



USER GUIDE

Application with Multiple Databases

Application with Multiple Databases

Multiple database services are common in the modern business environment. *Code On Time* generator has the capability to tie this data together in a single web application. This article will entail the steps required to set up such an application.

In this example, *DB1* holds the *Categories* and *Products* tables of an web-based order management system. *DB2* holds the *Suppliers* table used by the purchasing department. You can see the database schemas in the pictures below.

	Column Name	Data Type	Allow Nulls
3	CategoryID	int	
	CategoryName	nvarchar(15)	
	Description	ntext	V
	Picture	image	V
		Q.	
)r	oducts	0	
Pr	oducts Column Name	Data Type	Allow Nulls
Pr ۲	oducts Column Name ProductID	Data Type	Allow Nulls
Pr	Oducts Column Name ProductID ProductName	Data Type int nvarchar(40)	Allow Nulls
۲ ۲	Oducts Column Name ProductID ProductName CategoryID	Data Type int nvarchar(40) int	Allow Nulls
Pro 8	oducts Column Name ProductID ProductName CategoryID QuantityPerUnit	Data Type int nvarchar(40) int nvarchar(20)	Allow Nulls
Pr	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice	Data Type int nvarchar(40) int nvarchar(20) money	Allow Nulls
Pro 8	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock	Data Type int nvarchar(40) int nvarchar(20) money smallint	Allow Null Allow Vull C
Pro 8	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder	Data Type int nvarchar(40) int nvarchar(20) money smallint smallint	Allow Nulls
Pr P	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder ReorderLevel	Data Type int nvarchar(40) int nvarchar(20) money smallint smallint	Allow Nulls
Pr 8	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder ReorderLevel Discontinued	Data Type int nvarchar(40) int nvarchar(20) money smallint smallint bit	Allow Nulls

	Column Name	Data Type	Allow Nulls
P	SupplierID	int	
	CompanyName	nvarchar(40)	
	ContactName	nvarchar(30)	1
	ContactTitle	nvarchar(30)	1
	Address	nvarchar(60)	1
	City	nvarchar(15)	1
	Region	nvarchar(15)	1
	PostalCode	nvarchar(10)	1
	Country	nvarchar(15)	1
	Phone	nvarchar(24)	V
	Fax	nvarchar(24)	1
	HomePage	ntext	V

Suppose that business requirements demand displaying vendor information next to the product name. We would like to add fields in *Products* to capture information from the *Supplier*, as well as allow access to information about *Suppliers*, all in the same application.

How do we overcome the physical separation of DB1 and DB2?

Let's generate a *Web Site Factory* application from *DB1*. Run *Code On Time Generator*, create a new *Web Site Factory* project by the name of "MultiDB", and press *Create*. Enter the connection string for *DB1*, enable reporting, change the theme to *Social*, and generate the application. You will see that two pages have been created for *Categories* and *Products*, respectively. We will need to add *Suppliers* to this web app as well.

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- Mup://ioc	amost.44955/ Pages/ Products.aspx		Products	^			w w
🕌 MyCompany							
Home Categories -							Site Actions -
	Home > Categories > Products Products						
SUMMARY	This is a list of products.						
Product Name Chang	Quick Find 👂 💣 N	ew Products 🛛 😺 Edit	X Delete Actions	✓ Report ∨			View: Products V
Category Name	Product Name	Category Name	Quantity Per Uni	t Unit Price	Units In Stock	Units On Order	Reorder Level Discontinued
Beverages	Chai	Beverages	1	\$0.00	0	39	0 No
Quantity Per Unit 1	Chang	Beverages	01	\$0.00	0	17	40 No
Unit Price	Aniseed Syrup	Beverages	2	\$0.00	0	13	70 No
Juits In Stock	Chef Anton's Cajun Seasoning	Condiments	2	\$0.00	0	53	0 No
D	Chef Anton's Gumbo Mix	Condiments	2	\$0.00	0	0	0 No
ABOUT	Grandma's Boysenberry Spread	Confections	2	\$0.00	0	120	0 No
This page allows products management.	Uncle Bob's Organic Dried Pears	Confections	7	\$0.00	0	15	0 No
SEE ALSO	Northwoods Cranberry Sauce	Confections	2	\$0.00	0	6	0 No
Home	Mishi Kobe Niku	Dairy Products	6	\$0.00	0	29	0 No
	Ikura	Dairy Products	8	\$0.00	0	31	0 No
	« Previous Page: 1 2 3 Next >				Items p	er page: 10 , 15, 20, 3	25 Showing 1-10 of 27 items 🥏
	© 2011 MyCompany. All rights re	served.					

Code On Time Generator does not support generation from multiple databases. Creating an application that handles different data sources will require a combined sample database that you can generate from. After the web app is created, you can change the connection strings to connect the remote data. In this example, it would be easiest to add the Suppliers table to DB1. Also, add SupplierID and SupplierCompanyName to the Products table. These fields, while not foreign keys in the database, will capture

			<u>k</u>
roducts			Š
Col	umn Name	Data Type	Allow Nulls
ProductII	0	int	
ProductN	ame	nvarchar(40)	
SupplierI	D	int	
SupplierC	CompanyName	nvarchar(40)	
Category	/ID	int	V
Quantity	PerUnit	nvarchar(20)	\checkmark
UnitPrice		money	\checkmark
UnitsInSt	ock	smallint	
UnitsOnC	Order	smallint	V
ReorderL	evel.	smallint	\checkmark
Discontin	ued	bit	

	Column Name	Data Type	Allow Nulls
P	CategoryID	int	
	CategoryName	nvarchar(15)	
	Description	ntext	V
	Picture	image	V

	Column Name	Data Type	Allow Nulls
8	SupplierID	int	
	CompanyName	nvarchar(40)	
	ContactName	nvarchar(30)	\checkmark
	ContactTitle	nvarchar(30)	\checkmark
	Address	nvarchar(60)	\checkmark
	City	nvarchar(15)	\checkmark
	Region	nvarchar(15)	\checkmark
	PostalCode	nvarchar(10)	\checkmark
	Country	nvarchar(15)	\checkmark
	Phone	nvarchar(24)	\checkmark
	Fax	nvarchar(24)	\checkmark
	HomePage	ntext	V

information from DB2 when we set them up as lookups.

Go back to *Code On Time* and select the project. On the project page, press *Refresh* option. Check *Products* controller and the new *Suppliers* table, and press *OK*. Confirm refresh, and regenerate the application.

🔯 Project Action - Code On Time	
Multip Refresh	×
Image: Second state Image: Second state Ima	
Data controller <i>Products</i> will be refreshed. New data controller will be created from the table <i>dba.Suppliers</i> .	
Change Tables / Views OK Cancel	
	Cancel
relativePath="default.aspx" 1/8/2012 4:43:41 PM end when 1/8/2012 4:43:41 PM end choose 1/8/2012 4:43:41 PM end if	^ _
1/8/2012 4:43:41 PM completed [Documents]\Code On Time\Library\Web Site Factory\CodeOn Time.Project xml	*

When the page loads, you can see that *Suppliers* page has been added under the node *New Pages*. However, there are no suppliers to be found in this database. We will need to change the connection string for the *Suppliers* controller.

Http://loc	alhost:44935/Pages/Suppl	ers.aspx	오 - 🗟 Ċ × 🧔 Suppl	liers	×				× □ □ - ×)}
ႈ MyCompany								_		-
Home Categories •	New Pages 🔻							Sit	e Actions 🔻	
	Home > New Pages > S Suppliers	uppliers								
ABOUT	This is a list of suppliers.									
This page allows suppliers management.	Quick Find	🔎 📑 New Suppliers	Actions ∨ Report ∨					View: Sup	opliers 🗸	Е
SEE ALSO	Company Name	Contact Name	Contact Title	Address	City Regio	n Postal Code	Country	Phone	Fax	
Home Categories	No records found.									
									¢.)	
	© 2011 MyCompany. A	ll rights reserved.								-

On the *Products* page we will also need to change the *SupplierID* field to a lookup, and use *Supplier Company Name* as its alias.

Http://lc	calhost:47639/Pages/Produ	cts.aspx 🔎 🗕 🖒	× 🤗 Products	×		☆ 🕸
A Marcana						
age Mycompany						
Home Categories *	Review Products				x	Site Actions •
	Please review products info	rmation below. Click Edit to change th	is record, click Delete to delete the record,	or click Cancel/Close to retu	rn back.	
	Products					
SUMMARY	These are the fields of the	products record that can be edited.				
Product Name	Product Name*	Aniseed Syrup				View: Products V
Aniseed Syrup Supplier#	Supplier#					rder Level Discontinued
n/a	Supplier Company Name					0 No.
Supplier Company Name	Category Name	Beverages 🥜 📑				40. No
n/a	Quantity Per Unit	\$0.00				40 NO
Category Name Beverages	Units In Stock	0				70 No
Quantity Per Unit	Units On Order	13				0 No
2	Reorder Level	70				0 No
ABOUT	Discontinued *	No				0 No
This page allows products management.						0 No
SEE ALSO	🏠 🦺 * - indicates a requ	ired field		ок	Delete Cancel	0. No.
= Home	Mishi Kaba Niku	nla nla	Dainy Broducto 6	¢0.00	0 20	0. No
New Pages					0 29	0 110
L	Ikura	n/a n/a	Dairy Products 8	\$0.00	0 31	0 No

Switch to *Code On Time*, select the project name, press *Settings*, and select *Web Server Configuration*. In the *Web.Config modification instructions* textbox, add the following lines:

```
AppendChild: /configuration/connectionStrings
```

```
<add name="DB2" connectionString="Data Source=.;Initial Catalog=DB2;Integrated
Security=True;" providerName="System.Data.SqlClient" />
```



Press *Finish*, and press *Design*. Navigate to the *Suppliers* controller and open its settings. Under *Connection String Name*, type "DB2".

🖄 MultiDB / Controller - Code On Time		
Generate Browse Lit Home > Controller: Suppliers Controller Commands Fields Views Categories Coldc OK to save the data controller, dick Delete to delete Record	Data Fields Action Groups Actions , or dick Cancel to undo changes or return back. View: Controller •	Image: state
General Name of data controller.	Controller Name * Suppliers	E
Miscellaneous Specify conflict detection strategy and optional connection string name. Specify a connection string name only if the controller is working with the database other than the one selected for this project.	Conflict Detection * Overwrite Changes Compare All Values Connection String Name DB2	
Business Rules Specify the name of the business rules class that can be extended to respond to the controller actions.	Handler	
Annotations & Status Bar Specify if free form notes and attachments can be assigned any data row by end-users at run-time.	Allow Annotations N/A Status Bar	T Pages 🍕 Controllers 🕃 User Controls

Press *OK* to save your changes. Under the *Products* controller, select *SupplierID* field. In the *Lookup* settings, change *Items Style* to "Lookup", *Items Data Controller* to "Suppliers", *Data Value Field* to "SupplierID" and *Data Text Field* to "CompanyName", and *New Data View* to "createForm1". In the *Copy* field, type:

SupplierCompanyName=CompanyName

MultiDB3 / Field - Code On Time			
🕨 Generate 🔇 Browse 🖳 Exit		^	🔮 🗈 🎟 🚆 🦆
Home > Field: Products / SupplierID (Int32)			Categories
Lookup Lookup settings can be based on another data controller or defined as static items. Follow the link to learn more about lookup item styles. You can list static lookup items on the <i>Items</i> tab. Property <i>Capy</i> specifies the fields that must be copied from the lookup data row when a lookup value is selected. Specify one copy source per line in format <i>FieldName=LookupFieldName</i> . Items style <i>Check Box List</i> allows to configure the field as many-to-many if you set the data type to <i>String</i> , indicate that the value of the field is <i>computed at runtime</i> and select a <i>Target Controller</i> . Lookup is rendered in search mode if <i>Search on Start</i> is checked. The lookup window can be activated automatically in edit/new mode if the field value is blank.	Items Style Lookup Items Data Controller Suppliers Items Data View [select] Data Value Field SupplierID Data Text Field SupplierID New Data View (reateForm1 Copy SupplierCompanyName=CompanyName Search on Start Cokup window description	E	 Categories W Commands Fields ProductD (Int32) ProductName (String) SupplietCompanyName (String) CategoryD (Int32) -> Categories CategoryCategoryName (String) QuantityPerUnit (String) QuantityPerUnit (String) UnitRinStock (Int6) UnitRinStock (Int6) UnitSonOrder (Int6) Discontinued (Boolean) W Everdet-veil (Int6) Suppliers
© 2012 Code OnTime LLC. All rights reserved. Version 6.0.0.1			Pages 🤻 Controllers 🔠 User Controls

This will ensure that *SupplierID* will lookup data from the *Suppliers* table of DB2, store the SupplierID to DB1, and copy the *Company Name* as well. Press *OK* to save. Switch to the data fields tab of *SupplierID* field, and change all the data fields to have an *Alias* of "SupplierCompanyName".



One more change needs to be done. Select the *SupplierCompanyName* field, and switch to the *Data Fields* tab. Change all the data fields to be marked as "Hidden".

🖄 MultiDB / Field - Code On Time	
🕨 Generate 🚳 Browse 📲 Exit	
Home > Field: Products / SupplierCompanyName (String)	🛛 🖓 Categories
Field Items Validators Data Fields Field Outputs	a 🔩 Products
abl This is a list of data fields.	Commands
	View Dz ProductD (Int32)
	abl. ProductName (String)
Category View Read Only Cols Rows Data Format Alias Hidden Text Mode Search Σ	Chart SupplierID (Int32) -> Suppliers: S
New to to fill the form of the second second	BupplierCompanyName (String)
Products createForm1 Default 40 n/a String n/a n/a Yes Auto Default Nor	ne None 🔑 CategoryID (Int32) -> Categories
Products editForm1 Default 40 n/a String n/a n/a Yes Auto Default Nor	ne None CategoryCategoryName (String)
	abl QuantityPerUnit (String)
n/a grid1 Default 🔻 40 String (select) 🕼 Auto 💌 Default 💌 No	one None N
	12 UnitsOnOrder (Int16)
Save Cancel	12", Reorderl evel (Int16)
	Showing 1-3 c aby Discontinued (Boolean)
All customized project settings are stored in * I on yml files located in the root of your project folder	Views
- An eastornized project sectings are stored in registrin mes located in the root of your project router.	a 📴 grid1
	▷ abl ProductName
	> SupplierID -> SupplierCompa
	▷ abl SupplierCompanyName
	> CategoryID -> CategoryCateg
	▷ abl QuantityPerUnit
	▶ InitPrice
	⊳ 12 UnitsInStock
	↓ 12 UnitsOnOrder
4 W	> 12 ReorderLevel
1/10/2010 11:00:00 AM	> abl Discontinued
1/10/2012 11:33:22 AM end when 1/10/2012 11:33:22 AM end choose	a 📮 editForm1
1/10/2012 11:33:22 AM end if	
1/10/2012 11:33:22 AM completed [Documents]\Code On Time\Library\Web Site Factory\CodeOn Time.Project.xml 1/10/2012 11:33:22 AM	📕 📴 Pages 🍕 Controllers 📳 User Controls

Press *Save* to save changes, and generate the project. Go to the *Products* page, and create a new product. You can see that *Supplier* ID is now a lookup. When you click the lookup link, it will show you a list of *Suppliers* from *DB2*.

yCompany											
This is a list	of suppliers.									x	1
\odot	اھ 🗠								Viewa	Suppliers 🗸	
Company Na	ime	Contact Name	Contact Title	Address	City	Region	Postal Code	Country	Phone	Fax	Ŀ
Exotic Liquid	s	Charlotte Cooper	Purchasing Manager	49 Gilbert St.	London	n/a	EC1 4SD	UK	(171) 555- 2222	n/a	cts
New Orleans	Cajun Delights	Shelley Burke	Order Administrator	P.O. Box 78934	New Orleans	LA	70117	USA	(100) 555- 4822	n/a	100
Grandma Ke	lly's Homestead	Regina Murphy	Sales Representative	707 Oxford Rd.	Ann Arbor	MI	48104	USA	(313) 555- 5735	(313) 555- 3349	
Tokyo Trade	rs	Yoshi Nagase	Marketing Manager	9-8 Sekimai Musashino-shi	Tokyo	n/a	100	Japan	(03) 3555- 5011	n/a	
Cooperativa Cabras'	de Quesos 'Las	Antonio del Valle Saavedra	Export Administrator	Calle del Rosal 4	Oviedo	Asturias	33007	Spain	(98) 598 76 54	n/a	1
Mayumi's		Mayumi Ohno	Marketing Representative	92 Setsuko Chuo-ku	Osaka	n/a	545	Japan	(06) 431-7877	n/a	Ŀ
Pavlova, Ltd		Ian Devling	Marketing Manager	74 Rose St. Moonie Ponds	Melbourne	Victoria	3058	Australia	(03) 444-2343	(03) 444-6588	1
Specialty Bis	cuits, Ltd.	Peter Wilson	Sales Representative	29 King's Way	Manchester	n/a	M14 GSD	UK	(161) 555- 4448	n/a	
PB Knäckebr	öd AB	Lars Peterson	Sales Agent	Kaloadagatan 13	Göteborg	n/a	S-345 67	Sweden	031-987 65 43	031-987 65 91	
Refrescos Ar	nericanas LTDA	Carlos Diaz	Marketing Manager	Av. das Americanas	Sao Paulo	n/a	5442	Brazil	(11) 555 4640	n/a	

Select a *Supplier* and you will see that the *Supplier Company Name* will be displayed.

Http://loca	alhost:47639/Pages/Pro	ducts.aspx	ې & ک⊠ ≁ Q	Products	×			- ■ × ☆ ↔
MyCompany Home Categories *	Review Products Please review products Products These are the fields of t	information below. Click	: Edit to change this record, c	lick Delete to delete th	ne record, or click Cancel/Cl	ose to return back.	x	Site Actions -
Product Name Chai Supplier# n/a Category Name Beverages Quantity Per Unit 1 ABOUT This page allows products management.	Product Name * Supplier# Category Name Quantity Per Unit Unit Price Units In Stock Units On Order Reorder Level Discontinued *	Chai Grandma Kelly's Beverages (2) 1 \$0.00 0 39 0 No 💌	Homestead 🖉 🚅					View: Products v r Level Discontinued 0 No 40 No 70 No 0 No 0 No 0 No 0 No
SEE ALSO = Home = New Pages	* - indicates a m Mishi Kobe Niku Ikura	equired field	n/a Dairy Products	6	\$0.00 \$0.00	ОК Delet	29 31	0 No 0 No 0 No