Custom fields in Joomla 3.7 for developers

Allon Moritz

JDD 17 September 2016

DIGITALPEAK

About Me

Allon Moritz

@digitpeak / @laoneo

Founder Digital Peak GmbH

Doing Joomla extensions since 2007

Agenda

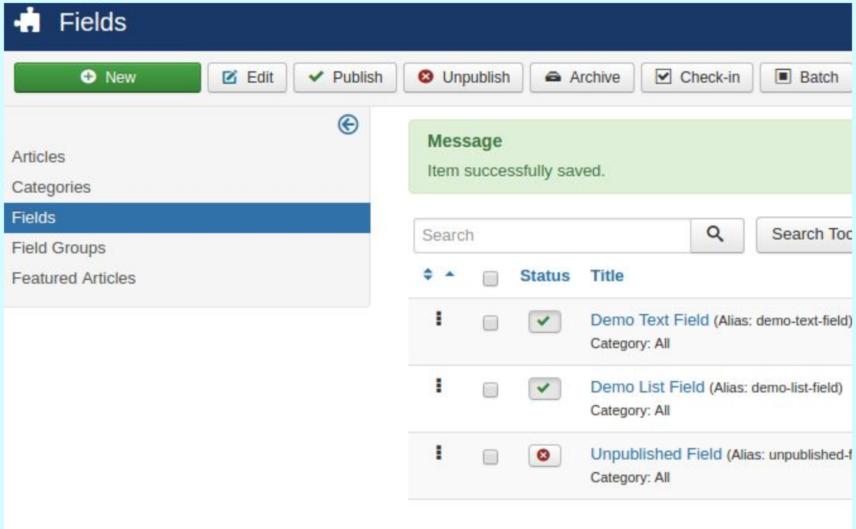
- Information
- Concept
- End user perspective
- Developer perspective
- Demo
- How to integrate
- Hidden features
- Fields plugin group
- Questions

Information

- DPFields is the base of com_fields
  https://joomla.digital-peak.com/products/dpfields
- Com_fields development repository (CLOSED)
  https://github.com/joomla-projects/custom-fields
- Final version can be found in PR 11833 in the 3.7 branch

Concept

- It is a component and a system plugin
- It integrates in the background trough Joomla events
- It extends JForm
- It uses JFormFields
- It is MVC coded
- It works like com_categories, it is not a standalone component
- It uses JLayouts



Message
Item successfully saved.

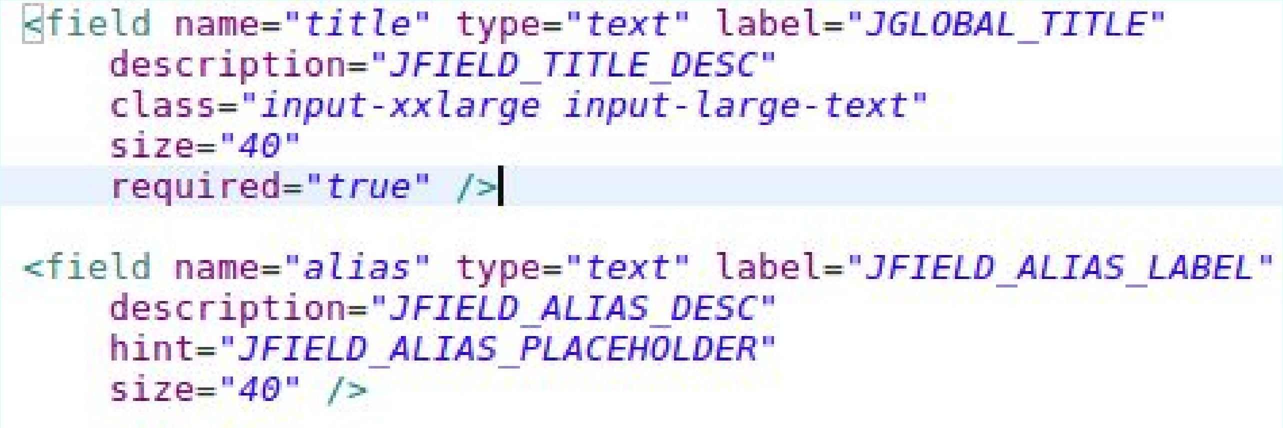
Demo Text Field (Alias: demo-text-field)
Category: All

Demo List Field (Alias: demo-list-field)
Category: All

Unpublished Field (Alias: unpublished-f
Category: All

Concept

It fills the gap between the XML declaration in administrator/components/com_content/models/forms/article.xml and JForm

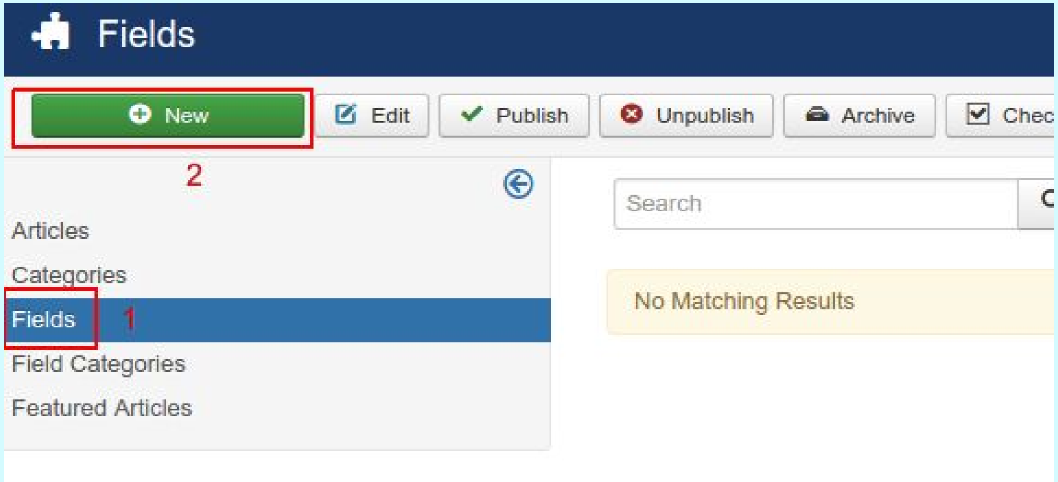


```
<field name="title" type="text" label="JGLOBAL_TITLE"
    description="JFIELD_TITLE_DESC"
    class="input-xxlarge input-large-text"
    size="40"
    required="true" />

<field name="alias" type="text" label="JFIELD_ALIAS_LABEL"
    description="JFIELD_ALIAS_DESC"
    hint="JFIELD_ALIAS_PLACEHOLDER"
    size="40" />
```

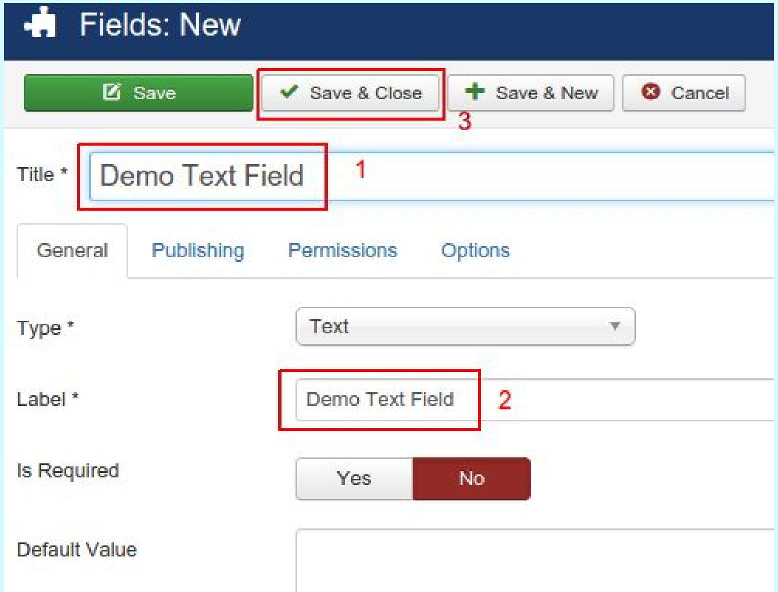
End user perspective

Menu item sidebar



End user perspective

Creating a field



Title * Demo Text Field

Type * Text

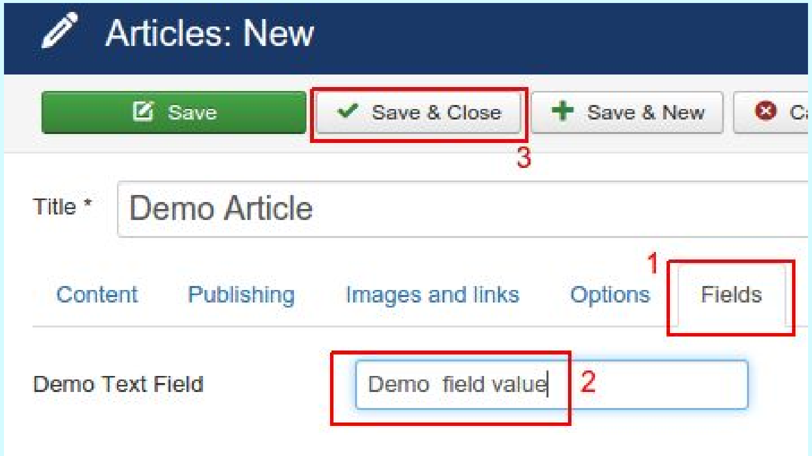
Label * Demo Text Field

Is Required No

Default Value

End user perspective

Edit article (item of your component)

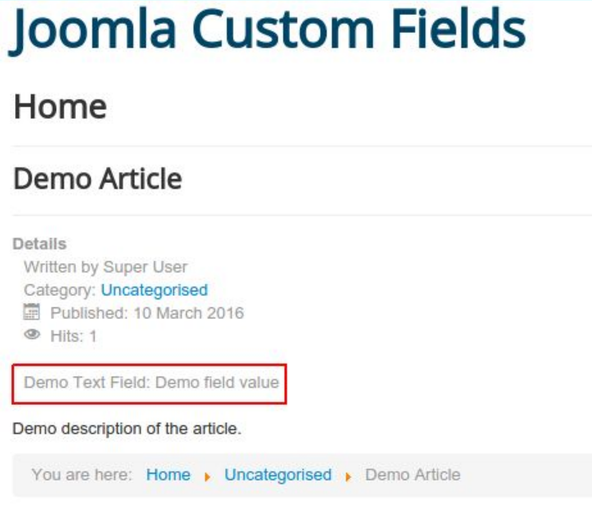


Title * Demo Article

Demo Text Field: Demo field value

End user perspective

Front end view



Joomla Custom Fields

Home

Demo Article

Details
Written by Super User
Category: Uncategorised
Published: 10 March 2016
Hits: 1

Demo Text Field: Demo field value

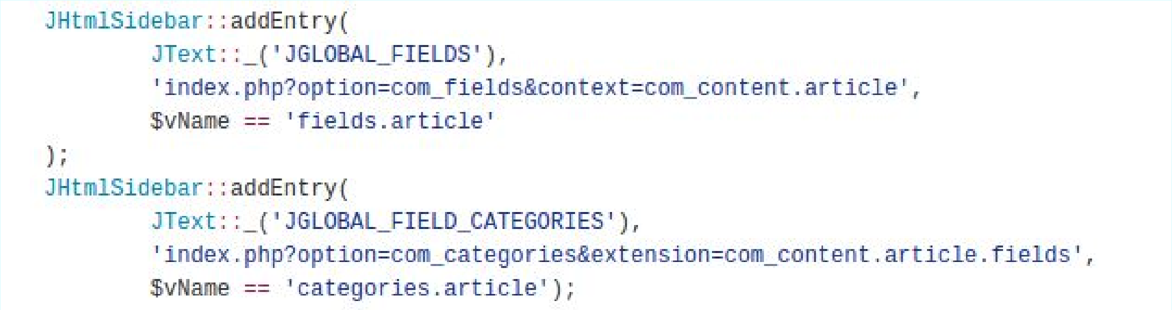
Demo description of the article.

You are here: Home ▸ Uncategorised ▸ Demo Article

Developer perspective

Menu item sidebar

Sidebar entries are added in your helper class through JHtmlSidebar



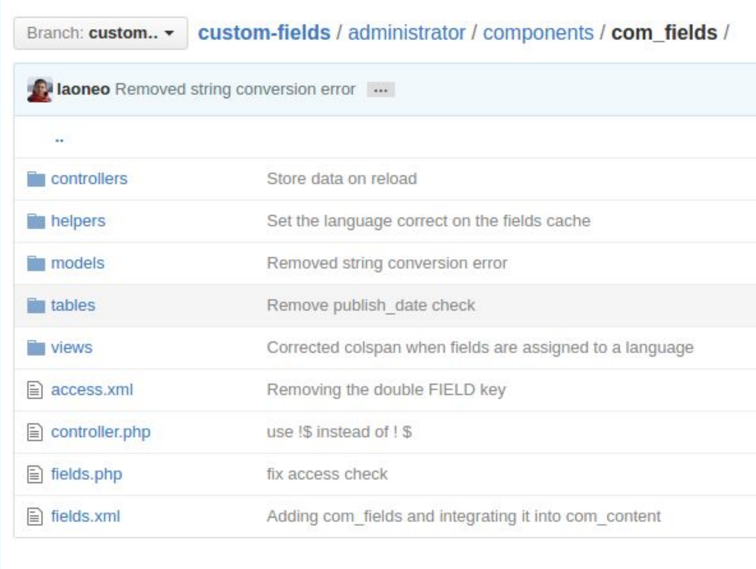
```
JHtmlSidebar::addEntry(
        JText::_('JGLOBAL_FIELDS'),
        'index.php?option=com_fields&context=com_content.article',
        $vName == 'fields.article'
);
JHtmlSidebar::addEntry(
        JText::_('JGLOBAL_FIELD_CATEGORIES'),
        'index.php?option=com_categories&extension=com_content.article.fields',
        $vName == 'categories.article');
```

administrator/components/com_content/helpers/content.php

Developer perspective

Creating a field

Editing a field is done in com_fields like any other ordinary J3 component



Branch: **custom..** ▾ custom-fields / administrator / components / **com_fields** /

laoneo Removed string conversion error ···

..

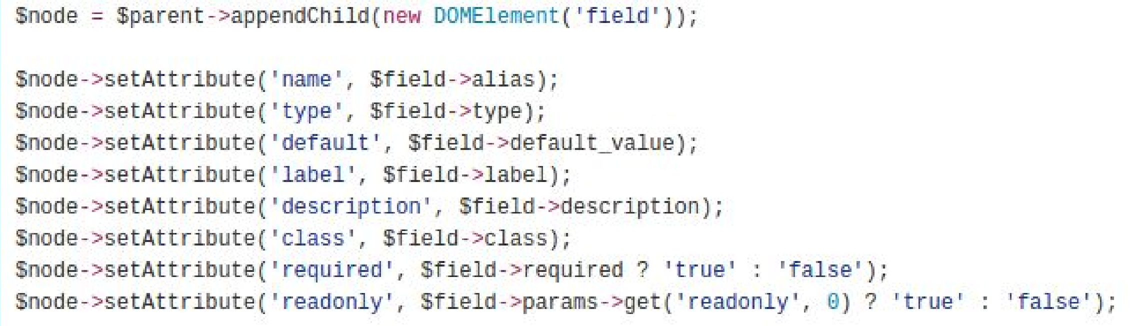
controllers	Store data on reload
helpers	Set the language correct on the fields cache
models	Removed string conversion error
tables	Remove publish_date check
views	Corrected colspan when fields are assigned to a language
access.xml	Removing the double FIELD key
controller.php	use !$ instead of ! $
fields.php	fix access check
fields.xml	Adding com_fields and integrating it into com_content

administrator/components/com_fields

Developer perspective

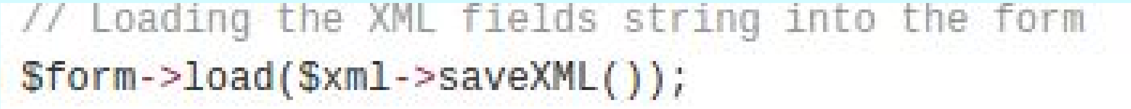
Edit article (item of your component)

When an item is loaded, through the onContentPrepareForm event the fields are added to the form



```
$node = $parent->appendChild(new DOMElement('field'));

$node->setAttribute('name', $field->alias);
$node->setAttribute('type', $field->type);
$node->setAttribute('default', $field->default_value);
$node->setAttribute('label', $field->label);
$node->setAttribute('description', $field->description);
$node->setAttribute('class', $field->class);
$node->setAttribute('required', $field->required ? 'true' : 'false');
$node->setAttribute('readonly', $field->params->get('readonly', 0) ? 'true' : 'false');
```



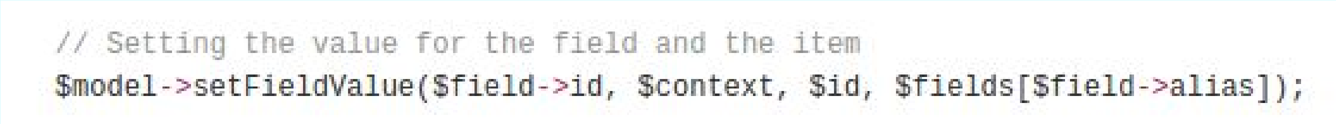
```
// Loading the XML fields string into the form
$form->load($xml->saveXML());
```

plugins/system/fields/fields.php

Developer perspective

Edit article (item of your component) 2

When an item is saved, through the onContentAfterSave event the fields are stored



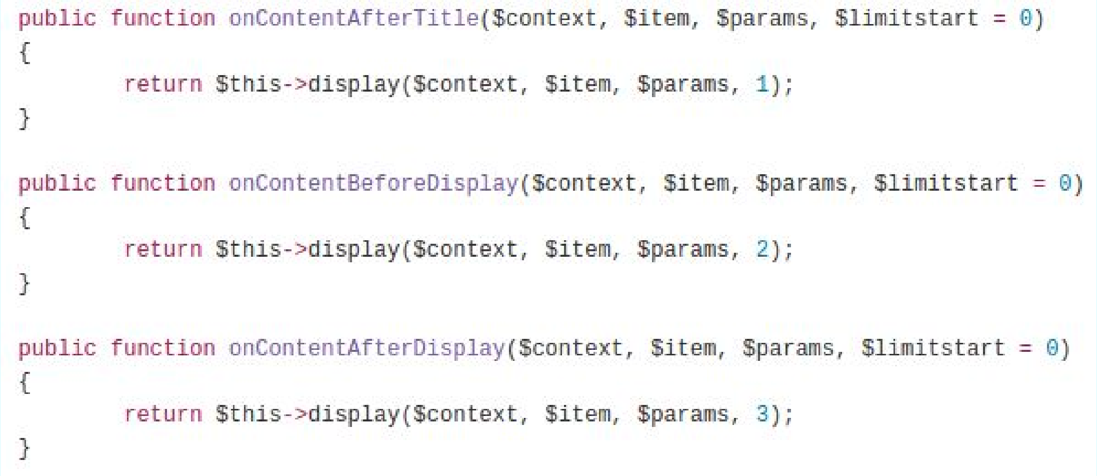
```
// Setting the value for the field and the item
$model->setFieldValue($field->id, $context, $id, $fields[$field->alias]);
```

plugins/system/fields/fields.php

Developer perspective

Front end view

When an item is rendered, through the [Plugin/Events/Content]() events the fields are displayed on the front



```
public function onContentAfterTitle($context, $item, $params, $limitstart = 0)
{
        return $this->display($context, $item, $params, 1);
}

public function onContentBeforeDisplay($context, $item, $params, $limitstart = 0)
{
        return $this->display($context, $item, $params, 2);
}

public function onContentAfterDisplay($context, $item, $params, $limitstart = 0)
{
        return $this->display($context, $item, $params, 3);
}
```

plugins/system/fields/fields.php

Developer perspective recap

- Plugin events to integrate into other components
- Com_fields component to manage the fields
- Layouts to prepare the value and render the field

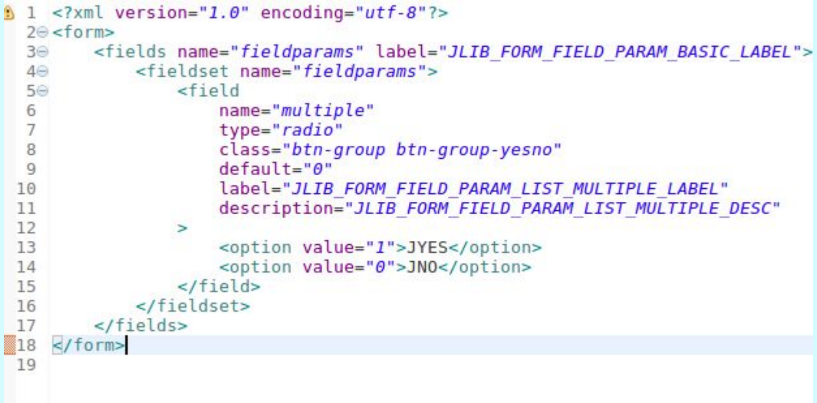
Demo

How to integrate

- It's all about the context
  - Form name is the context
  - Context save event
  - Context render event
- Load the params fieldsets, all of them
- Fields are added to the item as fields array
- Basic search needs a join, look at the plg_search_content plugin. Smart search is automatically supported.

How to integrate: My own fields

- Field needs to implement JFormDomfieldinterface and to extend JFormField
- Field parameters (eg. thumbnail width) as form in ../parameters/foo.xml



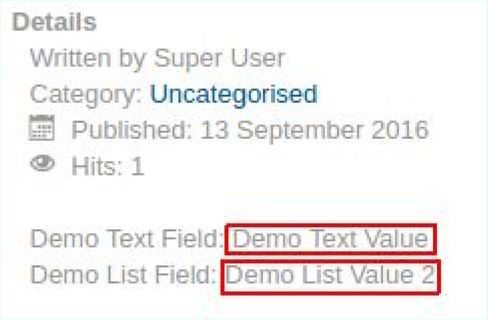
```xml
<?xml version="1.0" encoding="utf-8"?>
<form>
    <fields name="fieldparams" label="JLIB_FORM_FIELD_PARAM_BASIC_LABEL">
        <fieldset name="fieldparams">
            <field
                name="multiple"
                type="radio"
                class="btn-group btn-group-yesno"
                default="0"
                label="JLIB_FORM_FIELD_PARAM_LIST_MULTIPLE_LABEL"
                description="JLIB_FORM_FIELD_PARAM_LIST_MULTIPLE_DESC"
            >
                <option value="1">JYES</option>
                <option value="0">JNO</option>
            </field>
        </fieldset>
    </fields>
</form>
```

- If the output of the field for the front needs some special functionality, create a layout in components/com_foo/layouts/field/prepare/foo.php

Hidden features

Rendering: Prepare the value

The value of a field is prepared through the following steps



Details

Written by Super User

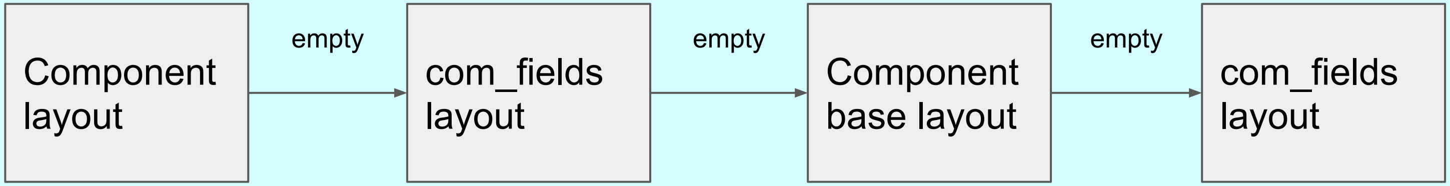
Category: Uncategorised

Published: 13 September 2016

Hits: 1

Demo Text Field: Demo Text Value

Demo List Field: Demo List Value 2



JLayoutHelper::render(‘field.prepare.foo’, ‘com_fields’, …)

JLayoutHelper::render(‘field.prepare.base’, ‘com_fields’, …)

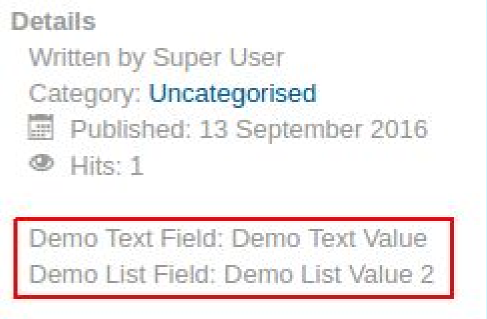
JLayoutHelper::render(‘field.prepare.foo’, ‘com_foo’, ..)

JLayoutHelper::render(‘field.prepare.base’, ‘com_foo’, …)

Hidden features

Rendering: Prepare the output

The output for the display events is prepared through a couple of steps



Details

Written by Super User

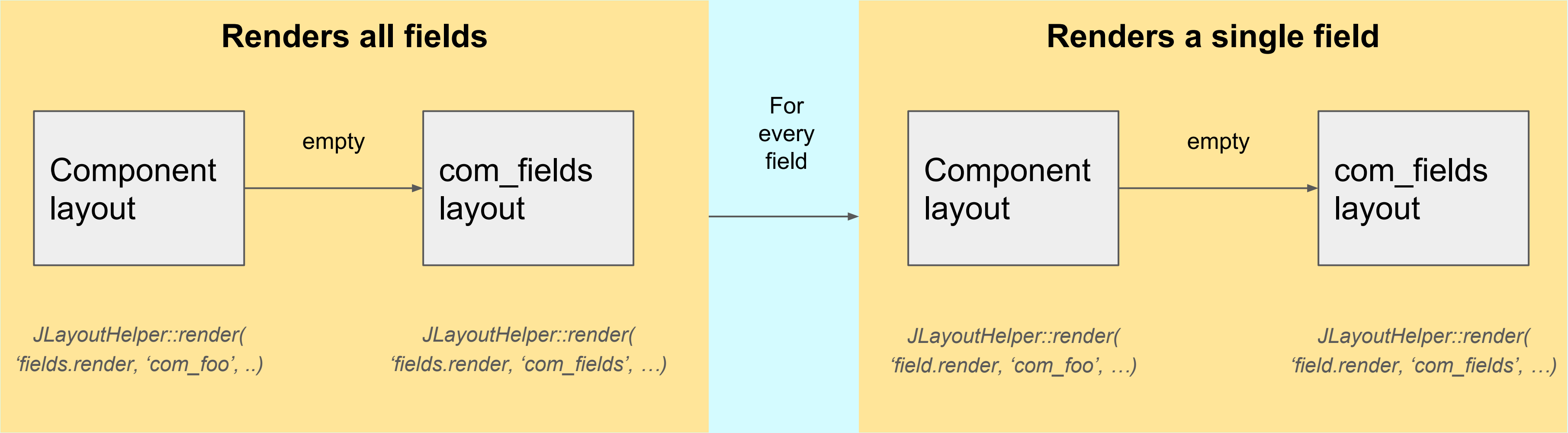
Category: Uncategorised

Published: 13 September 2016

Hits: 1

Demo Text Field: Demo Text Value

Demo List Field: Demo List Value 2



Renders all fields

Component layout

empty

com_fields layout

JLayoutHelper::render(‘fields.render, ‘com_foo’, ..)

JLayoutHelper::render(‘fields.render, ‘com_fields’, …)

For every field

Renders a single field

Component layout

empty

com_fields layout

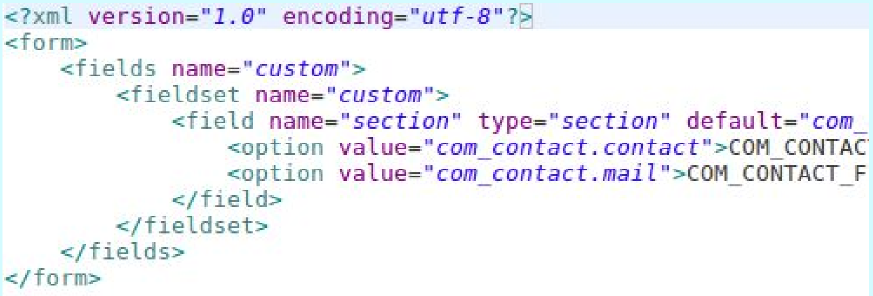
JLayoutHelper::render(‘field.render, ‘com_foo’, …)

JLayoutHelper::render(‘field.render, ‘com_fields’, …)

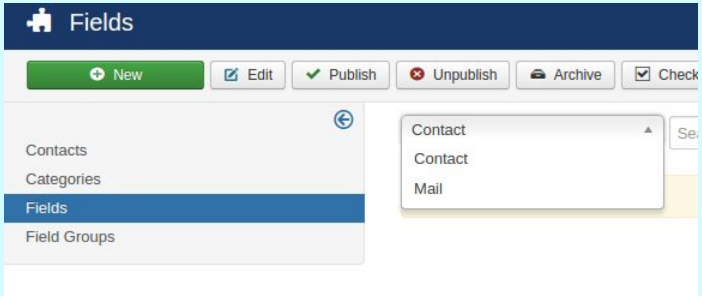
Hidden features

Multiple contexts

If your component has multiple contexts, for example Contacts has contacts and E-Mail form fields, add a filter form file to administrator/*com_foo/models/forms/filter_fields.xml*.



```
<?xml version="1.0" encoding="utf-8"?>
<form>
    <fields name="custom">
        <fieldset name="custom">
            <field name="section" type="section" default="com_
                <option value="com_contact.contact">COM_CONTAC
                <option value="com_contact.mail">COM_CONTACT_F
            </field>
        </fieldset>
    </fields>
</form>
```



Hidden features

Public helper classes and API

The class FieldsHelper has some public API functions to work with fields.

```
JLoader::register('FieldsHelper', JPATH_ADMINISTRATOR . '/components/com_fields/helpers/fields.php');
$fields = FieldsHelper::getFields(‘com_foo.bar’, $item, true);
```

The field model itself allows to get and store the value of a field.

```
JModelLegacy::addIncludePath(JPATH_ADMINISTRATOR . '/components/com_fields/models', 'FieldsModel');
$fieldModel = JModelLegacy::getInstance('Field', 'FieldsModel', array('ignore_request' => true));
$fieldModel->setValue($fieldId, ‘com_foo.bar’, $item->id, ‘demo value’);
```

Hidden features

ACL support

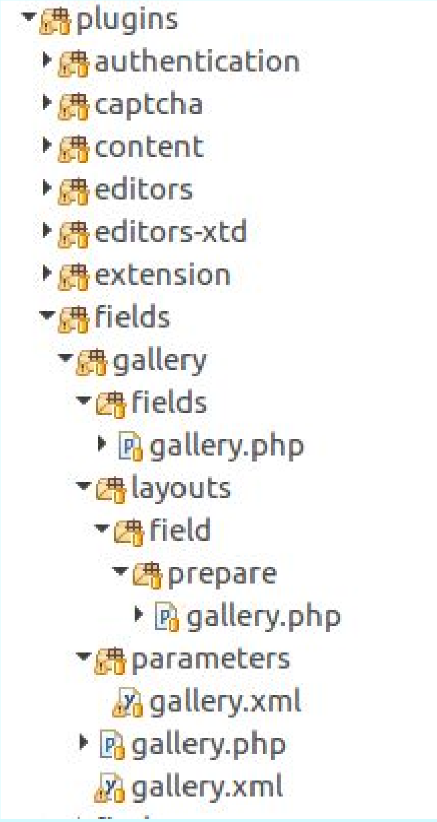
Every field has an access level

Every field has a new permission edit.value

```
JFactory::getUser()->authorise('edit.value', ‘com_foo.bar.field.' . (int) $field->id);
```

Fields plugin group

- New plugin group fields
- Every plugin must have a folder fields with the JFormFields
- Layouts should be placed in the layouts folder field/prepare
- Actually there are no plugin events, configuration is done by convention



```
plugins
  authentication
  captcha
  content
  editors
  editors-xtd
  extension
  fields
    gallery
      fields
        gallery.php
      layouts
        field
          prepare
            gallery.php
      parameters
        gallery.xml
      gallery.php
      gallery.xml
```

Final notes

- Photos are taken from https://unsplash.com
- The way to a CCK is not far anymore
- Hello world demo contains a DPFields branch, can be used for com_fields https://github.com/Digital-Peak/Joomla-3.2-Hello-World-Component

Questions?

Slides on https:/joomla-digital-peak.com/jd16de

Thank you and enjoy the day :-)