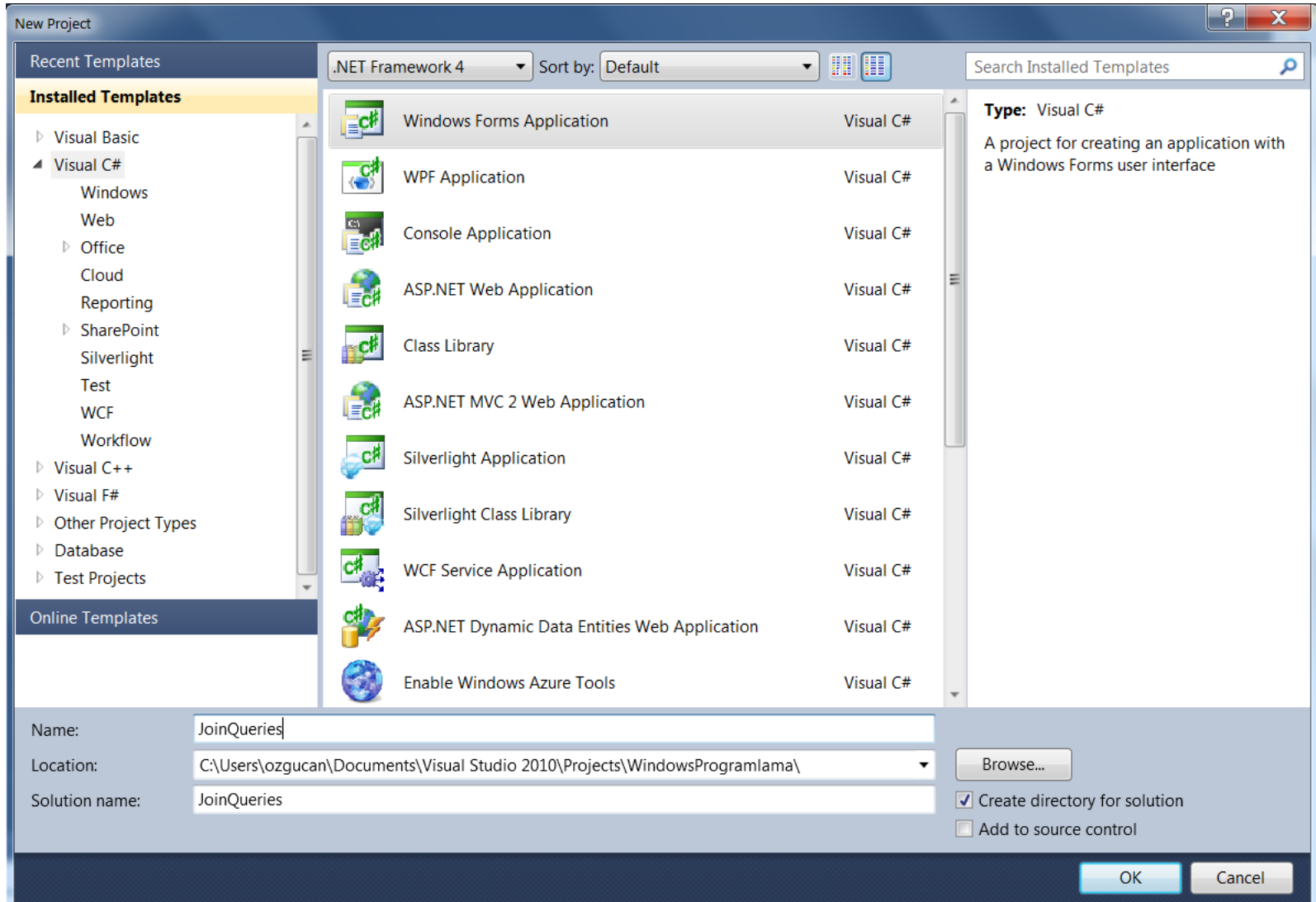


LINQ - 2

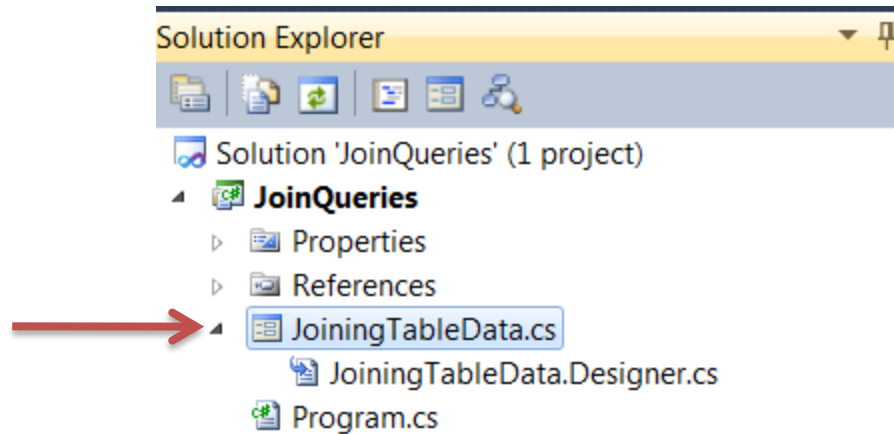
Language Integrated Query

Yrd. Doç. Dr. Özgü Can

Uygulama – LINQ Çoklu Tablo



Uygulama – LINQ Çoklu Tablo



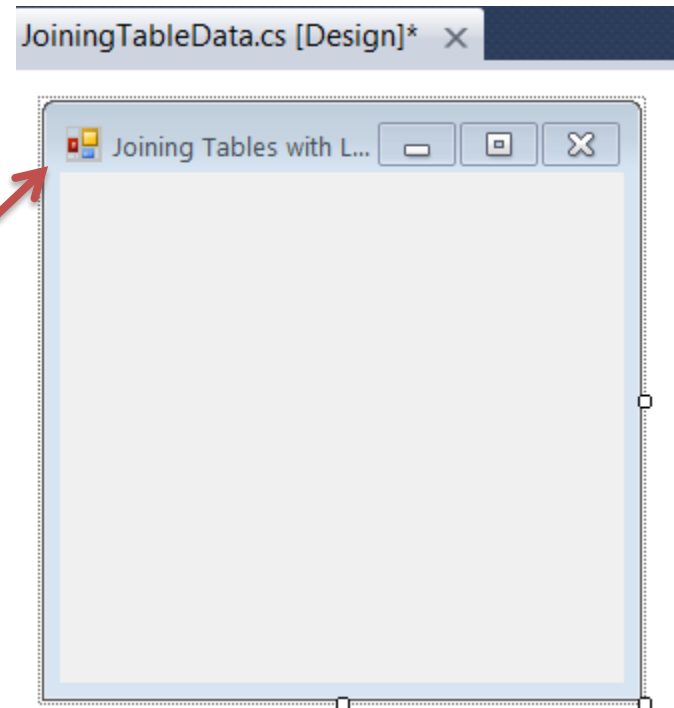
Uygulama – LINQ Çoklu Tablo

Properties

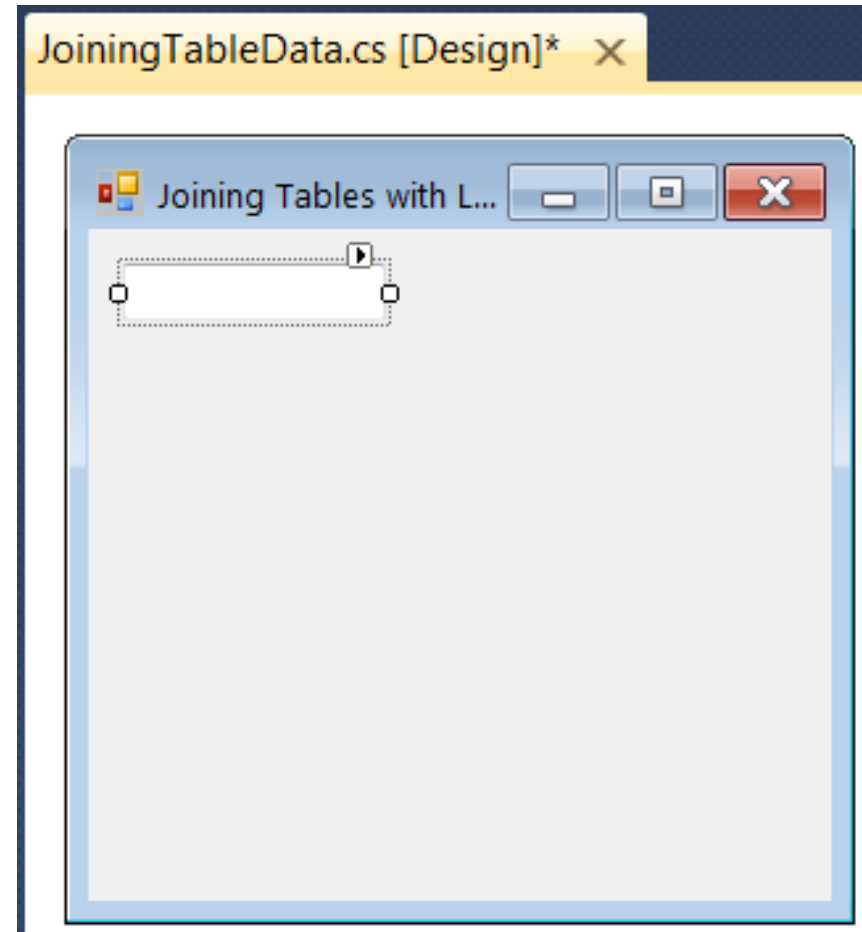
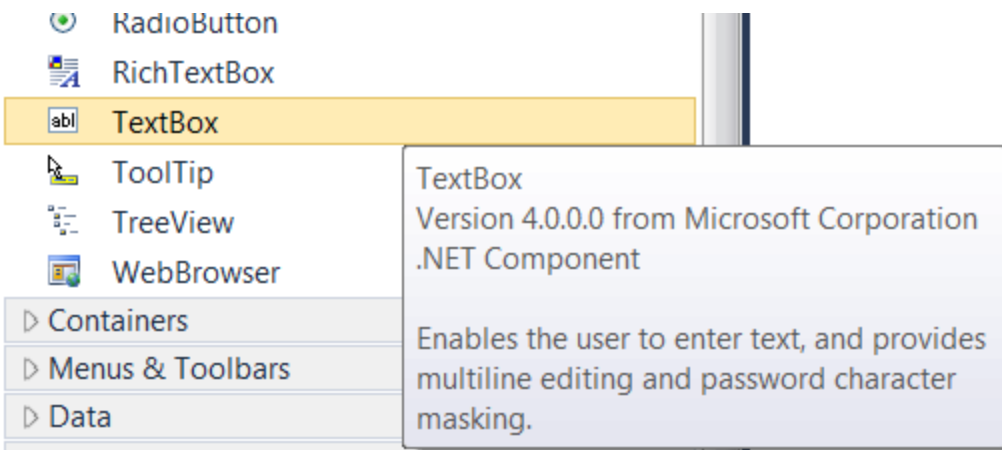
JoiningTableData System.Windows.Forms.Form

RightToLeft	No
RightToLeftLayout	False
ShowIcon	True
ShowInTaskbar	True
Size	300; 300
SizeGripStyle	Auto
StartPosition	WindowsDefaultLocation
Tag	
Text	Joining Tables with LINQ
TopMost	False
TransparencyKey	<input type="checkbox"/>
UseWaitCursor	False
WindowState	Normal

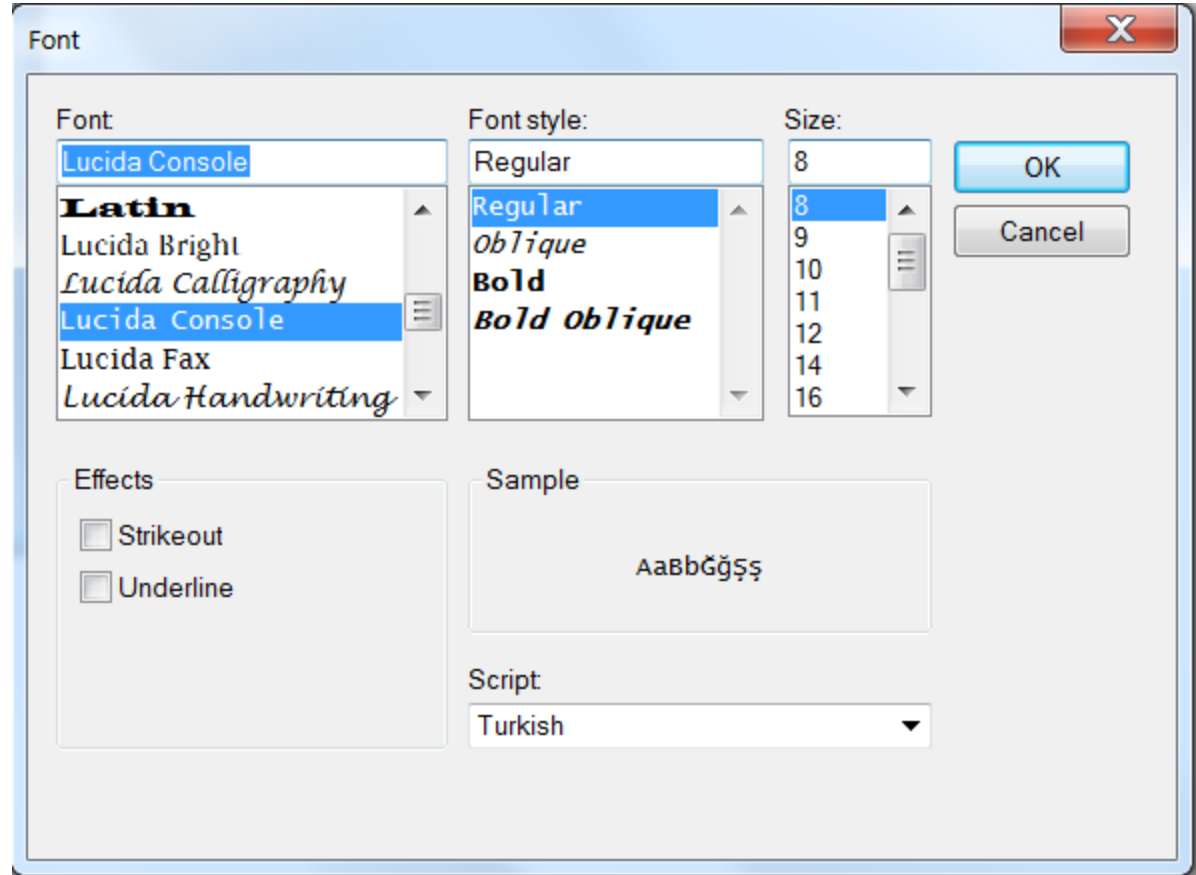
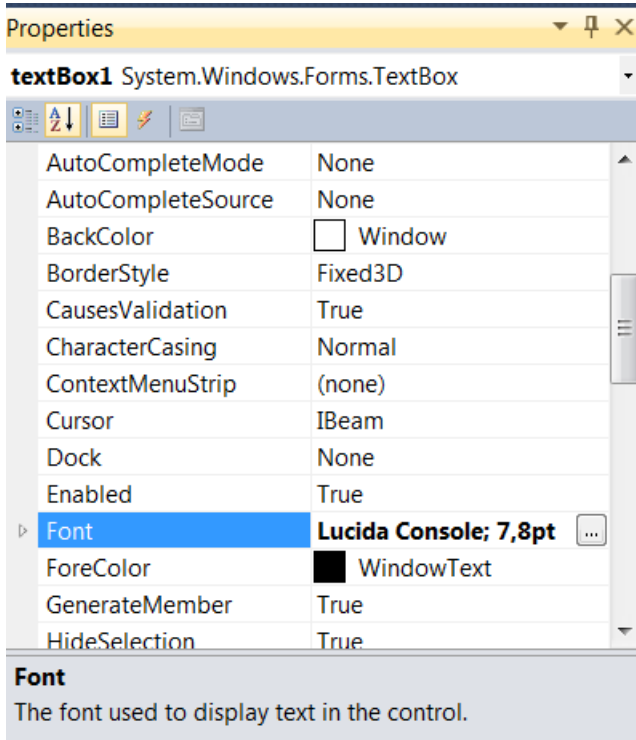
Text
The text associated with the control.



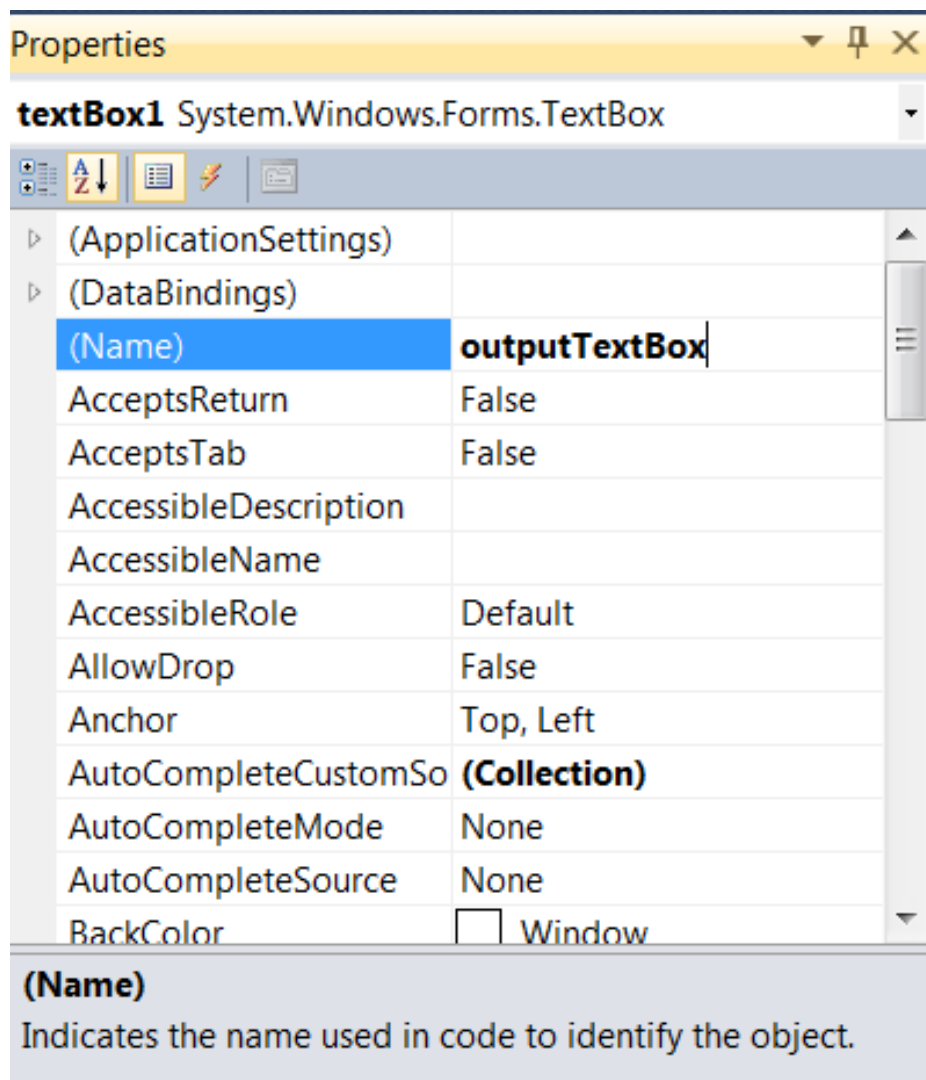
Uygulama – LINQ Çoklu Tablo



Uygulama – LINQ Çoklu Tablo



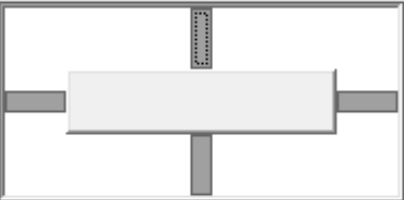
Uygulama – LINQ Çoklu Tablo



Uygulama – LINQ Çoklu Tablo

Properties

outputTextBox System.Windows.Forms.TextBox

AccessibleDescription	
AccessibleName	
AccessibleRole	Default
AllowDrop	False
Anchor	op, Bottom, Left, Right
AutoCompleteCustomSo	
AutoCompleteMode	
AutoCompleteSource	
BackColor	
BorderStyle	Fixed3D
CausesValidation	True
CharacterCasing	Normal
ContextMenuStrip	(none)
Cursor	IBeam

Anchor
Defines the edges of the container to which a certain co...

Properties

outputTextBox System.Windows.Forms.TextBox

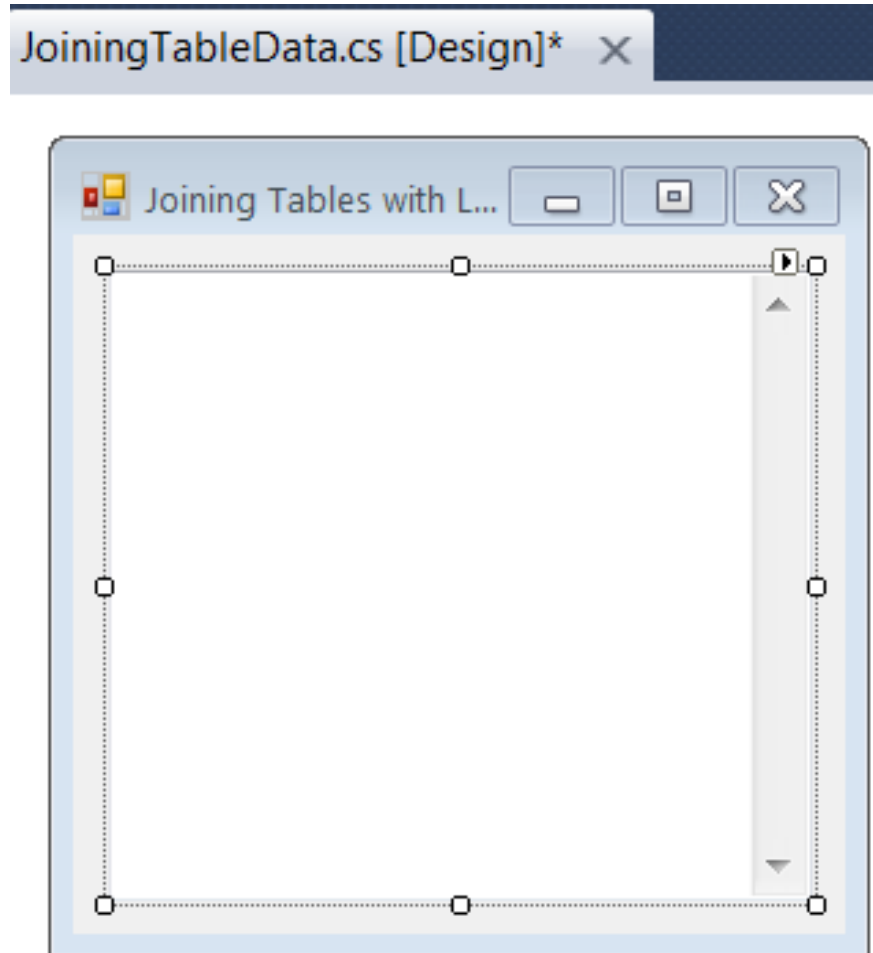
AccessibleDescription	
AccessibleName	
AccessibleRole	Default
AllowDrop	False
Anchor	Top, Bottom, Left, Right
AutoCompleteCustomSo	(Collection)
AutoCompleteMode	None

Uygulama – LINQ Çoklu Tablo

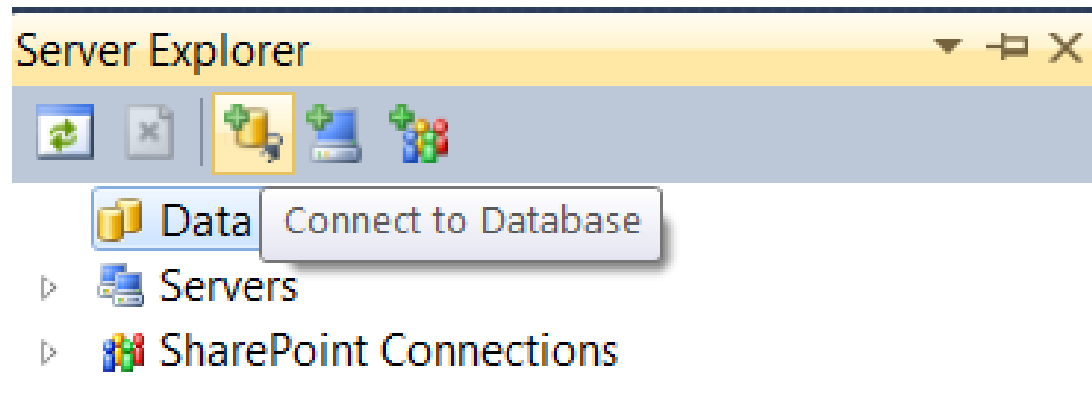
Properties	
outputTextBox System.Windows.Forms.TextBox	
PasswordChar	
ReadOnly	False
RightToLeft	No
ScrollBars	Vertical
ShortcutsEnabled	True
Size	100; 20
TabIndex	0
TabStop	True

Properties	
outputTextBox System.Windows.Forms.TextBox	
Location	13; 13
Locked	False
Margin	3; 3; 3; 3
MaximumSize	0; 0
MaxLength	32767
MinimumSize	0; 0
Modifiers	Private
Multiline	True
PasswordChar	
ReadOnly	False
RightToLeft	No

Uygulama – LINQ Çoklu Tablo



Uygulama – LINQ Çoklu Tablo



Uygulama – LINQ Çoklu Tablo

Add Connection

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source:
Microsoft SQL Server Database File (SqlClie) Change...

Database file name (new or existing):
C:\Academic_OC\Courses\2016-2017\Güz\W Browse...

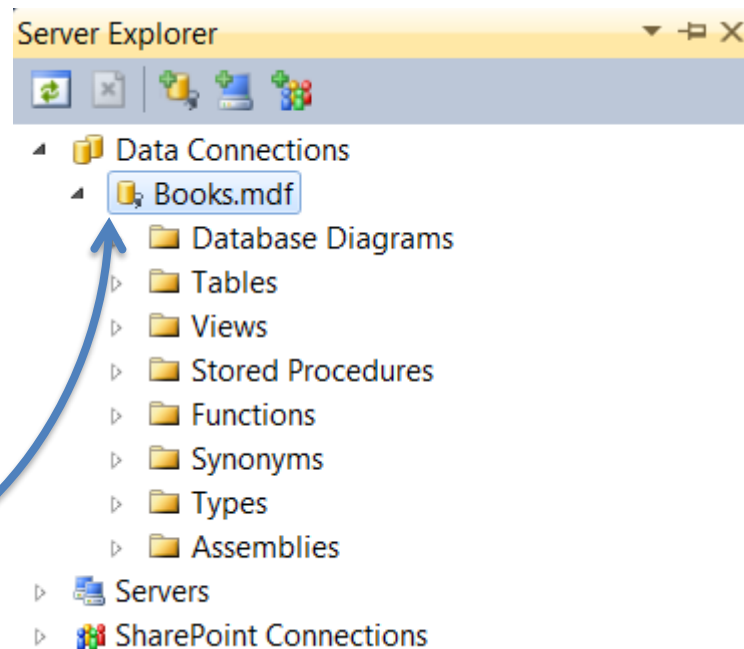
Log on to the server

☒ Use Windows Authentication
☐ Use SQL Server Authentication

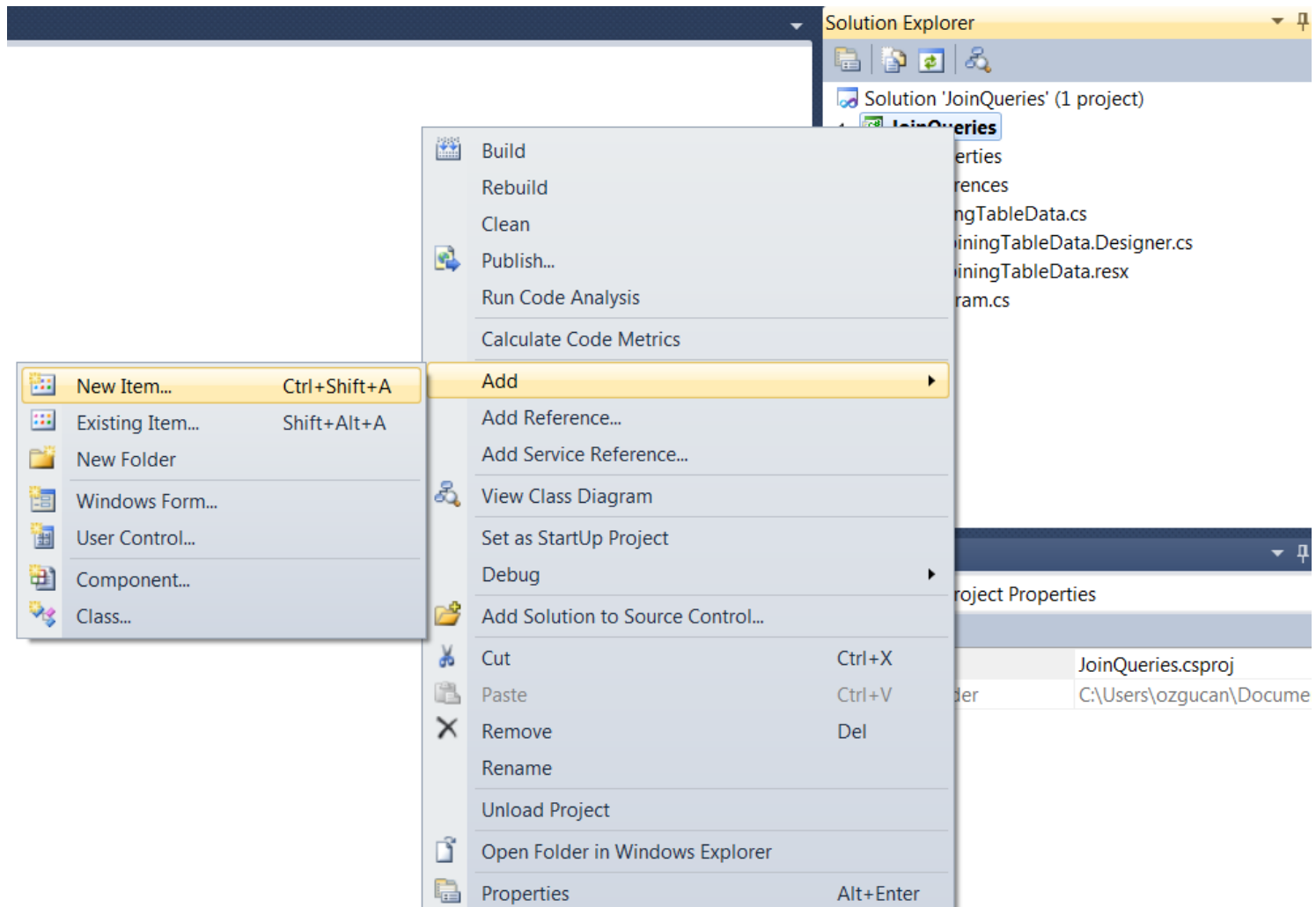
User name:
Password:
☐ Save my password

Advanced...

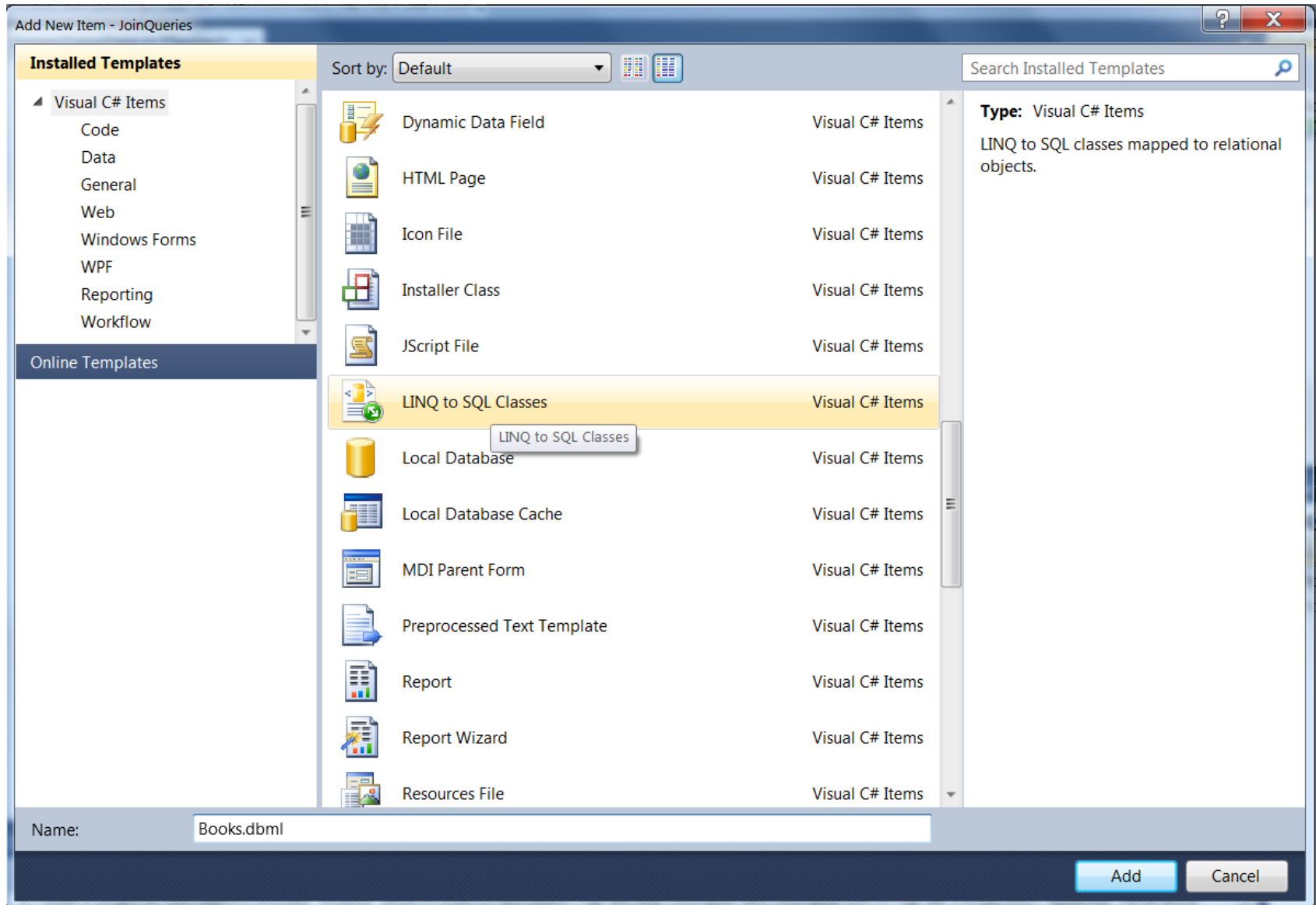
Test Connection OK Cancel



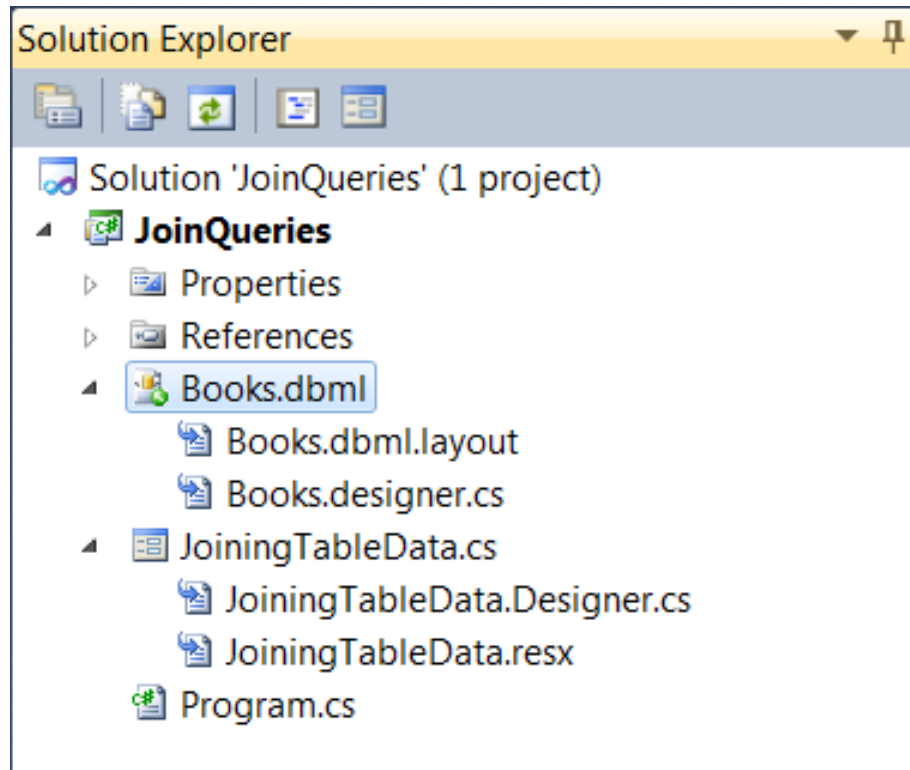
Uygulama – LINQ Çoklu Tablo



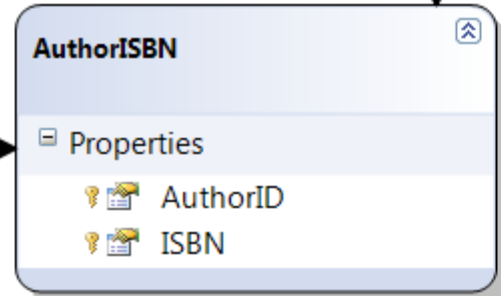
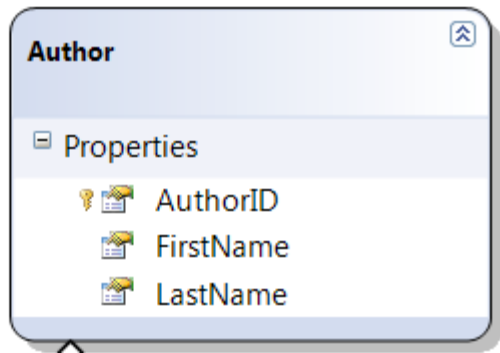
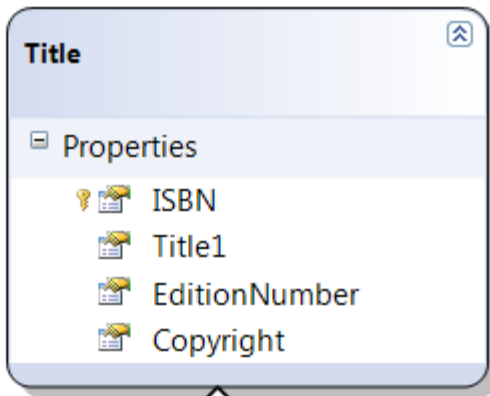
Uygulama – LINQ Çoklu Tablo



Uygulama – LINQ Çoklu Tablo



- Data Connections
 - Books.mdf
 - Database Diagrams
 - Tables
 - AuthorISBN
 - Authors
 - Titles
 - Views
 - Stored Procedures
 - Functions
 - Synonyms
 - Types
 - Assemblies
 - Servers
 - SharePoint Connections



Uygulama – LINQ Çoklu Tablo

```
private void JoiningTableData_Load(object sender, EventArgs e)
{
    // create database connection
    BooksDataContext database = new BooksDataContext();

    // get authors and ISBNs of each book they co-authored
    var authorsAndISBNs = from author in database.Authors
                          from book in author.AuthorISBNs
                          orderby author.LastName, author.FirstName
    select new { author.FirstName, author.LastName, book.ISBN };

    outputTextBox.AppendText("Authors and ISBNs:");

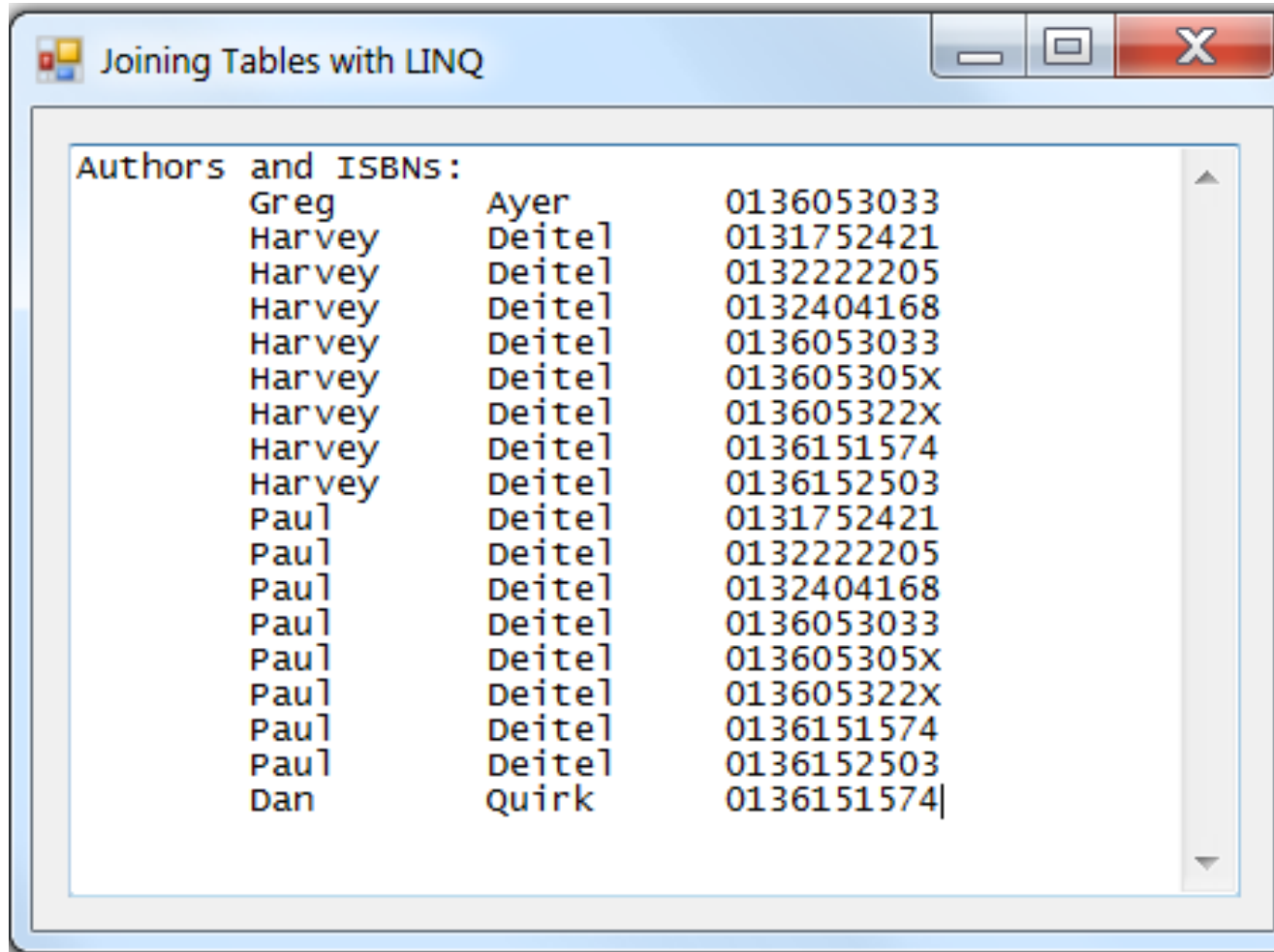
    // display authors and ISBNs in tabular format
    foreach (var element in authorsAndISBNs)
    {
        outputTextBox.AppendText(String.Format("\r\n\t{0,-10} {1,-10} {2,-10}",
                                                element.FirstName, element.LastName, element.ISBN));
    }
}
```

İki tablodaki veriyi birleştirir.

Anonymous Type*

* <http://msdn.microsoft.com/en-us/library/bb397696.aspx>

Uygulama – LINQ Çoklu Tablo



A screenshot of a Windows application window titled "Joining Tables with LINQ". The window contains a text area with the following text:

Authors and ISBNs:		
Greg	Ayer	0136053033
Harvey	Deitel	0131752421
Harvey	Deitel	0132222205
Harvey	Deitel	0132404168
Harvey	Deitel	0136053033
Harvey	Deitel	013605305X
Harvey	Deitel	013605322X
Harvey	Deitel	0136151574
Harvey	Deitel	0136152503
Paul	Deitel	0131752421
Paul	Deitel	0132222205
Paul	Deitel	0132404168
Paul	Deitel	0136053033
Paul	Deitel	013605305X
Paul	Deitel	013605322X
Paul	Deitel	0136151574
Paul	Deitel	0136152503
Dan	Quirk	0136151574

Uygulama – LINQ Çoklu Tablo

Yazar adının kitap adı ile birleştirilmesi


(JoiningTableData_Load'a eklenecek kod)

```
// get authors and titles of each book they co-authored
var authorsAndTitles = from title in database.Titles
                        from book in title.AuthorISBNs
                        let author = book.Author
                        orderby author.LastName, author.FirstName, title.Title1

select new
{
    author.FirstName,
    author.LastName,
    title.Title1
};

outputTextBox.AppendText("\r\n\r\nAuthors and titles:");

// display authors and titles in tabular format
foreach (var element in authorsAndTitles)
{
    outputTextBox.AppendText(String.Format("\r\n\t{0,-10} {1,-10} {2}",
                                           element.FirstName, element.LastName, element.Title1));
}
```

 LINQ sorgusunda yeni değişken yaratma

Uygulama – LINQ Çoklu Tablo

Authors and ISBNs:		
Greg	Ayer	0136053033
Harvey	Deitel	0131752421
Harvey	Deitel	0132222205
Harvey	Deitel	0132404168
Harvey	Deitel	0136053033
Harvey	Deitel	013605305X
Harvey	Deitel	013605322X
Harvey	Deitel	0136151574
Harvey	Deitel	0136152503
Paul	Deitel	0131752421
Paul	Deitel	0132222205
Paul	Deitel	0132404168
Paul	Deitel	0136053033
Paul	Deitel	013605305X
Paul	Deitel	013605322X
Paul	Deitel	0136151574
Paul	Deitel	0136152503
Dan	Quirk	0136151574
Authors and titles:		
Greg	Ayer	Simply Visual Basic 2008
Harvey	Deitel	C How to Program
Harvey	Deitel	C++ How to Program
Harvey	Deitel	Internet & World wide Web How to Program
Harvey	Deitel	Java How to Program
Harvey	Deitel	Simply Visual Basic 2008
Harvey	Deitel	Visual Basic 2008 How to Program
Harvey	Deitel	Visual C# 2008 How to Program
Harvey	Deitel	Visual C++ 2008 How to Program
Paul	Deitel	C How to Program
Paul	Deitel	C++ How to Program
Paul	Deitel	Internet & world wide web How to Program
Paul	Deitel	Java How to Program
Paul	Deitel	Simply Visual Basic 2008
Paul	Deitel	Visual Basic 2008 How to Program
Paul	Deitel	Visual C# 2008 How to Program
Paul	Deitel	Visual C++ 2008 How to Program
Dan	Quirk	Visual C++ 2008 How to Program

Kitap adlarının yazara göre düzenlenmesi

(JoiningTableData_Load'a eklenecek kod)

```
// get authors and titles of each book // authors co-authored; group by author
var titlesByAuthor = from author in database.Authors
                      orderby author.LastName, author.FirstName
select new
{
    Name = author.FirstName + " " + author.LastName,
    Titles = from book in author.AuthorISBNs
              orderby book.Title.Title1
              select book.Title.Title1
};
```

İlk sorgu, veritabanında ki yazarlar üzerinden yineler (iterate)

İkinci sorgu, belirli bir yazarı alır ve onun kitaplarına erişir.

```
outputTextBox.AppendText("\r\n\r\nTitles grouped by author:");
```

```
// display titles written by each author, grouped by author
foreach (var author in titlesByAuthor)
{
    // display author's name
    outputTextBox.AppendText("\r\n\t" + author.Name + ":");

    // display titles written by that author
    foreach (var title in author.Titles)
    {
        outputTextBox.AppendText("\r\n\t\t" + title);
    } // end inner foreach
} // end outer foreach
```

Authors and ISBNs:

Greg	Ayer	0136053033
Harvey	Deitel	0131752421
Harvey	Deitel	0132222205
Harvey	Deitel	0132404168
Harvey	Deitel	0136053033
Harvey	Deitel	013605305X
Harvey	Deitel	013605322X
Harvey	Deitel	0136151574
Harvey	Deitel	0136152503
Paul	Deitel	0131752421
Paul	Deitel	0132222205
Paul	Deitel	0132404168
Paul	Deitel	0136053033
Paul	Deitel	013605305X
Paul	Deitel	013605322X
Paul	Deitel	0136151574
Paul	Deitel	0136152503
Dan	Quirk	0136151574

Authors and titles:

Greg	Ayer	Simply Visual Basic 2008
Harvey	Deitel	C How to Program
Harvey	Deitel	C++ How to Program
Harvey	Deitel	Internet & world wide web How to Program
Harvey	Deitel	Java How to Program
Harvey	Deitel	Simply Visual Basic 2008
Harvey	Deitel	Visual Basic 2008 How to Program
Harvey	Deitel	Visual C# 2008 How to Program
Harvey	Deitel	Visual C++ 2008 How to Program
Paul	Deitel	C How to Program
Paul	Deitel	C++ How to Program
Paul	Deitel	Internet & world wide web How to Program
Paul	Deitel	Java How to Program
Paul	Deitel	Simply Visual Basic 2008
Paul	Deitel	Visual Basic 2008 How to Program
Paul	Deitel	Visual C# 2008 How to Program
Paul	Deitel	Visual C++ 2008 How to Program
Dan	Quirk	Visual C++ 2008 How to Program

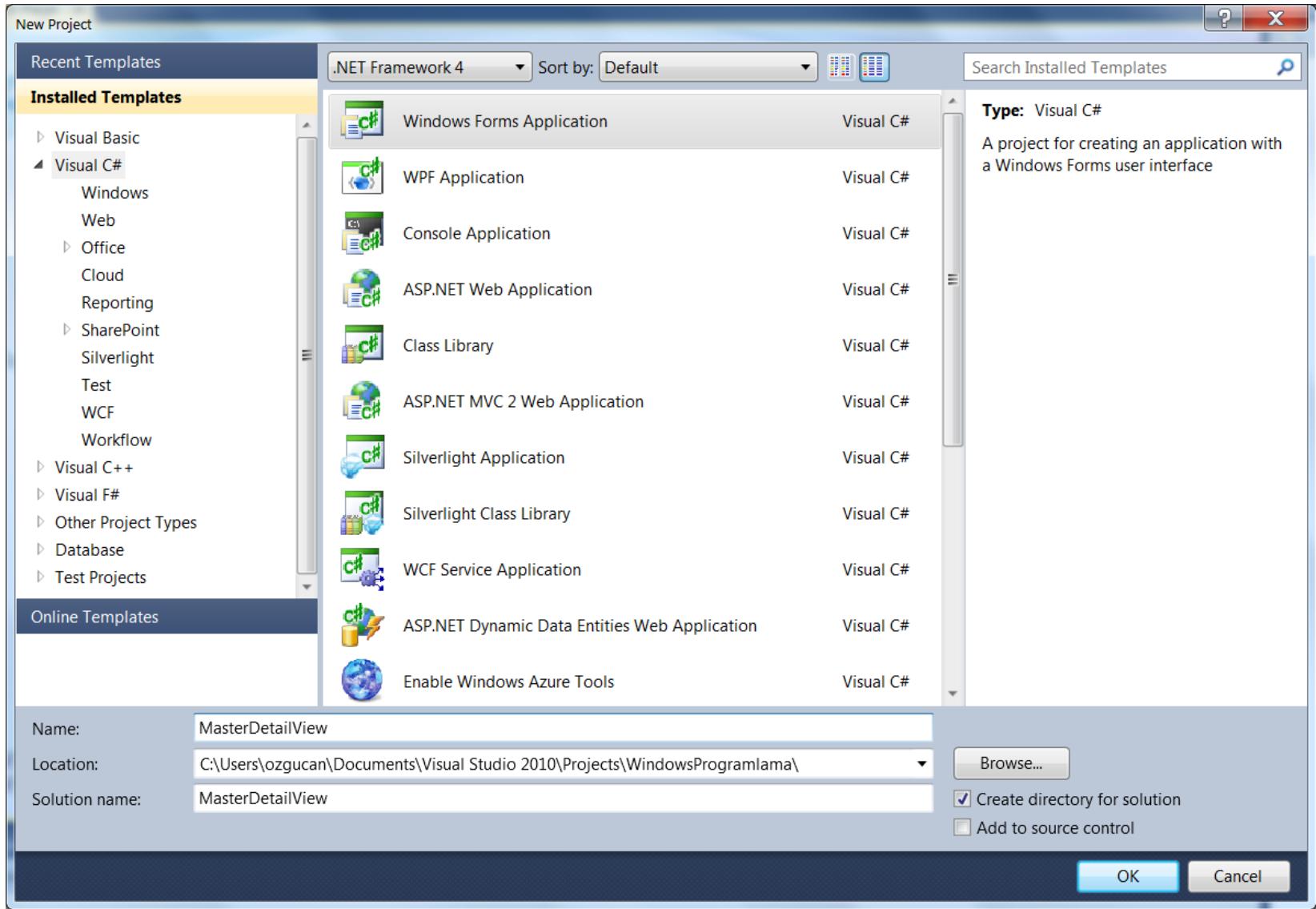
Titles grouped by author:

Greg Ayer:	Simply Visual Basic 2008
Harvey Deitel:	C How to Program
	C++ How to Program
	Internet & world wide web How to Program
	Java How to Program
	Simply Visual Basic 2008
	Visual Basic 2008 How to Program
	Visual C# 2008 How to Program
	Visual C++ 2008 How to Program
Paul Deitel:	C How to Program
	C++ How to Program
	Internet & world wide web How to Program
	Java How to Program
	Simply Visual Basic 2008
	Visual Basic 2008 How to Program
	Visual C# 2008 How to Program
	Visual C++ 2008 How to Program
Dan Quirk:	Visual C++ 2008 How to Program

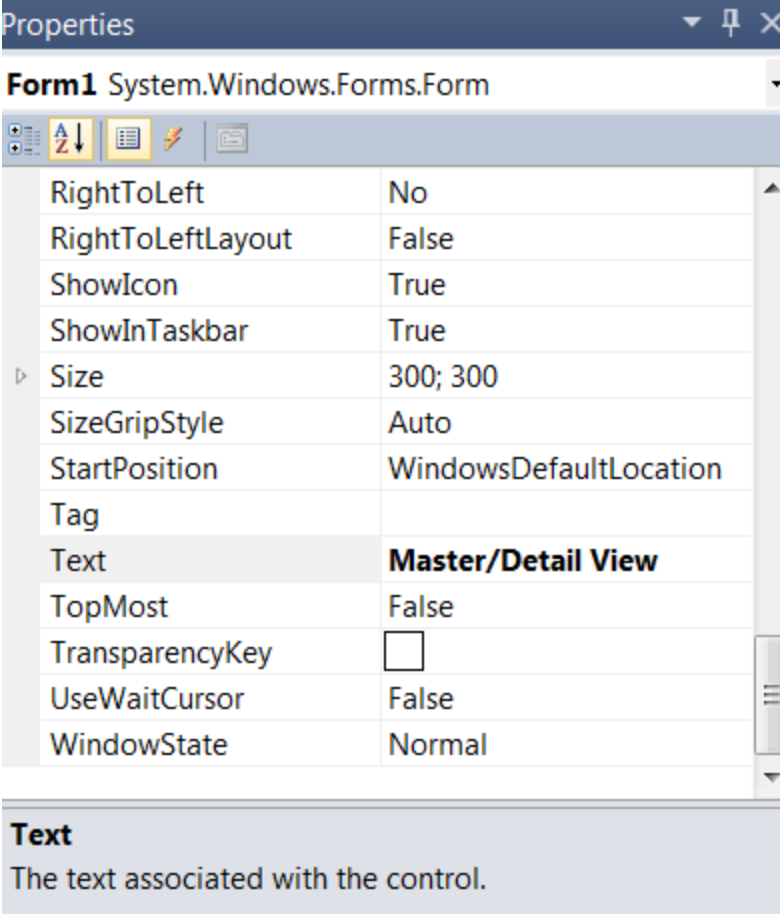
Master/Detail View

- GUI'nin bir parçası
 - girdi seçimine izin verirken,
 - diğer parçası
 - girdi ile ilgili veriyi
- görüntüler.

Uygulama – Master/Detail View



Uygulama – Master/Detail View

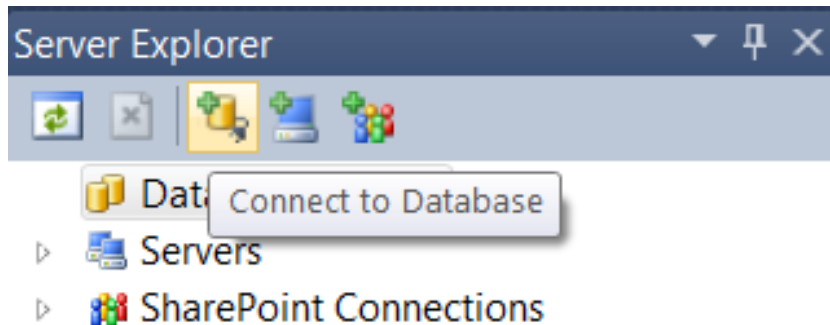


The screenshot shows the Visual Studio Properties window for a control named **Form1** of type `System.Windows.Forms.Form`. The **Text** property is highlighted and set to **Master/Detail View**. Other visible properties include `RightToLeft` (No), `RightToLeftLayout` (False), `ShowIcon` (True), `ShowInTaskbar` (True), `Size` (300; 300), `SizeGripStyle` (Auto), `StartPosition` (WindowsDefaultLocation), `Tag`, `TopMost` (False), `TransparencyKey` (empty), `UseWaitCursor` (False), and `WindowState` (Normal).

Property	Value
RightToLeft	No
RightToLeftLayout	False
ShowIcon	True
ShowInTaskbar	True
Size	300; 300
SizeGripStyle	Auto
StartPosition	WindowsDefaultLocation
Tag	
Text	Master/Detail View
TopMost	False
TransparencyKey	
UseWaitCursor	False
WindowState	Normal

Text
The text associated with the control.

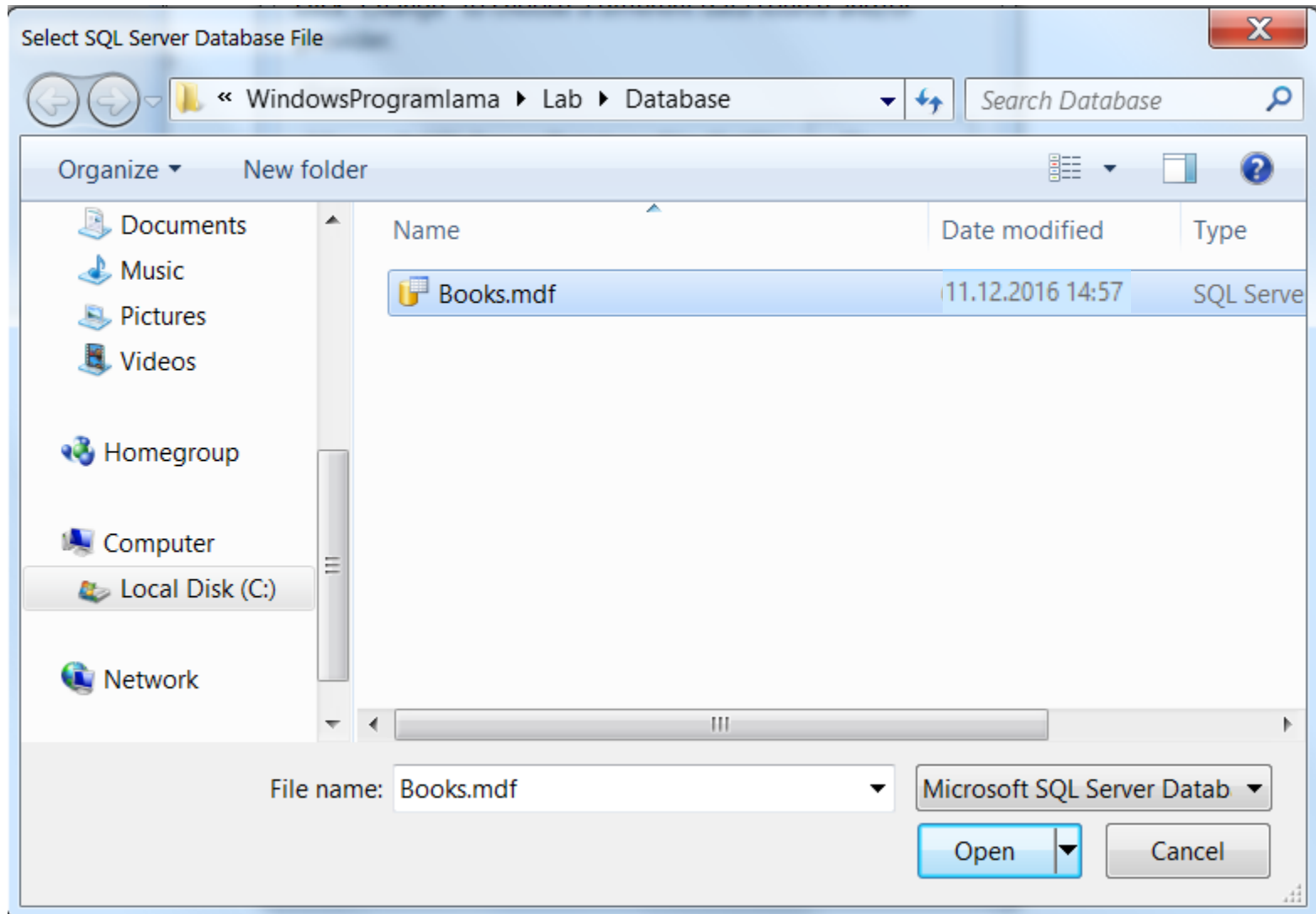
Uygulama – Master/Detail View



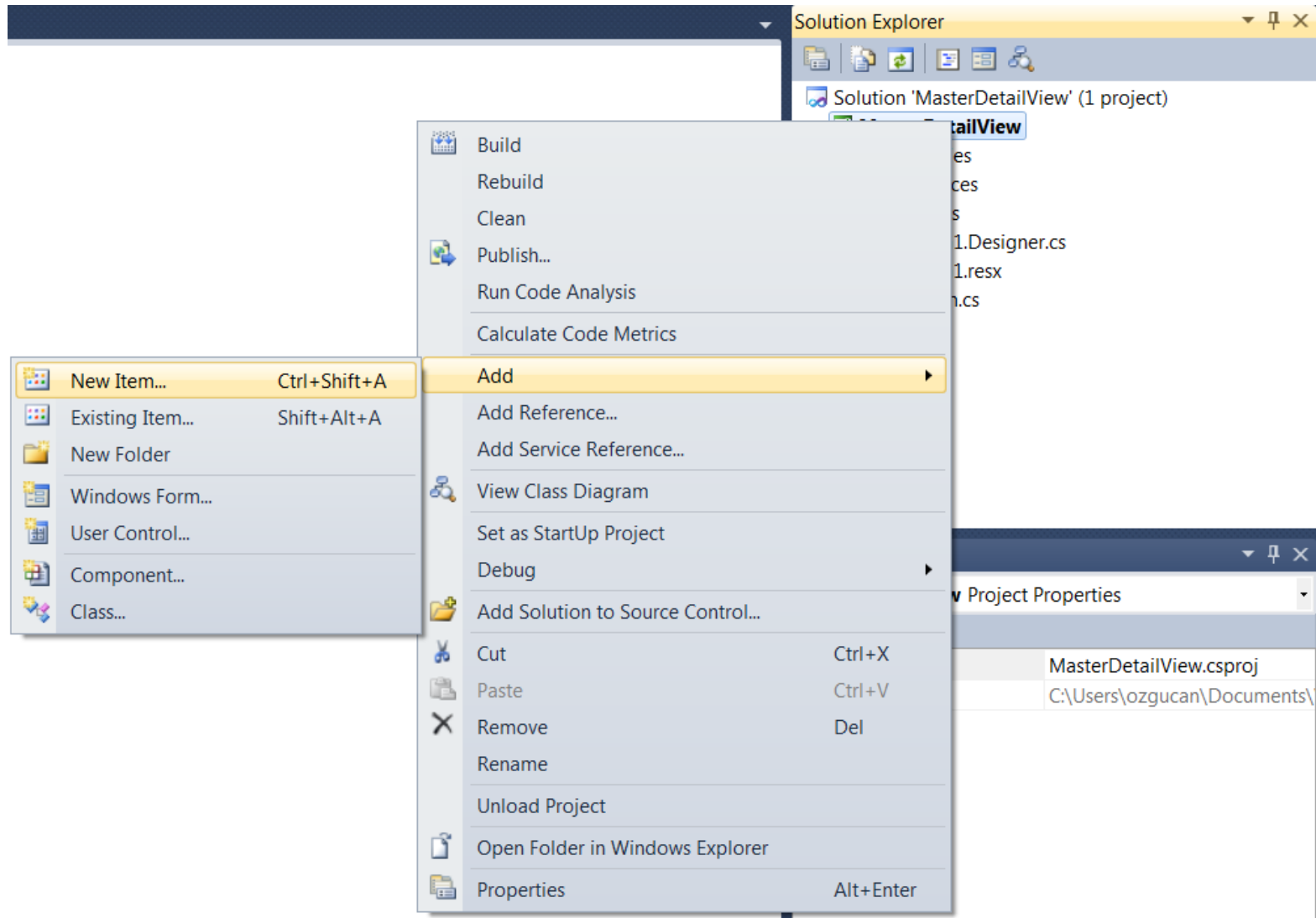
The 'Add Connection' dialog box is shown, which is used to configure a new data source connection. The dialog has a title bar with a question mark icon and a close button. The main content area contains the following fields and controls:

- Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.**
- Data source:** A text box containing 'Microsoft SQL Server Database File (SqlClie' and a 'Change...' button.
- Database file name (new or existing):** A text box and a 'Browse...' button.
- Log on to the server:** A section with two radio buttons: 'Use Windows Authentication' (selected) and 'Use SQL Server Authentication'. Below these are text boxes for 'User name:' and 'Password:', and a checkbox for 'Save my password'.
- Advanced...** button.
- Test Connection**, **OK**, and **Cancel** buttons at the bottom.

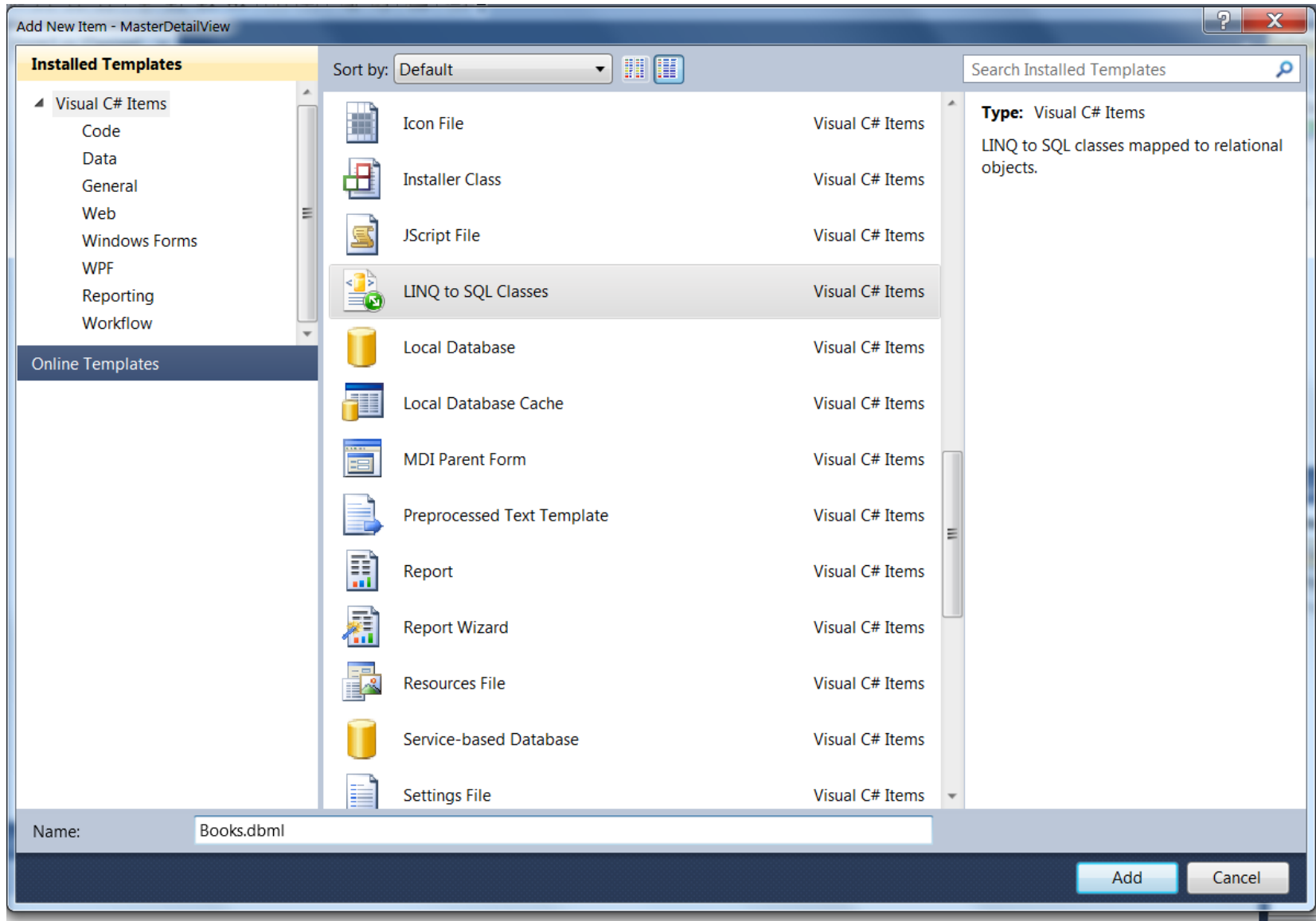
Uygulama – Master/Detail View



Uygulama – Master/Detail View



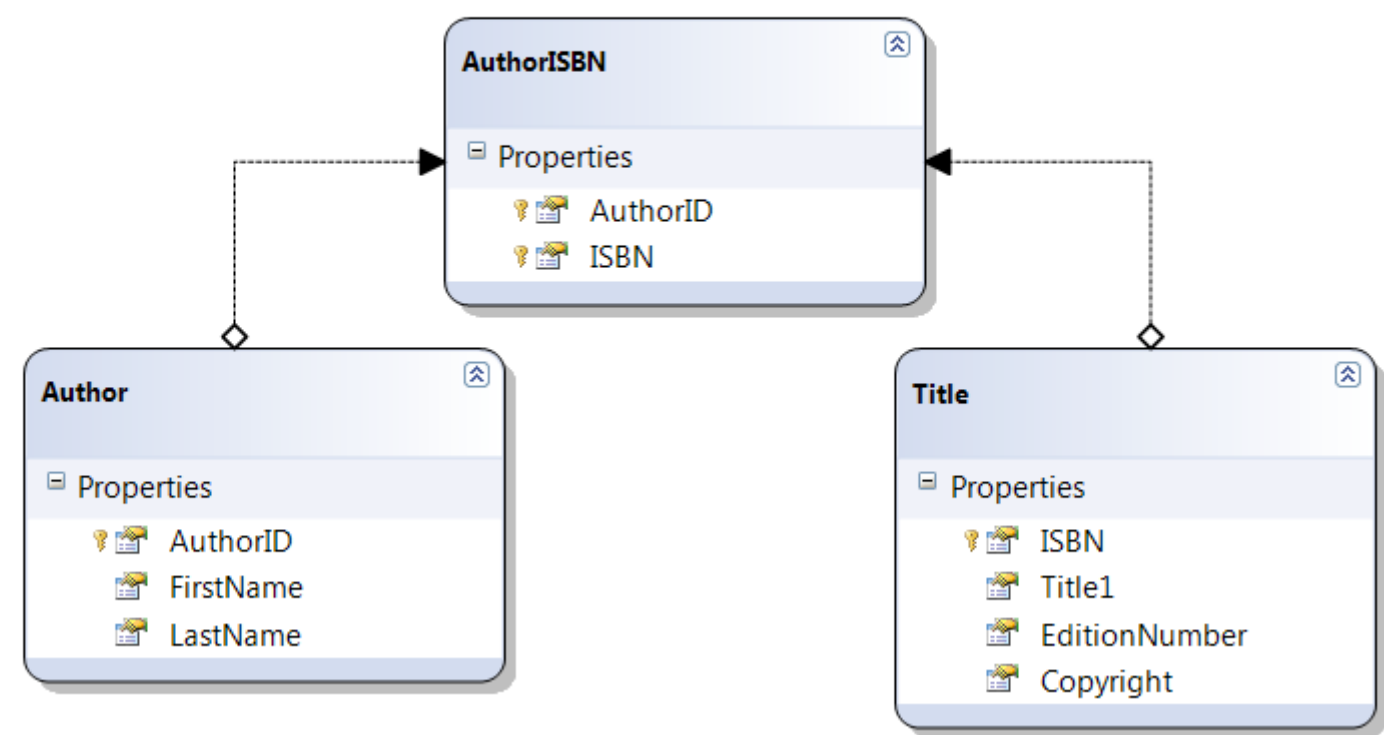
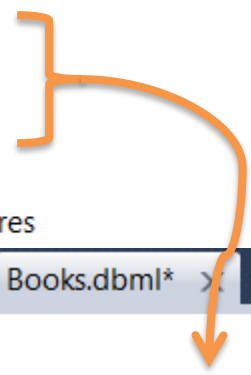
Uygulama – Master/Detail View





- Data Connections
 - Books.mdf
 - Database Diagrams
 - Tables
 - AuthorISBN
 - Authors
 - Titles
 - Views
 - Stored Procedures
 - Functions
 - Synonyms
 - Types
 - Assemblies
- Servers
- SharePoint Connections

Books.dbml* > Form1.cs [Design]



Uygulama – Master/Detail View

- 2 Label

1. Name = authorLabel

1. Text = Author:

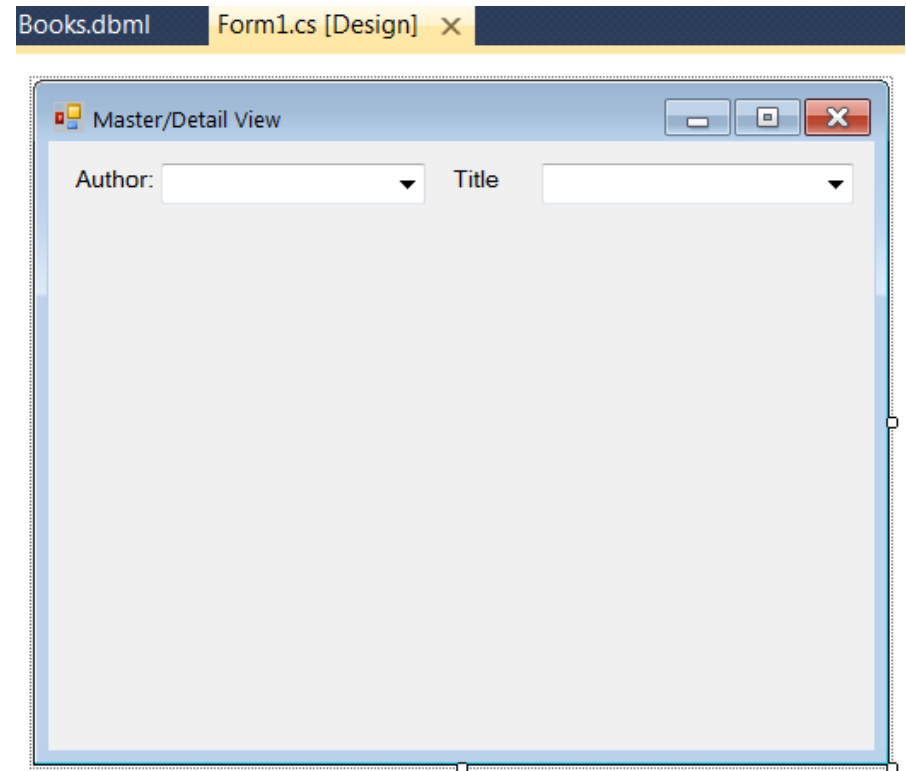
2. Name = titleLabel

2. Text = Title:

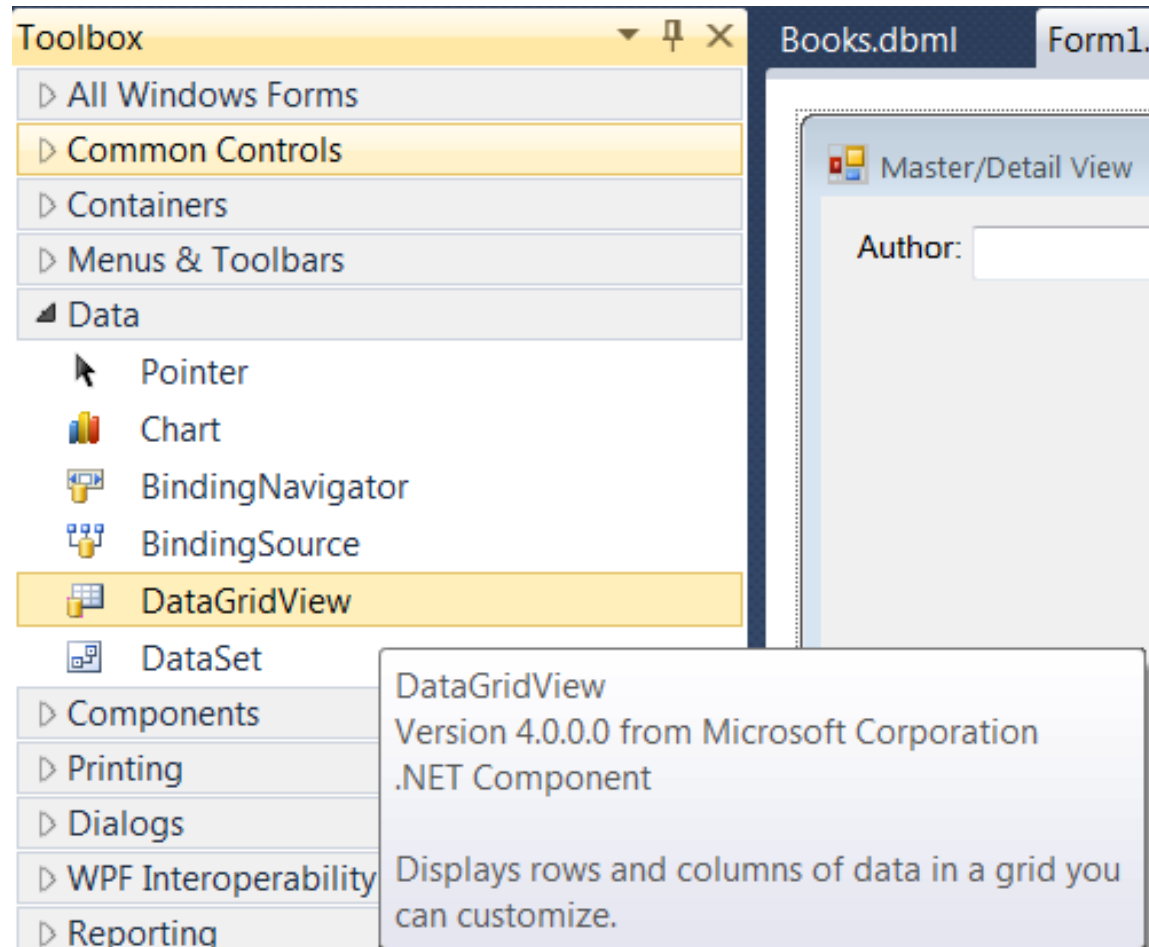
- 2 ComboBox

1. Name = authorComboBox

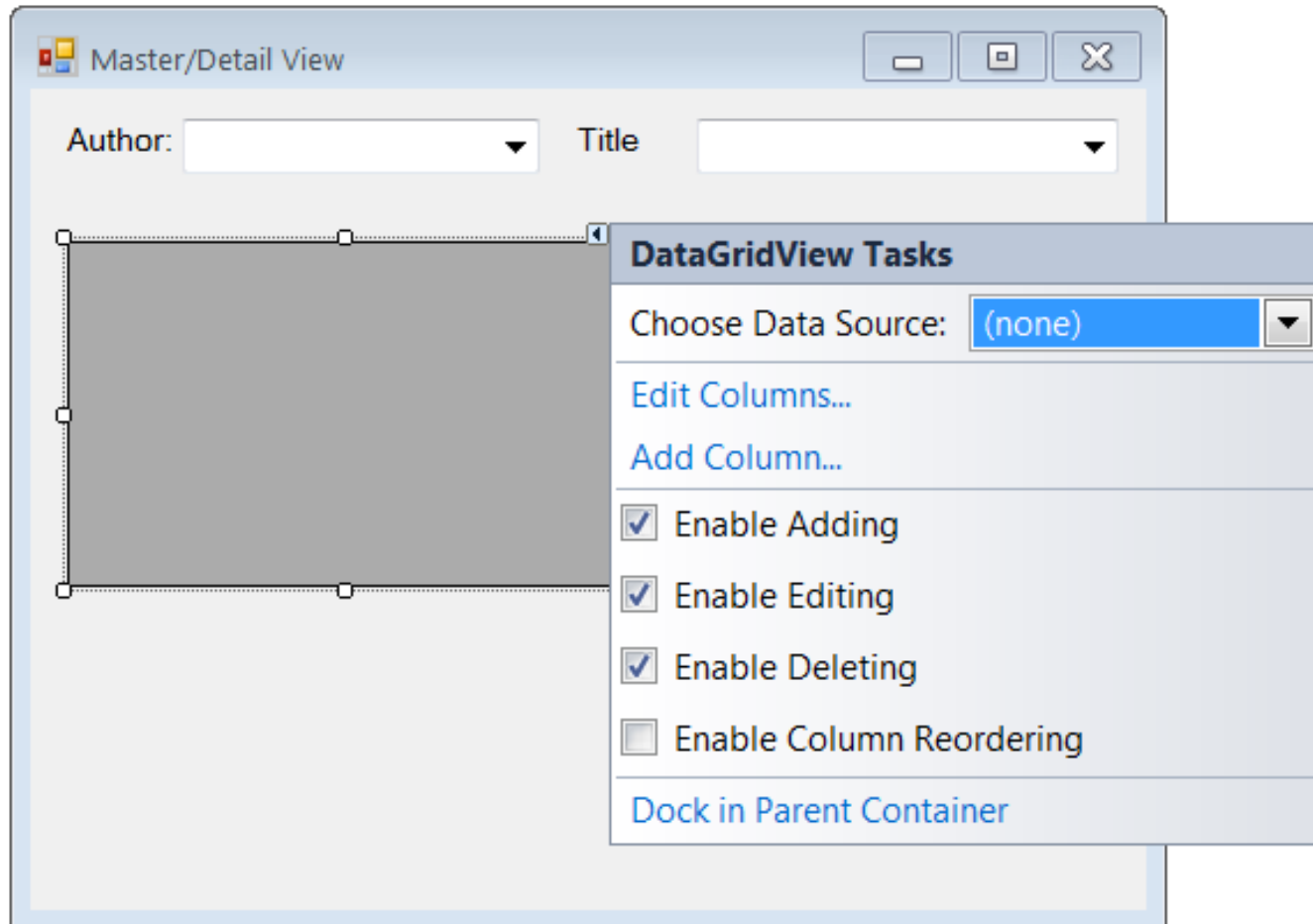
2. Name = titleComboBox



Uygulama – Master/Detail View



Uygulama – Master/Detail View



Sadece veri
görüntülemesi
yapılacağından



Master/Detail View

Author: Title:

Properties

dataGridView1 System.Windows.Forms.DataGridView

(ApplicationSettings)

(DataBindings)

(Name) **booksDataGridView**

Properties

booksDataGridView System.Windows.Forms.DataGridView

MaximumSize 0; 0

MinimumSize 0; 0

Modifiers Private

MultiSelect True

ReadOnly True

RightToLeft No

RowHeadersBorderStyle Raised

RowHeadersDefaultCellStyle DataGridViewCellStyle { Back

RowHeadersVisible True

RowHeadersWidth 41

RowHeadersWidthSizeMode EnableResizing

RowsDefaultCellStyle DataGridViewCellStyle { }

RowTemplate **DataGridViewRow { Index**

ReadOnly

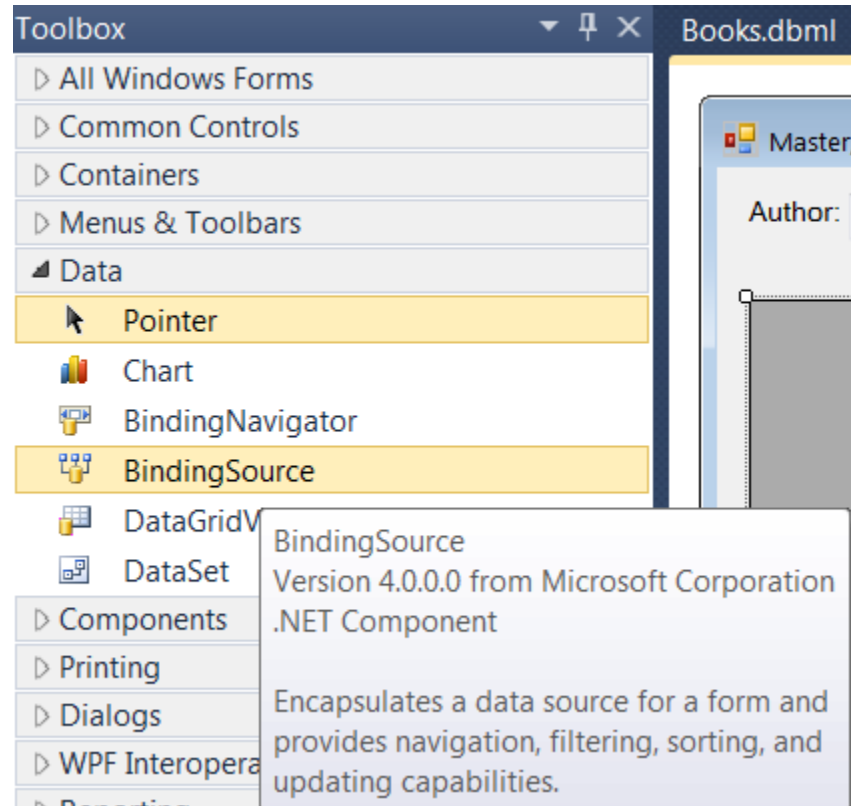
Indicates whether the user can edit the cells of the DataG...

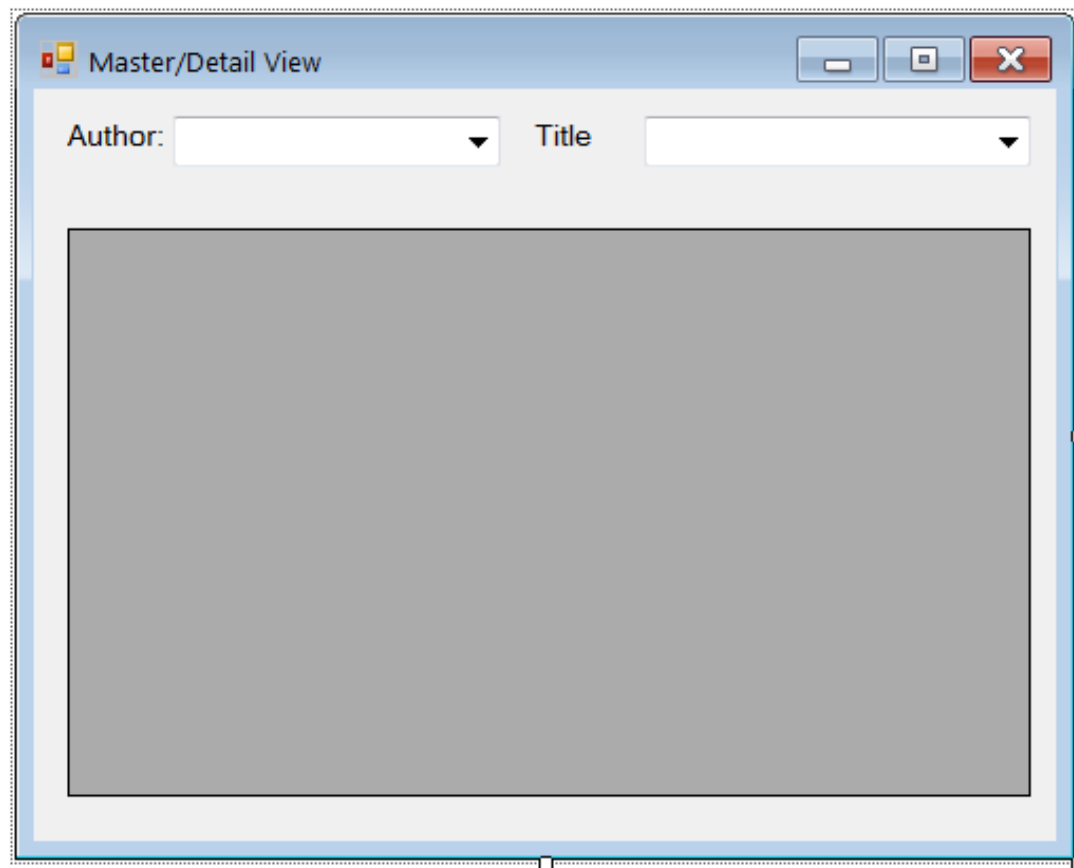
DataGridView için veri kaynağının belirtilmesi:


– 2 BindingSource


1. Name = authorBindingSource

2. Name = titleBindingSource





 authorBindingSource

 titleBindingSource

Uygulama – Master/Detail View

```
// connection to database
private BooksDataContext database = new BooksDataContext();

// this class helps us display each author's first and last name in the authors drop-down list
private class AuthorBinding
{
    public Author Author { get; set; } // contained Author object
    public string Name { get; set; } // author's full name
}
```

Uygulama – Master/Detail View

```
private void Form1_Load(object sender, EventArgs e) // initialize data sources when the Form is loaded
{
    // display AuthorBinding.Name
    authorComboBox.DisplayMember = "Name";

    // set authorComboBox's DataSource to the list of authors
    authorComboBox.DataSource = from author in database.Authors
                                orderby author.LastName, author.FirstName
    select new AuthorBinding
    {
        Author = author,
        Name = author.FirstName + " " + author.LastName
    };

    // display Title.Title1
    titleComboBox.DisplayMember = "Title1";

    // set titleComboBox's DataSource to the list of titles
    titleComboBox.DataSource = from title in database.Titles
                                orderby title.Title1
                                select title;

    // initially, display no "detail" data
    booksDataGridView.DataSource = null;
}
```

Program ilk
yüklendiğinde veri
görüntülenmesini
engellemek için

Uygulama – Master/Detail View

```
// display titles that were co-authored by the selected author
private void authorComboBox_SelectedIndexChanged(object sender, EventArgs e)
{
    // get the selected Author object from the ComboBox
    Author currentAuthor = ((AuthorBinding)authorComboBox.SelectedItem).Author;

    // set titleBindingSource's DataSource to the list of titles written by the selected author
    titleBindingSource.DataSource = from book in currentAuthor.AuthorISBNs
                                    select book.Title;

    // display the titles in the DataGridView
    booksDataGridView.DataSource = titleBindingSource;
}
```

Uygulama – Master/Detail View

```
// display the authors of the selected title
private void titleComboBox_SelectedIndexChanged(object sender, EventArgs e)
{
    // get the selected Title object from the ComboBox
    Title currentTitle = (Title)titleComboBox.SelectedItem;

    // set authorBindingSource's DataSource to the list of authors for the selected title
    authorBindingSource.DataSource = from book in currentTitle.AuthorISBNs
                                     select book.Author;

    // display the authors in the DataGridView
    booksDataGridView.DataSource = authorBindingSource;
}
```


Master/Detail View

Author: Title: C How to Program

Master/Detail View

Author: Harvey Deitel Title: C How to Program

	ISBN	Title1	EditionNumber	Copyright
▶	0131752421	Internet & W...	4	2008
	0132222205	Java How to...	7	2007
	0132404168	C How to Pr...	5	2007
	0136053033	Simply Visu...	3	2009
	013605305X	Visual Basic...	4	2009
	013605322X	Visual C# 20...	3	2009
	0136151574	Visual C++ 2...	2	2008
	0136152503	C++ How to ...	6	2008

Master/Detail View

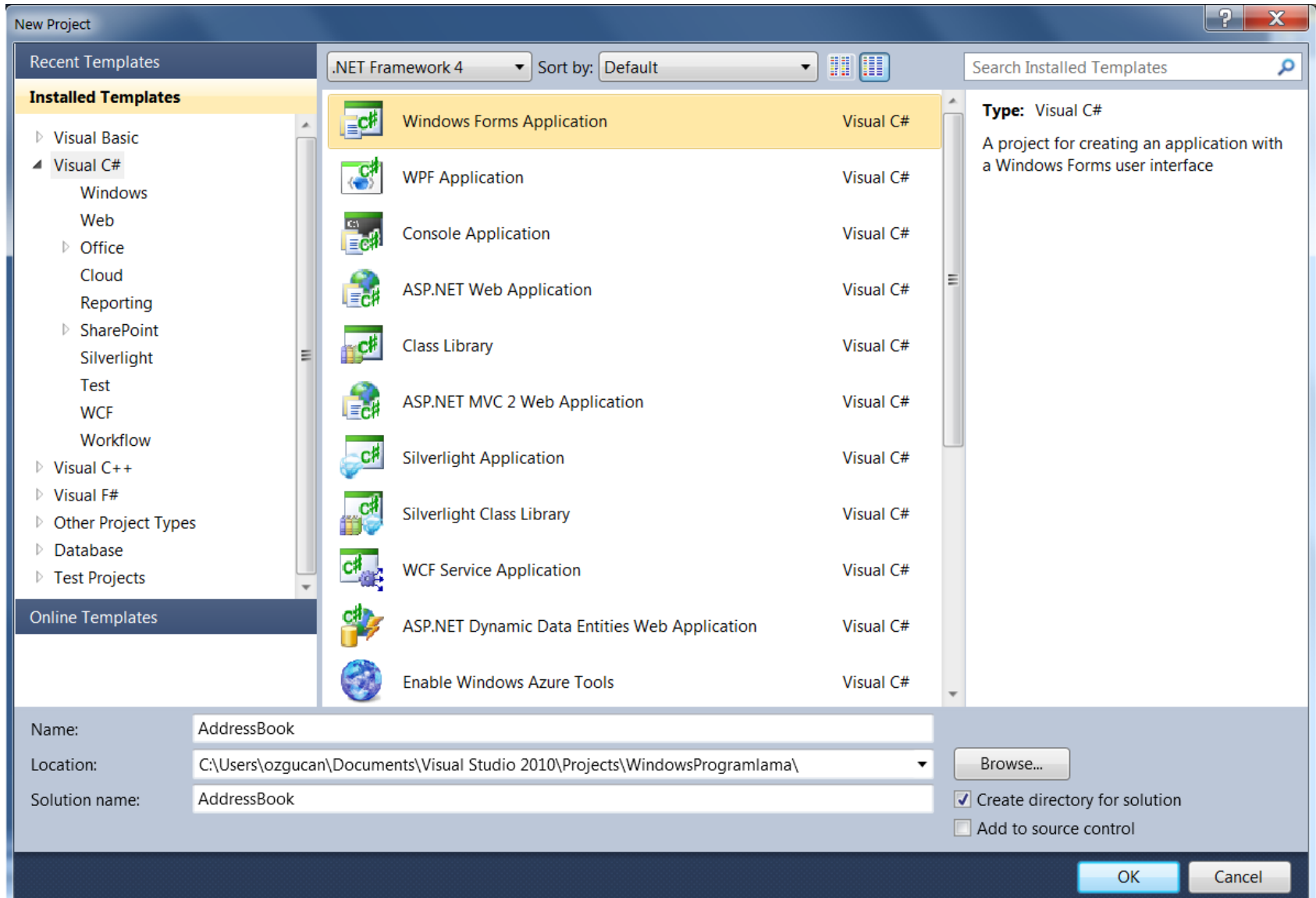
Author: Harvey Deitel Title: C# 2008 How to Program

	AuthorID	FirstName	LastName
▶	1	Harvey	Deitel
	2	Paul	Deitel

Uygulama – Adres Defteri

- Kullanıcı işlemleri:
 - Yeni kişi kaydı girme
 - Soyadı belirli harfler ile başlayan kişi kayıtlarını arama
 - Mevcut kişi kayıtlarını güncelleme
 - Kişi kayıtlarını silme

Uygulama – Adres Defteri



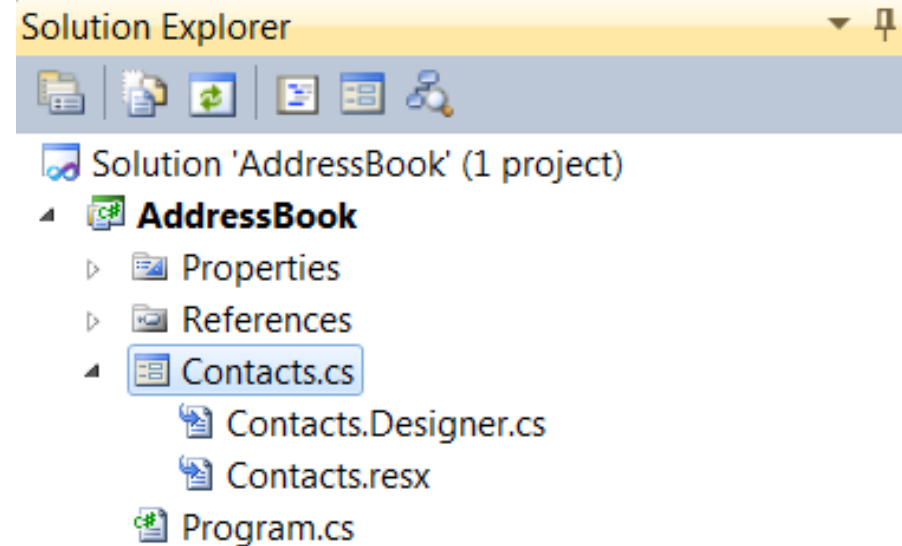
Uygulama – Adres Defteri

Properties

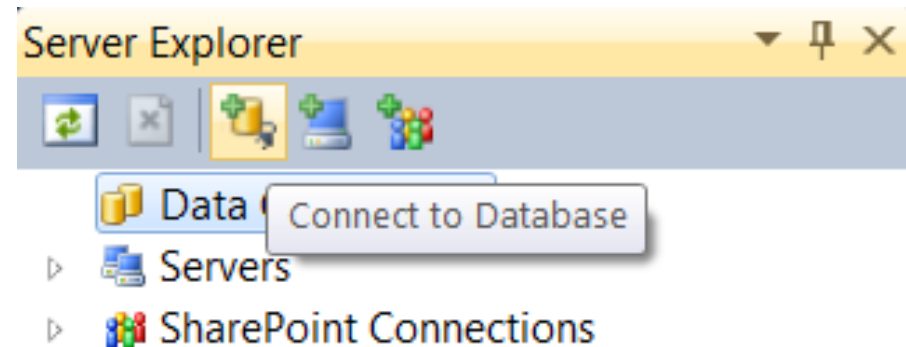
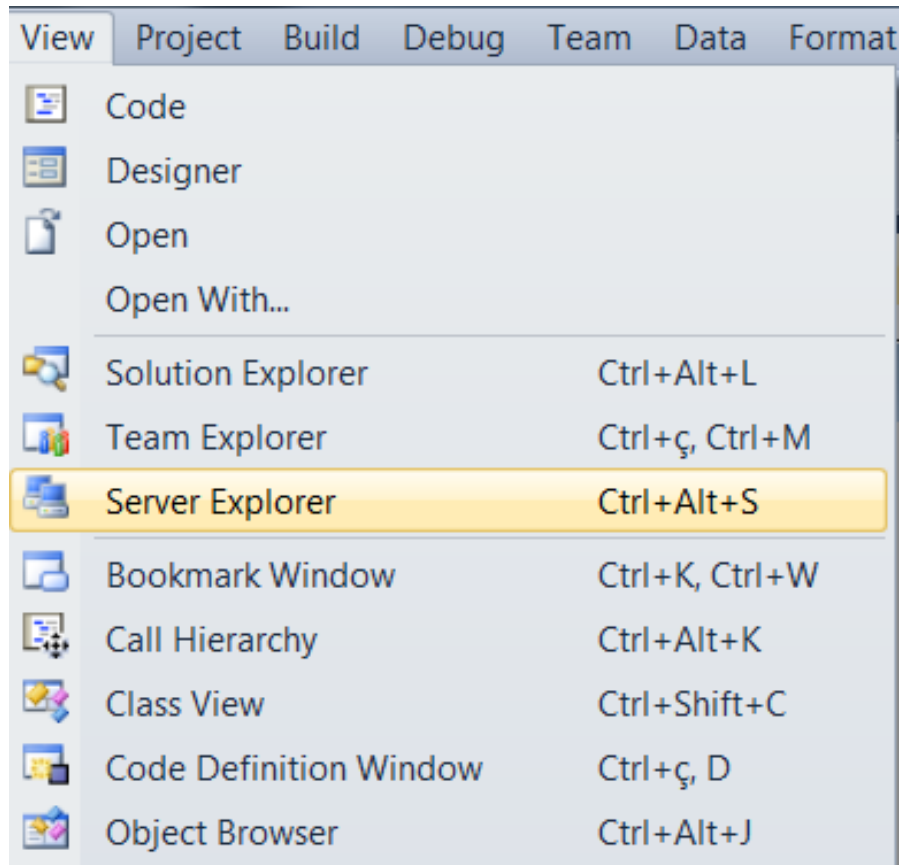
Form1 System.Windows.Forms.Form

Opacity	100%
Padding	0; 0; 0; 0
RightToLeft	No
RightToLeftLayout	False
ShowIcon	True
ShowInTaskbar	True
Size	300; 300
SizeGripStyle	Auto
StartPosition	WindowsDefaultLocation
Tag	
Text	Address Book
TopMost	False
TransparencyKey	<input type="checkbox"/>
UseWaitCursor	False

Text
The text associated with the control.



Uygulama – Adres Defteri



Add Connection

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source:

Microsoft SQL Server Database File (SqlClie

Change...

Database file name (new or existing):

Browse...

Log on to the server

☒ Use Windows Authentication

☐ Use SQL Server Authentication

User name:

Password:

☐ Save my password

Advanced...

Test Connection

OK

Cancel

Select SQL Server Database File



« Güz ► WindowsProgramlama ► Lab ► Org



Search Org



Organize ▼

New folder



Documents



Music



Pictures



Videos



Homegroup



Computer



Local Disk (C:)



Network

Name

Date modified

Type

AddressBook.mdf

05.12.2016 13:47

SQL Serve

Books.mdf

05.12.2016 16:58

SQL Serve

File name: AddressBook.mdf

Microsoft SQL Server Datab ▼

Open

Cancel

Add Connection

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source:
Microsoft SQL Server Database File (SqlClie) Change...

Database file name (new or existing):
C:\Academic_OC\Courses\2016-2017\Güz\w Browse...

Log on to the server

☒ Use Windows Authentication

☐ Use SQL Server Authentication

User name:

Password:

☐ Save my password

Advanced...

Test Connection OK Cancel

Server Explorer

- Data Connections
 - AddressBook.mdf**
 - Database Diagrams
 - Tables
 - Addresses
 - AddressID
 - FirstName
 - LastName
 - Email
 - PhoneNumber
 - Views
 - Stored Procedures
 - Functions
 - Synonyms
 - Types
 - Assemblies
- Servers
- SharePoint Connections

Solution Explorer

Solution 'AddressBook' (1 project)

AddressBook

Properties

References

Contacts.cs

Contacts.Designer.cs

Contacts.resx

Program.cs

Build

Rebuild

Clean

Publish...

Run Code Analysis

Calculate Code Metrics

Add

Add Reference...

Add Service Reference...

View Class Diagram

Set as StartUp Project

Debug

Add Solution to Source Control...

Cut

Paste

Remove

Rename

Unload Project

Open Folder in Windows Explorer

Properties

Ctrl+X

Ctrl+V

Del

Alt+Enter

New Item...

Existing Item...

New Folder

Windows Form...

User Control...

Component...

Class...

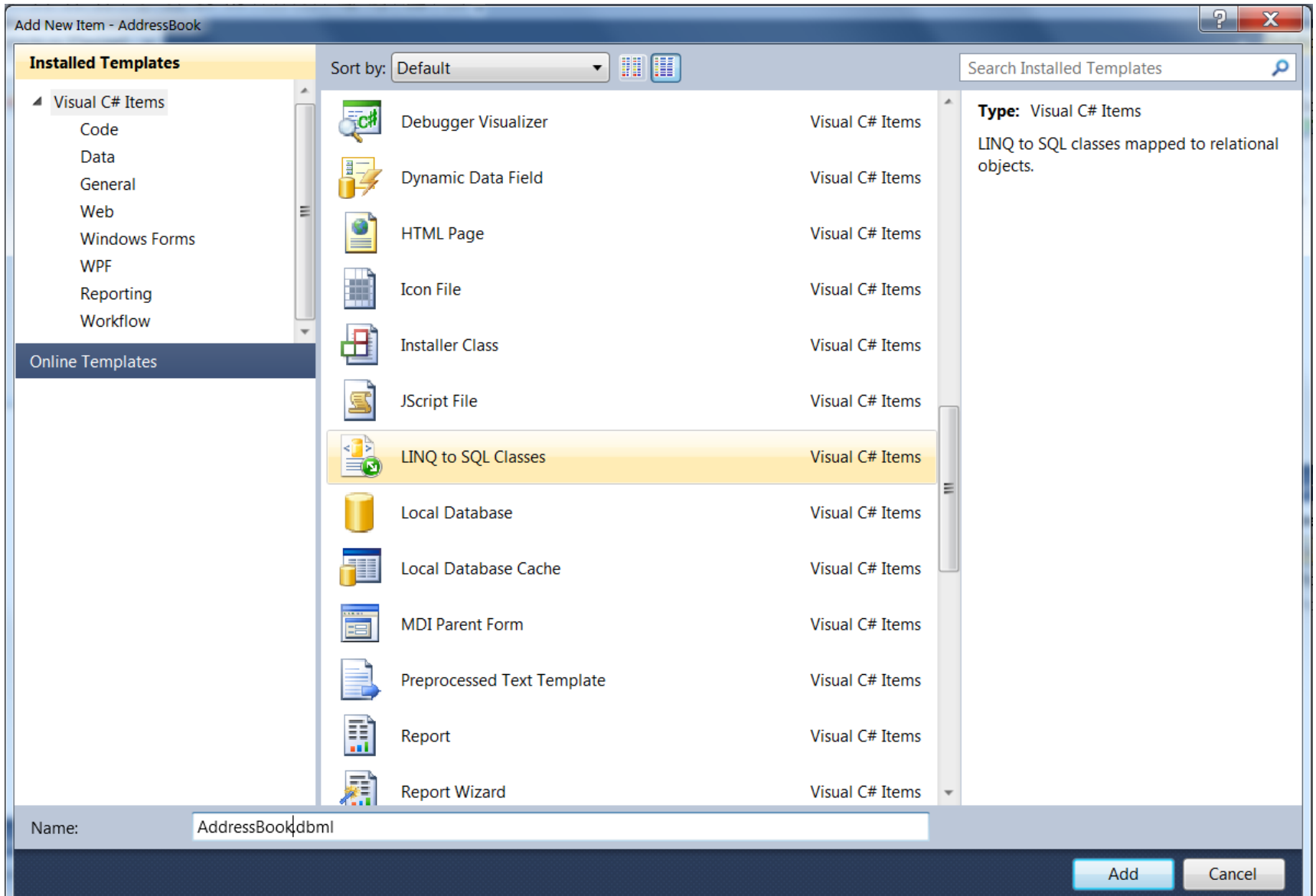
Ctrl+Shift+A

Shift+Alt+A

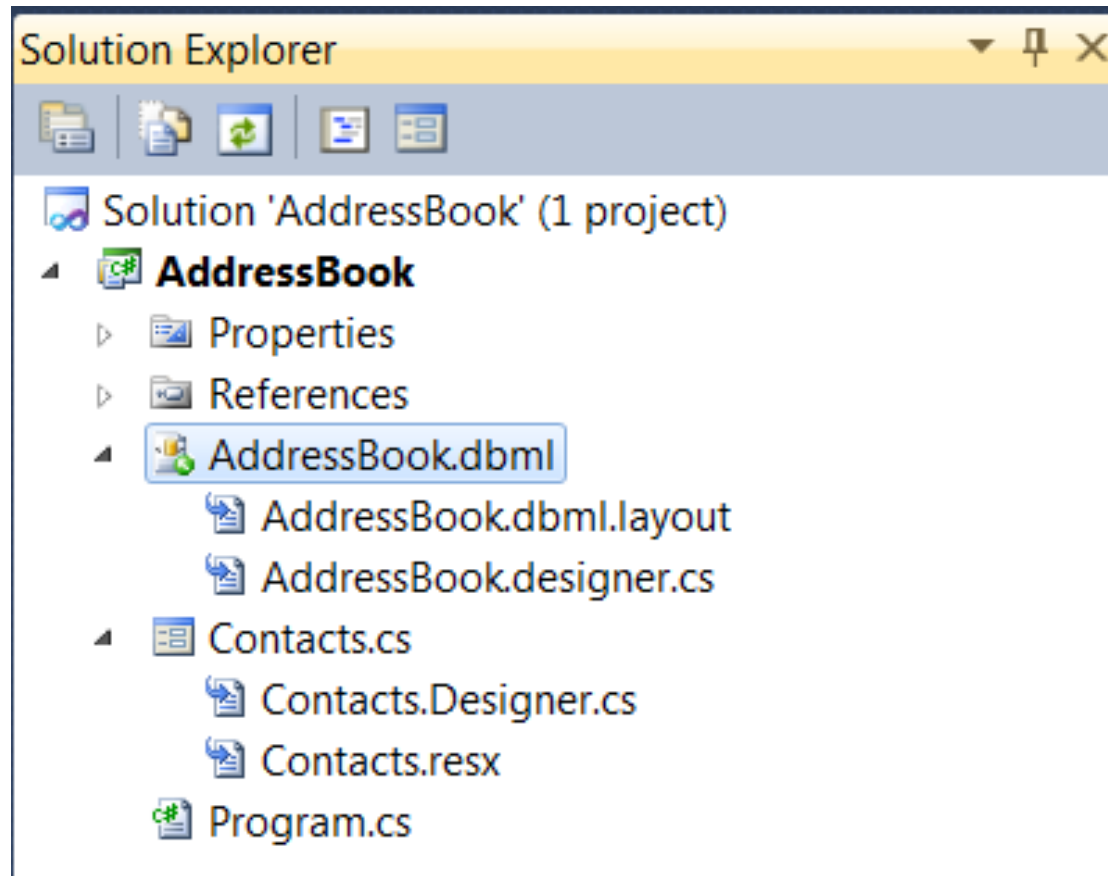
AddressBook.csproj

C:\Users\ozgucan\Documer

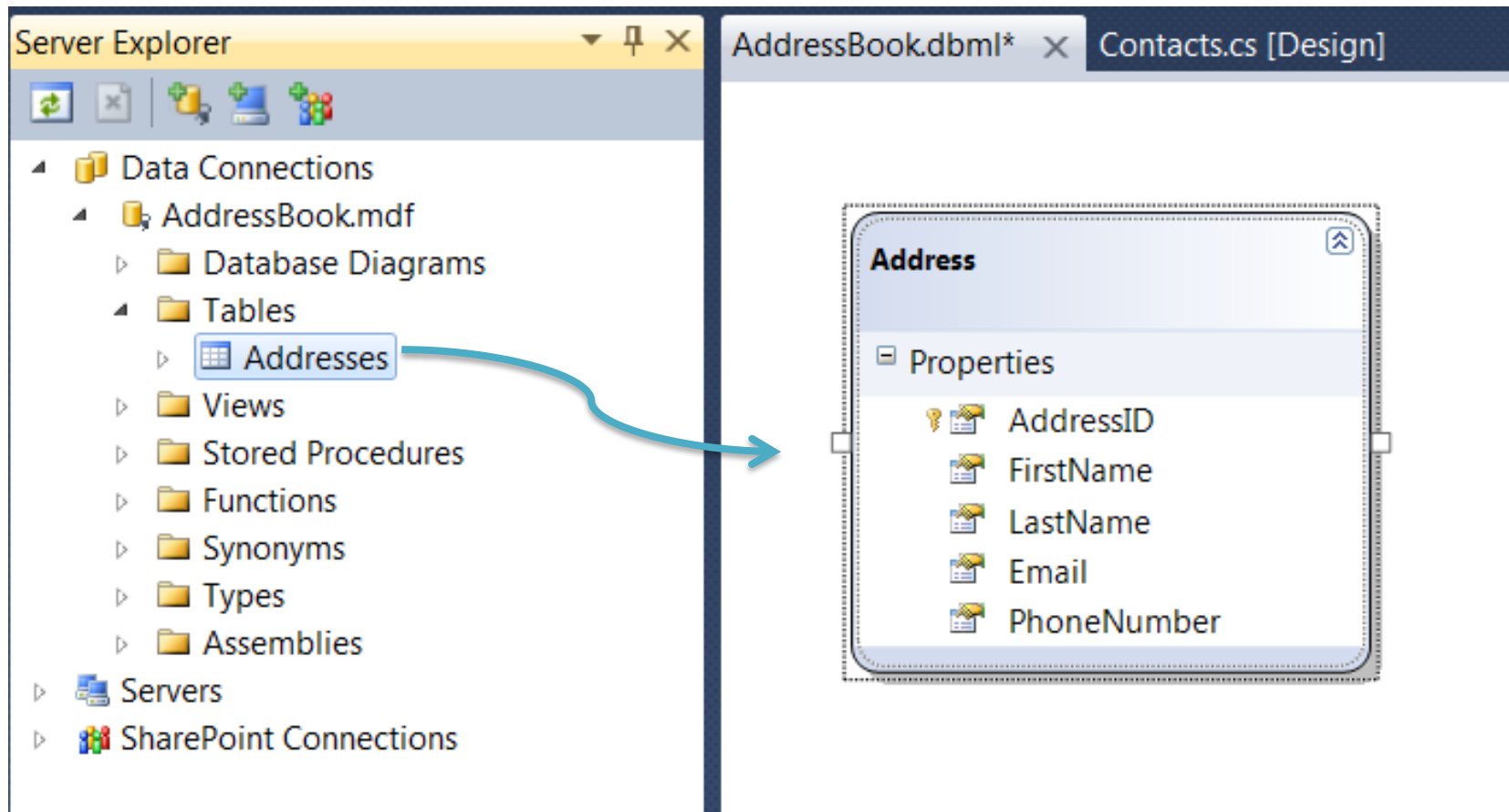
Uygulama – Adres Defteri



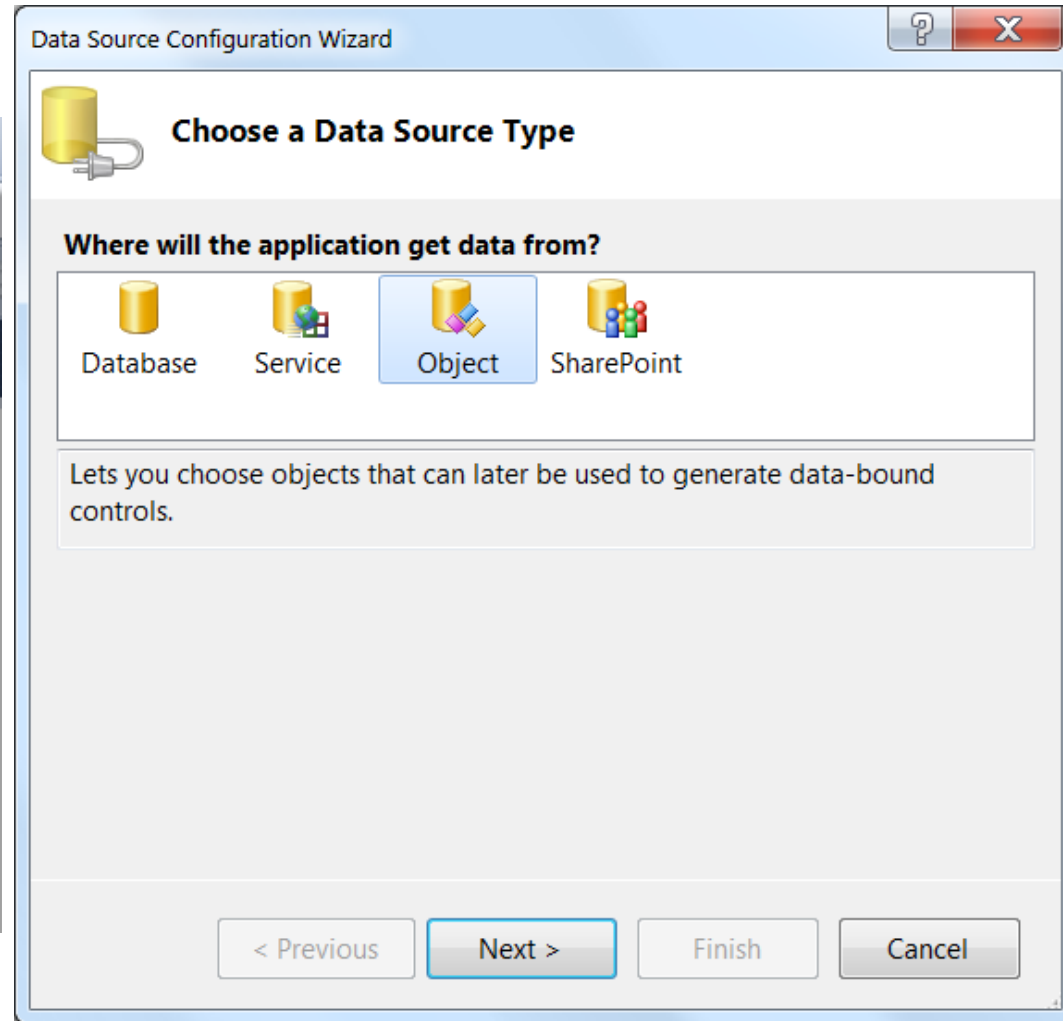
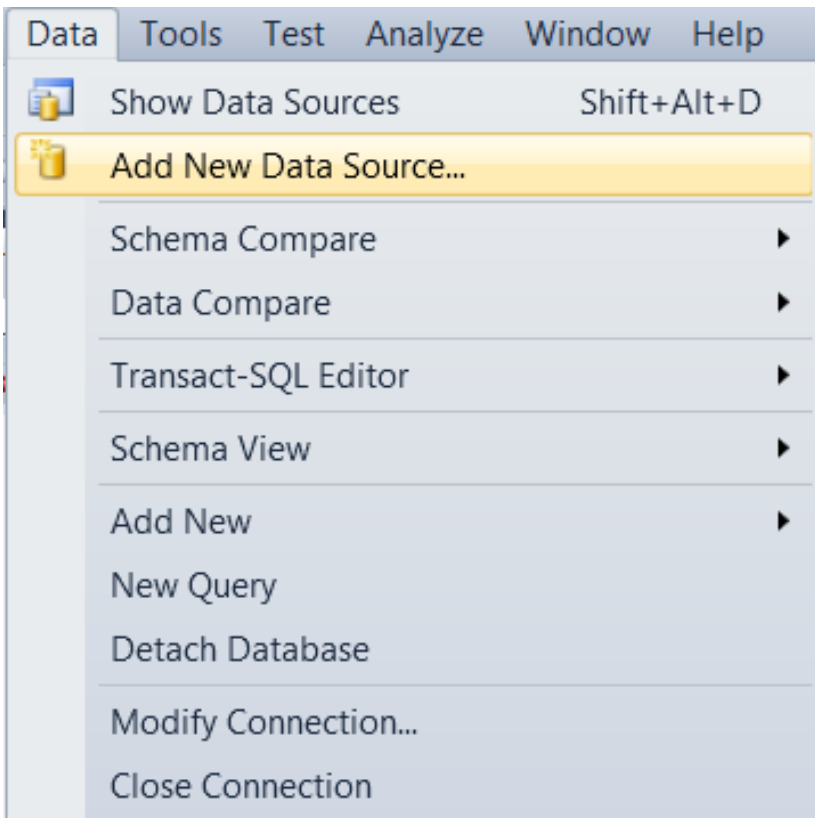
Uygulama – Adres Defteri



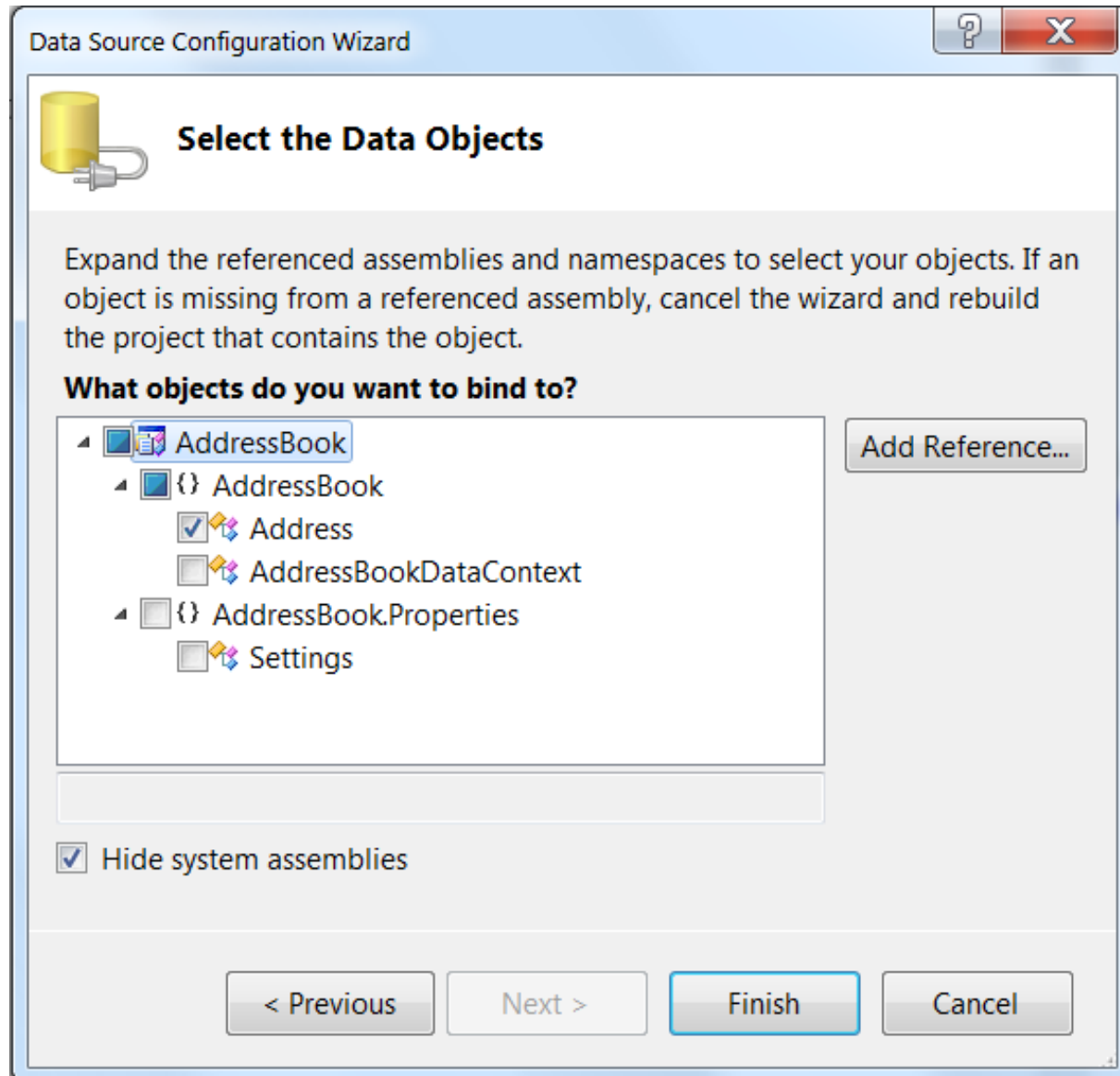
Uygulama – Adres Defteri

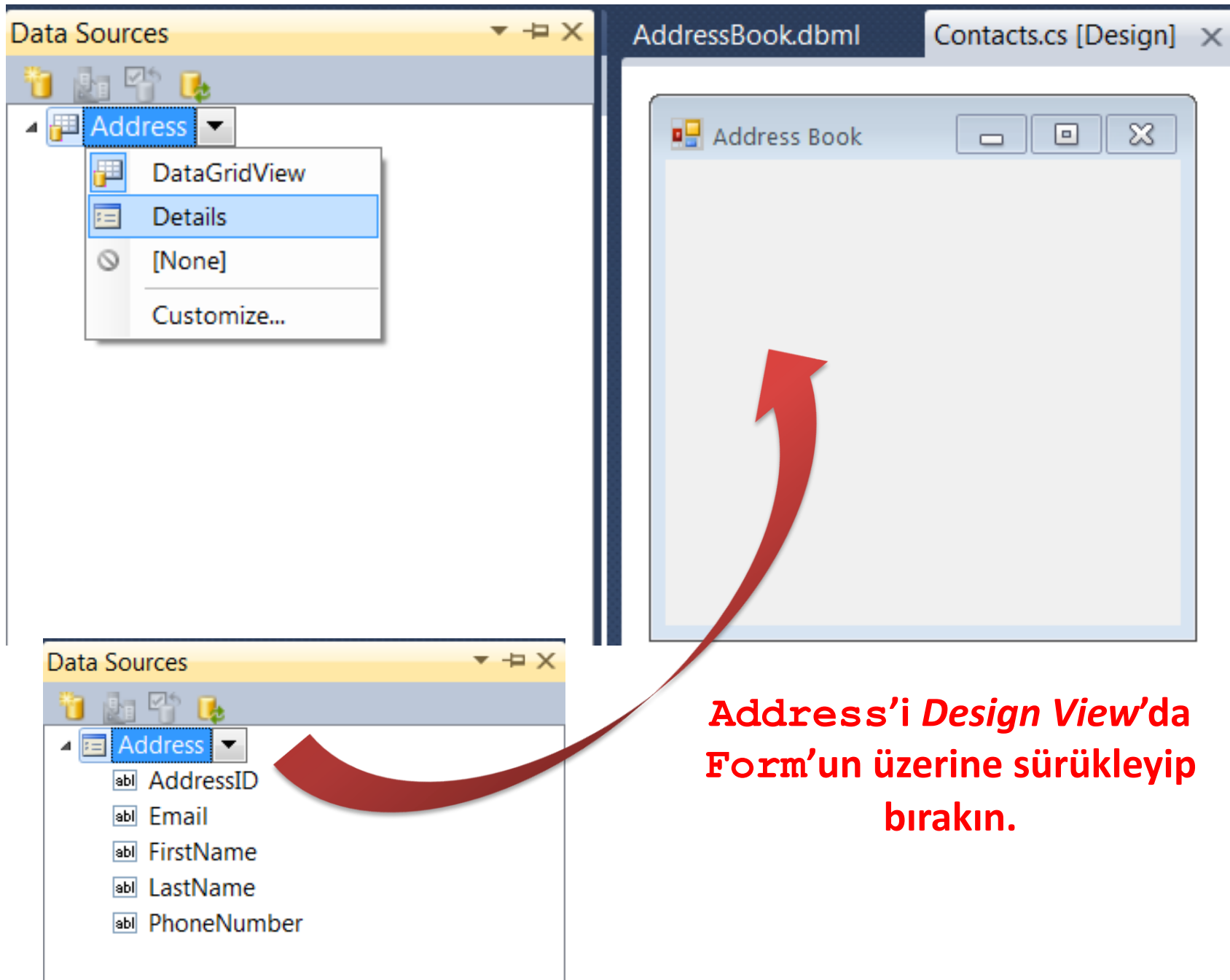


Uygulama – Adres Defteri



Uygulama – Adres Defteri





**BindingSource,
BindingNavigator,
Label ve TextBox'lar
otomatik olarak
yaratılacaktır.**

Address Book

0 of {0}

Address ID:

Email:

First Name:

Last Name:

Phone Number:



addressBindingSource



addressBindingNavigator

Uygulama – Adres Defteri

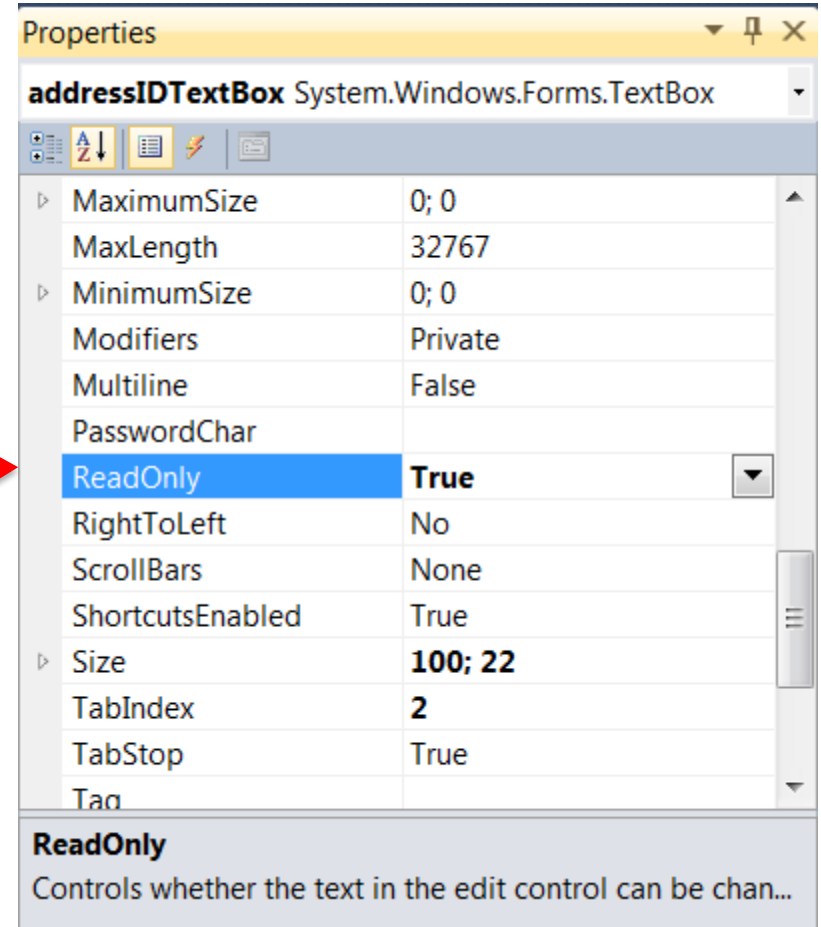
Hizalamayı düzenleyiniz.



Uygulama – Adres Defteri

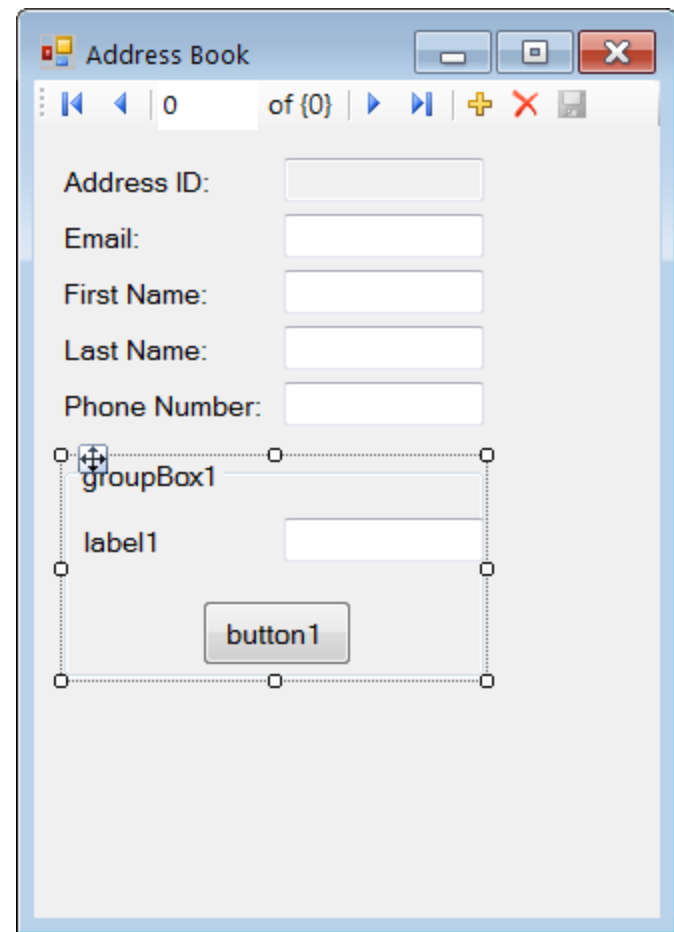
addressIDTextBox

Otomatik artan bir
sütun olduğundan
kullanıcı bu sütunda
değişiklik **yapmamalıdır.** →



Uygulama – Adres Defteri

- **BindingNavigator** → Adres defterine göz atmaya izin verir.
- Kullanıcının soyadına göre arama yapabilmesi için:
 - **GroupBox**
 - **Label**
 - **TextBox**
 - **Button**



Uygulama – Adres Defteri

– GroupBox

- Name = findGroupBox
- Text = Find an entry by last name

- Label

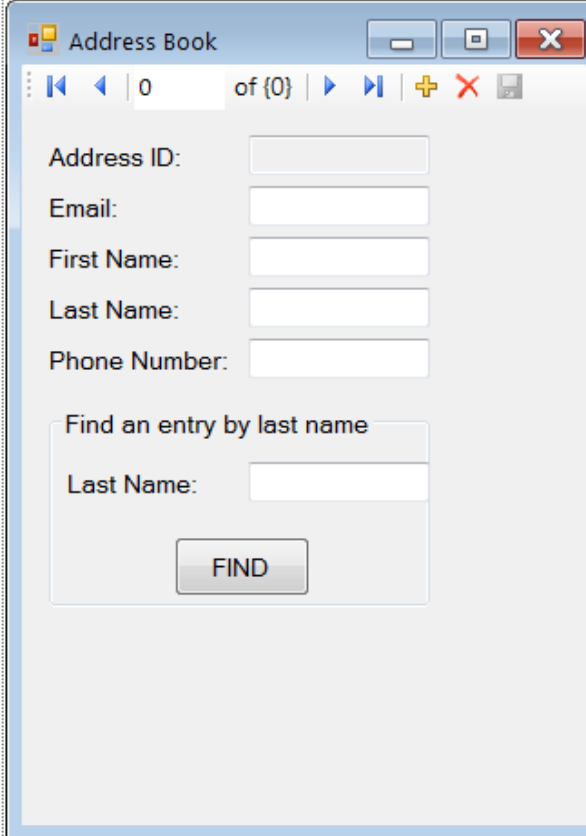
- Name = findLabel
 - Text = Last Name:

- TextBox

- Name = findTextBox

- Button

- Name = findButton
 - Text = Find



The screenshot shows a Windows-style application window titled "Address Book". At the top, there are standard window controls (minimize, maximize, close) and a status bar displaying "0 of {0}" with navigation icons. The main content area contains a form with the following fields: "Address ID:", "Email:", "First Name:", "Last Name:", and "Phone Number:". Below these fields is a section titled "Find an entry by last name" which contains a "Last Name:" label and a text input field. A "FIND" button is positioned at the bottom of this search section.

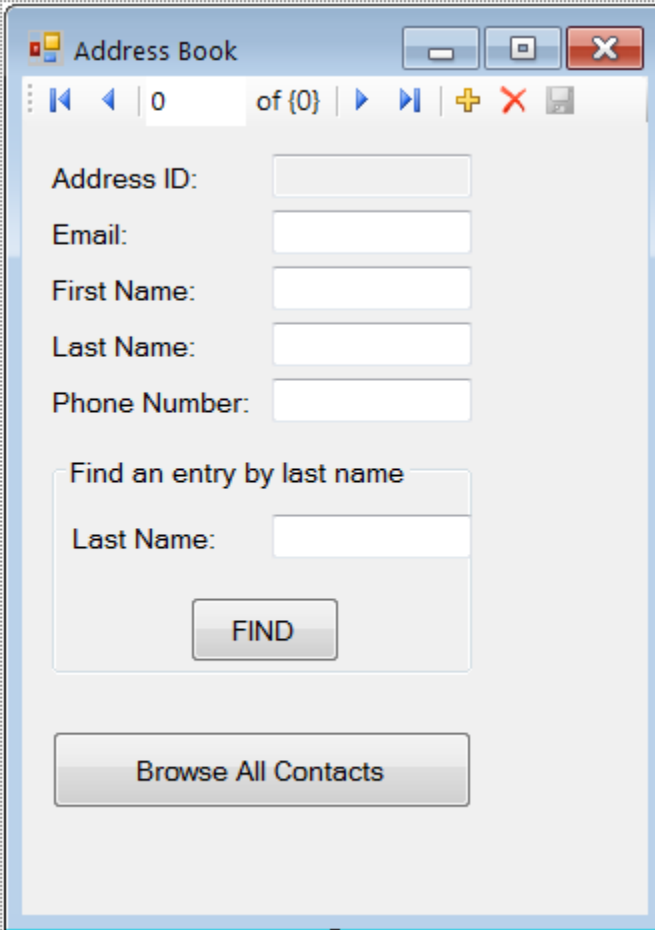
Uygulama – Adres Defteri

Bütün kayıtlara göz atmak için:

Button

Name = browseAllButton

Text = Browse All Contacts



The screenshot shows a window titled "Address Book" with a standard Windows-style title bar (minimize, maximize, close buttons). Below the title bar is a toolbar with navigation icons (back, forward, search, etc.) and a status bar showing "0 of {0}". The main content area contains several input fields for contact information: "Address ID:", "Email:", "First Name:", "Last Name:", and "Phone Number:". Below these fields is a section titled "Find an entry by last name" which includes a "Last Name:" input field and a "FIND" button. At the bottom of the window is a large button labeled "Browse All Contacts".

Uygulama – Adres Defteri

```
// LINQ to SQL data context
private AddressBookDataContext database = new AddressBookDataContext();

// fill our addressBindingSource with all rows, ordered by name
private void RefreshContacts()
{
    // use LINQ to create a data source from the database
    addressBindingSource.DataSource = from address in database.Addresses
                                      orderby address.LastName, address.FirstName
                                      select address;

    addressBindingSource.MoveFirst(); // go to the first result
    findTextBox.Clear(); // clear the Find TextBox
}

// when the form loads, fill it with data from the database
private void Contacts_Load(object sender, EventArgs e)
{
    RefreshContacts(); // fill binding with data from database
}
```

Uygulama – Adres Defteri

Contacts.cs AddressBook.dbml Contacts.cs [Design] ✕

Address Book

Address ID:

Email:

First Name:

Last Name:

Phone Number:

Find an entry by last name

Last Name:

FIND

Browse All Contacts

- View Code
- Set Image...
- Enabled
- Alignment
- DisplayStyle
- Convert To
- Insert
- Select
- Cut
- Copy
- Paste
- Delete
- Document Outline
- Properties

Address Book

Address ID:

Email:

First Name:

Last Name:

Phone Number:

Find an entry by last name

Last Name:

FIND

Browse All Contacts

Uygulama – Adres Defteri

```
private void addressBindingNavigatorSaveItem_Click(object sender, EventArgs e)
{
    Validate(); // validate input fields
    addressBindingSource.EndEdit(); // indicate edits are complete
    database.SubmitChanges(); // write changes to database file

    RefreshContacts(); // change back to initial unfiltered data
}
```


Uygulama – Adres Defteri

```
// use LINQ to create a data source that contains only people with last names that start with the specified text
private void findButton_Click(object sender, EventArgs e)
{
    // use LINQ to create a data source from the database
    addressBindingSource.DataSource = from address in database.Addresses
                                     where address.LastName.StartsWith(findTextBox.Text)
                                     orderby address.LastName, address.FirstName
                                     select address;

    addressBindingSource.MoveFirst(); // go to first result
}

// reload addressBindingSource with all rows
private void browseAllButton_Click(object sender, EventArgs e)
{
    RefreshContacts(); // change back to initial unfiltered data
}
```

Uygulama – Adres Defteri

The screenshot shows the 'Address Book' application window. At the top, the title bar reads 'Address Book'. Below the title bar, there is a navigation bar with icons for back, forward, and search, along with a status bar indicating '3 of 6' contacts. The main form contains the following fields:

- Address ID: 1
- Email: mbrown@deitel
- First Name: Mark
- Last Name: Brown
- Phone Number: 555-456-7890

Below these fields is a search section titled 'Find an entry by last name' with a text input field containing 'Last Name:' and a 'FIND' button. At the bottom of the window is a 'Browse All Contacts' button.

The screenshot shows the 'Address Book' application window. At the top, the title bar reads 'Address Book'. Below the title bar, there is a navigation bar with icons for back, forward, and search, along with a status bar indicating '1 of 2' contacts. The main form contains the following fields:

- Address ID: 6
- Email: jbrown@deitel.c
- First Name: Joe
- Last Name: Brown
- Phone Number: 555-555-0987

Below these fields is a search section titled 'Find an entry by last name' with a text input field containing 'Last Name: brow' and a 'FIND' button. At the bottom of the window is a 'Browse All Contacts' button.