

Building Custom Applications using Joomla! & Fabrik

Presentation by Tessa Mero – Oct 20, 2015

The Global *PHP* Conference

zendcon 2015

October 19-22, 2015 • Las Vegas, NV

Who Am I?

College Instructor

Open Source Contributor

Previous Systems Applications Dev



Joomla!™

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OVERVIEW

- **Why Use Joomla!**
- **What is Fabrik**
- **Creating Data Models**
- **Steps in Systems Development**
- **Create a Rudimentary Movie Rental Application**
- **Creating Fabrik Forms/Lists/Elements/Groups for Your Application**
- **Extending Your Application**
- **View Your Finished Product!**

Customers Rented List

+ Add  Group by ▾




Search:

 Clear filters

Last Name

Email Address

Go

id	First Name	Last Name	Address	City	State	Zip	Phone #	Email Address	Admin Notes	Date Rented	Due Date	Movie	<input type="checkbox"/>	
1	James	Butt	6649 N Blue Gum St	New Orleans	LA	70116	504-621-8927	jbutt@gmail.com	Watch out for his kid he always brings on Friday's who tries to steal a pack of gum.	2015-10-16	2015-10-19	Batman	<input type="checkbox"/>	
										2015-10-16	2015-10-19	Batman Returns		
										2015-10-12	2015-10-15	MazeRunner		
2	Josephine	Darakjy	4 B Blue Ridge Blvd	Brighton	MI	48116	810-292-9388	josephine_darakjy@darakjy.org	This person always forgets their wallet. Be prepared.	2015-10-12	2015-10-15	MazeRunner	<input type="checkbox"/>	
										2015-10-01	2015-10-04	MazeRunner II: The Scorch Trials		

Why Use Joomla?

- **Easy to install and set up (assuming you don't use a crappy host)**
 - ▶ Set up a free subdomain and hosting account at cloudaccess.net
 - ▶ Set up a free subdomain/hosting at Joomla.com (with restrictions)
- **Lots of documentation especially for building your own extensions**
 - ▶ And several great options for using custom application building tools, such as Fabrik, Seblod, and SobiPro. (I'm a fan of Fabrik obviously) ☺
- **The community is amazing and very welcoming**
- **It's Open Source and Downloaded over 50 MILLION times!**
- **Over 7,455 extensions on the Joomla Extensions Directory (JED)**
- **Core Devs Working Hard on New Architecture of Joomla 4**

What is Fabrik?

- **Installable Extension for Joomla called a Component**
- **A Custom Application Builder**
- **Over 126 plugins and counting available to extend**
- **Check out their website at <http://fabrikar.com>**
- **You can build anywhere from a very advanced user application to a real estate application. Simply, you can build anything!**
- **A lot of Joomla businesses use Fabrik for custom apps for a living!**
- **Integrate other Joomla Extensions easily to Fabrik**
 - ▶ Lots of existing integrations, and easily create your own (connect tables)

Planning Ahead – Systems Development Process

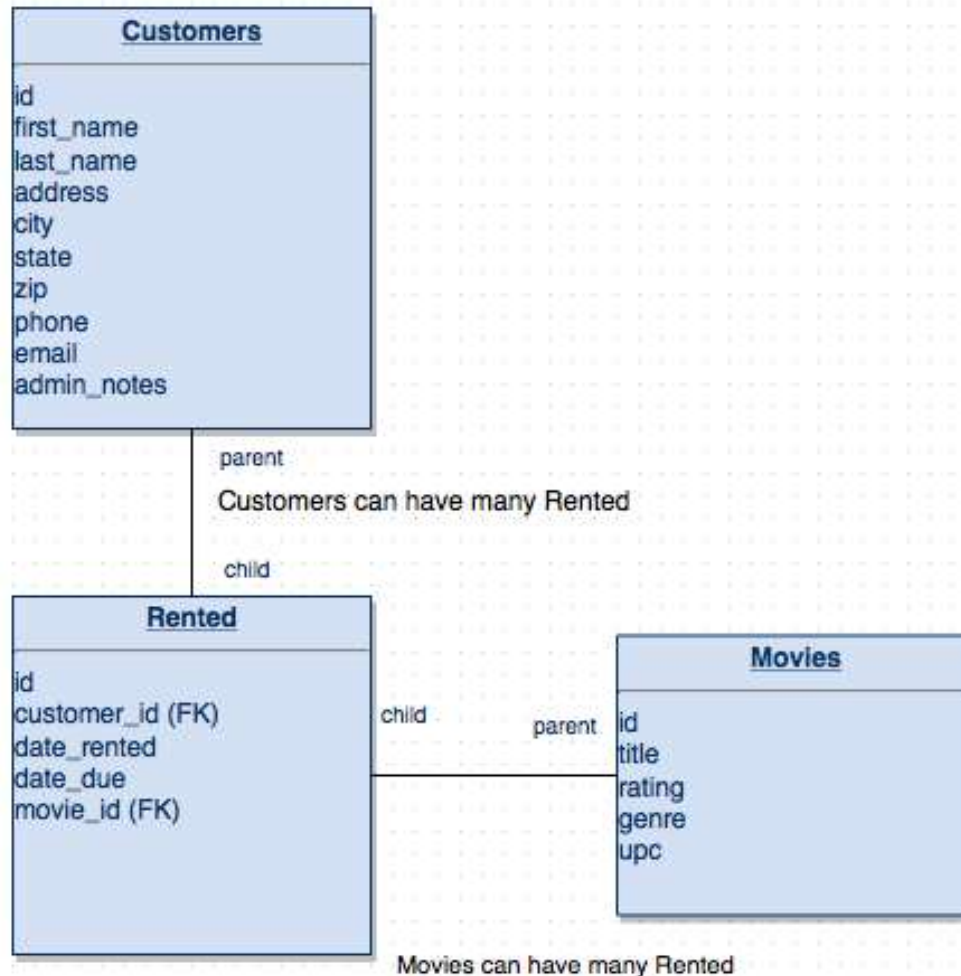
- **Work with clients (or users) to determine their workflow to understand how to build the application**
- **Create diagrams, flowcharts, and any tools to have visual diagrams of the workflow of the business**
- **Run through it with every team or department until every group agrees.**
- **Avoid Scope Creep!!!!**
- **Build the Application!**

Rudimentary System – Video Rental Application 1.0

- Needs to have database that stores information for 3 things: DVDs, Customers, and Rentals
- Each DVD needs to have a QR code for scanning
- You can search customers by Email or Last Name
- Needs to have main page to be Customer list and what each has rented out

Keeping it Simple!

Create Your Database Design – Part 1 – Data Diagram



Create Your Database Design – Part 2 - MetaData

- **Define each column type (metadata): Plan Ahead.**
 - ▶ Date? Integer Only? Any characters allowed? Character limit?
- **Plan Out Your Views**
 - ▶ How do you want your data displayed?

Overview of Fabrik in the Backend

The screenshot shows the Joomla! Backend interface. At the top is a navigation bar with menus for System, Users, Menus, Content, Components, Extensions, and Help. The right side of the bar shows 'Fabrik Test Ap...' and a settings icon. Below the bar, the page title is 'Fabrik - welcome'. On the left is a sidebar menu with items: Home (selected), Lists, Forms, Groups, Elements, Visualizations, Packages, Connections, and Schedule. The main content area features the Fabrik logo (a pink sunburst) and the text 'FABRIK as joomla app builder'. Below this is a 3D box icon with 'FABRIK open source application creation' on it. A large heading 'Subscribe and get' is followed by a list of benefits: 'Dedicated support', 'Concise and clear documentation', and 'Video tutorials'. A 'Subscribe now...' button with a play icon is at the bottom. To the right, there are tabs for 'About', 'News', 'Stats', 'Useful links', and 'Tools'. The 'About' tab is active, showing text: 'Fabrik is an open source Joomla application builder component. Fabrik gives people the power to create forms, tables and visualizations that run inside Joomla without requiring knowledge of mySQL and PHP, all from within the familiar Joomla administration interface. With Fabrik you can create applications that range in complexity from simple contact forms to complex applications such as a job application site or bug tracking systems.'


System ▾ Users ▾ Menus ▾ Content ▾ Components ▾ Extensions ▾ Help ▾


Fabrik Test Ap... ⚙

Fabrik - welcome Joomla!

⚙ Options


Home Lists Forms Groups Elements Visualizations Packages Connections Schedule

 **FABRIK**
as joomla app builder



Subscribe and get

- Dedicated support
- Concise and clear documentation
- Video tutorials

 Subscribe now...

About News Stats Useful links Tools

Fabrik is an open source Joomla application builder component.

Fabrik gives people the power to create forms, tables and visualizations that run inside Joomla without requiring knowledge of mySQL and PHP, all from within the familiar Joomla administration interface.

With Fabrik you can create applications that range in complexity from simple contact forms to complex applications such as a job application site or bug tracking systems.

Time to Implement!

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Create Your Fabrik Forms













View Your Fabrik Lists

System ▾ Users ▾ Menus ▾ Content ▾ Components ▾ Extensions ▾ Help ▾













Fabrik Test Ap... 

Fabrik: lists

Home
Lists
Forms
Groups
Elements
Visualizations
Packages
Connections
Schedule

Filter:

ID	<input type="checkbox"/>	List name ▴	Db table	Element	Form	View data	View details	Published
1	<input type="checkbox"/>	Customers	tbl_customers	 Add	 Edit	 View data	View details	
2	<input type="checkbox"/>	Movies	tbl_movies	 Add	 Edit	 View data	View details	
3	<input type="checkbox"/>	Rented	tbl_rented	 Add	 Edit	 View data	View details	

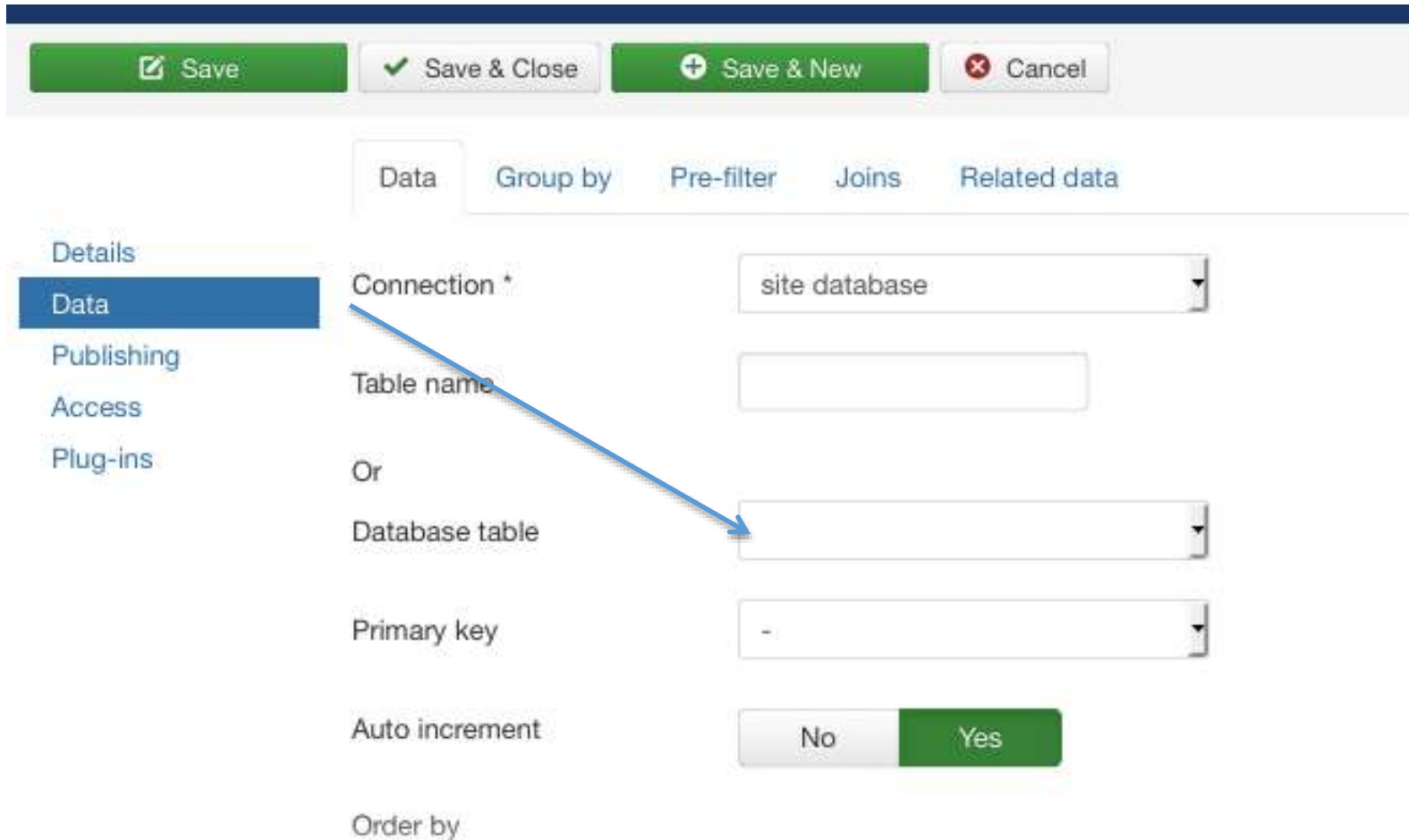
Filter:

- Select Status -

View PHPMyAdmin

	Structure	SQL	Search	Query	Export	Import	Operations	More	
<input type="checkbox"/>	nbqjd_update_sites_extensions	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	nbqjd_usergroups	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	nbqjd_users	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	nbqjd_user_keys	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	nbqjd_user_notes	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	nbqjd_user_profiles	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	nbqjd_user_usergroup_map	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	nbqjd_viewlevels	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	tbl_customers	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	tbl_movies	★	Browse	Structure	Search	Insert	Empty	Drop	
<input type="checkbox"/>	tbl_rented	★	Browse	Structure	Search	Insert	Empty	Drop	

What if I have Existing Tables?



Save Save & Close Save & New Cancel

Data Group by Pre-filter Joins Related data

Details
Data
Publishing
Access
Plug-ins

Connection * site database

Table name

Or

Database table

Primary key -

Auto increment No Yes

Order by

View Your Fabrik Elements (Fields) – Part 1

Fabrik: elements Joomla!

+ New Edit Copy Publish Unpublish Show in list Remove from list Check-in Trash Help Options

Home Lists Forms Groups Elements Visualizations Packages Connections Schedule

Filter: 20

ID	Name	Label	Full Element Name	Validations	Group	Plugin	Show in List	Published
----	------	-------	-------------------	-------------	-------	--------	--------------	-----------

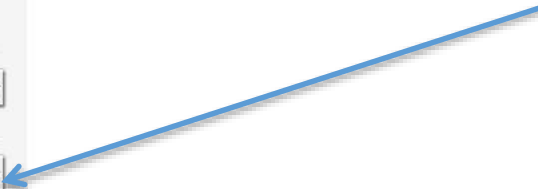
Filter:

- Plugin -

- Select form -

- Select group -

- Select Status -



View Your Fabrik Elements (Fields) – Part 2

Fabrik: elements Joomla!

New Edit Copy Publish Unpublish Show in list Remove from list Check-in Trash Help Options

Home Lists Forms Groups Elements Visualizations Packages Connections Schedule

Filter:

20

ID		Name	Label	Full Element Name	Validations	Group	Plugin	Show in List	Published
1		id	id	tbl_customers__id	0/0	Customers	internalid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2		date_time	date time	tbl_customers__date_time	0/0	Customers	date	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Filter:

- Plugin -

Customers

- Select group -

- Select Status -

Create Your Fabrik Elements



PHPMysqlAdmin View

<div><div> Browse</div><div> Structure</div><div> SQL</div><div> Search</div><div> Insert</div><div> Export</div><div> Import</div><div> Privileges</div><div> Operations</div></div>										
	#	Name	Type	Collation	Attributes	Null	Default	Extra		
<input type="checkbox"/>	1	id	int(11)			No	None	AUTO_INCREMENT		
<input type="checkbox"/>	2	date_time	datetime			Yes	NULL			
<input type="checkbox"/>	3	first_name	varchar(255)	utf8_general_ci		Yes	NULL			
<input type="checkbox"/>	4	last_name	varchar(255)	utf8_general_ci		Yes	NULL			
<input type="checkbox"/>	5	address	varchar(255)	utf8_general_ci		Yes	NULL			
<input type="checkbox"/>	6	city	varchar(255)	utf8_general_ci		Yes	NULL			
<input type="checkbox"/>	7	state	varchar(255)	utf8_general_ci		Yes	NULL			
<input type="checkbox"/>	8	zip	int(11)			Yes	NULL			
<input type="checkbox"/>	9	phone	varchar(255)	utf8_general_ci		Yes	NULL			
<input type="checkbox"/>	10	email	varchar(255)	utf8_general_ci		Yes	NULL			
<input type="checkbox"/>	11	admin_notes	text	utf8_general_ci		Yes	NULL			
	<input type="checkbox"/>	Check All	With selected:		Browse	Change	Drop	Primary	Unique	Index
	Fulltext									

Create Elements for Movies table



Create Elements for Rented Table



What is a Database Join?

- **We will be working with the “LEFT JOIN” keyword**
 - ▶ Returns all rows from left table (the table you are joining to) with any matching rows from the right table (the other table). If there are no matching data, it will show as NULL/Blank.
- **Other Join Types**
 - ▶ Inner – Joins only matching records
 - ▶ Right – Opposite of Left Join! (return all rows from right table with matching from left table. Null in the left side when there is no match)

Create Menus – View Your 3 Tables



Create a Database Join in Your List



What did the DatabaseJoin do?



Looking Further - Extending Your Application

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Adding Filters - Edit Element (Name and Email)

The screenshot shows the 'Edit Element' settings for 'Name and Email'. The left sidebar contains a menu with 'Access', 'List view settings' (highlighted in blue), 'Validations', and 'JavaScript'. The main content area has tabs for 'List settings', 'Icons', 'Filters' (active), 'CSS', and 'Calculations'. Under the 'Filters' tab, there are several settings: 'Filter type' is a dropdown menu set to 'Auto-complete'; 'Exact match' is a toggle switch with 'Yes' selected (green); 'Length' is a text input field containing '20'; 'Filter access' is a dropdown menu set to 'Public'; 'Full word match' is a toggle switch with 'No' selected (red); and 'Required' is a toggle switch with 'No' selected (red).

Access

List view settings

Validations

JavaScript

List settings Icons Filters CSS Calculations

Filter type Auto-complete

Exact match No Yes

Length 20

Filter access Public

Full word match No Yes

Required No Yes

List View – Filters Enabled

Customers Rented

 Add  Group by  CSV

Search:

 Clear filters

Last Name

Email Address

josephine_darakjy@dar

Go

First Name	Last Name	Address	City	State	Zip Code	Phone #	Email Address	Admin Notes	date rented	date due	<input type="checkbox"/>	X
Josephine	Darakjy	4 B Blue Ridge Blvd	Brighton	MI	48116	810-292-9388	josephine_darakjy@darakjy.org	This person always forgets their wallet. Be prepared.	2015-10-12	2015-10-15 00:00:00	<input type="checkbox"/>	X
									2015-10-01	2015-10-04 00:00:00	<input type="checkbox"/>	X

Display # 10

List View – Edit movie_id field

Customers Rented

 Add  Group by  CSV

Search:

 Clear filters

Last Name

Email Address

josephine_darakjy@dar

Go

First Name	Last Name	Address	City	State	Zip Code	Phone #	Email Address	Admin Notes	Movie	date rented	date due	
Josephine	Darakjy	4 B Blue Ridge Blvd	Brighton	MI	48116	810-292-9388	josephine_darakjy@darakjy.org	This person always forgets their wallet. Be prepared.	MazeRunner	2015-10-12	2015-10-15 00:00:00	<input type="checkbox"/>
									MazeRunner II: The Scorch Trials	2015-10-01	2015-10-04 00:00:00	<input type="checkbox"/>

Display # 10

Elements - Adding JavaScript Field Validations

Details
Publishing
Access
List view settings
Validations
JavaScript

Validations

notempty

Action	<input type="text" value="notempty"/>
Status	<input checked="" type="button" value="Published"/> <input type="button" value="Unpublished"/>
In	<input type="text" value="Both"/>
On	<input type="text" value="Both"/>
Show validation icon	<input type="button" value="No"/> <input checked="" type="button" value="Yes"/>

Test to ensure some data has been entered into the element

Error message	<input type="text" value="Please Enter a First Name"/>
---------------	--

Working with Groups (optional)

- **Groups are a collection of elements**
- **Can be used to create tabbed form data**
- **Considered similar to <fieldset> html element**
- **Every Element needs to be assigned to a group**
- **You can Set Groups to be Repeated Data if it's a one to many relationship**
 - ▶ Setting a group of elements on a table to “repeated data” will create a new database table by default
 - ▶ Setting a database join to “repeated data” will remain the same, but allow you to add many items for each parent data

Repeated Data – Rented Movies



Working With Access Levels



Template Overrides and Custom Coding



Menu Overrides - Custom Views

Menus: Edit Item

Menu Title *

Details **Fabrik List Options** Link Type Page Display Metadata Module Assignment

Custom Add URL

Show title

Reload Calculations

Template

Reset filters

Show in list

Pre-filters

Rows per page

Thank You!!! Questions?

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- **Email:** tessa.mero@joomla.org