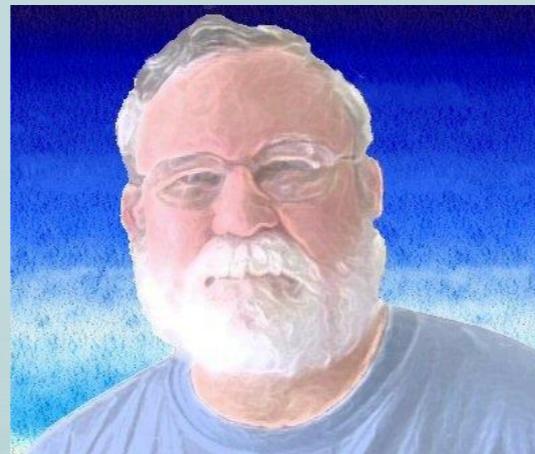
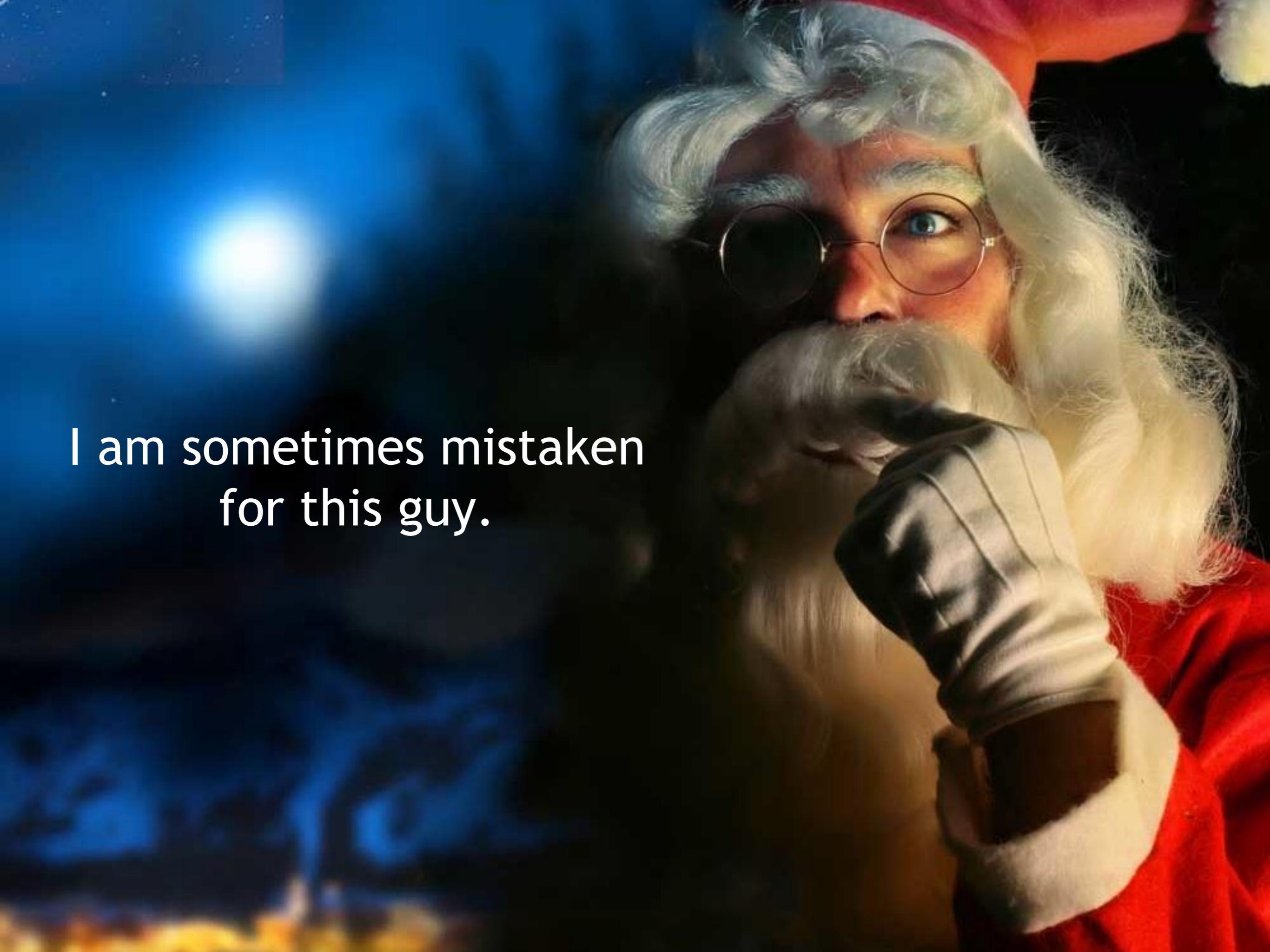


Build Custom Applications with Fabrik

Rodger Fields

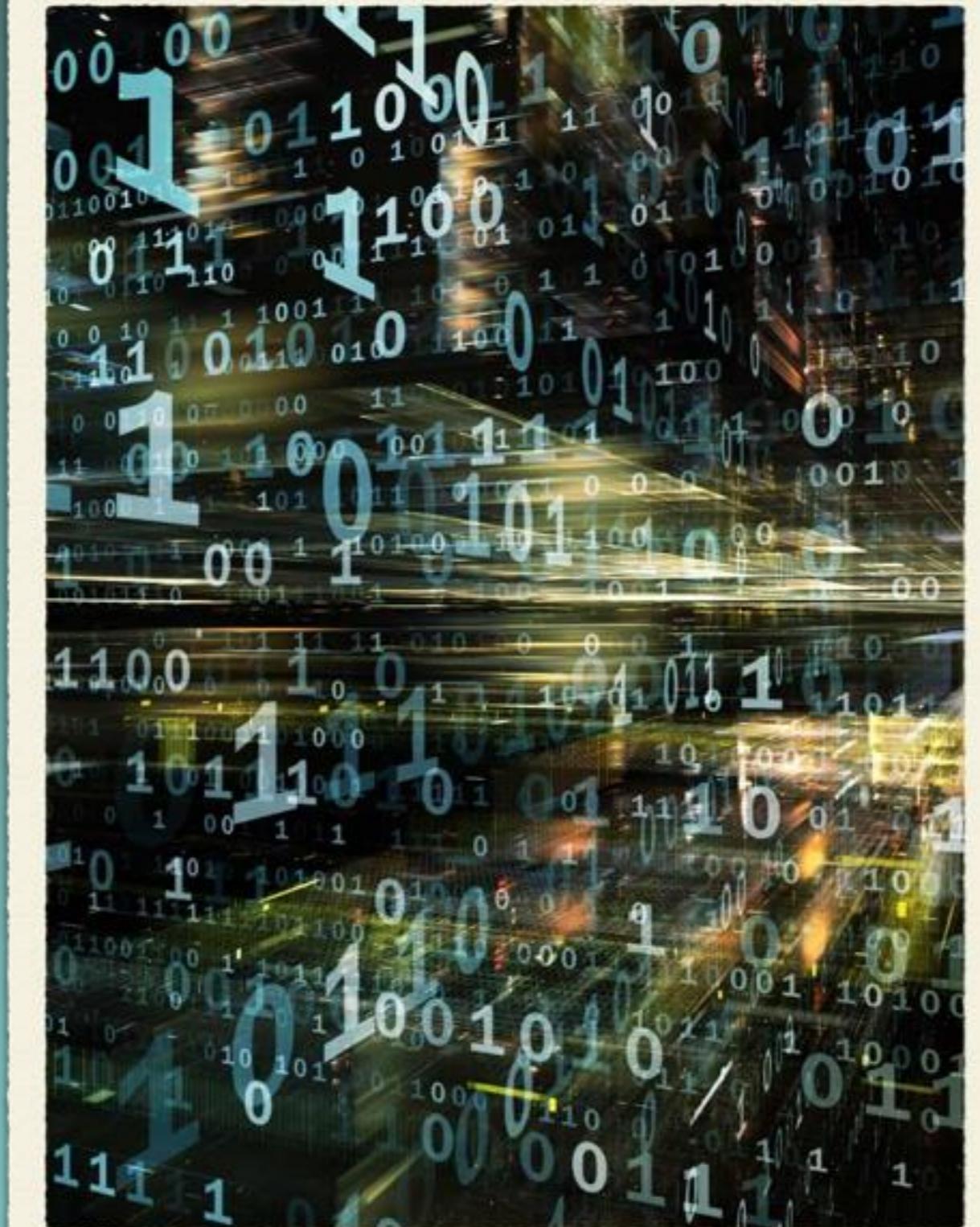


Joomla! Day Houston - 20 September, 2014

A close-up portrait of Santa Claus. He has white hair and a full, bushy grey beard. He is wearing round, dark sunglasses and a red Santa hat. He is holding a dark cigar in his right hand, which is wearing a black leather glove. The background is dark and out of focus.

I am sometimes mistaken
for this guy.

... but I'm really
just a Data Guy

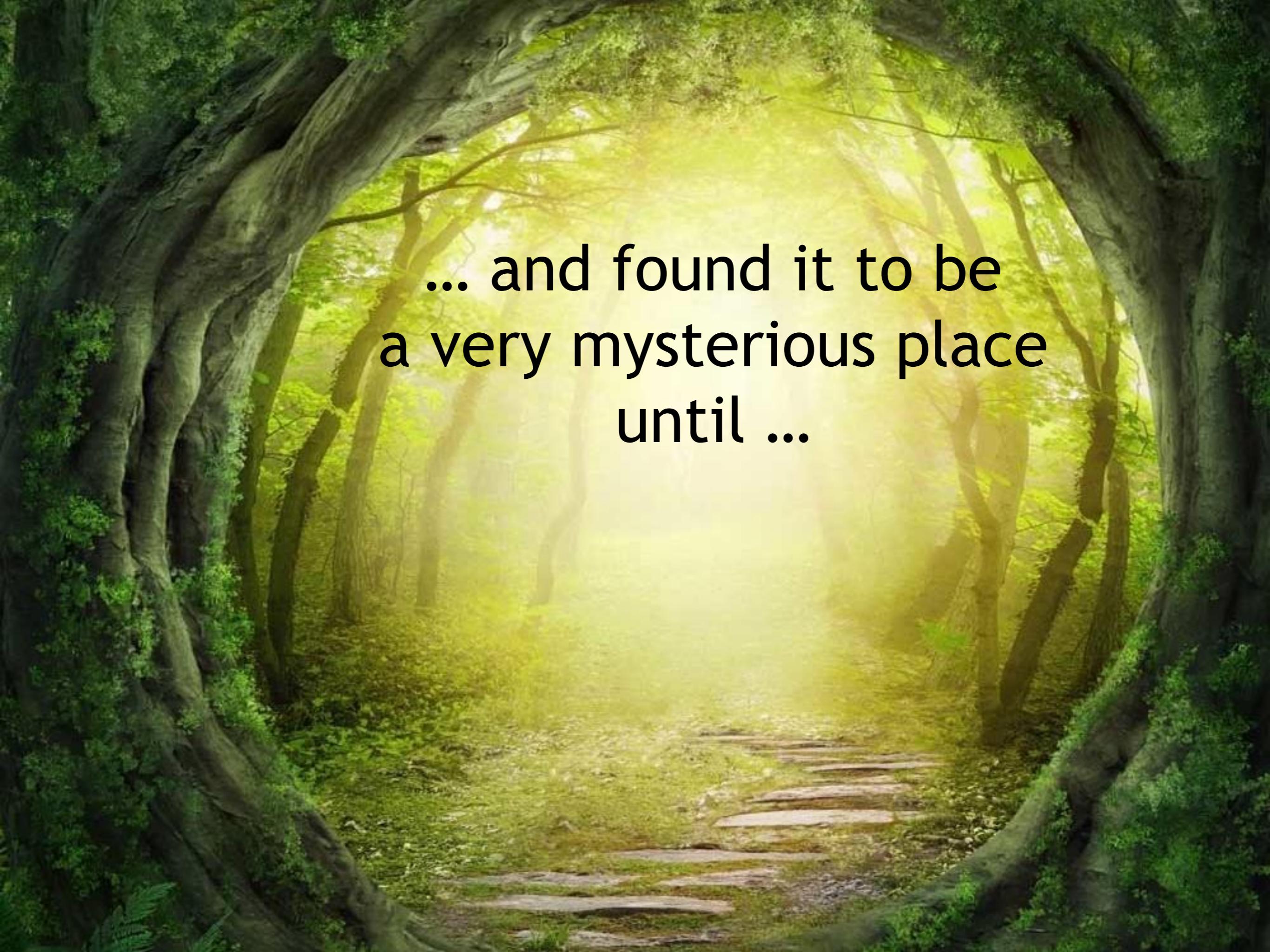




I knew nothing about the web
but I decided to create a web site

After all, how hard could it be?

I started looking into web development ...

A photograph of a sunlit path through a dense forest. The path is made of stone steps and is surrounded by tall, mossy trees. Sunlight filters through the leaves, creating a bright, dappled light effect on the ground.

... and found it to be
a very mysterious place
until ...

I discovered Joomla!
With Joomla! and my data expertise ...

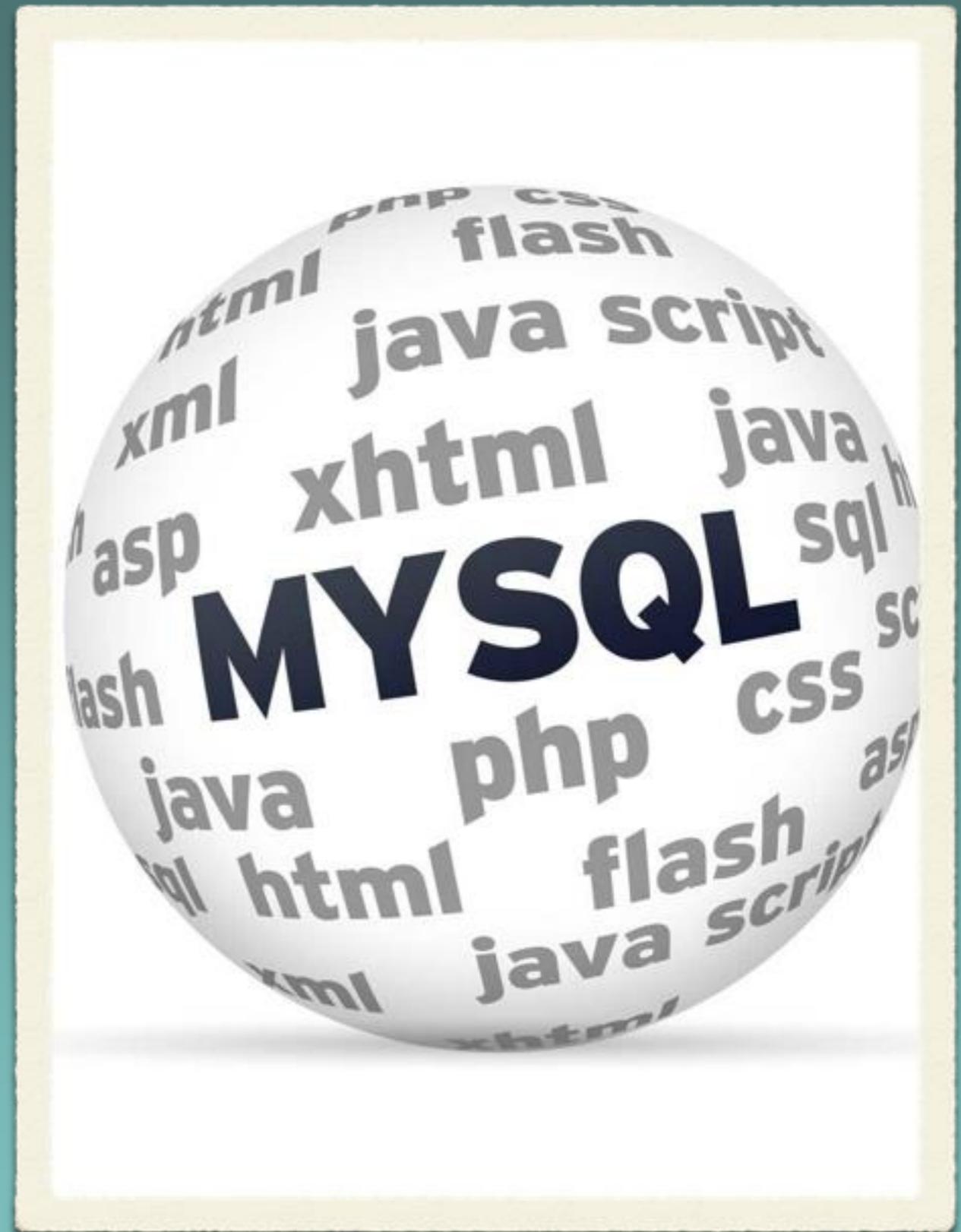


... I could conquer
the web and
its data.

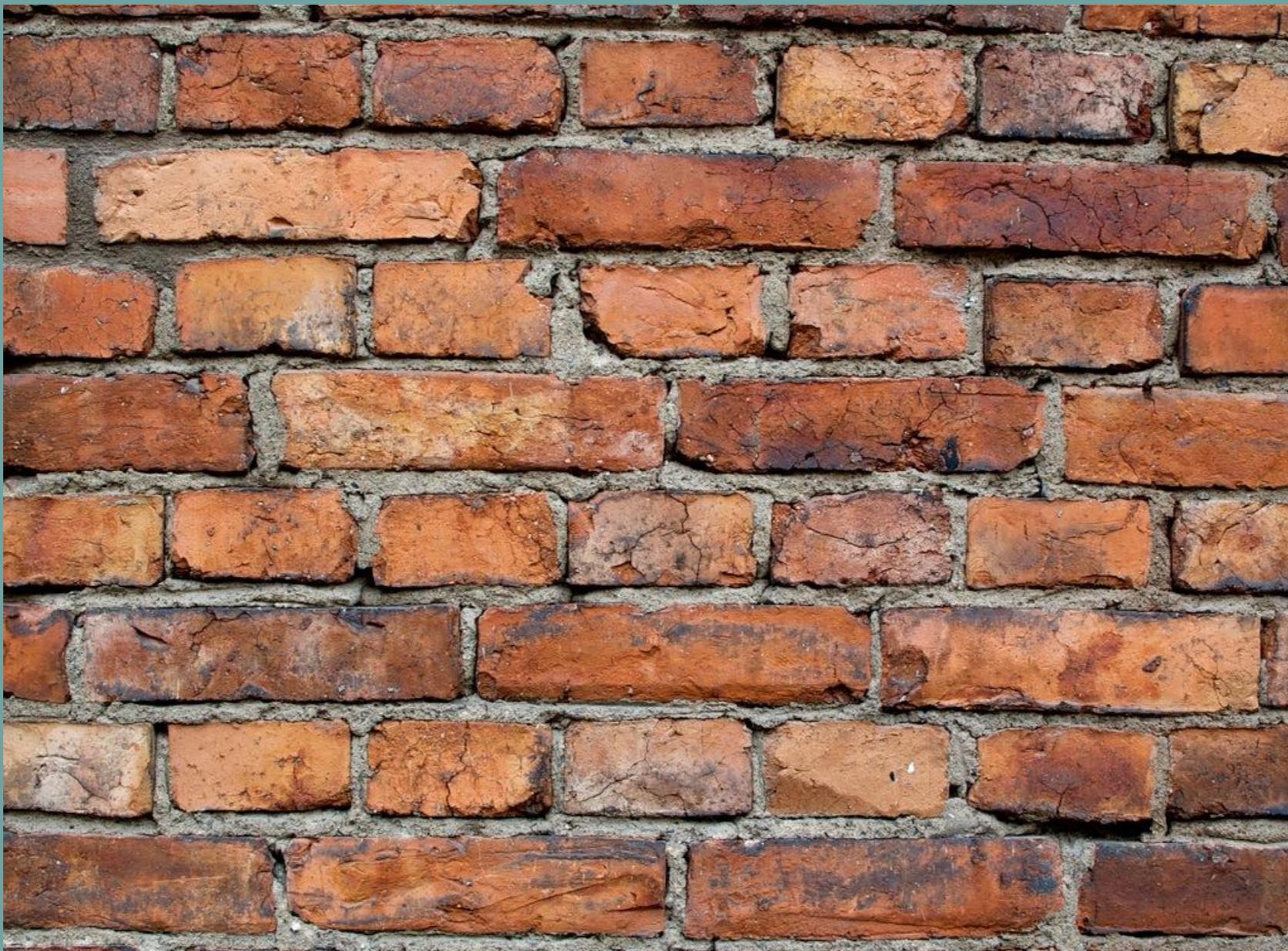


Maybe not.

I understood databases but not how to connect to them on the web.



Trying to create a simple database was like hitting ...





Then I discovered Fabrik ...

Fabrik builds Real Database Applications

- * Within Joomla!
- * Custom MySQL tables
- * Data relationships and validation
- * Powerful visualization
- * Granular security access

Joomla! + Fabrik

An Incredible Combination



IMHO

Joomla! is not complete
without Fabrik.

Fabrik is free ...

... but I highly recommend the subscriptions.

| | Professional €60 / month Ideal for Web Developers | Standard €20 / month Basic Support & Guidance | Supporter €39 / year Support Fabrik's Development |
|-----------------------------|---|---|---|
| Annual discount | €50.00 / month | €15.83 / month | |
| Exclusive Downloads | ✓ | ✓ | ✓ |
| User Manual Wiki | ✓ | ✓ | ✓ |
| Video Tutorials | ✓ | ✓ | ✓ |
| Dedicated Support Forum | ✓ | ✓ | ✗ |
| Forum Response Time | ⌚ 1 Day* | ⌚ 3 Days* | ✗ |
| Rapid Support via Live Chat | ✓ | ✗ | ✗ |

Sign up

Sign up

Sign up

Functionality such as map visualizations come in the form of plugins which require Exclusive Downloads capability.

These are Fabrik's building blocks:

Fabrik - welcome

Home

Lists

Forms

Groups

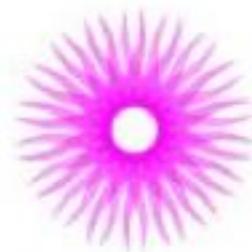
Elements

Visualizations

Packages

Connections

Schedule



FABRIK
os joomla app builder

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Now it's time to get our hands
dirty and make something.

Safety Incident Reporting Application

The PERSON table will display as a Directory List in our app.

PERSON

| id | |
|------------------------|--|
| first_name | |
| last_name | |
| department (FK) | |
| title | |
| picture | |
| employee_or_contractor | |
| work_phone | |
| phone | |
| phone_2 | |
| address_2 | |
| city | |
| state | |
| zip | |
| country | |
| user | |
| map | |

We'd also like to see a pre-filtered list displaying only Managers.

DEPARTMENT

| id | |
|------------------------|--|
| department_name | |
| department_description | |

Departments:
 - Management
 - Manufacturing
 - Accounting
 - Sales

| Locations: |
|-----------------------|
| - Main Office |
| - Warehouse |
| - Manufacturing Floor |
| - Parking Lot |
| - Offsite |

| LOCATION |
|----------------------|
| id |
| Location_Name |
| Location_Description |

occurred at

INCIDENT

| id | |
|-----------------------|--|
| location (FK) | |
| investigator (FK) | |
| safety_category (FK) | |
| incident_title | |
| incident_description | |
| incident_date | |
| near-miss | |
| investigation_summary | |
| incident_status | |

| SAFETY_CATEGORY |
|----------------------|
| id |
| Category_Name |
| Category_Description |

classifies

INCIDENT_ROOT_CAUSE

| root_cause (FK) | |
|-----------------|--|
| incident (FK) | |

root causes found

| ROOT_CAUSE |
|------------------------|
| id |
| root_cause_name |
| root_cause_description |

Root Causes:

- Fatigue
- Stress
- Haste
- Equipment Failure
- Tripping Hazard
- Poor Posture
- Lighting
- Improper Storage
- Physical Layout
- Weather

Legend

These are Lists we'll create directly in Fabrik.

We'll create these in Fabrik for many-to-many relationships.

Lists created ahead of time to avoid data entry during the demo.

Explanatory design notes.

Safety Incident Categories:
 - Slips, Trips, and Falls
 - Repetitive Stress Injury
 - Overexertion
 - Struck by Object
 - Struck Against Object
 - Auto Accident
 - Cuts
 - Caught in or Squeezed By
 - Electrocution
 - Hazardous Materials
 - Physical Assault

Building the Application STARTING POINT

PERSON

| |
|------------------------|
| id |
| first_name |
| last_name |
| department (FK) |
| title |
| picture |
| employee_or_contractor |
| work_phone |
| phone |
| phone_2 |
| address_2 |
| city |
| state |
| zip |
| country |
| user |
| map |

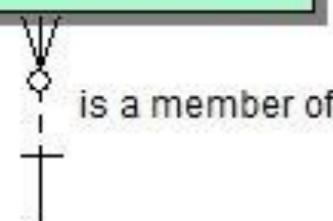
The PERSON table will display as a Directory List in our app.

Any given PERSON in the Directory List belongs to a SINGLE department.

A DEPARTMENT is comprised of multiple people.

In Data-speak, this is called a ONE-To-MANY relationship - but that's a term which some find confusing.

For user friendliness, let's call this a SINGLE Reference relationship.



DEPARTMENT

| |
|------------------------|
| id |
| department_name |
| department_description |

Departments:
- Management
- Manufacturing
- Accounting

Legend

These are Lists we'll create directly in Fabrik.

We'll create these for many-to-many relationships.

Lists created ahead of time to avoid data entry during

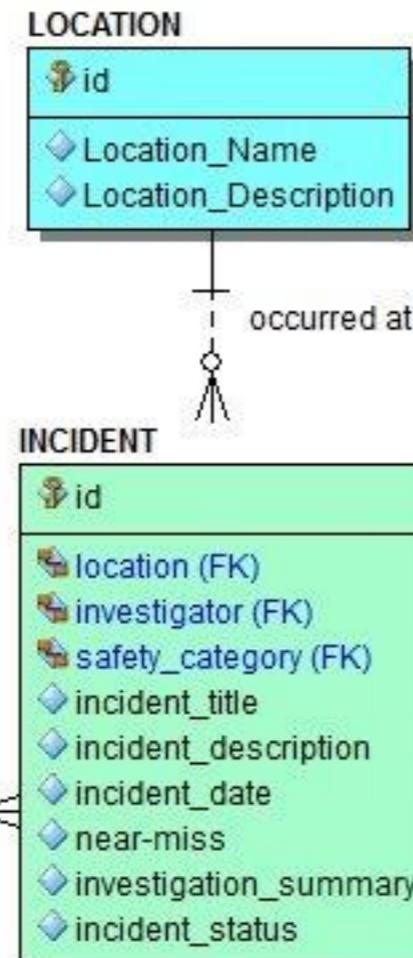
Explanatory design notes.

Building the Application

STEP 1 - Create the LOCATION List and add SINGLE Reference relationships from INCIDENT to

PERSON

| |
|------------------------|
| id |
| first_name |
| last_name |
| department (FK) |
| title |
| picture |
| employee_or_contractor |
| work_phone |
| phone |
| phone_2 |
| address_2 |
| city |
| state |
| zip |
| country |
| user |
| map |



Locations:
- Main Office
- Warehouse
- Manufacturing Floor
- Parking Lot
- Offsite

Legend

These are Lists we'll create directly in Fabrik.

We'll create these in Fabrik for many-to-many relationships.

Lists created ahead of time to avoid data entry during the demo.

Explanatory design notes.

The INCIDENT list was created ahead of time to reduce data entry during the demo. If we were to create it from scratch, we would do it exactly as we did with the LOCATION list.

Building the Application

STEP 2 - Create a SINGLE Reference relationship from INCIDENT to SAFETY_CATEGORY.



Legend

These are Lists we'll create directly in Fabrik.

We'll create these for many-to-many relationships.

Lists created ahead of time to avoid data entry during demo.

Explanatory design notes.

Safety Incident Categories:

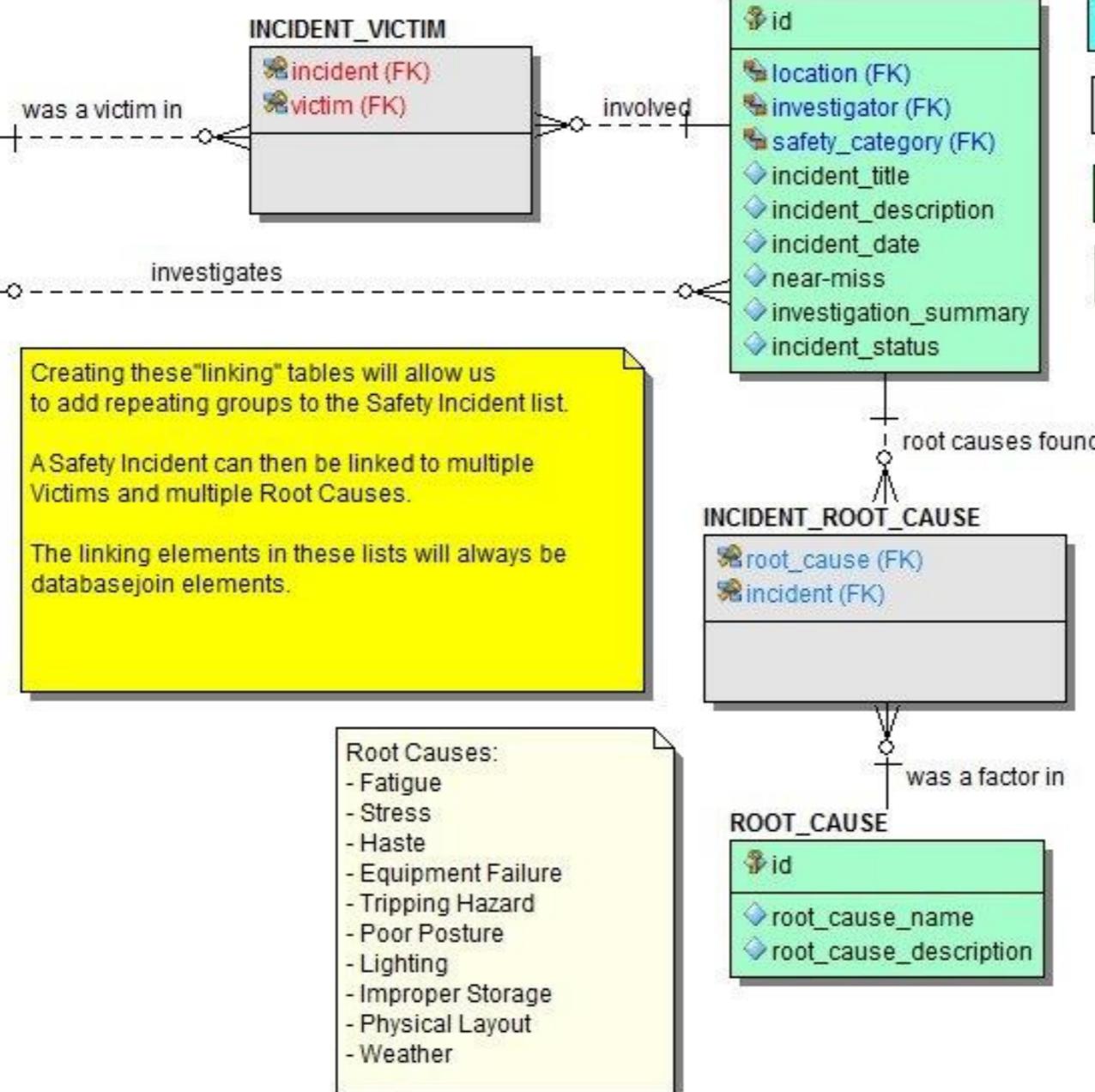
- Slips, Trips, and Falls
- Repetitive Stress Injury
- Overexertion
- Struck by Object
- Struck Against Object
- Auto Accident
- Cuts
- Caught in or Squeezed By
- Electrocution
- Hazardous Materials
- Physical Assault

Just like INCIDENT, SAFETY_CATEGORY was created ahead of time to reduce data entry during the demo.

It was created exactly like we created the LOCATION list.

Building the Application

STEP 3 - Add REPEATING Reference Relationships from INCIDENT to PERSON (VICTIM) and ROOT_CAUSE.



Legend

These are Lists we'll create directly in Fabrik.

We'll create these for many-to-many relationships.

Lists created ahead of time to avoid data entry during demo.

Explanatory design notes.

In Data-speak, these are referred to as MANY-To-MANY Relationships.

For user friendliness in Fabrik, though, I'm referring to these as REPEATING Reference Relationships.

These relationships are implemented as "Repeating Groups" in Fabrik by defining a Data Join on a Fabrik List. When such a Join is created, Fabrik automatically creates a corresponding "Repeating Group" to represent it in the original list.

Building the Application

STEP 4 - Add a Map Visualization to see people's locations and create a pre-filtered list for Managers

PERSON

| | |
|--|-------------------------------------|
| | <code>id</code> |
| | <code>first_name</code> |
| | <code>last_name</code> |
| | <code>department (FK)</code> |
| | <code>title</code> |
| | <code>picture</code> |
| | <code>employee_or_contractor</code> |
| | <code>work_phone</code> |
| | <code>phone</code> |
| | <code>phone_2</code> |
| | <code>address_2</code> |
| | <code>city</code> |
| | <code>state</code> |
| | <code>zip</code> |
| | <code>country</code> |
| | <code>user</code> |
| | <code>map</code> |

We'd also like to see a pre-filtered list displaying only Managers.

Legend

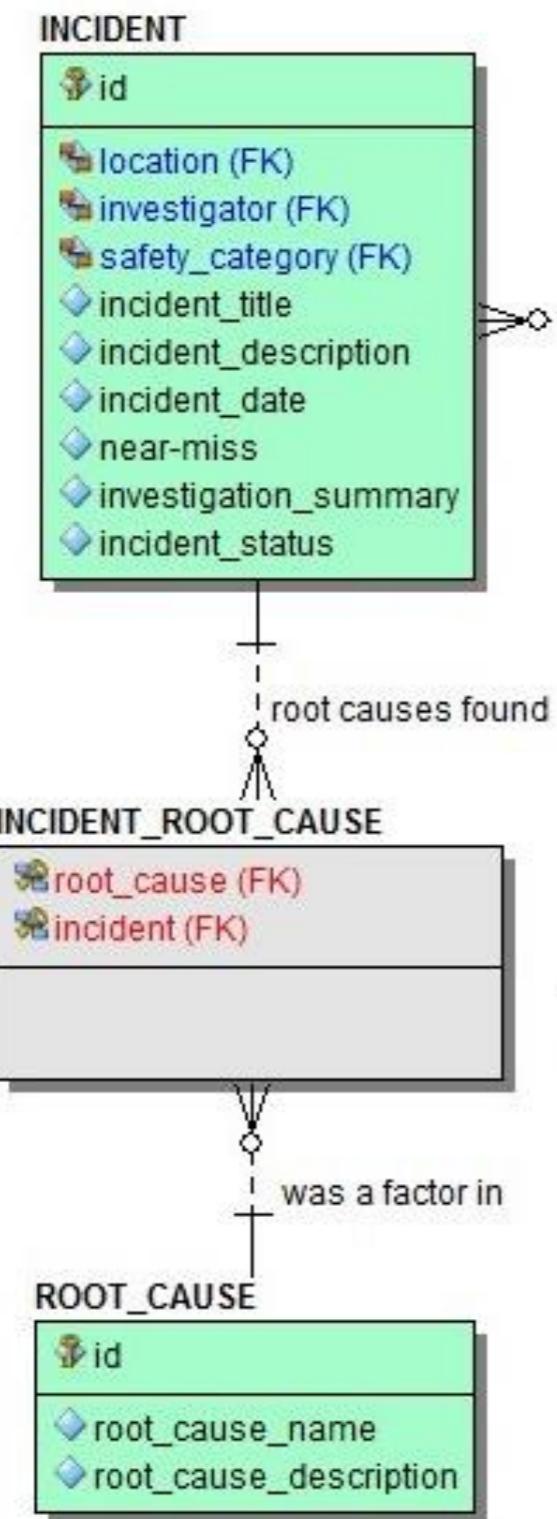
Lists created ahead of time to avoid data entry during the demo.

Explanatory design notes.

Create a Map Visualization of where people live - so that we can assess their vulnerability to hurricanes.

Building the Application

STEP 5 - Add Some Final Tweaks to the INCIDENT List



We'd like an Advanced Search Capability to see Incidents pertaining to a particular Safety Category or Root Cause.

SAFETY_CATEGORY

| |
|----------------------|
| id |
| Category_Name |
| Category_Description |

Safety Incident Categories:

- Slips, Trips, and Falls
- Repetitive Stress Injury
- Overexertion
- Struck by Object
- Struck Against Object
- Auto Accident
- Cuts
- Caught in or Squeezed By
- Electrocution

Finally, we'd like to restrict edit capability to the investigation_summary to only those in Special groups.

Root Causes:

- Fatigue
- Stress
- Haste
- Equipment Failure
- Tripping Hazard
- Poor Posture
- Lighting
- Improper Storage

Let's review what
we've learned
about Fabrik's
building blocks.

Connections

- * Your link from Joomla! to a database
- * Fabrik connects to your site database
- * You can also connect to other databases



Lists

- * A list is a view of a database table or a set of joined tables
- * Use lists to create custom tables
- * Lists can also refer to already created tables
- * For lists using a new database table, Fabrik creates 2 elements: id and datetime.
- * Fabrik automatically creates a form for the list and a group for that form

Elements

- * Elements represent the columns in your Fabrik database tables
- * Elements always belong to a Fabrik group - which, in turn, belongs to a Fabrik form

Element Plugins

- * Fabrik has a wide array of element plugins:
 - * Field - simple text field (for numbers as well)
 - * Text Area - larger text entry
 - * Date - which also provides a date picker
 - * Checkbox, Dropdown, Radio Button - preset values
 - * Fileupload - to load images, sound, video

Element Plugins - Continued

- * Fabrik has a wide array of element plugins:
 - * Databasejoin - to reference other table values
 - * Link - for URLs or email addresses
 - * Googlemap - for Google map references
 - * User - to capture Joomla! User ID for access control
 - * Cascading Dropdowns
 - * Calculated

Groups

- * Basically containers for elements on a form
- * Creating a list creates a form and a group
- * Use groups to pull similar elements together
- * Elements can never repeat - but groups can

Forms

- * Forms are made up of Groups - which, in turn, include Elements
- * Fabrik automatically creates a form for a list

What We Didn't Look At

- * **Packages** - create an installable component for multiple sites for your app
- * **Schedule** - Creates a task which runs at specified time and intervals

Any Questions?

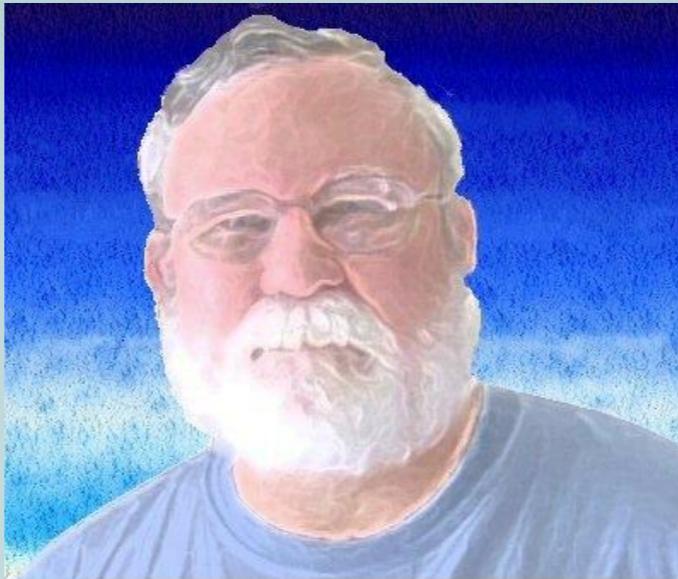
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