
CREATE TABLE [dbo].[Person]
(
    [Id] INT NOT NULL PRIMARY KEY IDENTITY,
    [FirstName] NCHAR(32) NULL,
    [SecondName] NCHAR(32) NULL,
    [LastName] NCHAR(64) NULL,
    [BirthDate] DATE NULL
)

GO
EXEC sp_addextendedproperty @name = N'MS_Description',
    @value = N'Имя',
    @level0type = N'SCHEMA',
    @level0name = N'dbo',
    @level1type = N'TABLE',
    @level1name = N'Person',
    @level2type = N'COLUMN',
    @level2name = N'FirstName'
```

(Name)	Id
Allow Nulls	False
Collation	
Computed Column Speci	
Data Type	int
Default Value or Binding	
Description	
Full-Text Specification	False
Identity Specification	True
(Is Identity)	True
Identity Increment	1
Identity Seed	1
Is Column Set	False
Is File Stream	False

Введите данные для генератора первичного ключа

Задайте описания и значения по умолчанию


Debug
Any CPU
Start
dbo.Person [Design]
Form1.cs [Design]
Update
Script File: dbo.Table.sql
Design
T-SQL
100 %
Connection Ready
Data Tools Operations
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFo
WindowsFormsA
Properties
References
App.config
Form1.cs
MedDatabase.mdf
Program.cs
GitHub
R Plot
Python Environments
Solution Explorer
Team
Properties

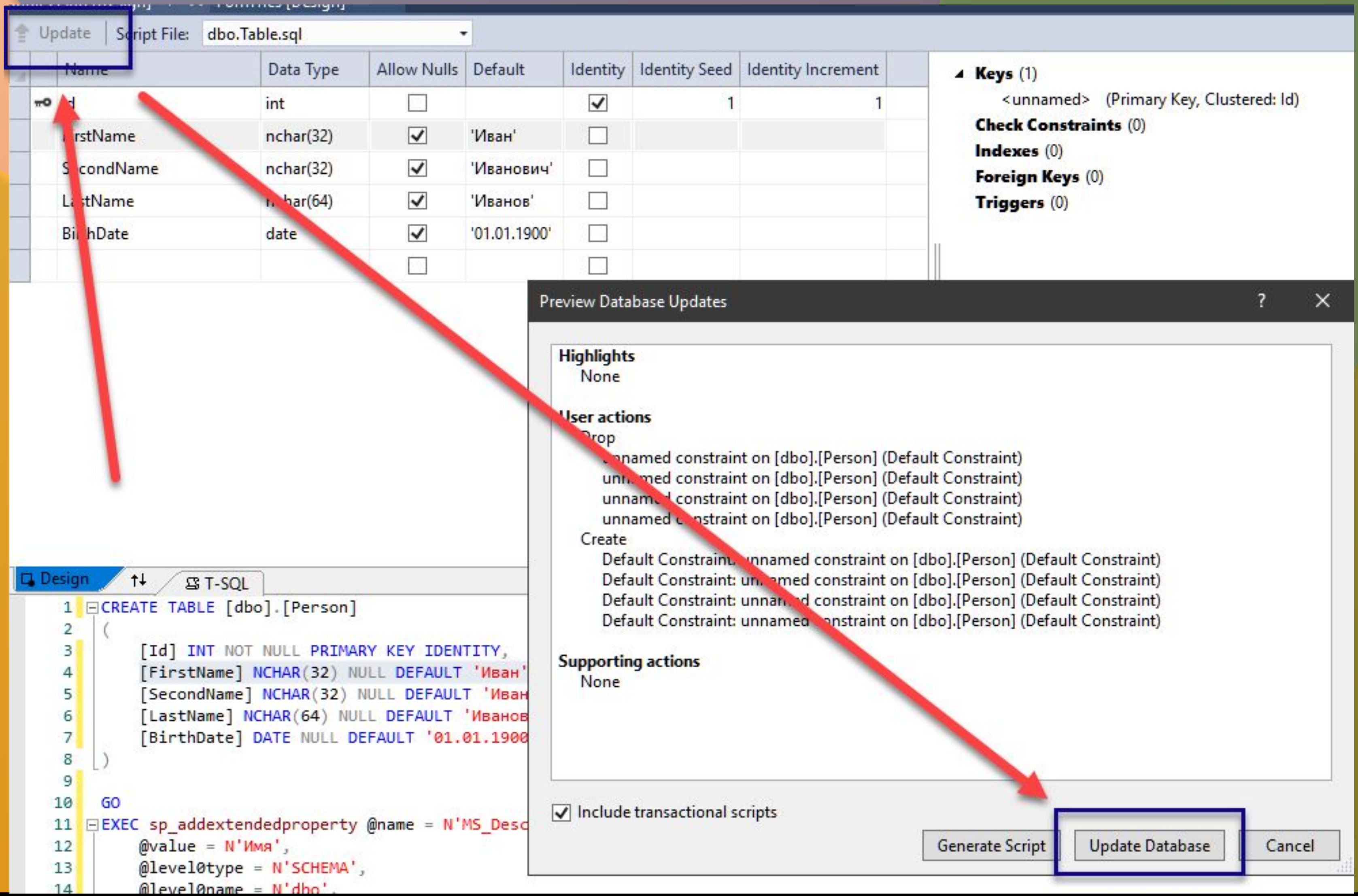
Name	Data Type	Allow Nulls	Default	Identity	Ide
Id	int	☐		☑	
FirstName	nchar(32)	☑	'Иван'	☐	
SecondName	nchar(32)	☑	'Иванович'	☐	
LastName	nchar(64)	☑	'Иванов'	☐	
BirthDate	date	☑	'01.01.1900'	☐	
		☐		☐	

```
CREATE TABLE [dbo].[Person]
(
    [Id] INT NOT NULL PRIMARY KEY IDENTITY,
    [FirstName] NCHAR(32) NULL DEFAULT 'Иван',
    [SecondName] NCHAR(32) NULL DEFAULT 'Иванович',
    [LastName] NCHAR(64) NULL DEFAULT 'Иванов',
    [BirthDate] DATE NULL DEFAULT '01.01.1900'
)

GO
EXEC sp_addextendedproperty @name = N'MS_Description',
    @value = N'Имя',
    @level0type = N'SCHEMA',
    @level0name = N'dbo',
    @level1type = N'TABLE',
    @level1name = N'Person',
    @level2type = N'COLUMN',
    @level2name = N'FirstName'
```

FirstName Column

(Name)	FirstName
Allow Nulls	True
Collation	
Computed Column Speci	
Data Type	nchar
Default Value or Binding	'Иван'
Description	Имя
Full Text Specification	False
Identity Specification	False
Is Column Set	False
Is File Stream	False
Is ROWGUID Column	False
Is Sparse	False
Length	32

Описания обязательно в кавычках



Name	Data Type	Allow Nulls	Default	Identity	Identity Seed	Identity Increment
Id	int	☐		☑	1	1
FirstName	nchar(32)	☑	'Иван'	☐		
SecondName	nchar(32)	☑	'Иванович'	☐		
LastName	nchar(64)	☑	'Иванов'	☐		
BirthDate	date	☑	'01.01.1900'	☐		
		☐		☐		

Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign Keys (0)
Triggers (0)

```
CREATE TABLE [dbo].[Person]
(
    [Id] INT NOT NULL PRIMARY KEY IDENTITY,
    [FirstName] NCHAR(32) NULL DEFAULT 'Иван'
    [SecondName] NCHAR(32) NULL DEFAULT 'Иван
    [LastName] NCHAR(64) NULL DEFAULT 'Иванов
    [BirthDate] DATE NULL DEFAULT '01.01.1900
)

GO
EXEC sp_addextendedproperty @name = N'MS_Desc
    @value = N'Имя',
    @level0type = N'SCHEMA',
    @level0name = N'dbo',
```

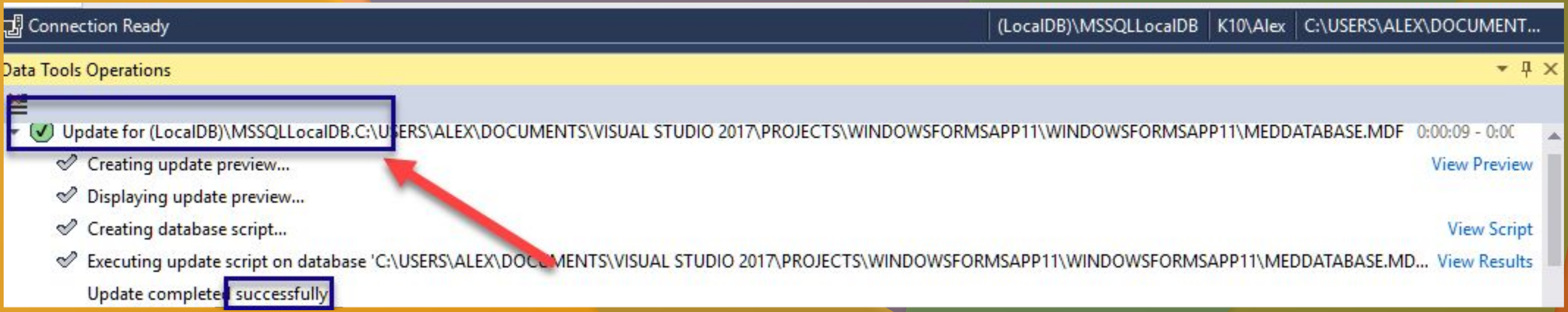
Preview Database Updates

Highlights
None

User actions
Drop
unnamed constraint on [dbo].[Person] (Default Constraint)
unnamed constraint on [dbo].[Person] (Default Constraint)
unnamed constraint on [dbo].[Person] (Default Constraint)
unnamed constraint on [dbo].[Person] (Default Constraint)
Create
Default Constraint: unnamed constraint on [dbo].[Person] (Default Constraint)
Default Constraint: unnamed constraint on [dbo].[Person] (Default Constraint)
Default Constraint: unnamed constraint on [dbo].[Person] (Default Constraint)
Default Constraint: unnamed constraint on [dbo].[Person] (Default Constraint)

Supporting actions
None

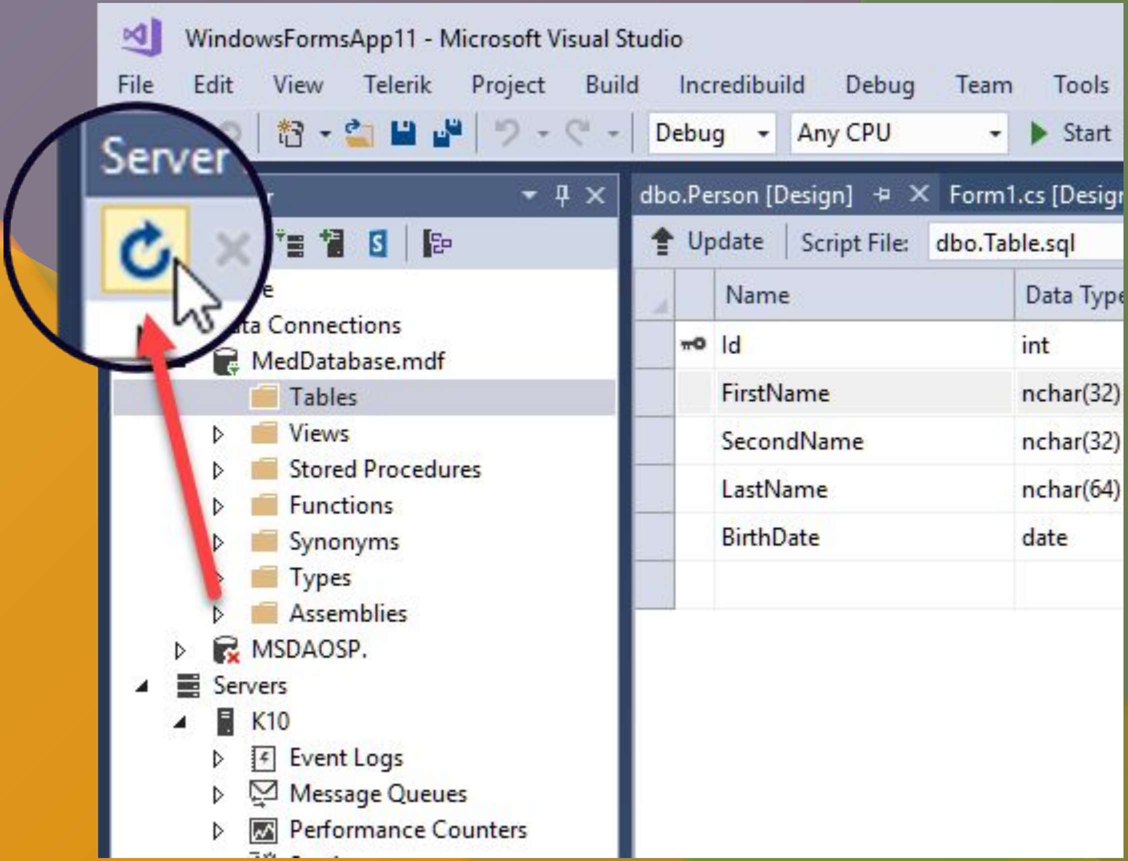
☑ Include transactional scripts



Connection Ready | (LocalDB)\MSSQLLocalDB | K10\Alex | C:\USERS\ALEX\DOCUMENT...

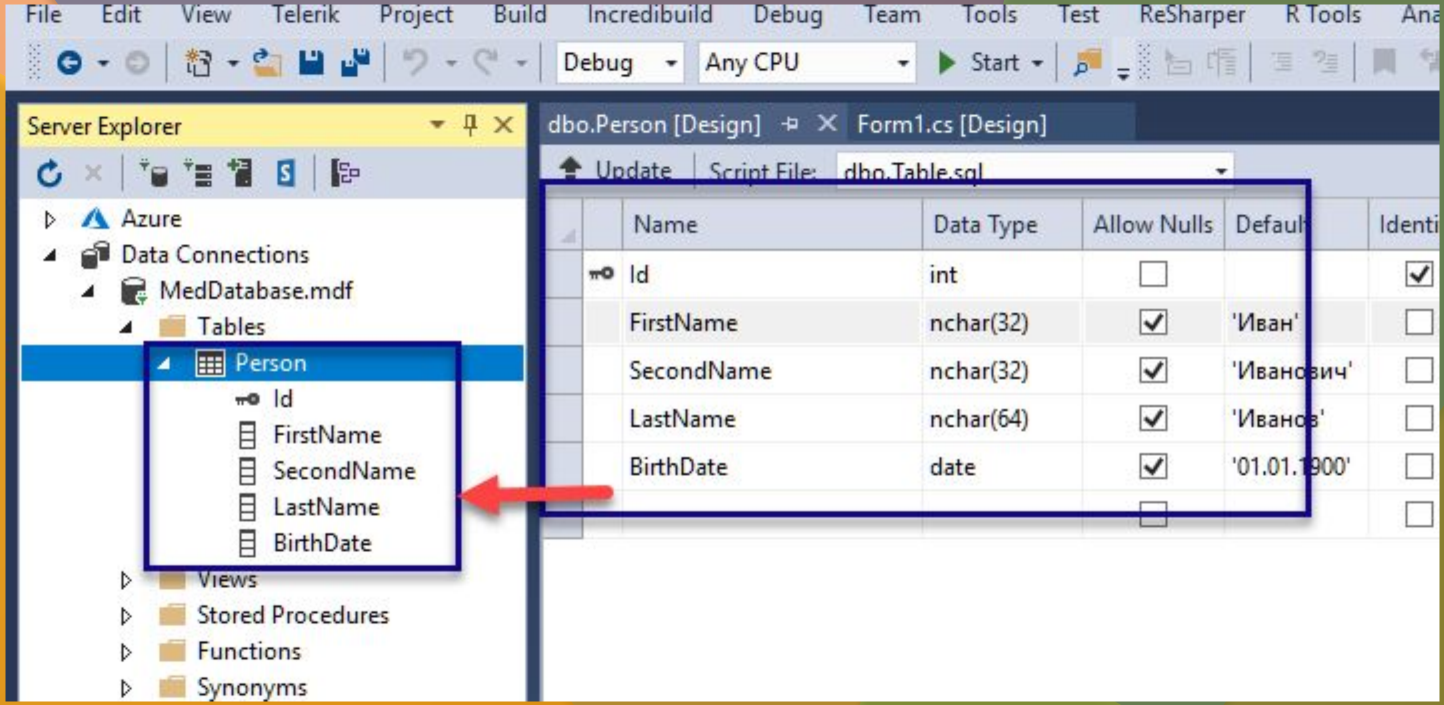
Data Tools Operations

```
Update for (LocalDB)\MSSQLLocalDB.C:\USERS\ALEX\DOCUMENTS\VISUAL STUDIO 2017\PROJECTS\WINDOWSFORMSAPP11\WINDOWSFORMSAPP11\MEDDATABASE.MDF  0:00:09 - 0:0
    ✓ Creating update preview...
    ✓ Displaying update preview...
    ✓ Creating database script...
    ✓ Executing update script on database 'C:\USERS\ALEX\DOCUMENTS\VISUAL STUDIO 2017\PROJECTS\WINDOWSFORMSAPP11\WINDOWSFORMSAPP11\MEDDATABASE.MD...
      Update completed successfully
```


WindowsFormsApp11 - Microsoft Visual Studio
File
Edit
View
Telerik
Project
Build
Incredibuild
Debug
Team
Tools
Debug
Any CPU
Start
Server
dbo.Person [Design]
Form1.cs [Desig
Update
Script File:
dbo.Table.sql
ta Connections
MedDatabase.mdf
Tables
Views
Stored Procedures
Functions
Synonyms
Types
Assemblies
MSDAOSP.
Servers
K10
Event Logs
Message Queues
Performance Counters

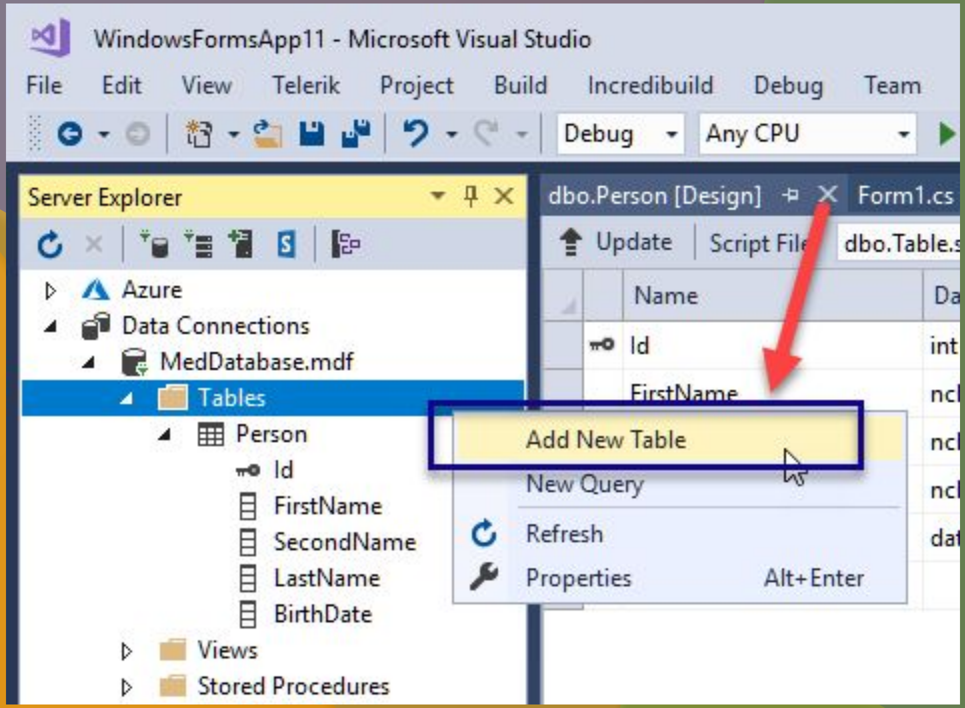
Name	Data Typ
Id	int
FirstName	nchar(32)
SecondName	nchar(32)
LastName	nchar(64)
BirthDate	date

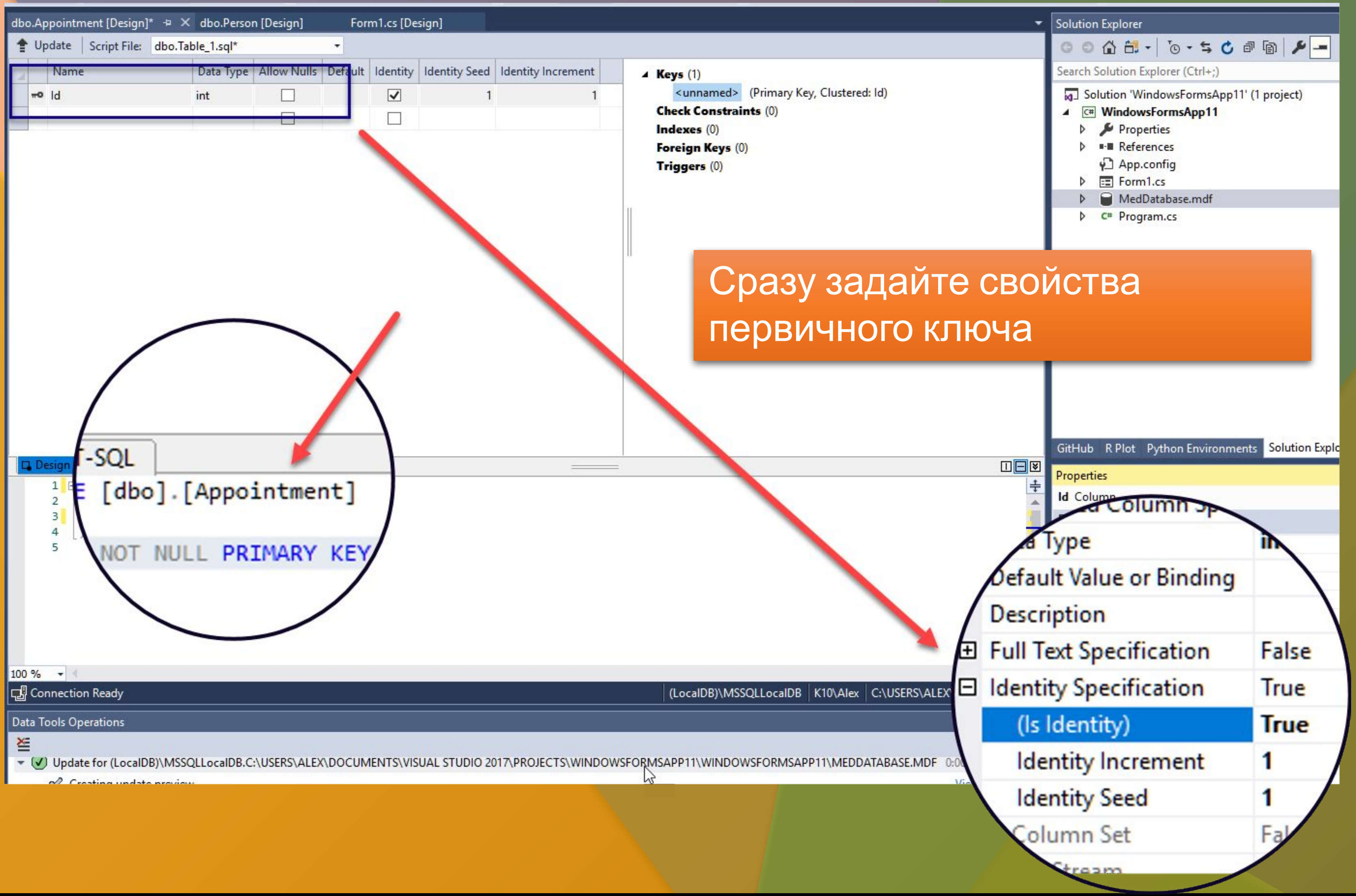
Обновите информацию о БД


File
Edit
View
Telerik
Project
Build
Incredibuild
Debug
Team
Tools
Test
ReSharper
R Tools
Ana
Debug
Any CPU
Start
Server Explorer
Azure
Data Connections
MedDatabase.mdf
Tables
Person
Id
FirstName
SecondName
LastName
BirthDate
Views
Stored Procedures
Functions
Synonyms
dbo.Person [Design]
Form1.cs [Design]
Update
Script File:
dbo.Table.sql

Name	Data Type	Allow Nulls	Defaul	Identi
Id	int	☐		☑
FirstName	nchar(32)	☑	'Иван'	☐
SecondName	nchar(32)	☑	'Иванович'	☐
LastName	nchar(64)	☑	'Иванов'	☐
BirthDate	date	☑	'01.01.1900'	☐
		☐		☐

Убедитесь, что создана новая таблица


WindowsFormsApp11 - Microsoft Visual Studio
File
Edit
View
Telerik
Project
Build
Incredibuild
Debug
Team
Debug
Any CPU
Server Explorer
Azure
Data Connections
MedDatabase.mdf
Tables
Person
Id
FirstName
SecondName
LastName
BirthDate
Views
Stored Procedures
dbo.Person [Design]
Form1.cs
Update
Script File
dbo.Table.s
Name
Da
Id
int
FirstName
ncl
ncl
ncl
dat
Add New Table
New Query
Refresh
Properties
Alt+Enter


dbo.Appointment [Design]*
dbo.Person [Design]
Form1.cs [Design]
Update
Script File: dbo.Table_1.sql*
Design
T-SQL
100 %
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
MedDatabase.mdf
Program.cs
GitHub
R Plot
Python Environments
Solution Explo
Properties
Id Column

Name	Data Type	Allow Nulls	Default	Identity	Identity Seed	Identity Increment
Id	int	☐		☑	1	1
		☐		☐		

Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign Keys (0)
Triggers (0)

```
E [dbo].[Appointment]

 NOT NULL PRIMARY KEY
```

Type	in
Default Value or Binding	
Description	
⊞ Full Text Specification	False
⊟ Identity Specification	True
(Is Identity)	True
Identity Increment	1
Identity Seed	1
Column Set	Fa

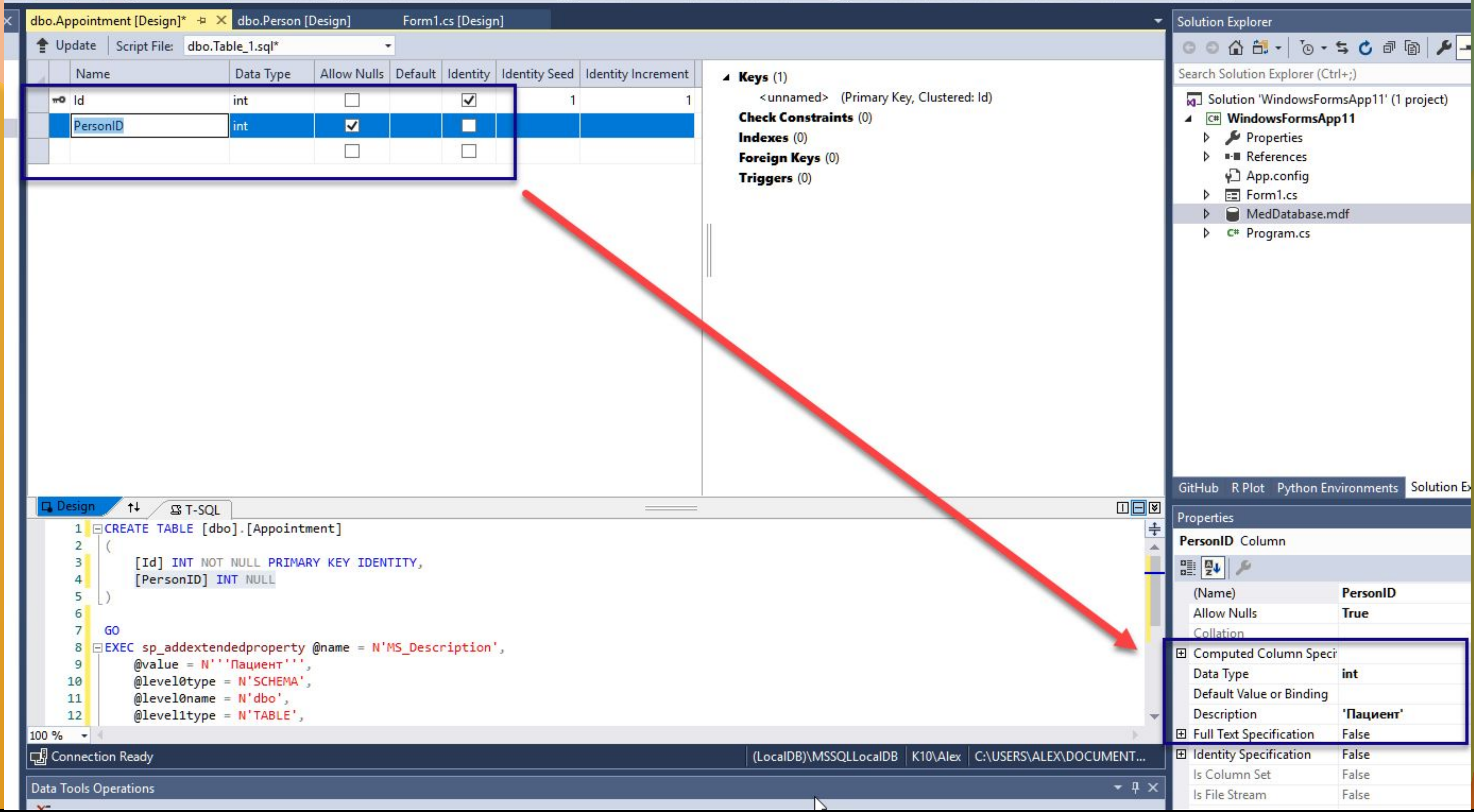
Connection Ready | (LocalDB)\MSSQLLocalDB | K10\Alex | C:\USERS\ALEX

Data Tools Operations

Update for (LocalDB)\MSSQLLocalDB.C:\USERS\ALEX\DOCUMENTS\VISUAL STUDIO 2017\PROJECTS\WINDOWSFORMSAPP11\WINDOWSFORMSAPP11\MEDDATABASE.MDF

Сразу задайте свойства первичного ключа

Таблица посещений врача


dbo.Appointment [Design]*
dbo.Person [Design]
Form1.cs [Design]
Update
Script File: dbo.Table_1.sql*
Design
T-SQL
100 %
Connection Ready
(LocalDB)\MSSQLLocalDB
K10\Alex
C:\USERS\ALEX\DOCUMENT...
Data Tools Operations
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
MedDatabase.mdf
Program.cs
GitHub
R Plot
Python Environments
Solution E
Properties
PersonID Column

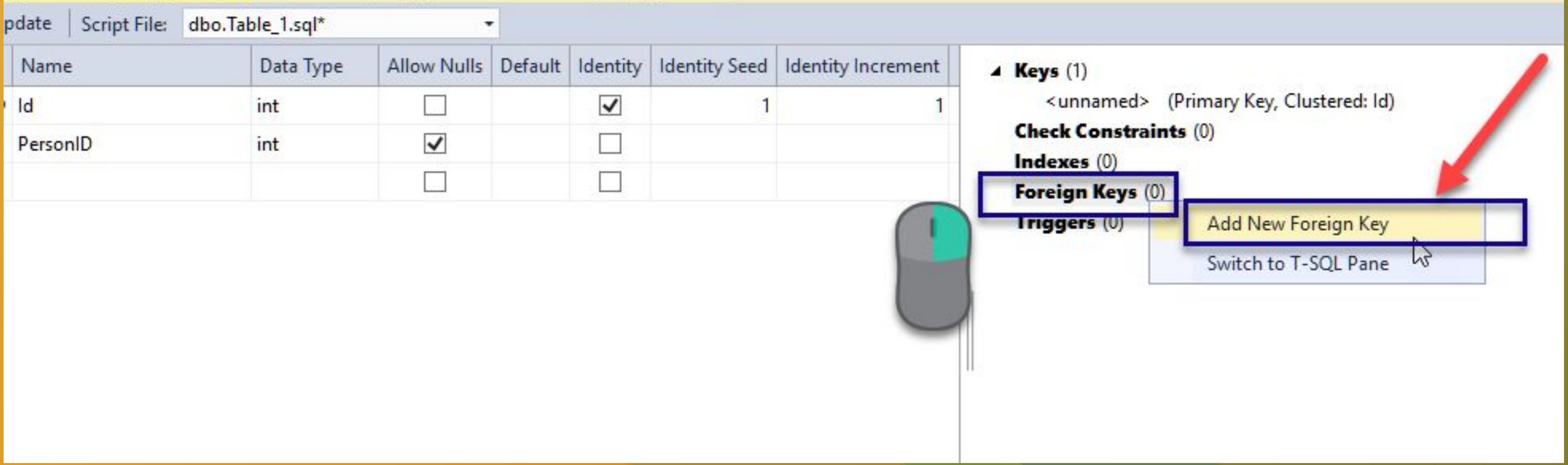
	Name	Data Type	Allow Nulls	Default	Identity	Identity Seed	Identity Increment
🔑	Id	int	☐		☑	1	1
	PersonID	int	☑		☐		
			☐		☐		

Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign Keys (0)
Triggers (0)

```
CREATE TABLE [dbo].[Appointment]
(
    [Id] INT NOT NULL PRIMARY KEY IDENTITY,
    [PersonID] INT NULL
)

GO
EXEC sp_addextendedproperty @name = N'MS_Description',
    @value = N'''Пациент''',
    @level0type = N'SCHEMA',
    @level0name = N'dbo',
    @level1type = N'TABLE',
```

(Name)	PersonID
Allow Nulls	True
Collation	
Computed Column Speci	
Data Type	int
Default Value or Binding	
Description	'Пациент'
Full Text Specification	False
Identity Specification	False
Is Column Set	False
Is File Stream	False

Поле для номеров пациентов

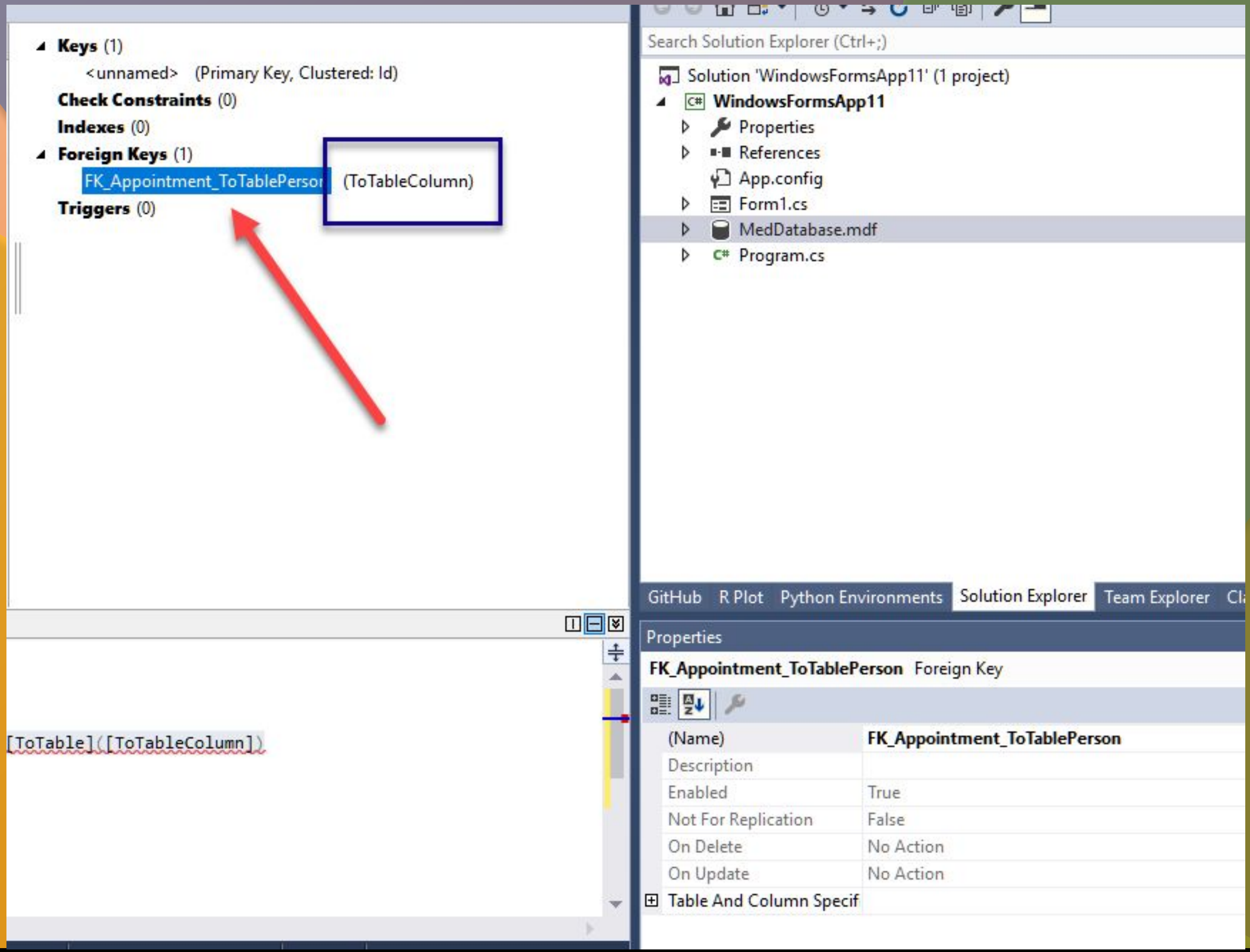


pdate | Script File: dbo.Table_1.sql*

Name	Data Type	Allow Nulls	Default	Identity	Identity Seed	Identity Increment
Id	int	☐		☑	1	1
PersonID	int	☑		☐		
		☐		☐		

Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign Keys (0)
Triggers (0)

Add New Foreign Key
Switch to T-SQL Pane



Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign Keys (1)
FK_Appointment_ToTablePerson (ToTableColumn)
Triggers (0)

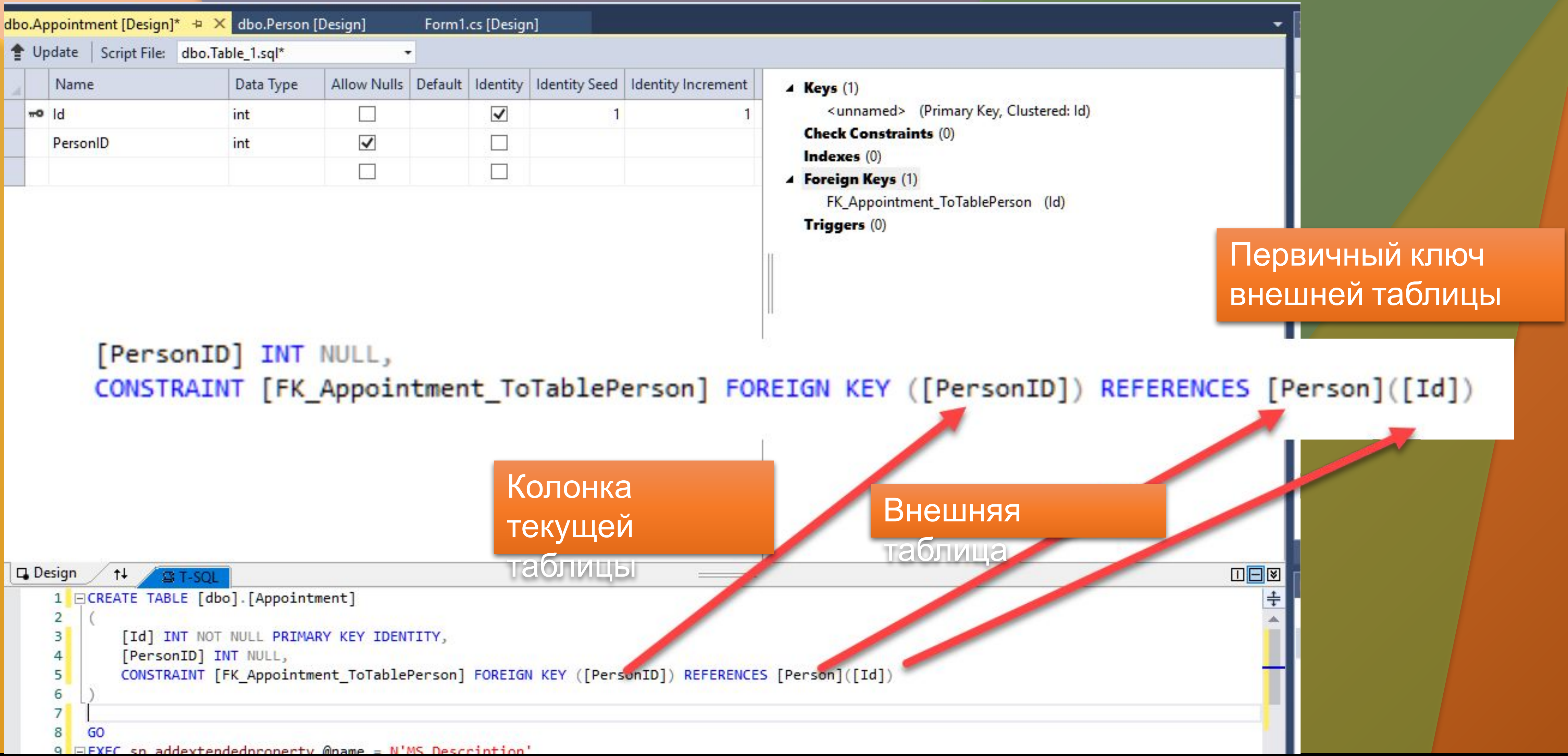
```
[ToTable]([ToTableColumn])
```

Search Solution Explorer (Ctrl+;)
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
MedDatabase.mdf
Program.cs
GitHub
R Plot
Python Environments
Solution Explorer
Team Explorer
Cl

Properties

FK_Appointment_ToTablePerson Foreign Key

(Name)	FK_Appointment_ToTablePerson
Description	
Enabled	True
Not For Replication	False
On Delete	No Action
On Update	No Action
Table And Column Specif	


dbo.Appointment [Design]*
dbo.Person [Design]
Form1.cs [Design]
Update
Script File: dbo.Table_1.sql*
Design
T-SQL

Name	Data Type	Allow Nulls	Default	Identity	Identity Seed	Identity Increment
Id	int	☐		☑	1	1
PersonID	int	☑		☐		
		☐		☐		

- **Keys** (1)
  - <unnamed> (Primary Key, Clustered: Id)
- **Check Constraints** (0)
- **Indexes** (0)
- **Foreign Keys** (1)
  - FK_Appointment_ToTablePerson (Id)
- **Triggers** (0)

```sql
[PersonID] INT NULL,
CONSTRAINT [FK_Appointment_ToTablePerson] FOREIGN KEY ([PersonID]) REFERENCES [Person]([Id])
```

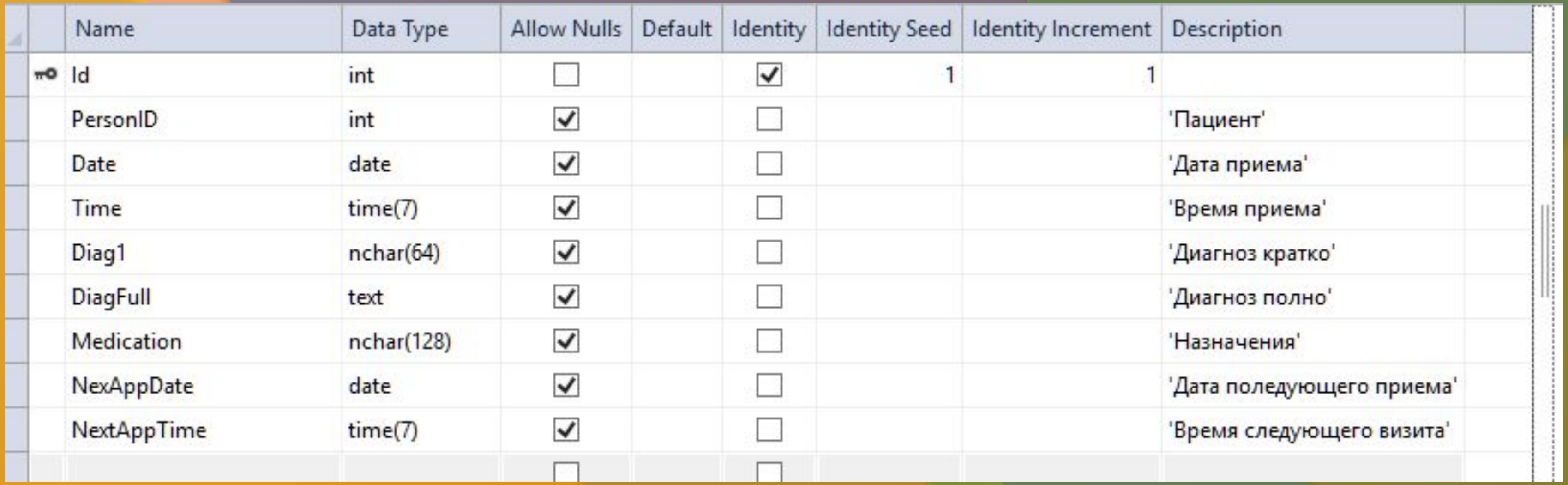
```sql
CREATE TABLE [dbo].[Appointment]
(
    [Id] INT NOT NULL PRIMARY KEY IDENTITY,
    [PersonID] INT NULL,
    CONSTRAINT [FK_Appointment_ToTablePerson] FOREIGN KEY ([PersonID]) REFERENCES [Person]([Id])
)

GO
EXEC sp_addextendedproperty @name = N'MS_Description'
```

Первичный ключ внешней таблицы

Колонка текущей таблицы

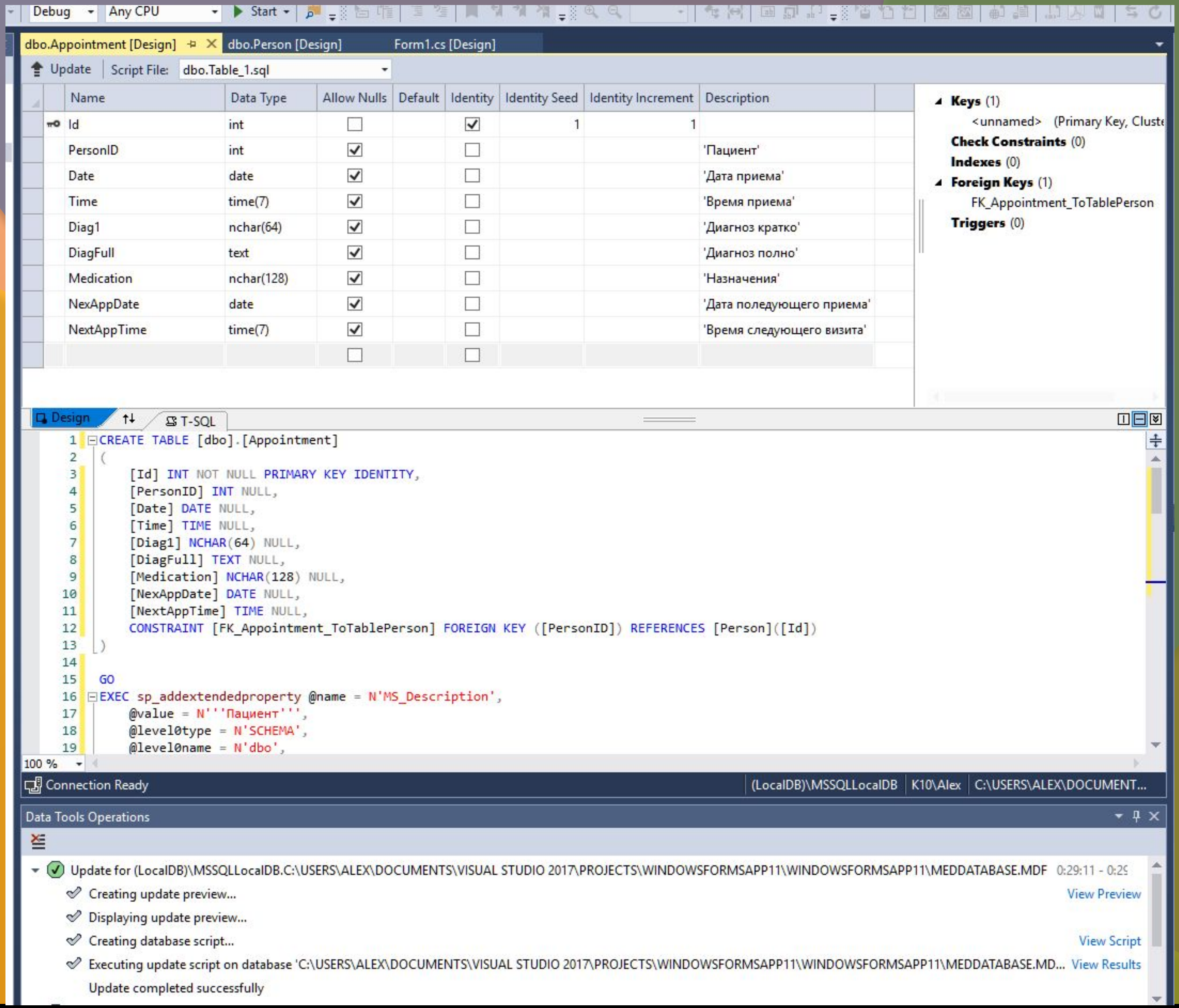
Внешняя таблица

Впишите руками



	Name	Data Type	Allow Nulls	Default	Identity	Identity Seed	Identity Increment	Description
🔑	Id	int	☐		☑	1	1	
	PersonID	int	☑		☐			'Пациент'
	Date	date	☑		☐			'Дата приема'
	Time	time(7)	☑		☐			'Время приема'
	Diag1	nchar(64)	☑		☐			'Диагноз кратко'
	DiagFull	text	☑		☐			'Диагноз полно'
	Medication	nchar(128)	☑		☐			'Назначения'
	NexAppDate	date	☑		☐			'Дата поледующего приема'
	NextAppTime	time(7)	☑		☐			'Время следующего визита'
			☐		☐			

Добавьте остальные поля, их тип и описание



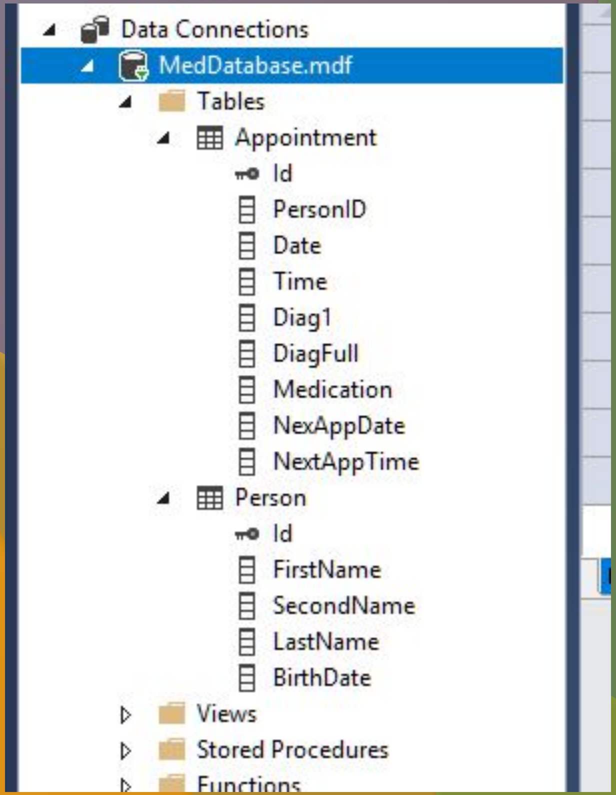
	Name	Data Type	Allow Nulls	Default	Identity	Identity Seed	Identity Increment	Description
	Id	int	☐		☑	1	1	
	PersonID	int	☑		☐			'Пациент'
	Date	date	☑		☐			'Дата приема'
	Time	time(7)	☑		☐			'Время приема'
	Diag1	nchar(64)	☑		☐			'Диагноз кратко'
	DiagFull	text	☑		☐			'Диагноз полно'
	Medication	nchar(128)	☑		☐			'Назначения'
	NexAppDate	date	☑		☐			'Дата поледующего приема'
	NextAppTime	time(7)	☑		☐			'Время следующего визита'
			☐		☐			

Keys (1)
<unnamed> (Primary Key, Cluste
Check Constraints (0)
Indexes (0)
Foreign Keys (1)
FK_Appointment_ToTablePerson
Triggers (0)

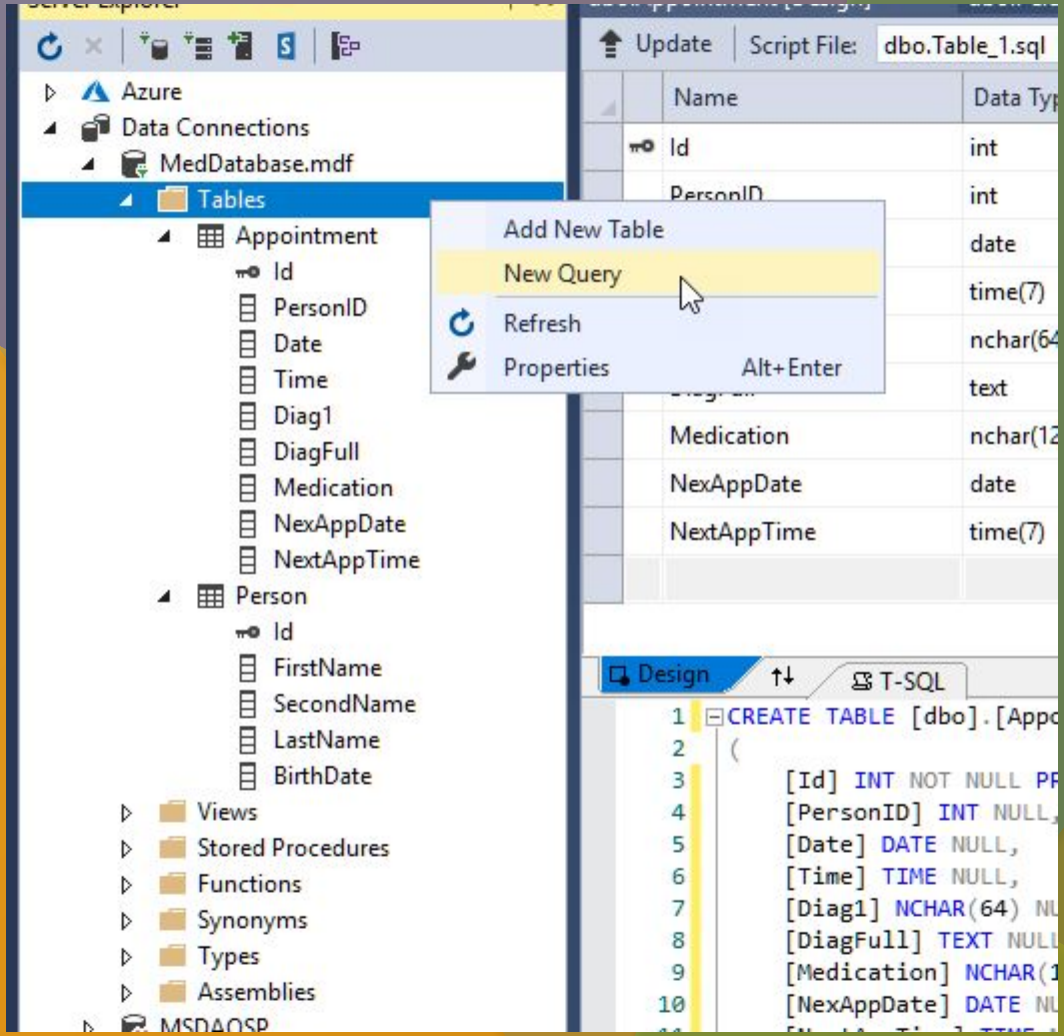
```sql
CREATE TABLE [dbo].[Appointment]
(
    [Id] INT NOT NULL PRIMARY KEY IDENTITY,
    [PersonID] INT NULL,
    [Date] DATE NULL,
    [Time] TIME NULL,
    [Diag1] NCHAR(64) NULL,
    [DiagFull] TEXT NULL,
    [Medication] NCHAR(128) NULL,
    [NexAppDate] DATE NULL,
    [NextAppTime] TIME NULL,
    CONSTRAINT [FK_Appointment_ToTablePerson] FOREIGN KEY ([PersonID]) REFERENCES [Person]([Id])
)

GO
EXEC sp_addextendedproperty @name = N'MS_Description',
    @value = N'''Пациент''',
    @level0type = N'SCHEMA',
    @level0name = N'dbo',
```

```
Connection Ready                    (LocalDB)\MSSQLLocalDB | K10\Alex | C:\USERS\ALEX\DOCUMENT...
```

```
Update for (LocalDB)\MSSQLLocalDB.C:\USERS\ALEX\DOCUMENTS\VISUAL STUDIO 2017\PROJECTS\WINDOWSFORMSAPP11\WINDOWSFORMSAPP11\MEDDATABASE.MDF  0:29:11 - 0:2
    Creating update preview...                                                                                  View Preview
    Displaying update preview...
    Creating database script...                                                                                 View Script
    Executing update script on database 'C:\USERS\ALEX\DOCUMENTS\VISUAL STUDIO 2017\PROJECTS\WINDOWSFORMSAPP11\WINDOWSFORMSAPP11\MEDDATABASE.MD...  View Results
    Update completed successfully
```

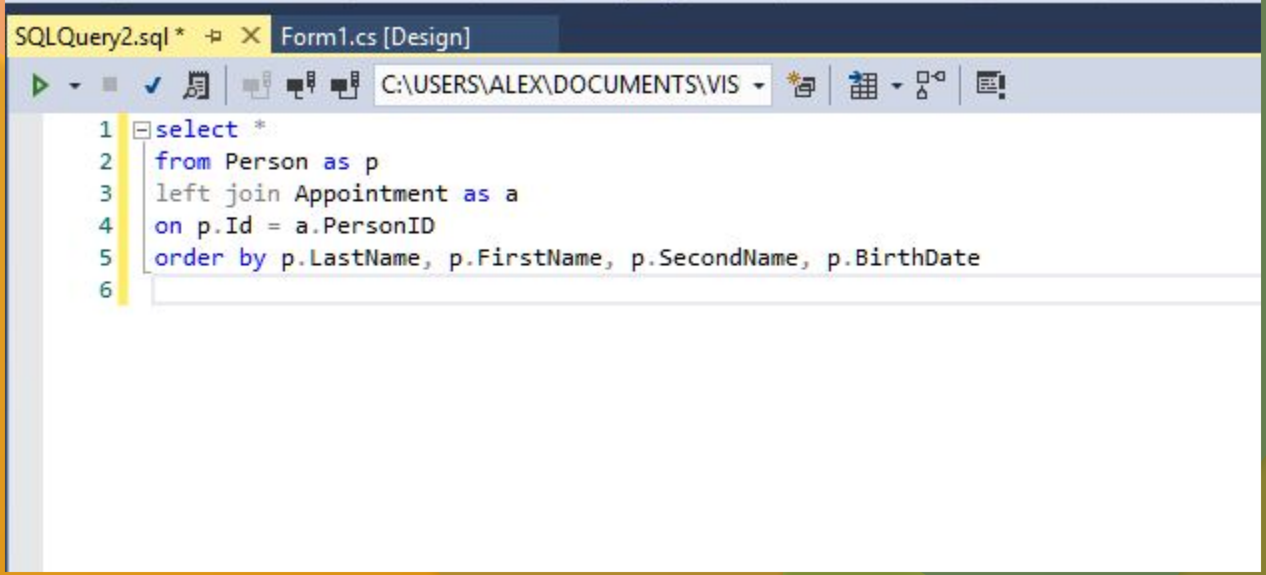


- Data Connections
  - MedDatabase.mdf
    - Tables
      - Appointment
        - Id
        - PersonID
        - Date
        - Time
        - Diag1
        - DiagFull
        - Medication
        - NexAppDate
        - NextAppTime
      - Person
        - Id
        - FirstName
        - SecondName
        - LastName
        - BirthDate
    - Views
    - Stored Procedures
    - Functions


Azure
Data Connections
MedDatabase.mdf
Tables
Appointment
Id
PersonID
Date
Time
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
Person
Id
FirstName
SecondName
LastName
BirthDate
Views
Stored Procedures
Functions
Synonyms
Types
Assemblies
MSDAOSP
Add New Table
New Query
Refresh
Properties Alt+Enter
Update
Script File:
dbo.Table_1.sql
Design
T-SQL

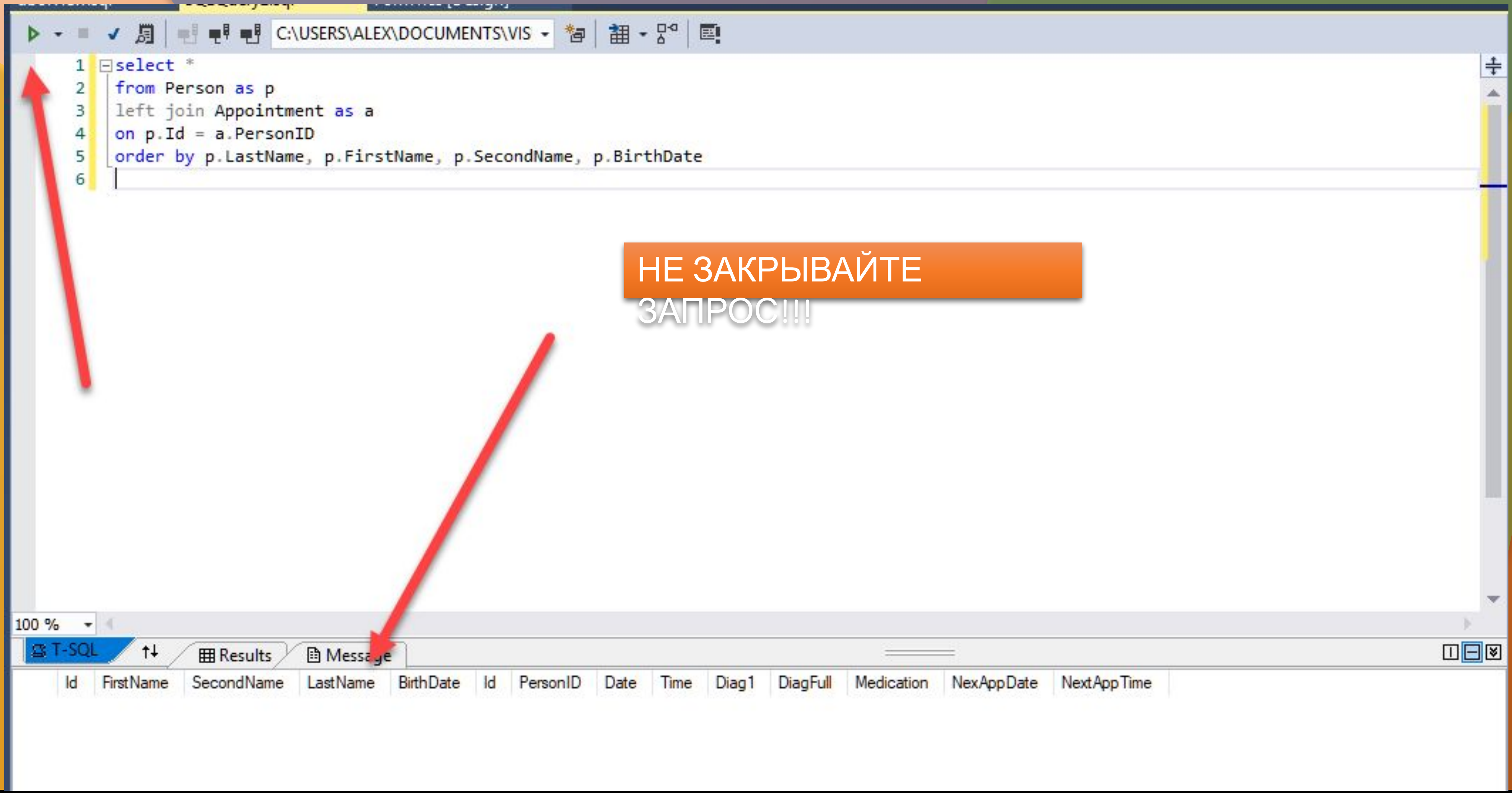
Name	Data Typ
Id	int
PersonID	int
	date
	time(7)
	nchar(64
	text
Medication	nchar(12
NexAppDate	date
NextAppTime	time(7)

```
CREATE TABLE [dbo].[Appo
(
    [Id] INT NOT NULL P
    [PersonID] INT NULL,
    [Date] DATE NULL,
    [Time] TIME NULL,
    [Diag1] NCHAR(64) NU
    [DiagFull] TEXT NUL
    [Medication] NCHAR(1
    [NexAppDate] DATE NU
```


SQLQuery2.sql *
Form1.cs [Design]
C:\USERS\ALEX\DOCUMENTS\VIS

```
select *
from Person as p
left join Appointment as a
on p.Id = a.PersonID
order by p.LastName, p.FirstName, p.SecondName, p.BirthDate
```

Создайте запрос на объединение

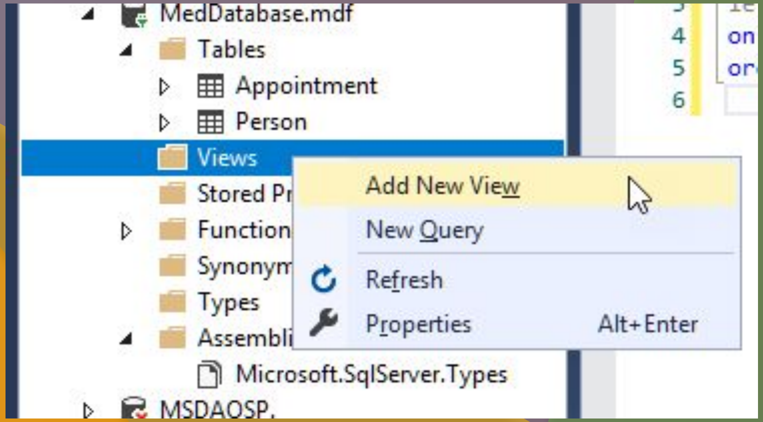

C:\USERS\ALEX\DOCUMENTS\VIS
100 %
T-SQL
Results
Message

```
select *
from Person as p
left join Appointment as a
on p.Id = a.PersonID
order by p.LastName, p.FirstName, p.SecondName, p.BirthDate
```

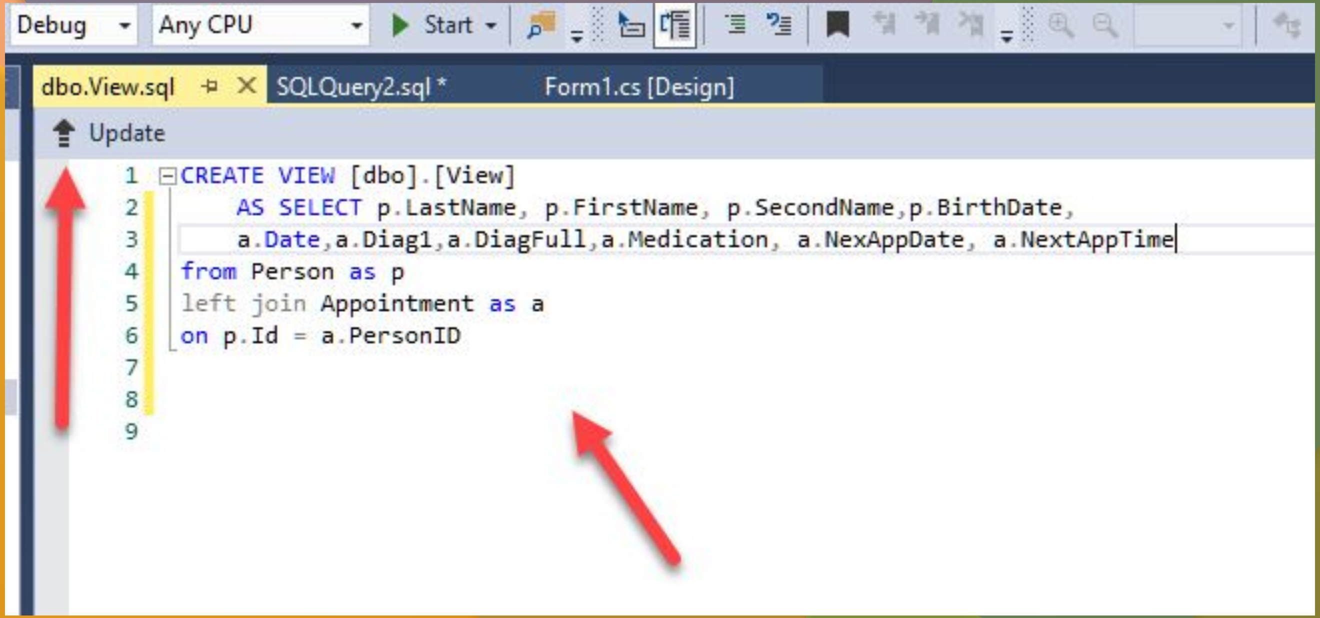
Id	FirstName	SecondName	LastName	BirthDate	Id	PersonID	Date	Time	Diag1	DiagFull	Medication	NexAppDate	NextAppTime

НЕ ЗАКРЫВАЙТЕ ЗАПРОС!!!

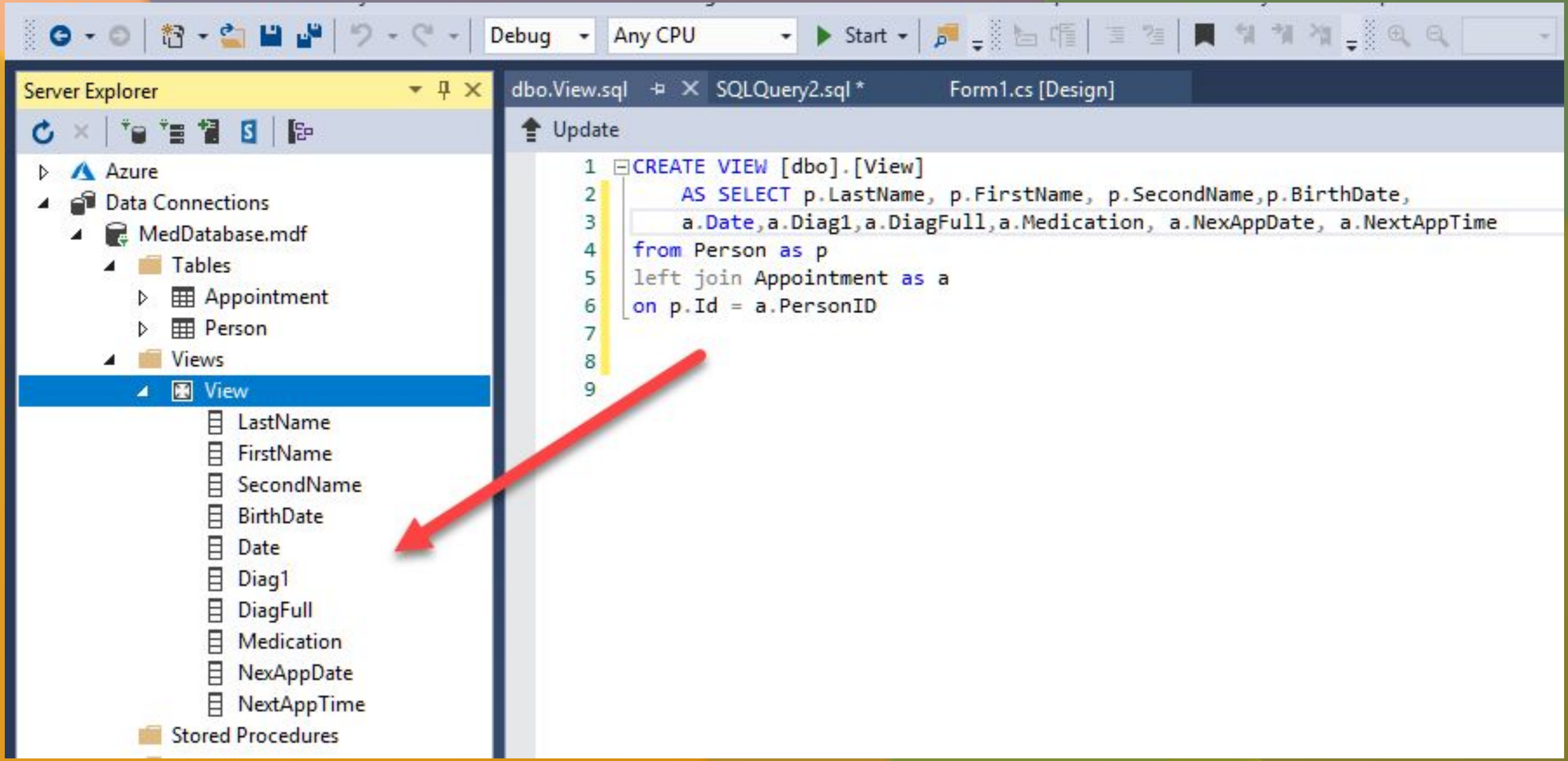
Убедитесь, что запрос дает ответ (хотя бы и пустой)


MedDatabase.mdf
Tables
Appointment
Person
Views
Stored Pr
Function
Synonym
Types
Assembli
Microsoft.SqlServer.Types
MSDAOSP.
Add New View
New Query
Refresh
Properties
Alt+Enter
4
5
6
on
or

Создайте вид (имитацию таблицы на базе запроса)

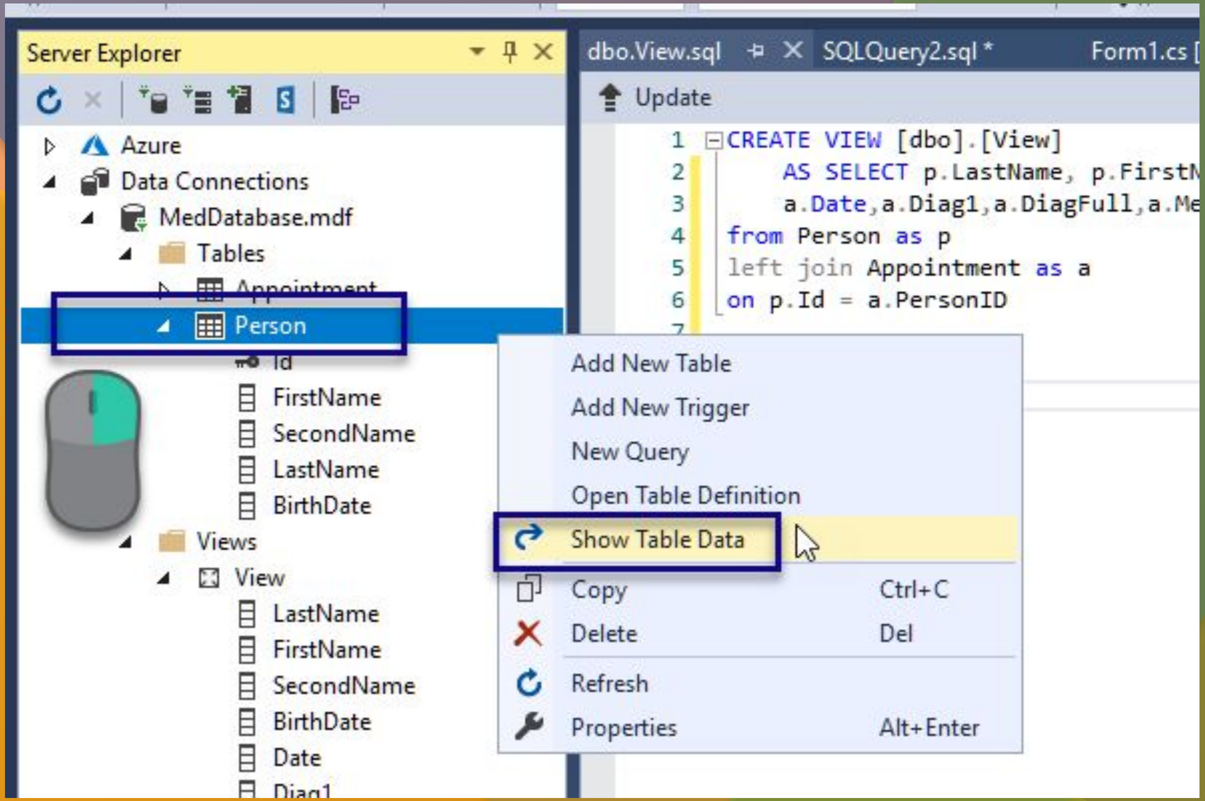

Debug
Any CPU
Start
dbo.View.sql
SQLQuery2.sql *
Form1.cs [Design]
Update

```sql
CREATE VIEW [dbo].[View]
    AS SELECT p.LastName, p.FirstName, p.SecondName,p.BirthDate,
    a.Date,a.Diag1,a.DiagFull,a.Medication, a.NexAppDate, a.NextAppTime
from Person as p
left join Appointment as a
on p.Id = a.PersonID
```



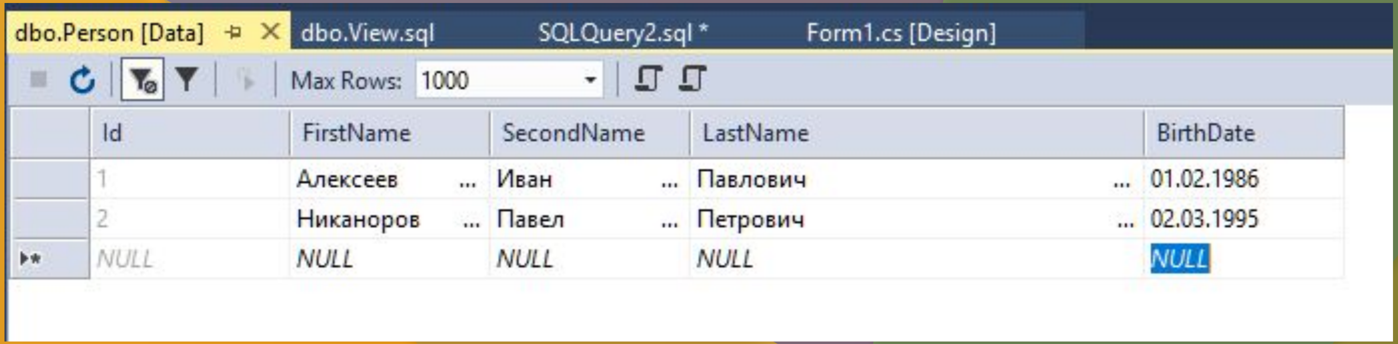
Debug
Any CPU
Start
Server Explorer
Azure
Data Connections
MedDatabase.mdf
Tables
Appointment
Person
Views
View
LastName
FirstName
SecondName
BirthDate
Date
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
Stored Procedures
dbo.View.sql
SQLQuery2.sql *
Form1.cs [Design]
Update

```sql
CREATE VIEW [dbo].[View]
    AS SELECT p.LastName, p.FirstName, p.SecondName,p.BirthDate,
    a.Date,a.Diag1,a.DiagFull,a.Medication, a.NexAppDate, a.NextAppTime
from Person as p
left join Appointment as a
on p.Id = a.PersonID
```

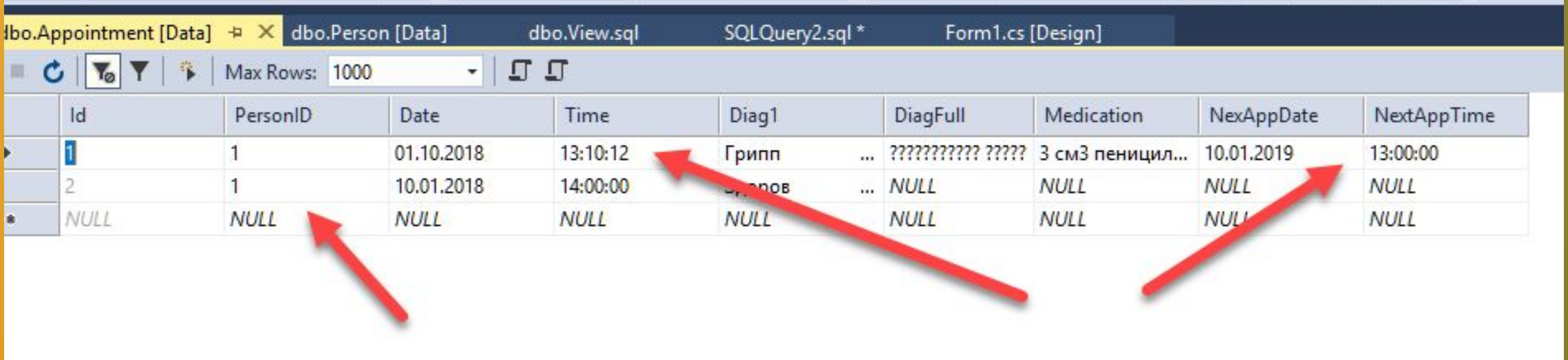

Server Explorer
Azure
Data Connections
MedDatabase.mdf
Tables
Appointment
Person
Id
FirstName
SecondName
LastName
BirthDate
Views
View
LastName
FirstName
SecondName
BirthDate
Date
Diag1
dbo.View.sql
SQLQuery2.sql *
Form1.cs
Update
Add New Table
Add New Trigger
New Query
Open Table Definition
Show Table Data
Copy Ctrl+C
Delete Del
Refresh
Properties Alt+Enter

```
CREATE VIEW [dbo].[View]
    AS SELECT p.LastName, p.FirstN
    a.Date,a.Diag1,a.DiagFull,a.Me
from Person as p
left join Appointment as a
on p.Id = a.PersonID
```

Добавьте к таблице строку данных

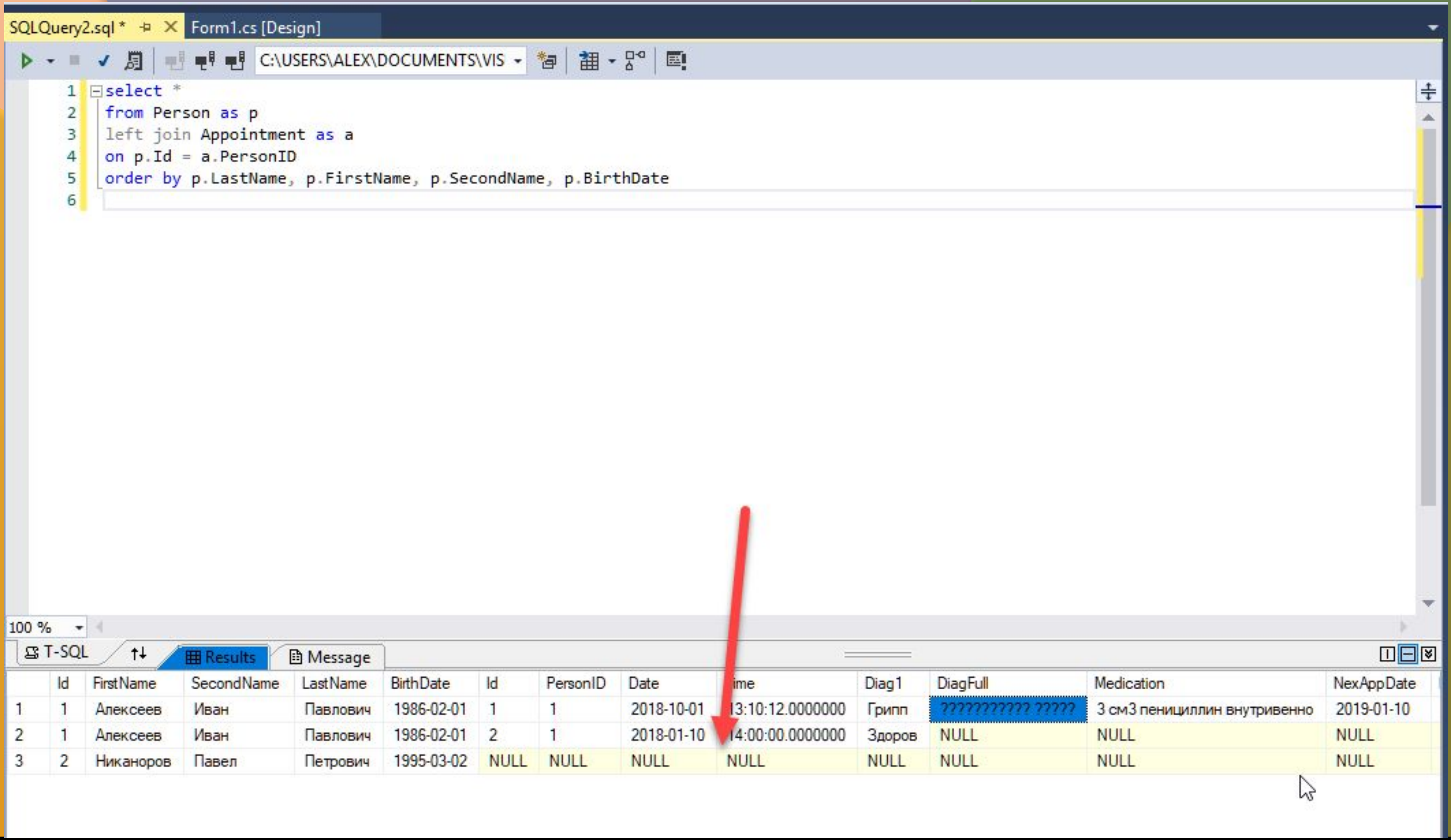

dbo.Person [Data]
dbo.View.sql
SQLQuery2.sql *
Form1.cs [Design]
Max Rows: 1000

Id	FirstName	SecondName	LastName	BirthDate
1	Алексеев	Иван	Павлович	01.02.1986
2	Никаноров	Павел	Петрович	02.03.1995
NULL	NULL	NULL	NULL	NULL


dbo.Appointment [Data]
dbo.Person [Data]
dbo.View.sql
SQLQuery2.sql *
Form1.cs [Design]
Max Rows: 1000

Id	PersonID	Date	Time	Diag1	DiagFull	Medication	NexAppDate	NextAppTime
1	1	01.10.2018	13:10:12	Грипп ...	??????????? ?????	3 см3 пеницил...	10.01.2019	13:00:00
2	1	10.01.2018	14:00:00	Здоров ...	NULL	NULL	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

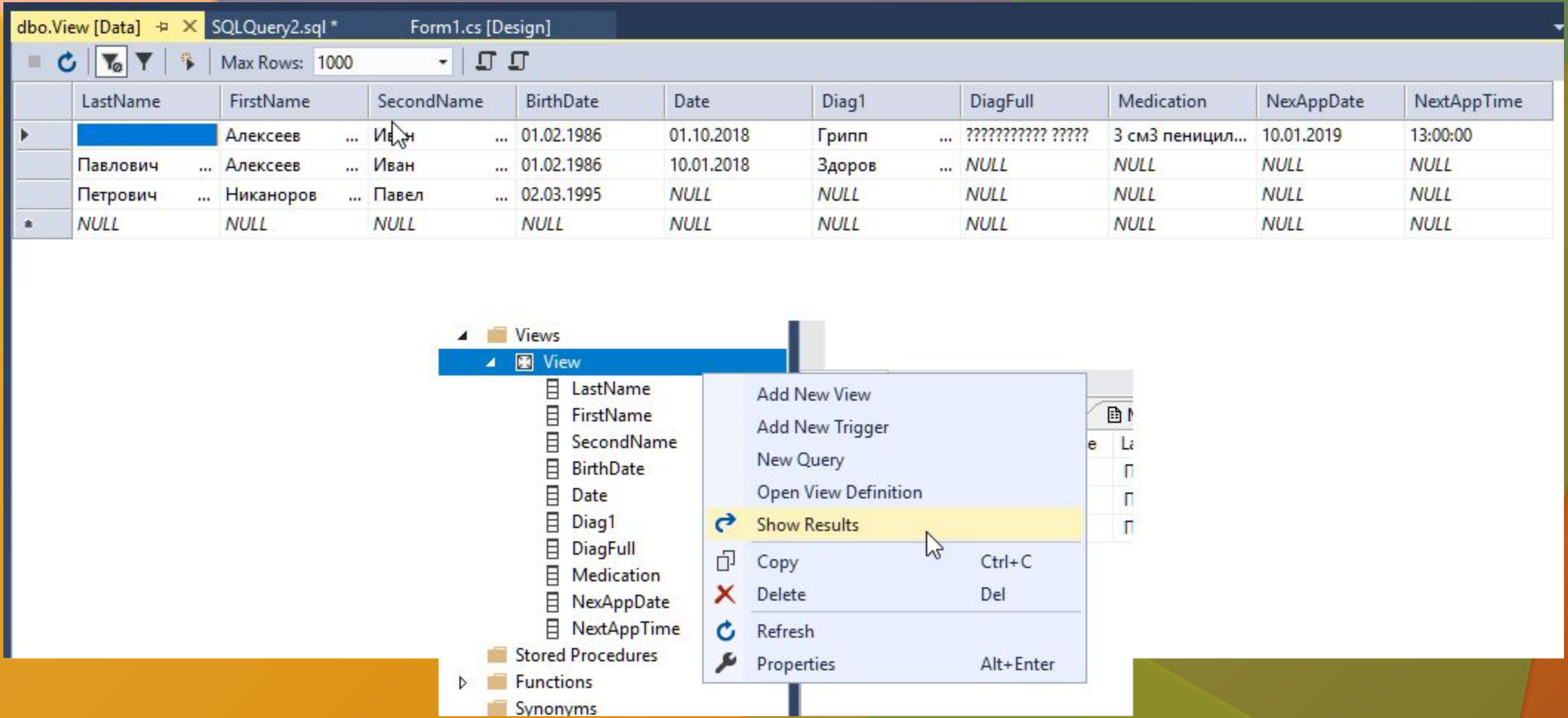
Обязательно задайте правильный PersonID


SQLQuery2.sql *
Form1.cs [Design]
C:\USERS\ALEX\DOCUMENTS\VIS
100 %
T-SQL
Results
Message

```sql
select *
from Person as p
left join Appointment as a
on p.Id = a.PersonID
order by p.LastName, p.FirstName, p.SecondName, p.BirthDate
```

	Id	FirstName	SecondName	LastName	BirthDate	Id	PersonID	Date	ime	Diag1	DiagFull	Medication	NexAppDate
1	1	Алексеев	Иван	Павлович	1986-02-01	1	1	2018-10-01	3:10:12.0000000	Грипп	??????????? ?????	3 см3 пенициллин внутривенно	2019-01-10
2	1	Алексеев	Иван	Павлович	1986-02-01	2	1	2018-01-10	4:00:00.0000000	Здоров	NULL	NULL	NULL
3	2	Никаноров	Павел	Петрович	1995-03-02	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

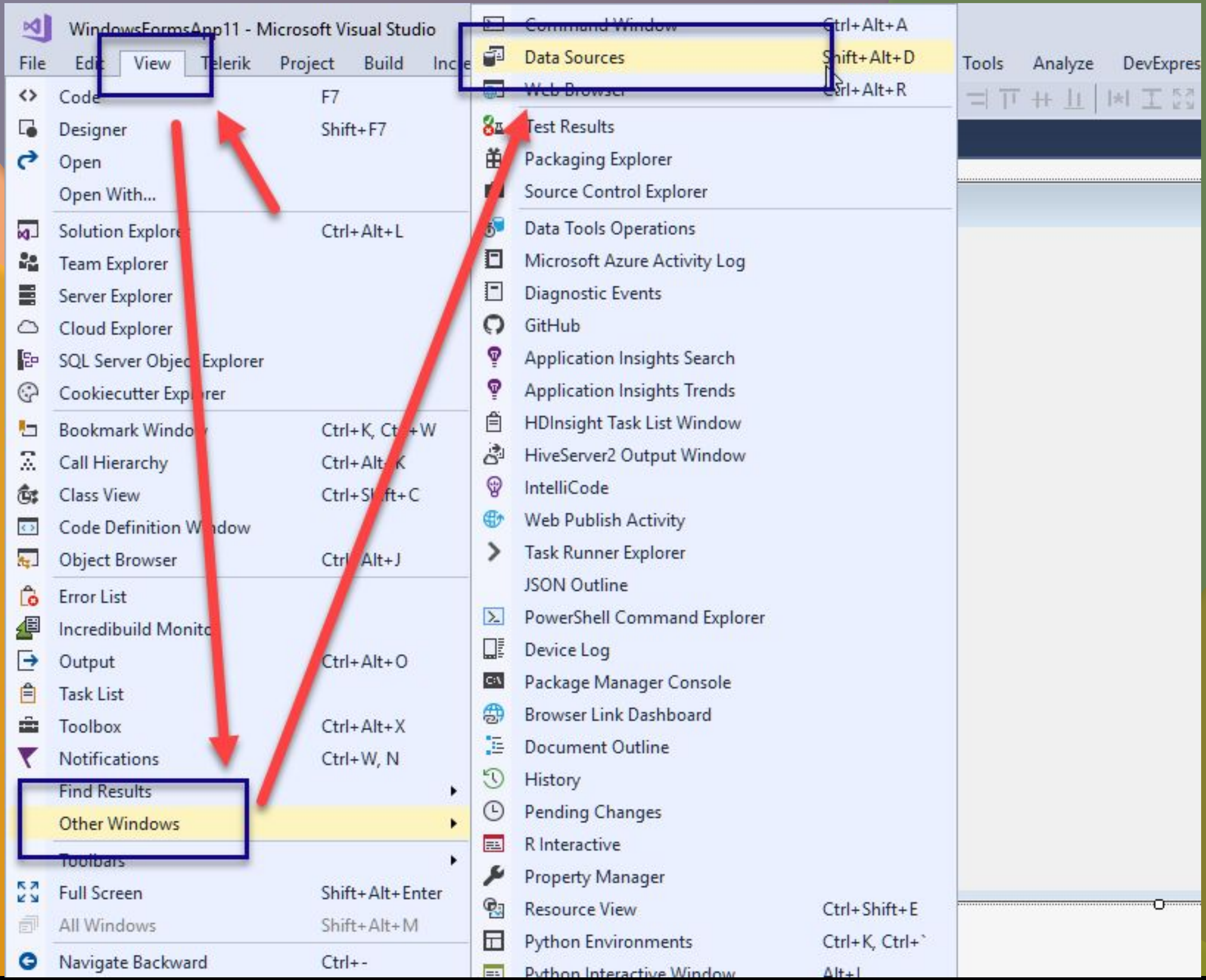
Убедитесь, что запрос отрабатывается


dbo.View [Data]
SQLQuery2.sql *
Form1.cs [Design]
Max Rows: 1000
Views
View
LastName
FirstName
SecondName
BirthDate
Date
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
Stored Procedures
Functions
Synonyms
Add New View
Add New Trigger
New Query
Open View Definition
Show Results
Copy Ctrl+C
Delete Del
Refresh
Properties Alt+Enter

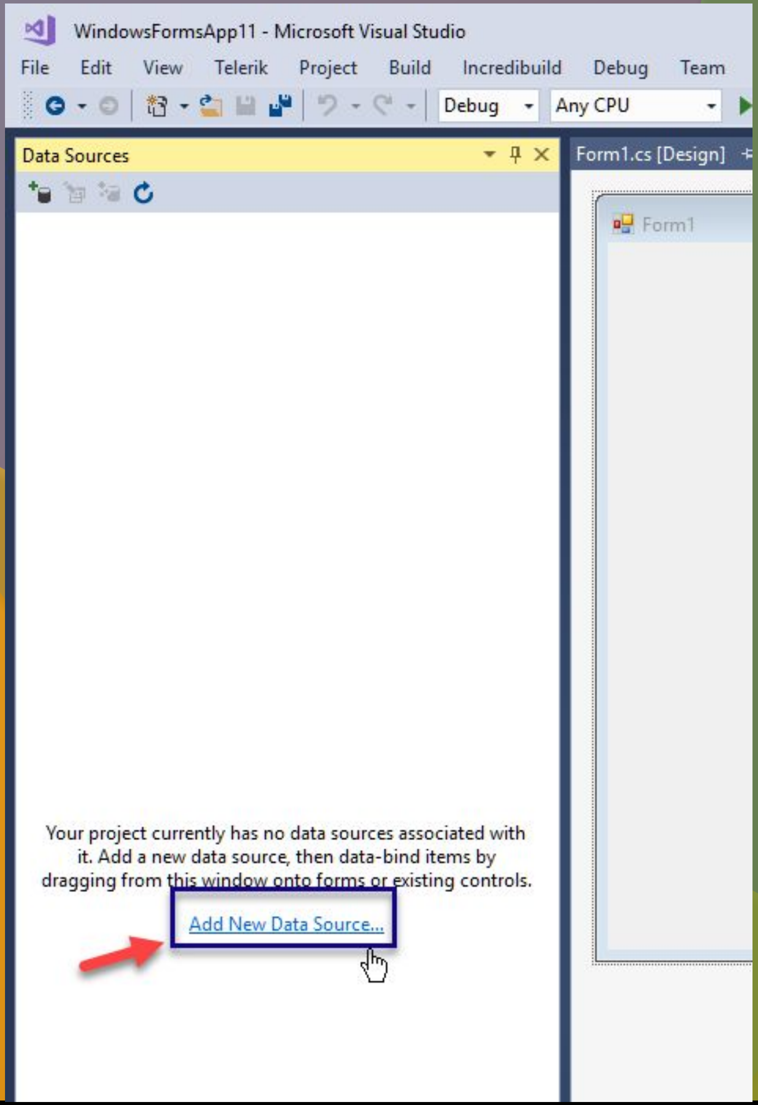
LastName	FirstName	SecondName	BirthDate	Date	Diag1	DiagFull	Medication	NexAppDate	NextAppTime
	Алексеев	Иван	01.02.1986	01.10.2018	Грипп	???????????? ?????	3 см3 пеницил...	10.01.2019	13:00:00
Павлович	Алексеев	Иван	01.02.1986	10.01.2018	Здоров	NULL	NULL	NULL	NULL
Петрович	Никаноров	Павел	02.03.1995	NULL	NULL	NULL	NULL	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Убедитесь, что вид демонстрирует данные, аналогично запросу

Подключение к базе данных

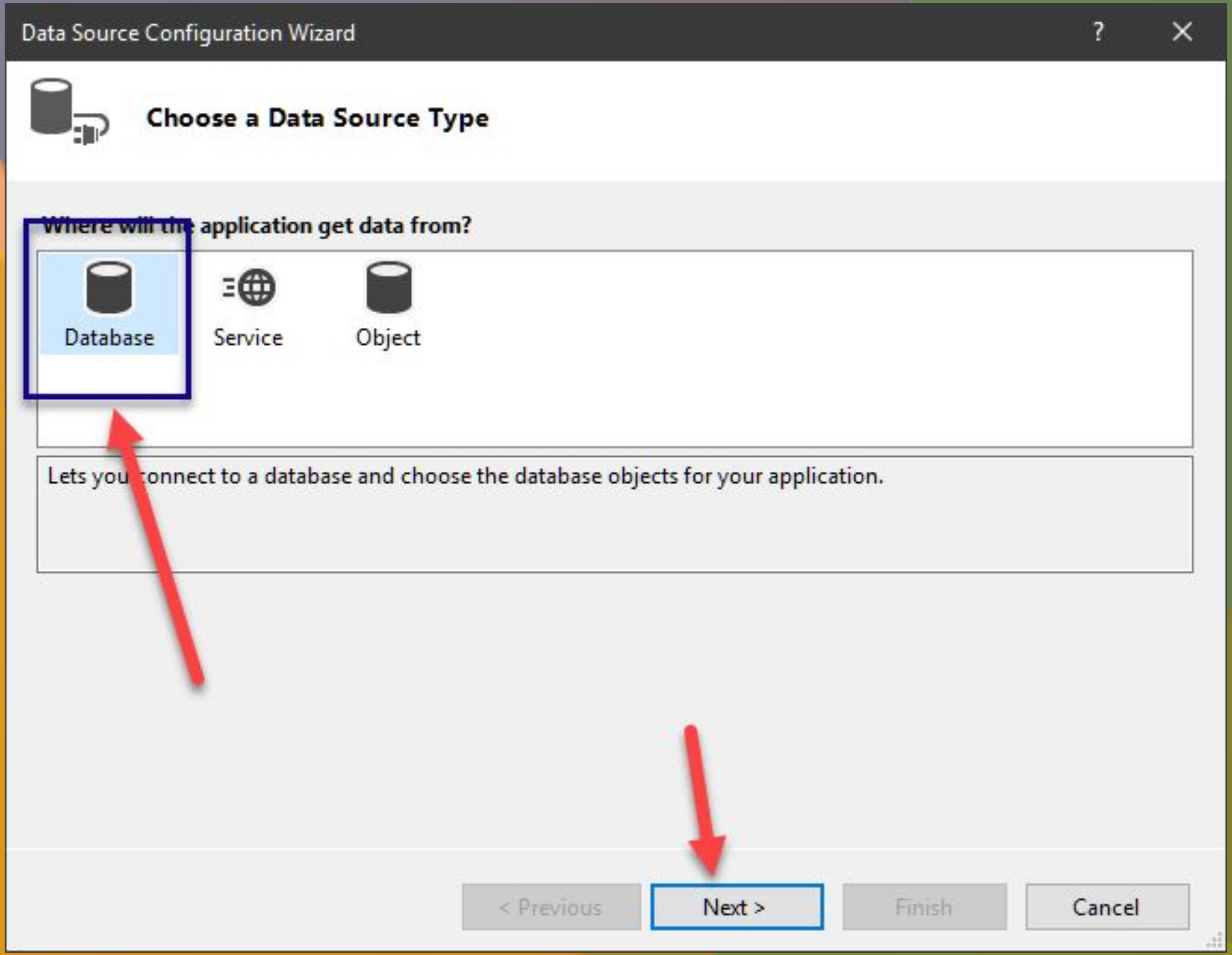

WindowsFormsApp11 - Microsoft Visual Studio
File
Edit
View
Telerik
Project
Build
Tools
Analyze
DevExpres
Code F7
Designer Shift+F7
Open
Open With...
Solution Explorer Ctrl+Alt+L
Team Explorer
Server Explorer
Cloud Explorer
SQL Server Object Explorer
Cookiecutter Explorer
Bookmark Window Ctrl+K, Ctrl+W
Call Hierarchy Ctrl+Alt+K
Class View Ctrl+Shift+C
Code Definition Window
Object Browser Ctrl+Alt+J
Error List
Incredibuild Monitor
Output Ctrl+Alt+O
Task List
Toolbox Ctrl+Alt+X
Notifications Ctrl+W, N
Find Results
Other Windows
Toolbars
Full Screen Shift+Alt+Enter
All Windows Shift+Alt+M
Navigate Backward Ctrl+-
Command Window Ctrl+Alt+A
Data Sources Shift+Alt+D
Web Browser Ctrl+Alt+R
Test Results
Packaging Explorer
Source Control Explorer
Data Tools Operations
Microsoft Azure Activity Log
Diagnostic Events
GitHub
Application Insights Search
Application Insights Trends
HDInsight Task List Window
HiveServer2 Output Window
IntelliCode
Web Publish Activity
Task Runner Explorer
JSON Outline
PowerShell Command Explorer
Device Log
Package Manager Console
Browser Link Dashboard
Document Outline
History
Pending Changes
R Interactive
Property Manager
Resource View Ctrl+Shift+E
Python Environments Ctrl+K, Ctrl+`
Python Interactive Window Alt+I

Отображаем окно мастера


WindowsFormsApp11 - Microsoft Visual Studio
File
Edit
View
Telerik
Project
Build
Incredibuild
Debug
Team
Debug
Any CPU
Data Sources
Form1.cs [Design]
Form1
Add New Data Source...

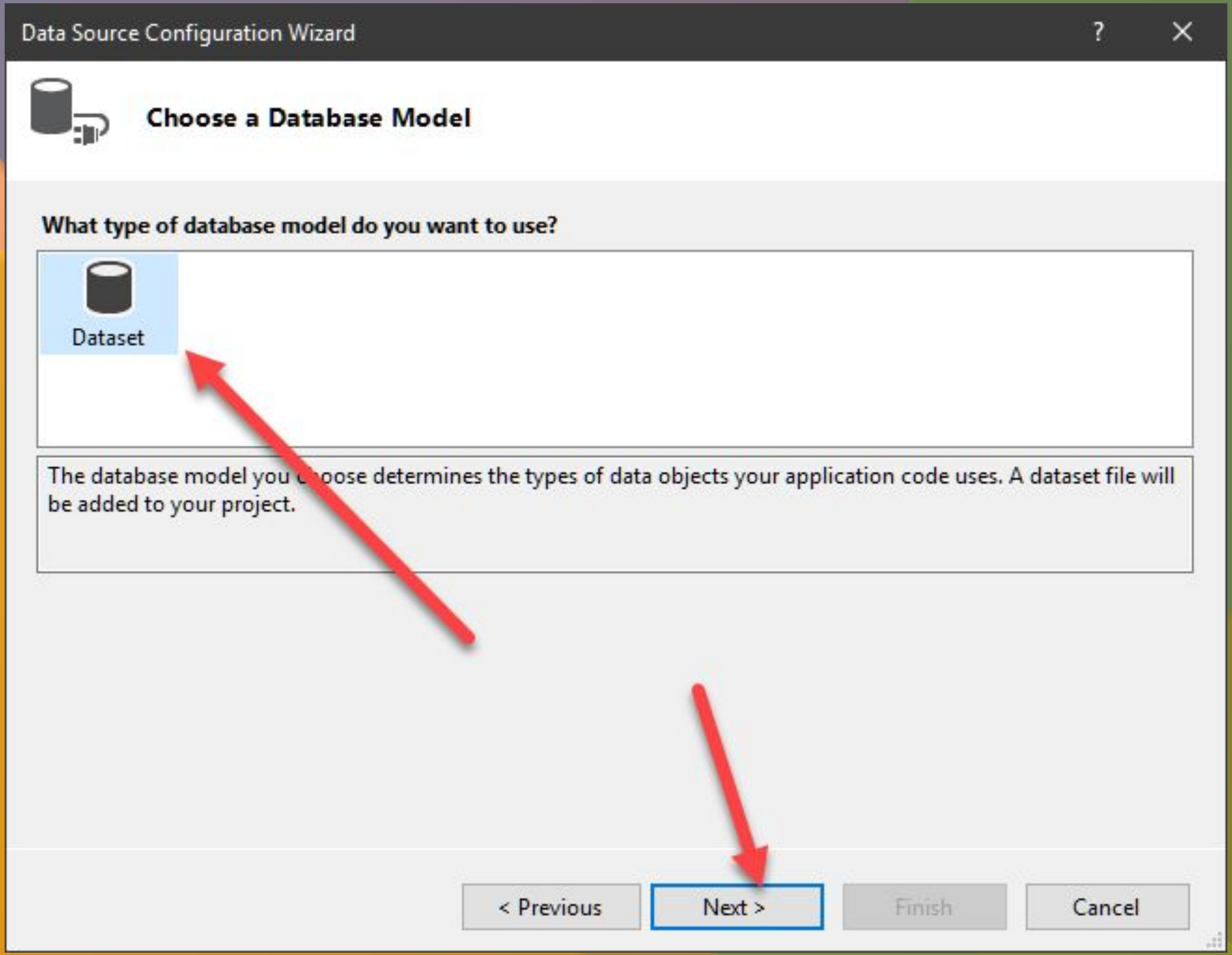
Your project currently has no data sources associated with it. Add a new data source, then data-bind items by dragging from this window onto forms or existing controls.

Запускаем мастер подключения


Data Source Configuration Wizard
?
Choose a Data Source Type
Where will the application get data from?
Database
Service
Object
< Previous
Next >
Finish
Cancel

Lets you connect to a database and choose the database objects for your application.

Выбираем базу данных

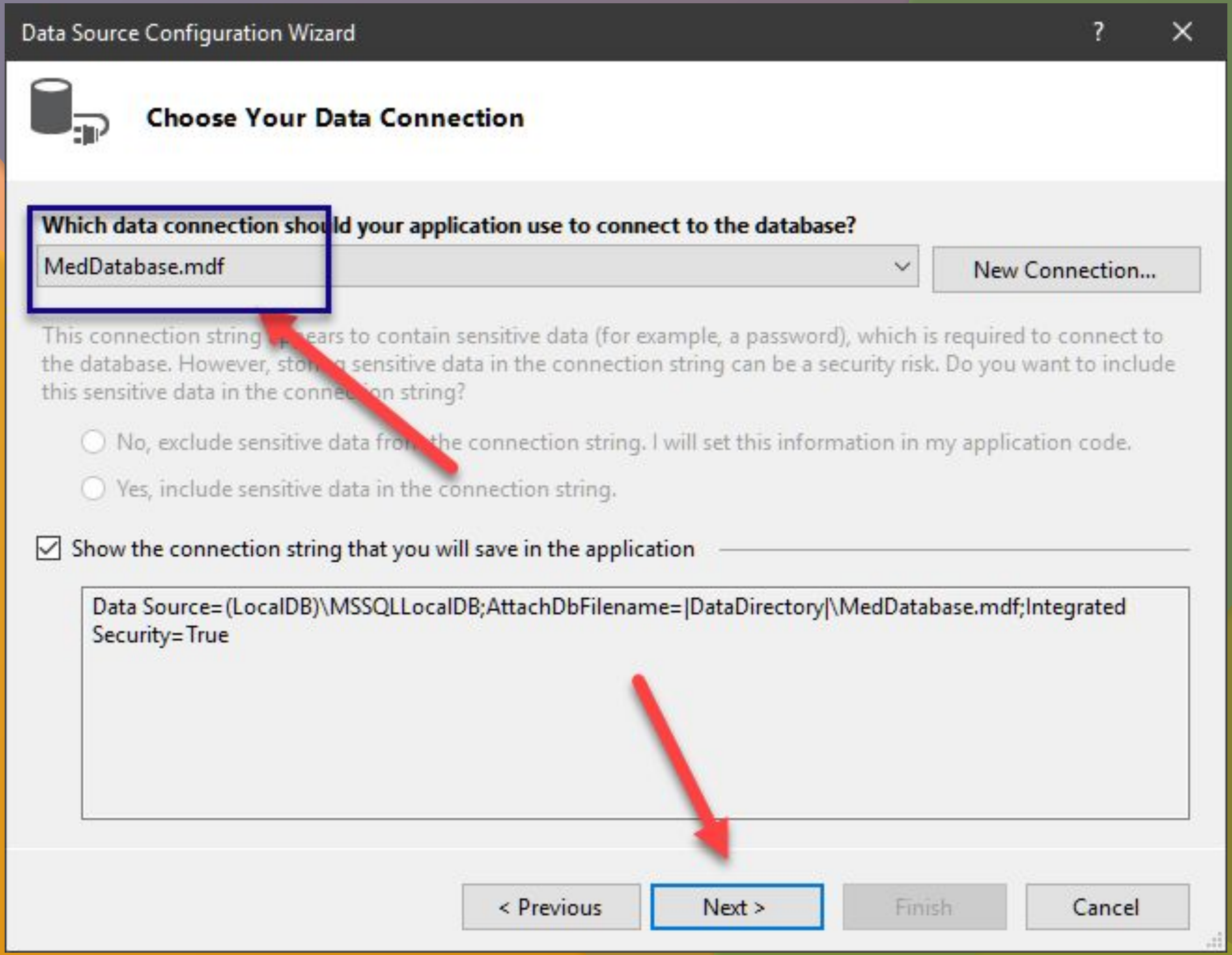

Data Source Configuration Wizard
?
✕
Dataset
< Previous
Next >
Finish
Cancel

Choose a Database Model

What type of database model do you want to use?

The database model you choose determines the types of data objects your application code uses. A dataset file will be added to your project.

На ее основе будет создана модель данных (Dataset)


Data Source Configuration Wizard
?
✕
Choose Your Data Connection
New Connection...
< Previous
Next >
Finish
Cancel

Which data connection should your application use to connect to the database?

MedDatabase.mdf

This connection string appears to contain sensitive data (for example, a password), which is required to connect to the database. However, storing sensitive data in the connection string can be a security risk. Do you want to include this sensitive data in the connection string?

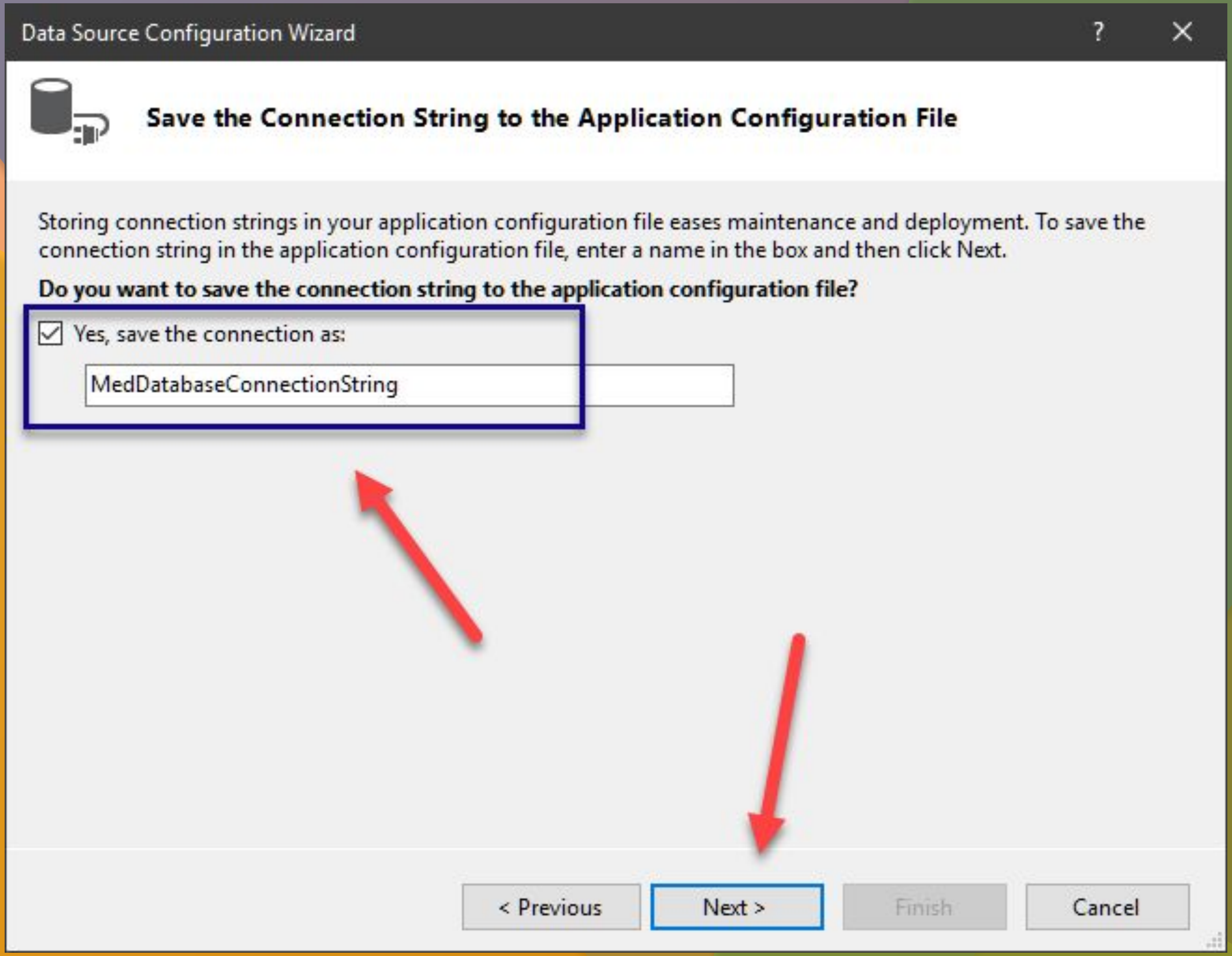
○ No, exclude sensitive data from the connection string. I will set this information in my application code.

○ Yes, include sensitive data in the connection string.

☑ Show the connection string that you will save in the application

```
Data Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=|DataDirectory|\MedDatabase.mdf;Integrated
Security=True
```

В приложении будет строка для указания БД



Data Source Configuration Wizard
?
Save the Connection String to the Application Configuration File

Storing connection strings in your application configuration file eases maintenance and deployment. To save the connection string in the application configuration file, enter a name in the box and then click Next.

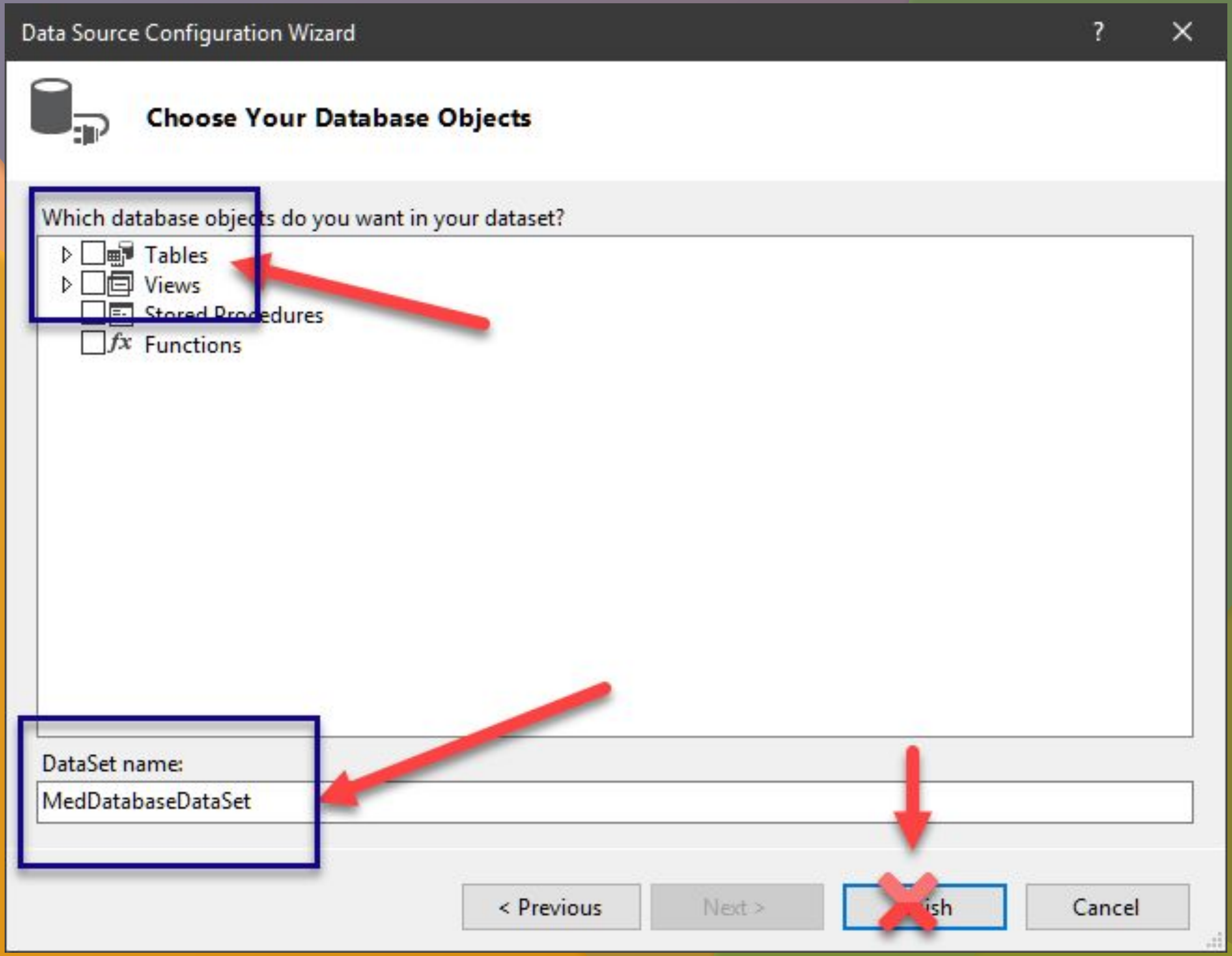
Do you want to save the connection string to the application configuration file?

☑ Yes, save the connection as:

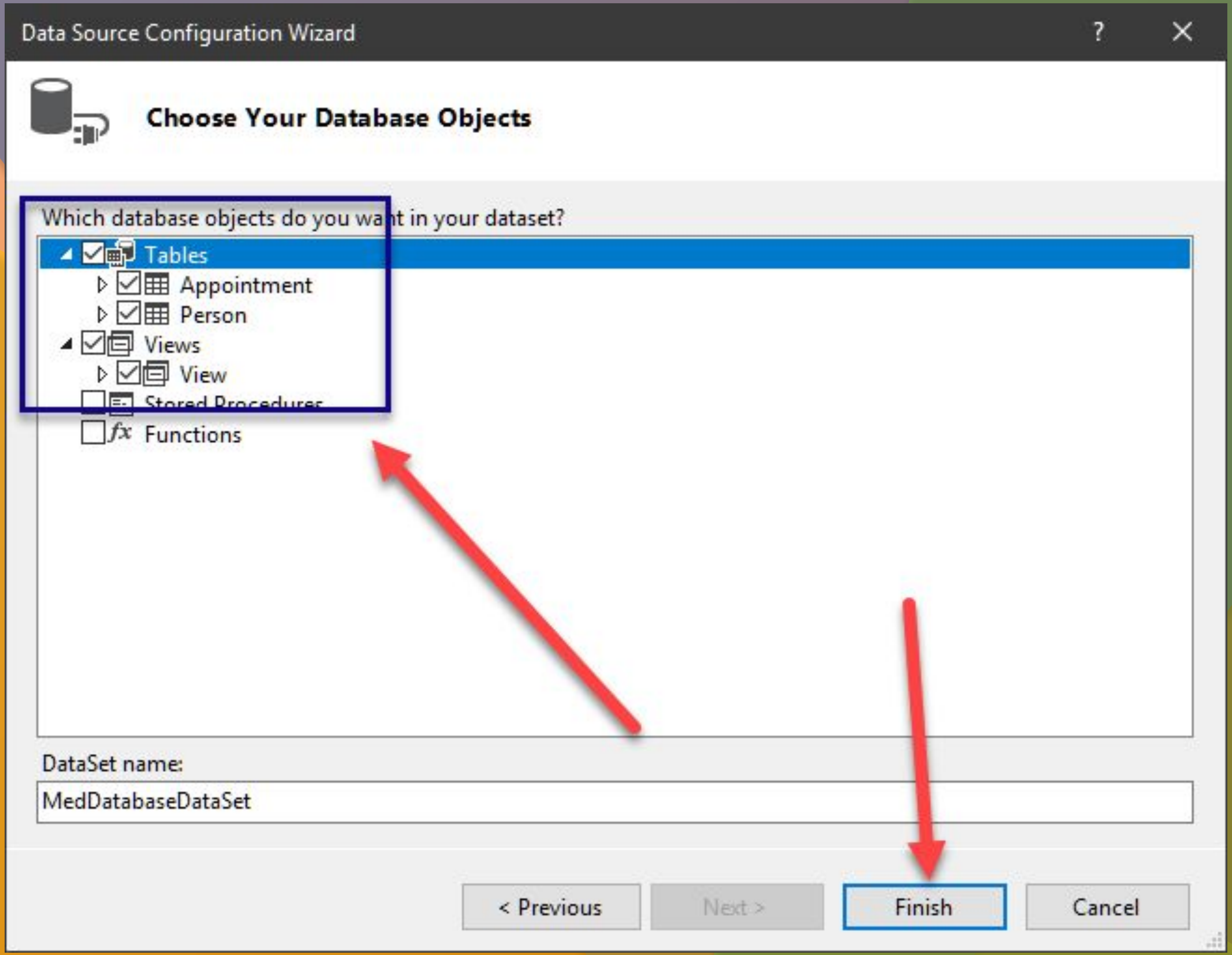
MedDatabaseConnectionString

< Previous
Next >
Finish
Cancel

Строка будет сохранена в файле конфигурации


Data Source Configuration Wizard
?
Choose Your Database Objects
Which database objects do you want in your dataset?
☐ Tables
☐ Views
☐ Stored Procedures
☐ Functions
DataSet name:
MedDatabaseDataSet
< Previous
Next >
Finish
Cancel

Отметьте все таблицы и виды для импорта



Data Source Configuration Wizard
?
×
< Previous
Next >
Finish
Cancel

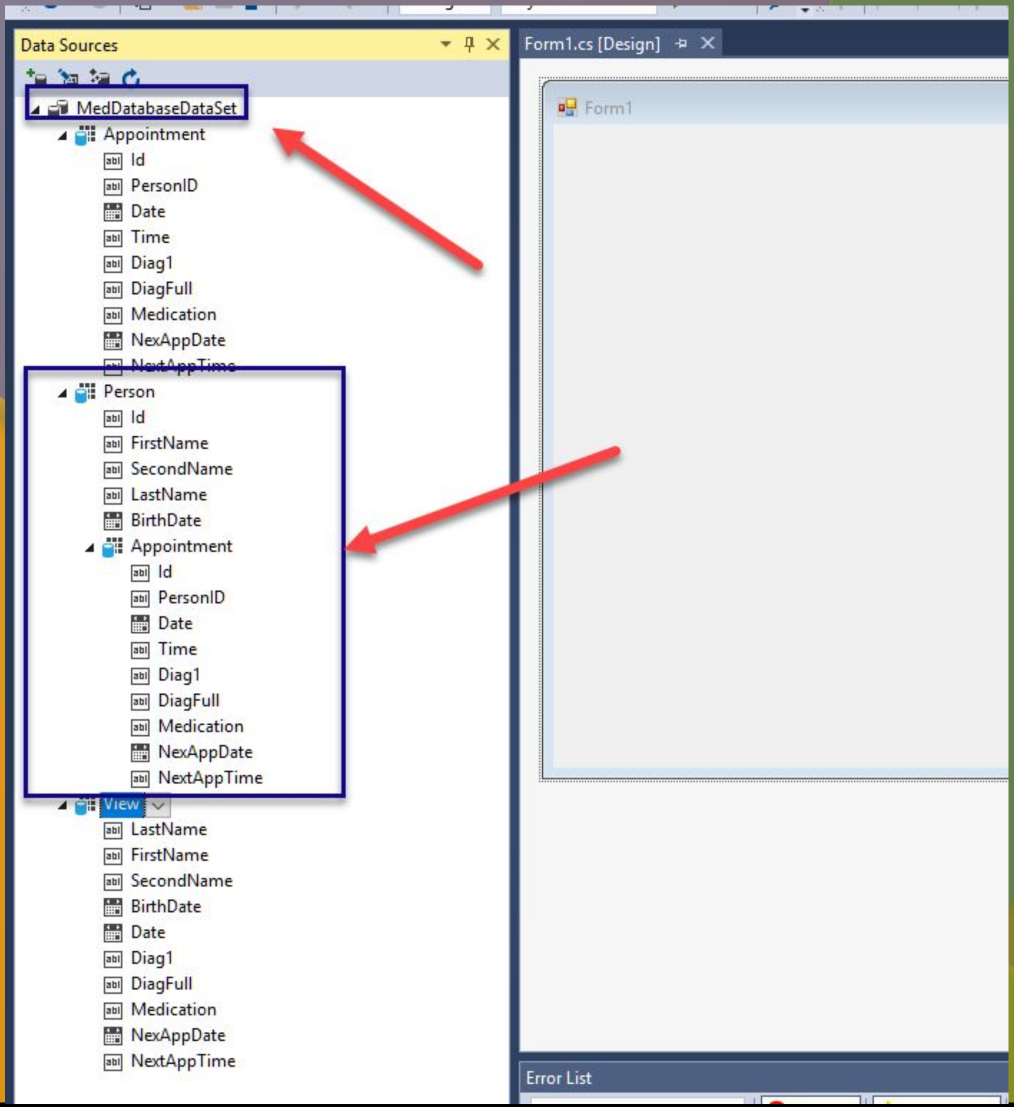
Choose Your Database Objects

Which database objects do you want in your dataset?

- ☑ Tables
  - ☑ Appointment
  - ☑ Person
- ☑ Views
  - ☑ View
- ☐ Stored Procedures
- ☐ Functions

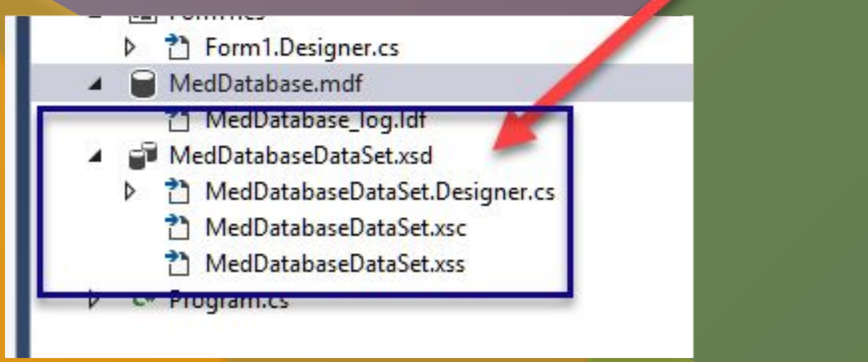
DataSet name: MedDatabaseDataSet

Убедитесь, что все элементы отмечены



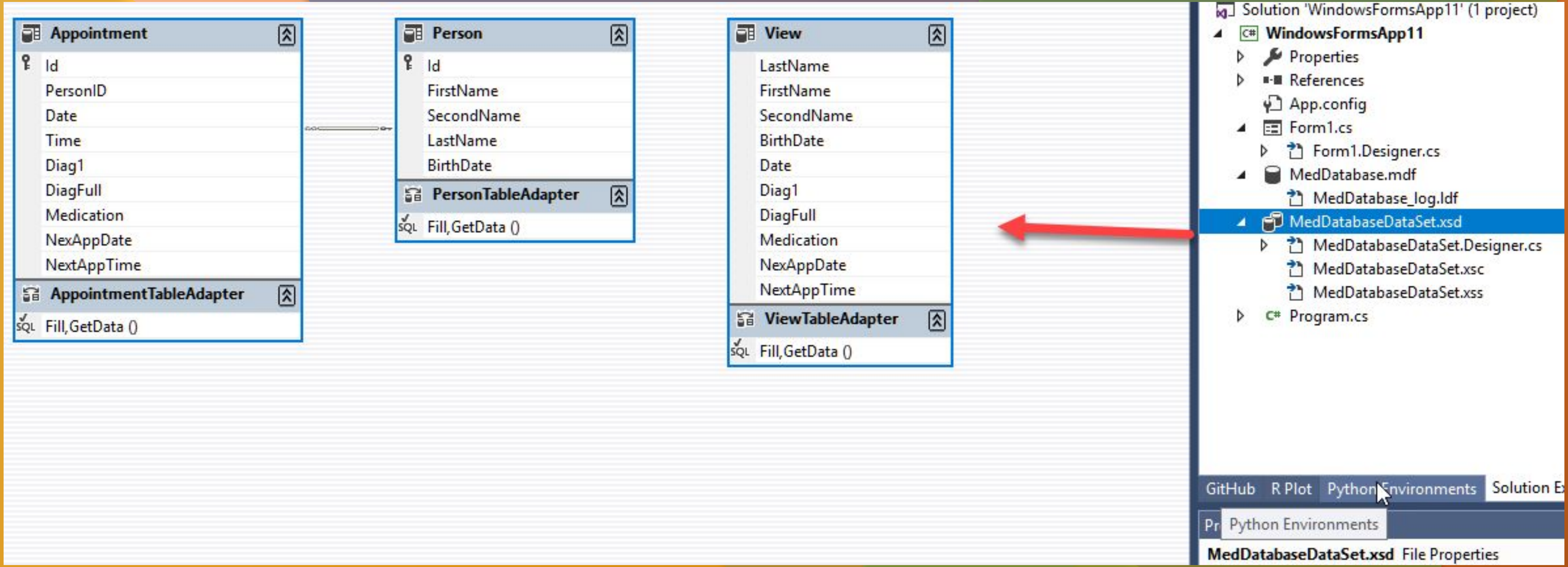
- MedDatabaseDataSet
  - Appointment
    - Id
    - PersonID
    - Date
    - Time
    - Diag1
    - DiagFull
    - Medication
    - NexAppDate
    - NextAppTime
  - Person
    - Id
    - FirstName
    - SecondName
    - LastName
    - BirthDate
    - Appointment
      - Id
      - PersonID
      - Date
      - Time
      - Diag1
      - DiagFull
      - Medication
      - NexAppDate
      - NextAppTime
  - View
    - LastName
    - FirstName
    - SecondName
    - BirthDate
    - Date
    - Diag1
    - DiagFull
    - Medication
    - NexAppDate
    - NextAppTime

DataSet определил содержимое таблиц и подобрал элементы интерфейса для вывода

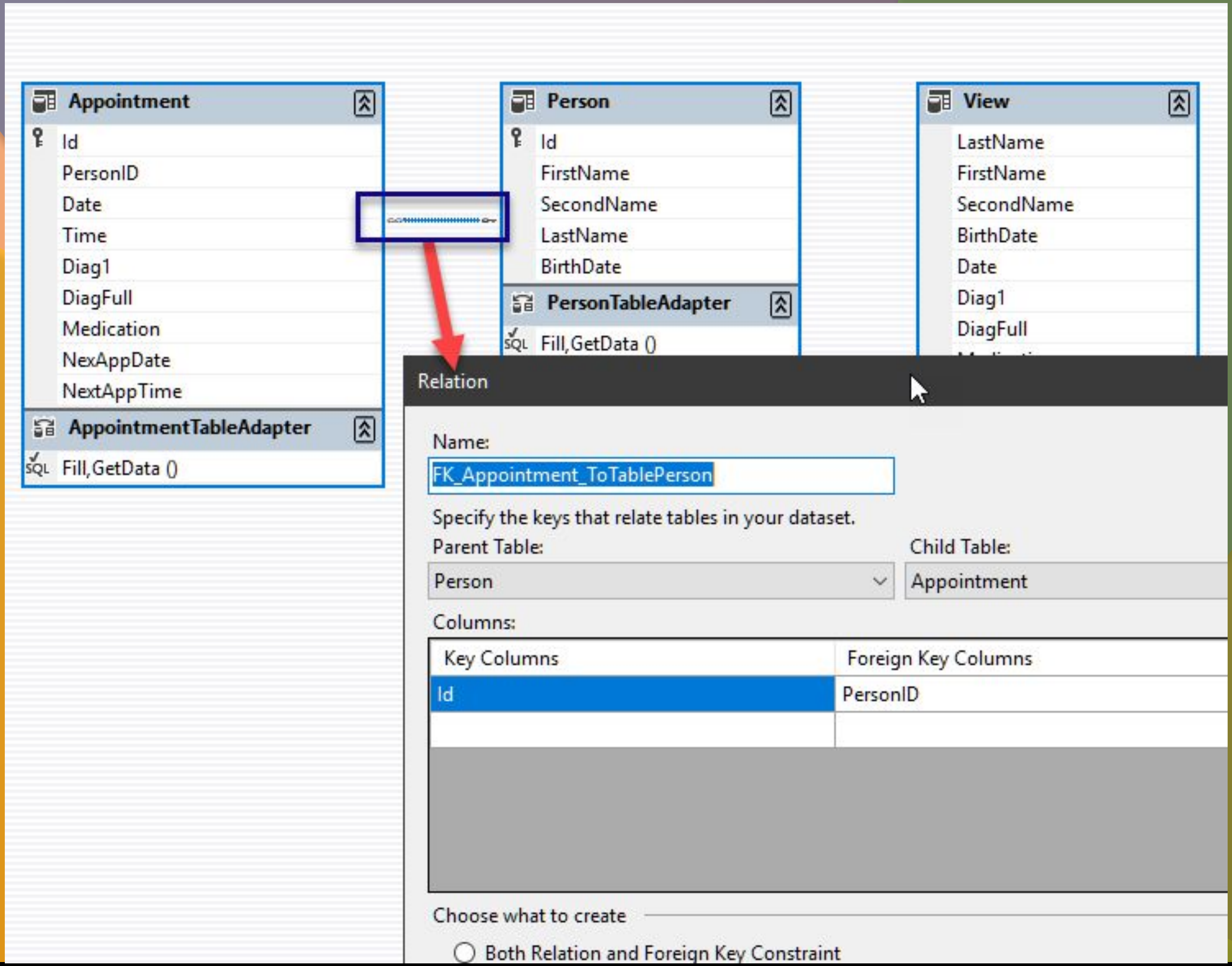


Form1.Designer.cs
MedDatabase.mdf
MedDatabase_log.ldf
MedDatabaseDataSet.xsd
MedDatabaseDataSet.Designer.cs
MedDatabaseDataSet.xsc
MedDatabaseDataSet.xss
Program.cs

Редактируем датасет


Appointment
Id
PersonID
Date
Time
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
AppointmentTableAdapter
Fill,GetData ()
Person
Id
FirstName
SecondName
LastName
BirthDate
PersonTableAdapter
Fill,GetData ()
View
LastName
FirstName
SecondName
BirthDate
Date
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
ViewTableAdapter
Fill,GetData ()
Solution 'WindowsFormsApp11' (1 project)
WindowsFormsApp11
Properties
References
App.config
Form1.cs
Form1.Designer.cs
MedDatabase.mdf
MedDatabase_log.ldf
MedDatabaseDataSet.xsd
MedDatabaseDataSet.Designer.cs
MedDatabaseDataSet.xsc
MedDatabaseDataSet.xss
Program.cs
GitHub
R Plot
Python Environments
Solution E
Pr
Python Environments
MedDatabaseDataSet.xsd File Properties

На схеме видны таблицы и отношения


Appointment
Id
PersonID
Date
Time
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
AppointmentTableAdapter
Fill,GetData ()
Person
Id
FirstName
SecondName
LastName
BirthDate
PersonTableAdapter
Fill,GetData ()
View
LastName
FirstName
SecondName
BirthDate
Date
Diag1
DiagFull
Relation

Name: FK_Appointment_ToTablePerson

Specify the keys that relate tables in your dataset.

Parent Table: Person

Child Table: Appointment

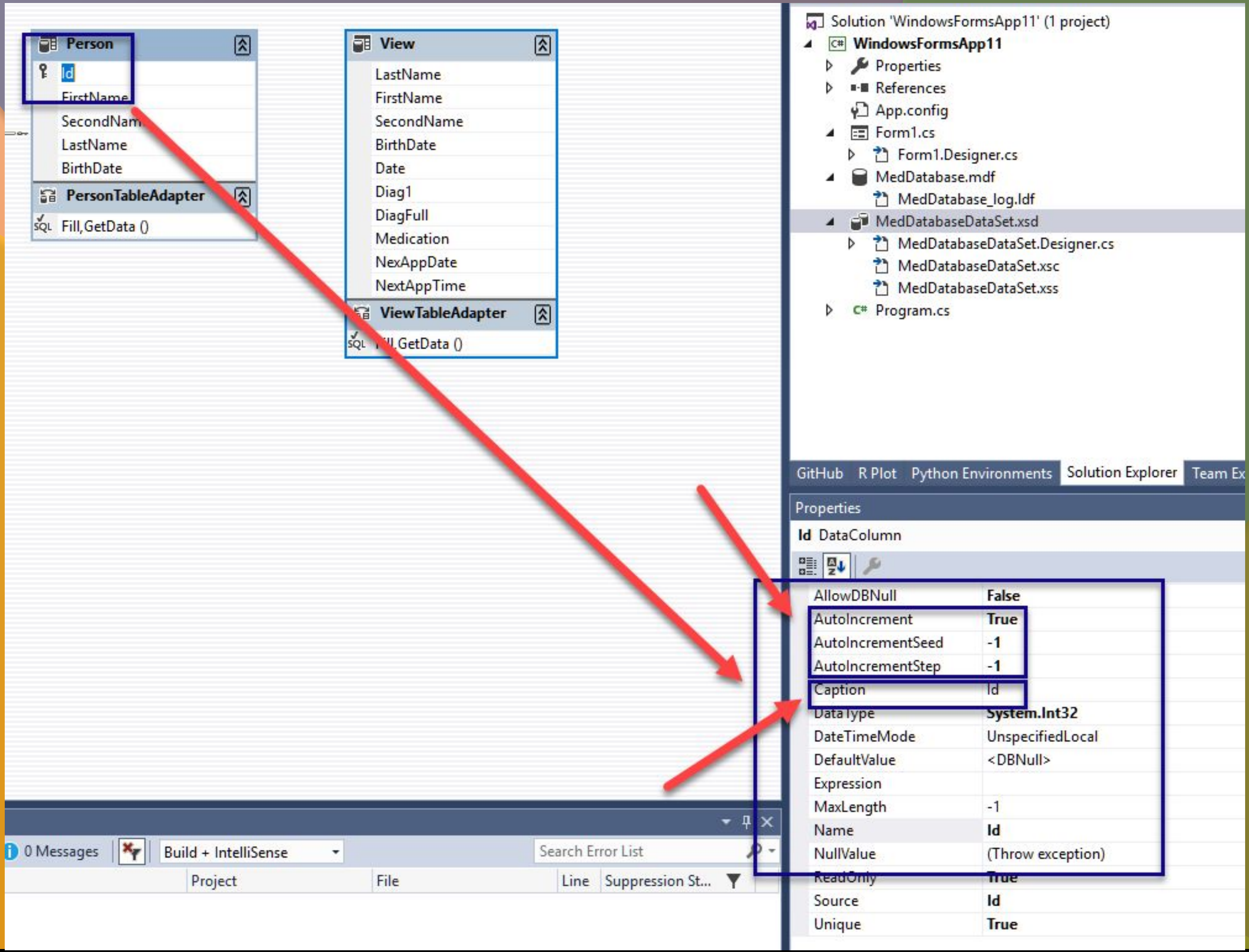
Columns:

Key Columns	Foreign Key Columns
Id	PersonID

Choose what to create

○ Both Relation and Foreign Key Constraint

Внешний ключ



Person
Id
FirstName
SecondName
LastName
BirthDate
PersonTableAdapter
Fill,GetData ()
View
LastName
FirstName
SecondName
BirthDate
Date
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
ViewTableAdapter
Fill,GetData ()
0 Messages
Build + IntelliSense
Search Error List
Project
File
Line
Suppression St...
GitHub
R Plot
Python Environments
Solution Explorer
Team Ex

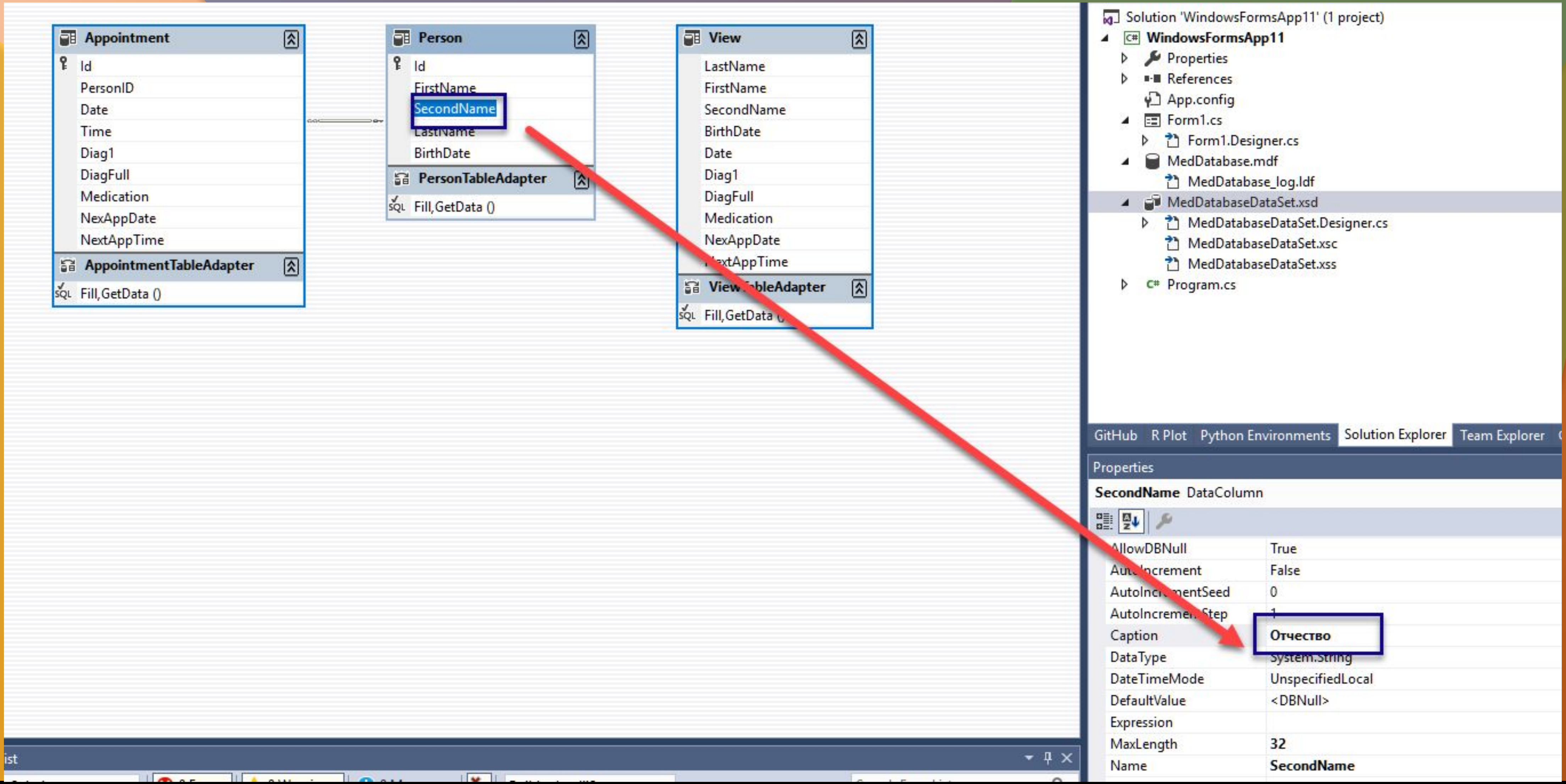
Solution 'WindowsFormsApp11' (1 project)
- WindowsFormsApp11
  - Properties
  - References
  - App.config
  - Form1.cs
    - Form1.Designer.cs
  - MedDatabase.mdf
    - MedDatabase_log.ldf
  - MedDatabaseDataSet.xsd
    - MedDatabaseDataSet.Designer.cs
    - MedDatabaseDataSet.xsc
    - MedDatabaseDataSet.xss
  - Program.cs

Properties

Id DataColumn

AllowDBNull	**False**
AutoIncrement	**True**
AutoIncrementSeed	**-1**
AutoIncrementStep	**-1**
Caption	Id
DataType	**System.Int32**
DateTimeMode	UnspecifiedLocal
DefaultValue	<DBNull>
Expression	
MaxLength	-1
Name	**Id**
NullValue	(Throw exception)
ReadOnly	**True**
Source	**Id**
Unique	**True**

Первичный ключ настроен для генерации на стороне сервера



Appointment
- Id
- PersonID
- Date
- Time
- Diag1
- DiagFull
- Medication
- NexAppDate
- NextAppTime

AppointmentTableAdapter
- Fill,GetData ()

Person
- Id
- FirstName
- SecondName
- LastName
- BirthDate

PersonTableAdapter
- Fill,GetData ()

View
- LastName
- FirstName
- SecondName
- BirthDate
- Date
- Diag1
- DiagFull
- Medication
- NexAppDate
- NextAppTime

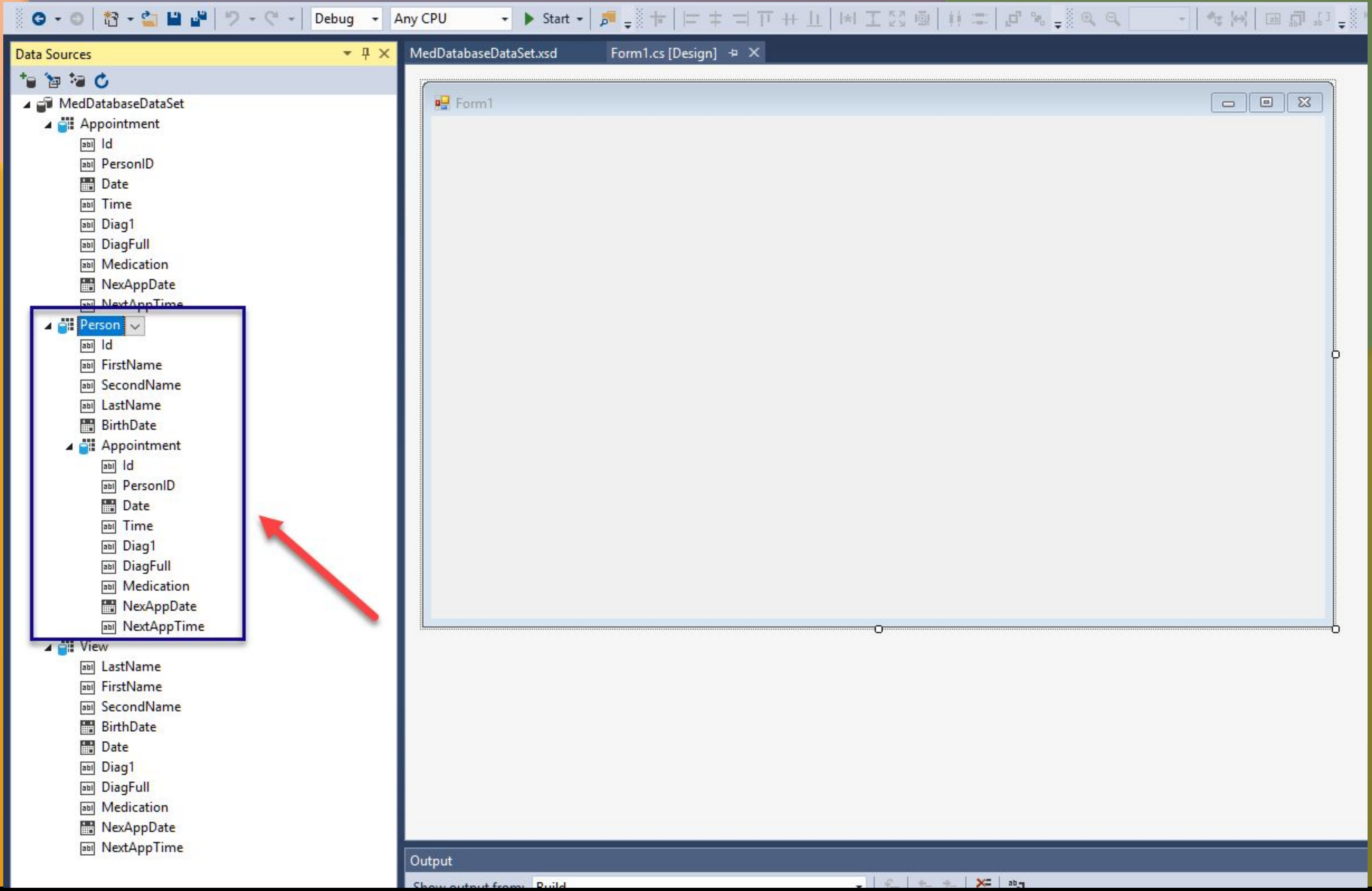
ViewTableAdapter
- Fill,GetData ()

Solution 'WindowsFormsApp11' (1 project)
- WindowsFormsApp11
  - Properties
  - References
  - App.config
  - Form1.cs
    - Form1.Designer.cs
  - MedDatabase.mdf
    - MedDatabase_log.ldf
  - MedDatabaseDataSet.xsd
    - MedDatabaseDataSet.Designer.cs
    - MedDatabaseDataSet.xsc
    - MedDatabaseDataSet.xss
  - Program.cs

SecondName DataColumn

AllowDBNull	True
AutoIncrement	False
AutoIncrementSeed	0
AutoIncrementStep	1
Caption	Отчество
DataType	System.String
DateTimeMode	UnspecifiedLocal
DefaultValue	<DBNull>
Expression	
MaxLength	32
Name	SecondName

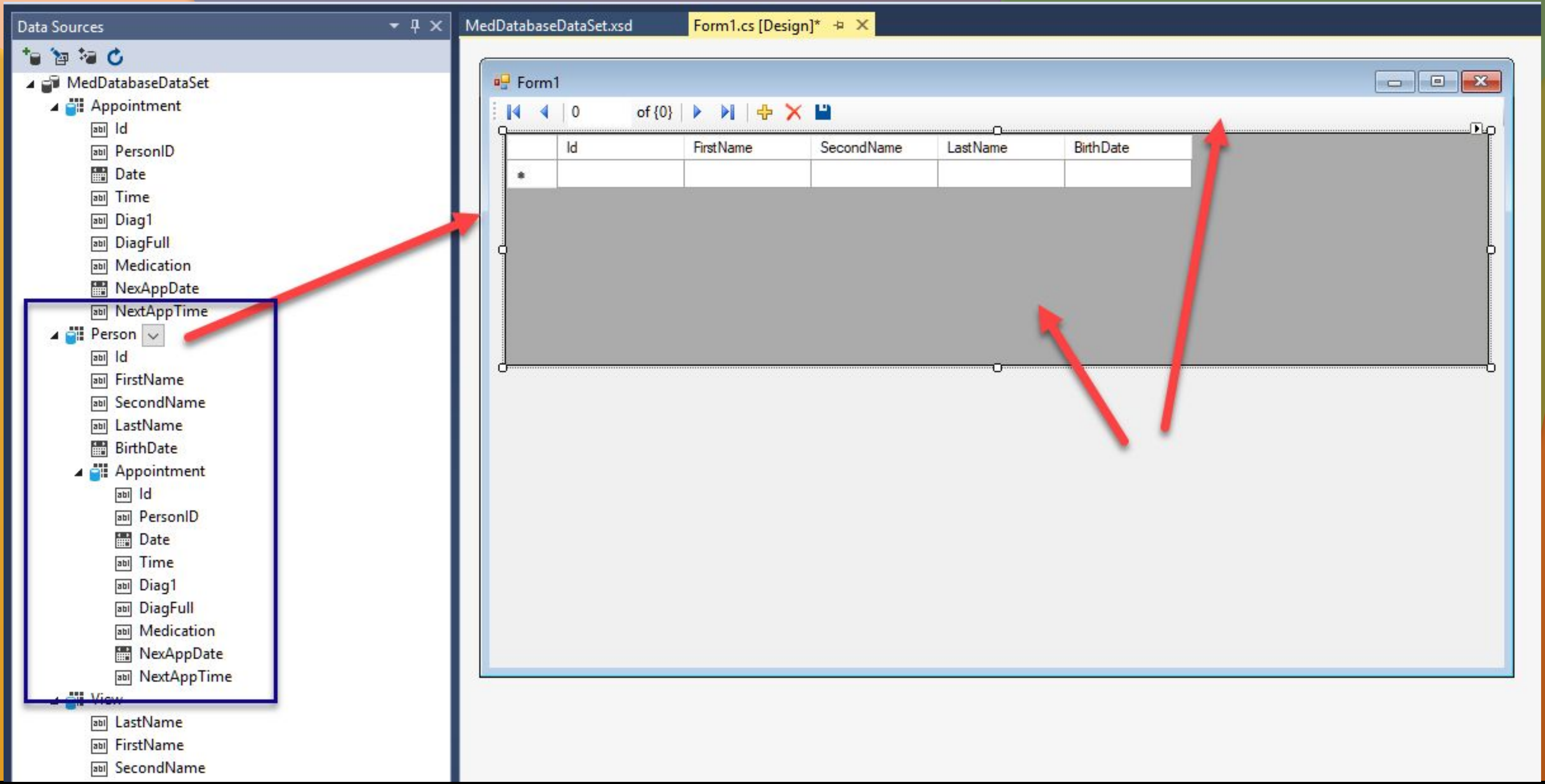
Добавьте заголовки полей



Debug
Any CPU
Start
Data Sources
MedDatabaseDataSet.xsd
Form1.cs [Design]
Form1
Output

- MedDatabaseDataSet
  - Appointment
    - Id
    - PersonID
    - Date
    - Time
    - Diag1
    - DiagFull
    - Medication
    - NexAppDate
    - NextAppTime
  - Person
    - Id
    - FirstName
    - SecondName
    - LastName
    - BirthDate
    - Appointment
      - Id
      - PersonID
      - Date
      - Time
      - Diag1
      - DiagFull
      - Medication
      - NexAppDate
      - NextAppTime
  - View
    - LastName
    - FirstName
    - SecondName
    - BirthDate
    - Date
    - Diag1
    - DiagFull
    - Medication
    - NexAppDate
    - NextAppTime

Переместите на форму таблицу данных Person


Data Sources
MedDatabaseDataSet
Appointment
Id
PersonID
Date
Time
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
Person
Id
FirstName
SecondName
LastName
BirthDate
Appointment
Id
PersonID
Date
Time
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
View
LastName
FirstName
SecondName
MedDatabaseDataSet.xsd
Form1.cs [Design]*
Form1
0
of {0}
Id
FirstName
SecondName
LastName
BirthDate

Добавлены таблица и навигатор данных

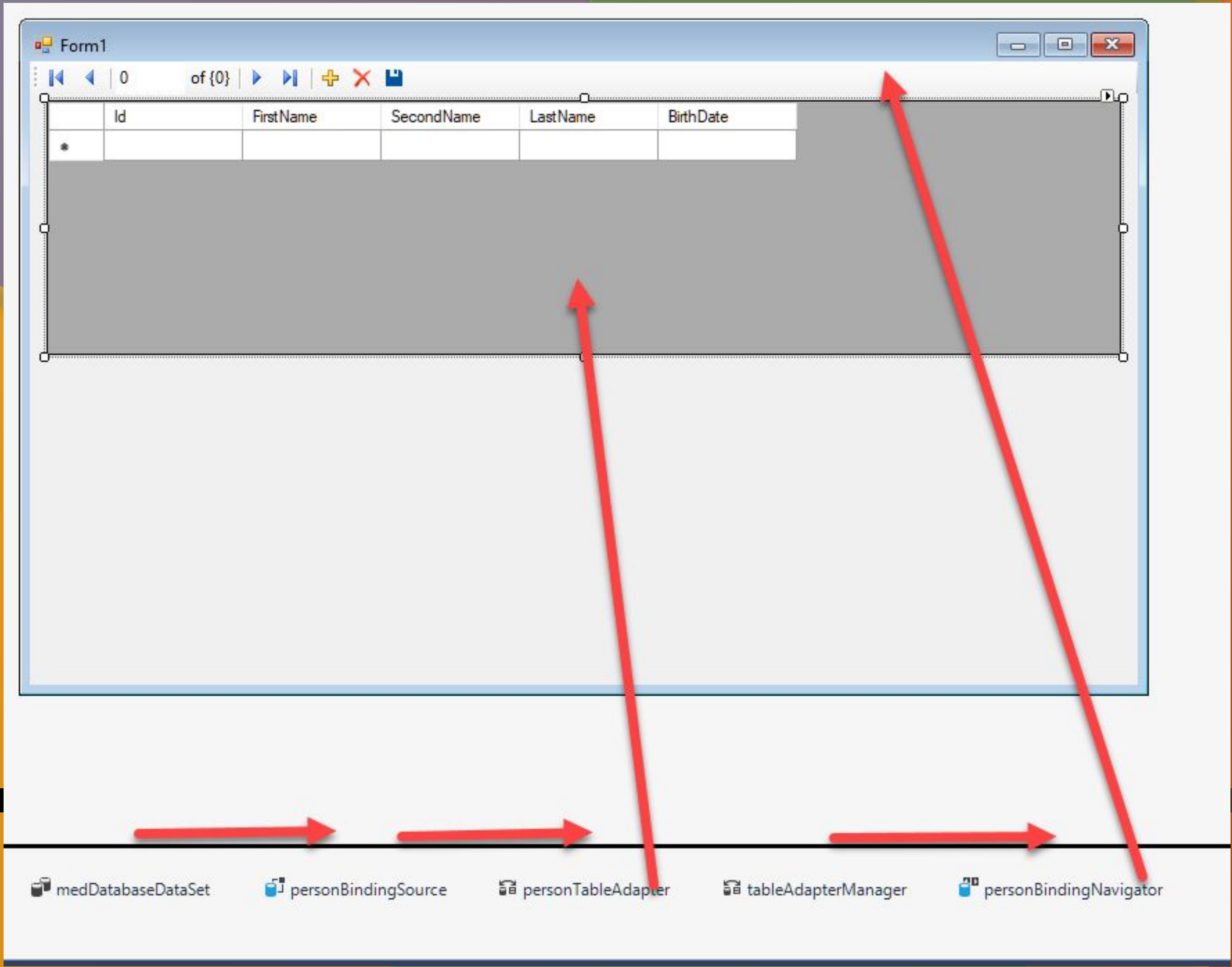
Добавлены компоненты:

датасет,

связанный с датасетом и формой источник данных,

адаптер таблицы,

менеджер (если таблиц несколько) и навигатор по записям


Form1
0
of {0}
Id
FirstName
SecondName
LastName
BirthDate
medDatabaseDataSet
personBindingSource
personTableAdapter
tableAdapterManager
personBindingNavigator

Датасет читает данные из БД

«Раскладывает» данные по классам

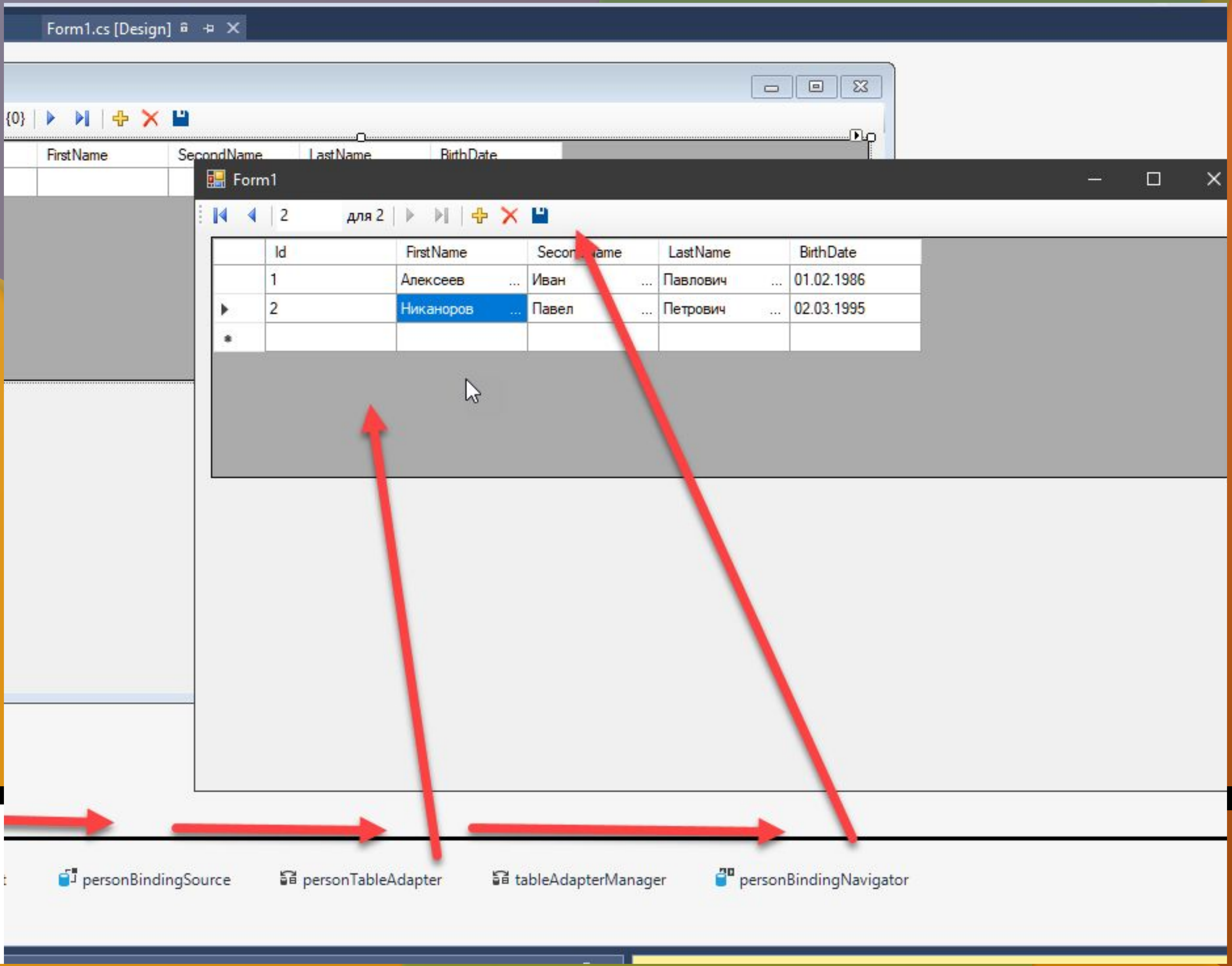
Передает массивы в источник данных

Источник раздает данные по визуальным элементам, в частности – таблицам

За состоянием данных в таблицах следит адаптер таблицы и менеджер таблиц (например, он реагирует на изменения данных)

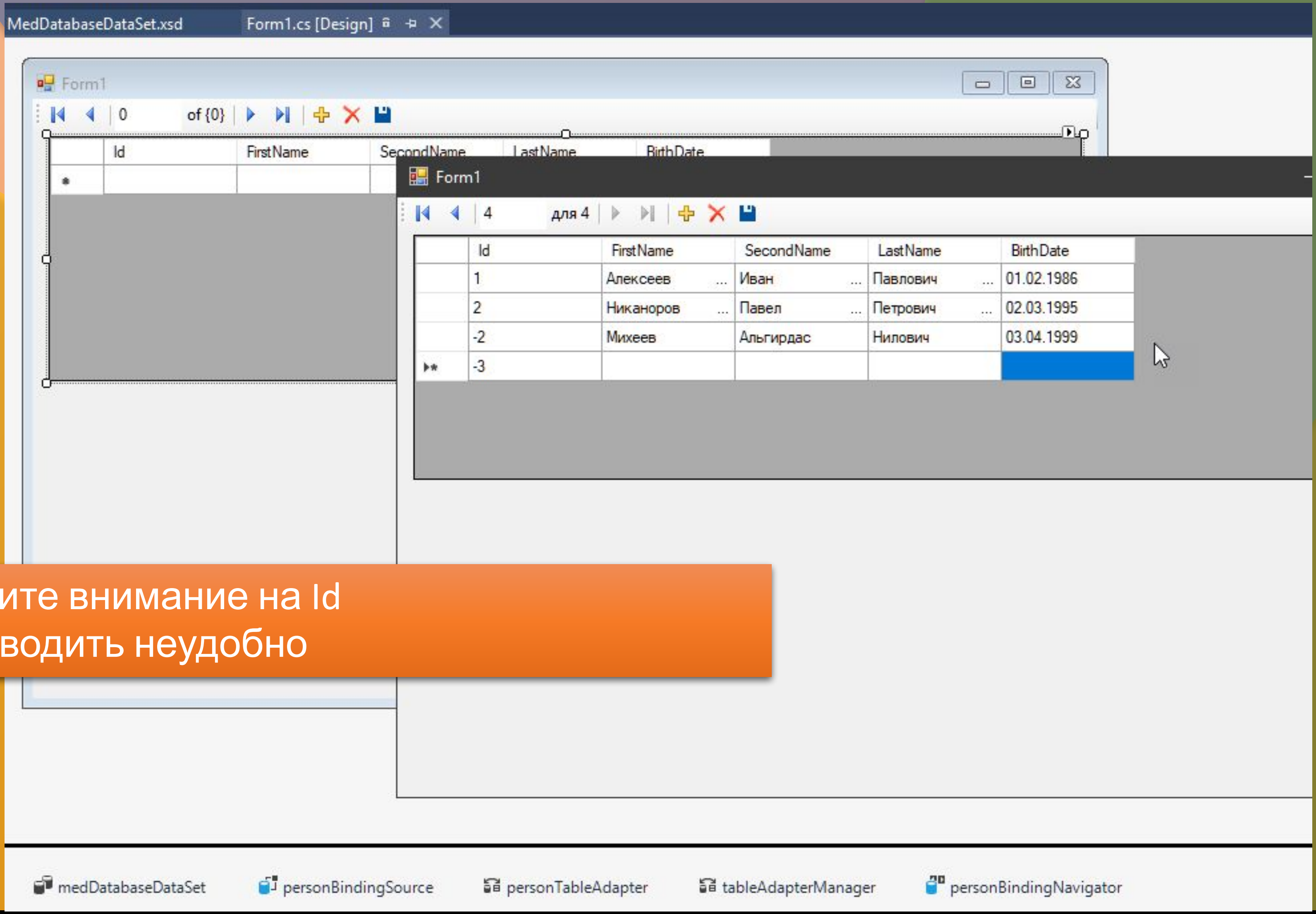
Одна из записей в таблице является «выбранной», на нее указывает курсор

За курсором следит навигатор


Form1.cs [Design]
{0}
Form1
2
для 2
personBindingSource
personTableAdapter
tableAdapterManager
personBindingNavigator

Id	FirstName	SecondName	LastName	BirthDate
1	Алексеев	Иван	Павлович	01.02.1986
2	Никаноров	Павел	Петрович	02.03.1995

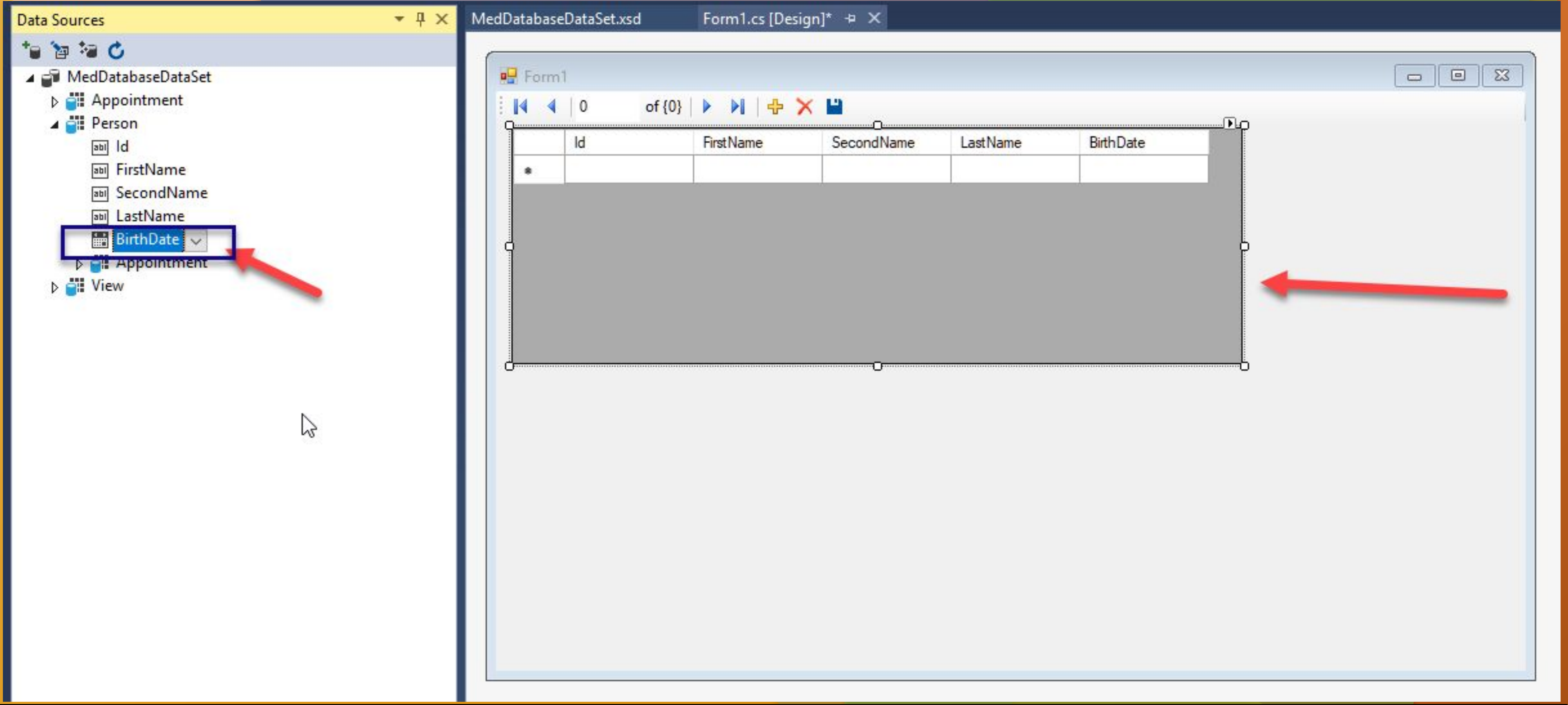
При запуске


MedDatabaseDataSet.xsd
Form1.cs [Design]
Form1
0
of {0}
Id
FirstName
SecondName
LastName
BirthDate
Form1
4
для 4
medDatabaseDataSet
personBindingSource
personTableAdapter
tableAdapterManager
personBindingNavigator

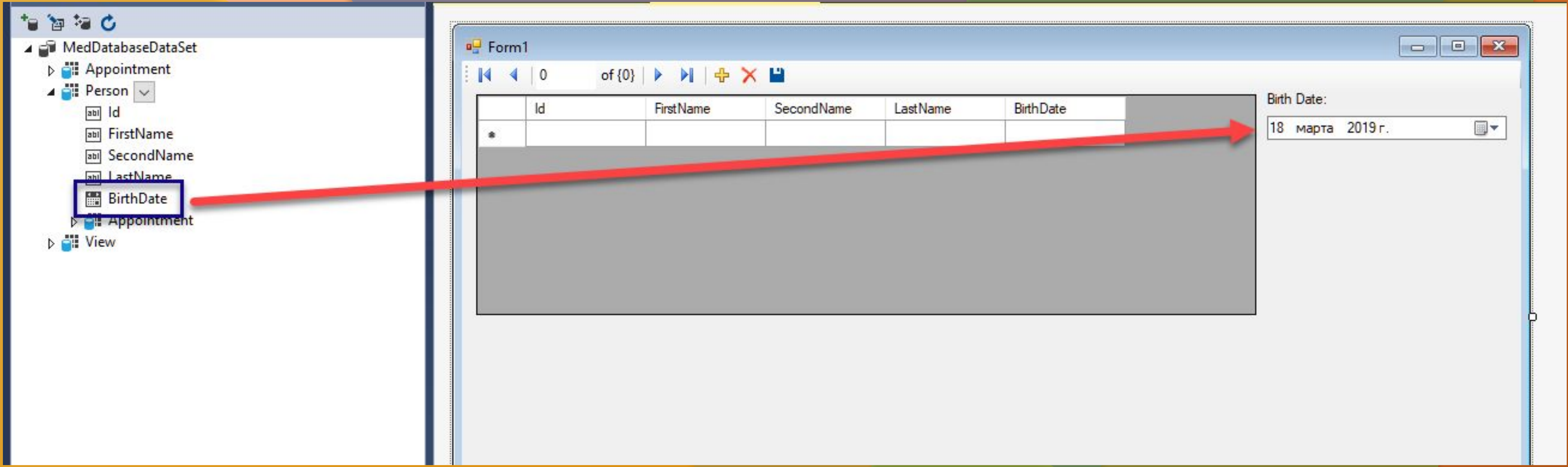
Id	FirstName	SecondName	LastName	BirthDate
1	Алексеев	Иван	Павлович	01.02.1986
2	Никаноров	Павел	Петрович	02.03.1995
-2	Михеев	Альгирдас	Нилович	03.04.1999
-3				

Обратите внимание на Id
Дату вводить неудобно

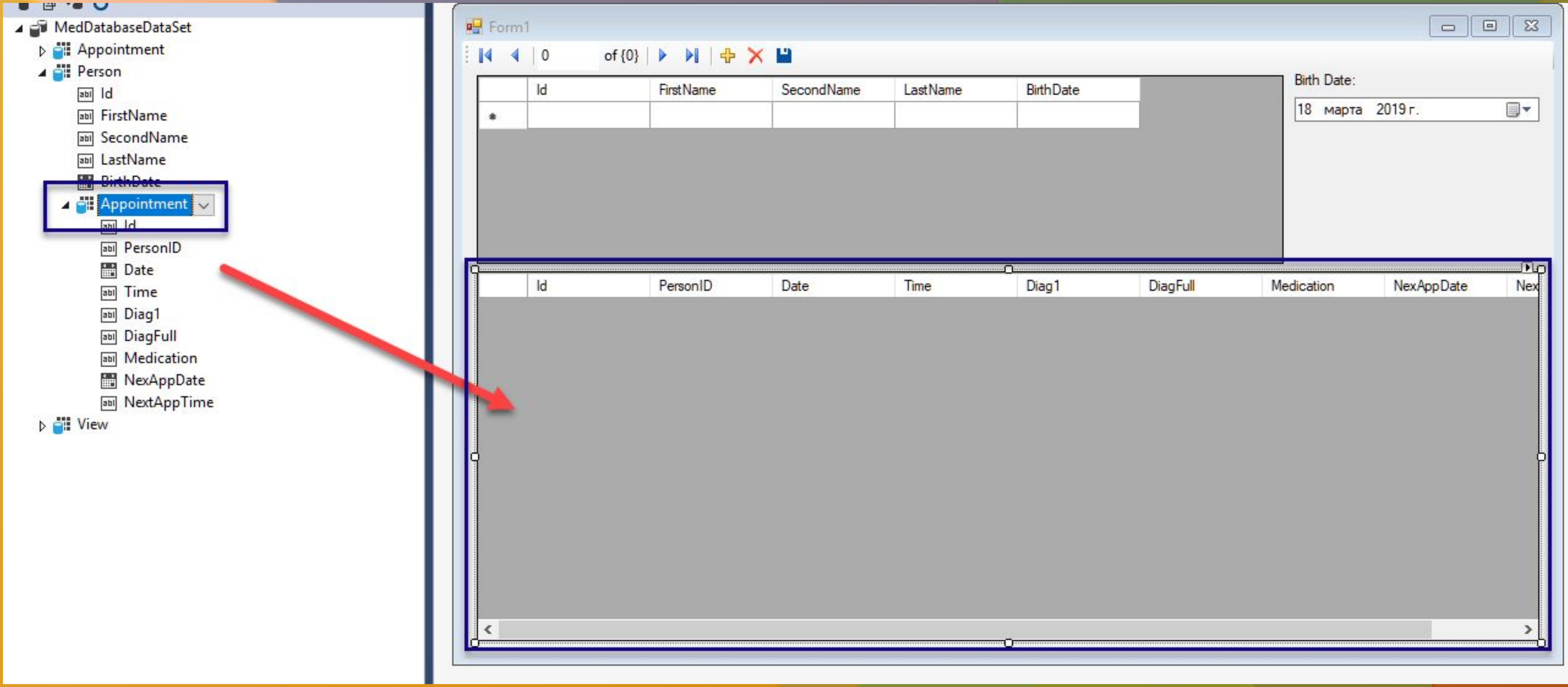
Добавление записи


Data Sources
MedDatabaseDataSet
Appointment
Person
Id
FirstName
SecondName
LastName
BirthDate
Appointment
View
MedDatabaseDataSet.xsd
Form1.cs [Design]*
Form1
0
of {0}
Id
FirstName
SecondName
LastName
BirthDate

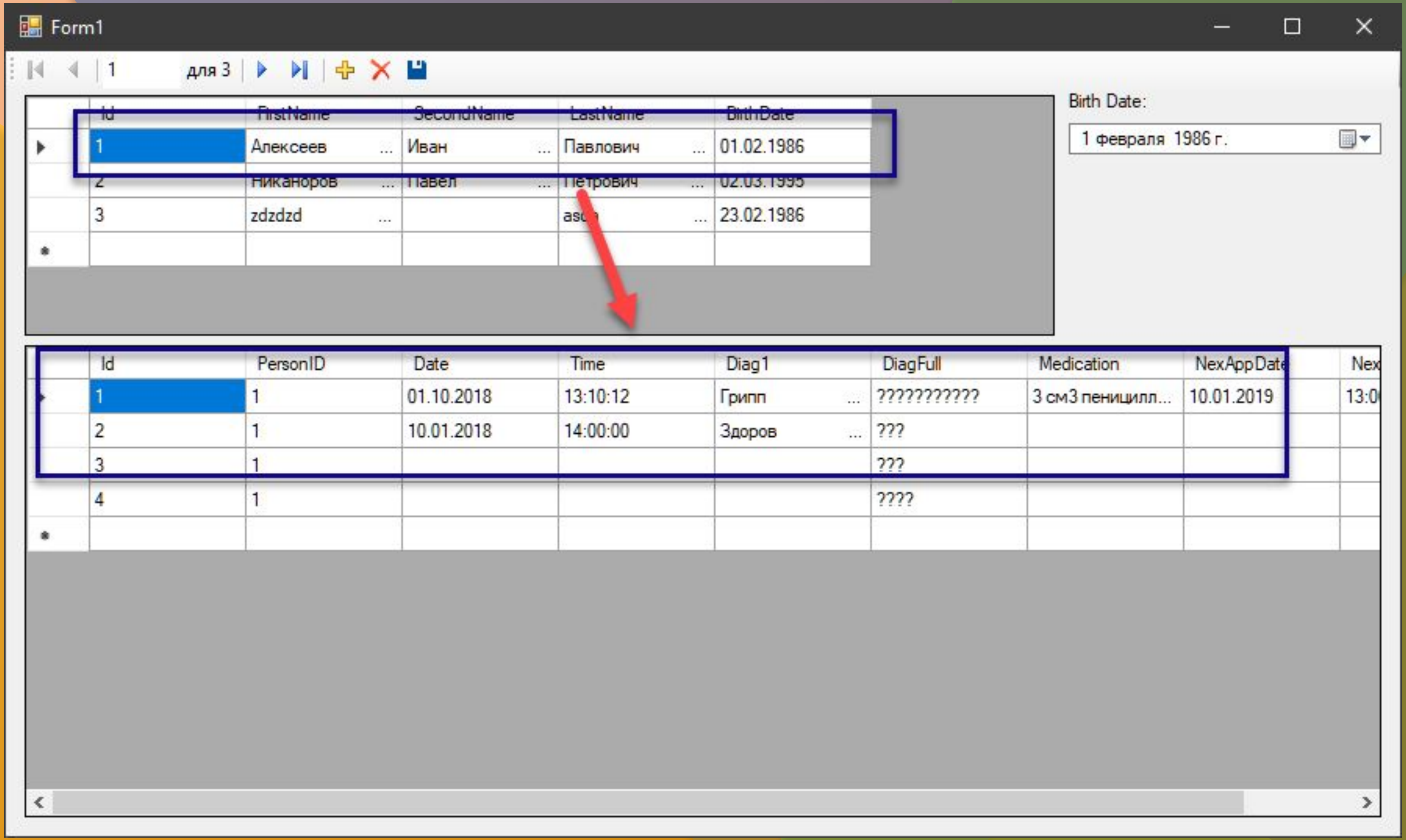
Освободите место (под таблицей или сбоку)


MedDatabaseDataSet
Appointment
Person
Id
FirstName
SecondName
LastName
BirthDate
Appointment
View
Form1
0
of {0}
Id
FirstName
SecondName
LastName
BirthDate
Birth Date:
18 марта 2019 г.

Передвиньте только дату рождения


MedDatabaseDataSet
Appointment
Person
Id
FirstName
SecondName
LastName
BirthDate
Appointment
Id
PersonID
Date
Time
Diag1
DiagFull
Medication
NexAppDate
NextAppTime
View
Form1
0
of {0}
Id
FirstName
SecondName
LastName
BirthDate
Birth Date:
18 марта 2019 г.
Id
PersonID
Date
Time
Diag1
DiagFull
Medication
NexAppDate
Nex

Передвиньте на форму таблицу посещений



Id	FirstName	SecondName	LastName	BirthDate
1	Алексеев	Иван	Павлович	01.02.1986
2	Никаноров	Павел	Петрович	02.03.1995
3	zdzdzd		as	23.02.1986

Id	PersonID	Date	Time	Diag1	DiagFull	Medication	NexAppDate	Nex
1	1	01.10.2018	13:10:12	Грипп	???????????	3 см3 пеницилл...	10.01.2019	13:0
2	1	10.01.2018	14:00:00	Здоров	???			
3	1				???			
4	1				????			

Убедитесь, что визиты АВТОМАТИЧЕСКИ сортируются по пациентам