



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
	CategoryID	int	
	CategoryName	nvarchar(15)	
	Description	ntext	V
	Picture	image	v
		8	
'n	oducts	8	
'n	oducts Column Name	8 Data Type	Allow Nul
		Data Type	Allow Nul
	Column Name		
	Column Name ProductID ProductName CategoryID	int nvarchar(40) int	
	Column Name ProductID ProductName CategoryID QuantityPerUnit	int nvarchar(40) int nvarchar(20)	
	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice	int nvarchar(40) int nvarchar(20) money	
	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock	int nvarchar(40) int nvarchar(20) money smallint	
	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder	int nvarchar(40) int nvarchar(20) money smallint smallint	
	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder ReorderLevel	int nvarchar(40) int nvarchar(20) money smallint smallint smallint	
	Column Name ProductID ProductName CategoryID QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder	int nvarchar(40) int nvarchar(20) money smallint smallint	

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

MyCompany							
Home Categories •	Home > Categories > Products Products						Site Actions •
SUMMARY	This is a list of products.						
Product Name Chang	Quick Find 🔎 🛋 New	Products 🛛 📝 Edit	X Delete Actions ~	Report ∨			View: Products v
Category Name	Product Name	Category Name	Quantity Per Unit	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	O 1	\$0.00	0	17	40 No
Jnit Price	Aniseed Syrup	Beverages	2	\$0.00	0	13	70 No
Units 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 nanagement.	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 pe	er page: 10 , 15 , 20, 2	5 Showing 1-10 of 27 items 🥏

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

			8
Pro	oducts		ŏ
	Column Name	Data Type	Allow Nulls
8	ProductID	int	
	ProductName	nvarchar(40)	
•	SupplierID	int	V
	SupplierCompanyName	nvarchar(40)	
	CategoryID	int	V
	QuantityPerUnit	nvarchar(20)	V
	UnitPrice	money	V
	UnitsInStock	smallint	V
	UnitsOnOrder	smallint	V
	ReorderLevel	smallint	V
	Discontinued	bit	

Column Name	Data Type	Allow Nulls
CategoryID	int	
CategoryName	nvarchar(15)	
Description	ntext	1
Picture	image	V

	Column Name	Data Type	Allow Nulls
8	SupplierID	int	
	CompanyName	nvarchar(40)	
	ContactName	nvarchar(30)	\checkmark
	ContactTitle	nvarchar(30)	V
	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	_ 0 %
ONTIME State	B
Multin Refresh	
Web Site rad ^(*) Categories ^(*)	
Data controller <i>Products</i> will be refreshed.	
New data controller will be created from the table <i>abo.Suppliers</i> .	
Change Tables / Views OK Cancel	
relativePath="default.aspx"	Cancel
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 OnTime\Libray\Web Site Factory\CodeOnTime.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	iers.aspx	오 - 🗟 Ċ × 🥖 Suppl	liers	×				- □ ×	_
辩 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	pliers 🗸	Ε
SEE ALSO	Company Name	Contact Name	Contact Title	Address	City Region	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						
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 Category Name	Quantity Per Unit Unit Price	\$0.00				
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 Kobe Niku	n/a n/a	Dairy Products 6	\$0.00	0 29	0 No
New Pages						
L	Ikura	nla nla	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 Generate	Data Fields Action Groups Actions e, or dick Cancel to undo changes or return back. View: Controller • OK Delete Cancel	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		^	🕼 i 🗴 🏭 🚆 🦆 i
Home > Field: Products / SupplierID (Int32)			▶ ♠ Categories
Lookup Lookup settings can be based on another data controller or defined as static times. Follow the link to learn more about lookup item styles. You can list static lookup items on the <i>Items</i> tab. Property <i>Copy</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 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 (createForm1 Copy SupplierCompanyName=CompanyName Search on Start Activate If Blank Lookup window description	E	 Products Products Products ProductD (Int32) ProductD (Int32) SupplierCompanyName (String) CategoryID (Int32) -> Categories CategoryCategoryName (String) CategoryCategoryName (String) CategoryCategoryName (String) UnitsInStock (Int16) UnitsInStock (Int16) UnitsOnOrder (Int16) Discontinued (Boolean) Views 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
Ouick Find P Record •	View: Da ProductID (Int32)
	ably ProductName (String)
Category View Read Only Cols Rows Type Format Alias Hidden Text Mode Search Σ	Chart Q 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	CategoryID (Int32) -> Categories
Products editForm1 Default 40 n/a String n/a n/a Yes Auto Default Nor	ne None CategoryCategoryName (String)
	QuantityPerUnit (String)
n/a grid1 Default 🕶 40 String (select) 📝 Auto 💌 Default 💌 No	one None None UnitPrice (Decimal) UnitsInStock (Int16)
	12 UnitsOnOrder (Int16)
Save Cancel	12, ReorderLevel (Int16)
	Showing 1-3 c aby Discontinued (Boolean)
All customized project settings are stored in *.Log.xml 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
	⊳ ≸ - UnitPrice
	⊳ 12 UnitsInStock
	→ 12 UnitsOnOrder
()	> 12 ReorderLevel
	▷ 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*.

	Company		I								
	This is a list of suppliers.									x	
_	<u>ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا </u>	8							View	Suppliers 🗸	
	Company Name	Contact Name	Contact Title	Address	City	Region	Postal Code	Country	Phone	Fax	
page igem	Exotic Liquids	Charlotte Cooper	Purchasing Manager	49 Gilbert St.	London	n/a	EC1 4SD	UK	(171) 555- 2222	n/a	ts v
	New Orleans Cajun Delights	Shelley Burke	Order Administrator	P.O. Box 78934	New Orleans	LA	70117	USA	(100) 555- 4822	n/a	dinued
ne v Pa	Grandma Kelly's Homestead	Regina Murphy	Sales Representative	707 Oxford Rd.	Ann Arbor	MI	48104	USA	(313) 555- 5735	(313) 555- 3349	
	Tokyo Traders	Yoshi Nagase	Marketing Manager	9-8 Sekimai Musashino-shi	Tokyo	n/a	100	Japan	(03) 3555- 5011	n/a	
	Cooperativa de Quesos 'Las Cabras'	Antonio del Valle Saavedra	Export Administrator	Calle del Rosal 4	Oviedo	Asturias	33007	Spain	(98) 598 76 54	n/a	<u> </u>
	Mayumi's	Mayumi Ohno	Marketing Representative	92 Setsuko Chuo-ku	Osaka	n/a	545	Japan	(06) 431-7877	n/a	
	Pavlova, Ltd.	Ian Devling	Marketing Manager	74 Rose St. Moonie Ponds	Melbourne	Victoria	3058	Australia	(03) 444-2343	(03) 444-6588	
	Specialty Biscuits, Ltd.	Peter Wilson	Sales Representative	29 King's Way	Manchester	n/a	M14 GSD	UK	(161) 555- 4448	n/a	
	PB Knäckebröd AB	Lars Peterson	Sales Agent	Kaloadagatan 13	Göteborg	n/a	5-345 67	Sweden	031-987 65 43	031-987 65 91	
	Refrescos Americanas LTDA	Carlos Diaz	Marketing Manager	Av. das Americanas 12.890	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.

(C)	Ilhost:47639/Pages/Pro	ducts.aspx	ا 🈂 🗙 ٹ 🖉 - ک	Products	×			⊕ ☆ 🕸			
MyCompany Home Categories •								Site Actions *			
	Review Products						x				
	Please review products information below. Click Edit to change this record, click Delete to delete the record, or click Cancel/Close to return back. Products										
SUMMARY Product Name	These are the fields of the products record that can be edited.										
Chai	Product Name*	Chai						View: Products V			
Supplier#	Supplier#	Grandma Kelly's	Homestead 🥢 🖃					er Level Discontinued			
n/a	Category Name	Beverages 🥥 🗉	<u>2</u>					0 No			
Category Name Beverages	Quantity Per Unit	1						40 No			
Quantity Per Unit	Unit Price Units In Stock	\$0.00 0						70 No			
1	Units On Order	39						0 No			
ABOUT	Reorder Level	0						0 No			
This page allows products management.	Discontinued*	No									
SEE ALSO								0 No			
= Home	👚 🦺 * - indicates a re	quired field				OK Dele	te Cancel	0 No			
New Pages								0 No			
			n/a Dairy Products	6			29	0 No			
	Tkura		n/a Dairy Products	8	\$0.00	0	31	0 No 🔻			