

DRUPAL 8 - THE MISSING PARTS

WHO AM I?

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[https://github.com/pingevt/
d8-missing-parts](https://github.com/pingevt/d8-missing-parts)

BLUECADET

PETE INGE | BLUECADET | D8: THE MISSING PARTS



WHO IS THIS FOR?

- » Anyone interested in getting better at Drupal
- » "Site Builders"
- » Themers
- » Beginner Coders

WHAT WE'LL COVER

- » Grabbag of ideas
- » methodologies
- » and hopefully some best practices

WHAT WE'LL COVER

1 Data

- Libraries
- Preprocess
- Display Formatters
- Services
- Tokens

WHAT WE'LL COVER

2 Content

- Form States
- Option Fields
- Settings Pages
- CKeditor Plugins
- Batch Processes
- Honorable Mentions

\DRUPAL\MYWAY->CONFIGO;

- » Customization is key to taking your site to the next level
- » Drupal is very data centric, and can be very confusing to Content Authors

\DRUPAL\MYWAY->CONFIGO;

- » Let's try to do it closer to the "Drupal" way
- » "In Drupal there are 10 ways to do something and 5 of them are correct"
- » By doing it the "Drupal way", makes it easier to debug
- » Mental checklist of what to look at when debugging

\DRUPAL\MYWAY->CONFIGO;

» We should always be thinking about the next developer.

1 DAY

1 DATA

- » Input Raw Data
- » Transform the Data
- » Present to our Audience (html/css/js)

LIBRARIES

LIBRARIES

Adding stylesheets and JS to your sites

- » Include custom CSS/JS for specific elements
- » Helps with optimizations, file size etc.

```
global-css:  
  version: 1.0  
  css:  
    theme:  
      dist/css/style.css: {}  
      dist/css/ie.css: { browsers: { IE: 'lte IE 9', '!IE': false } }  
global-js:  
  version: 1.0  
  js:  
    dist/js/vendor/modernizr.min.js: { weight: -10 }  
    dist/js/vendor/plugins.min.js: {}  
    dist/js/revelations.js: {}  
    dist/js/parallaxBg.js: {}  
    dist/js/functionality.js: {}  
    dist/js/stickyHeader.js: {}  
  dependencies:  
    - core/jquery  
    - core/drupal  
    - core/underscore  
    - mann_theme/scroll-watch  
    - mann_theme/flickity  
    # - mann_theme/sticky-bits  
views-filters:  
  version: 1.0  
  js:  
    dist/js/viewFilters.js: {}  
flickity:  
  version: 2.0.10  
  js:  
    dist/dependencies/flickity.pkgd.min.js: {}  
video-hero:  
  version: 1.0  
  js:  
    dist/js/videoHero.js: {}  
  dependencies:  
    - core/underscore
```

LIBRARIES (EX)

The screenshot shows a web browser window with the title "Welcome to the Independence". The address bar reads "Not Secure | ivc-web.localhost.com". The bookmarks bar includes links to "Bookmarks", "Debugger", "D8", "Drupal/Pantheon", "PHPStorm", "Page testing", "tuts", "CI", "raspberryPI", "server config", "Javascript", "To Read", "Clients", "Node.js", "Game Stuff", and "Other Bookmarks". The main content area features the "Independence Visitor Center Corporation" logo, navigation links for "Start Here", "Find Things To Do", "Get Around", and "Independence National Historical Park", and a search bar. Below this, there are two sections: "Nearby on Independence Mall" and "Explore the City", each containing three images with captions.

Nearby on Independence Mall

-  Independence Mall
-  Liberty Bell Center
-  National Constitution Center >

Explore the City

-  City Hall Visitor Center
-  Mütter Museum of the College of Physicians of Philadelphia
-  Christ Church Burial Ground
-  Merchants' Exchange Building
-  Pennsylvania Academy of the Fine Arts >

PREPROCESS/ AFTER FUNCTIONS

PREPROCESS/ALTER FUNCTIONS

- » Hooks are specially-named functions that a module defines (this is known as "implementing the hook"), which are discovered and called at specific times to alter or add to the base behavior or data (this is known as "invoking the hook").

PREPROCESS/ALTER FUNCTIONS

- » They are all over the place, anything you can theme
- » A lot of customization and logic
- » I often bury a lot of code here that can be done other ways, but easier here.
- » Remove logic from template files
 - » Templates should be for presentation, not logic

```
function hook_preprocess_node(&$variables) {  
  global $base_url;  
  
  $node = $variables['elements']['#node'];  
  $variables['type'] = $node->bundle();  
  
  switch ($node->bundle()) {  
    case 'CONTENT TYPE':  
      // ... Do a bunch of cool stuff ...  
      break;  
  }  
}
```

PREPROCESS/ALTER FUNCTIONS (EX)

Examples

- » Links with icons added in
- » 'Override' fields
- » Add custom dynamic markup

2018

June 19

Roger Daltrey
Performs The Who's
'TOMMY'

Tickets & Information →



DISPLAY FORMATTERS

DISPLAY FORMATTERS

What is a Display Formatter?

Manage display

Edit Manage fields Manage form display **Manage display** Devel

Default Full content Search index Teaser Teaser Plus Teaser Portrait

Home > Administration > Structure > Content types > Listing > Manage display

+ Add group Show row weights

FIELD	LABEL	FORMAT	
Links			
Featured Image	- Hidden -	Rendered entity	Rendered as Featured Media
Listing Tags	- Hidden -	Web Listing Tag	
Description	- Hidden -	Default	
Address	- Hidden -	Default	
Hours of Operation	- Hidden -	Rendered entity	Rendered as Default
Ticketing Info	- Hidden -	Rendered entity	Rendered as Default
Google Places ID	- Hidden -	Plain text	
Phone	- Hidden -	Telephone link	Link using provided telephone number.
Meta tags	- Hidden -	Empty formatter	
Detail Paragraph Content	- Hidden -	Rendered entity	Rendered as Default
More Content	- Hidden -	Rendered entity	Rendered as Default
Assistive Listening Systems	- Hidden -	Boolean Label	Hide if False
Audio Description	- Hidden -	Boolean Label	Hide if False
Braille	- Hidden -	Boolean Label	Hide if False
Closed Captioning	- Hidden -	Boolean Label	Hide if False
Large Print	- Hidden -	Boolean Label	Hide if False
Mother's Room	- Hidden -	Boolean Label	Hide if False
Sensory-Friendly	- Hidden -	Boolean Label	Hide if False
Service Animals Welcome	- Hidden -	Boolean Label	Hide if False
Sign language interpreter	- Hidden -	Boolean Label	Hide if False
Telephone Typewriter (TTY)	- Hidden -	Boolean Label	Hide if False
Volume Control Telephone	- Hidden -	Boolean Label	Hide if False
Wheelchair Accessible	- Hidden -	Boolean Label	Hide if False
Disabled			
Show Badge	Above	Boolean	
M Students decimal	Above	Plain text	
M Location Postal code	Above	Plain text	
M Location State/Province	Above	Plain text	
M Location Street	Above	Plain text	

DISPLAY FORMATTERS

Why use a Display Formatter?

- » It's the "Drupal" Way
- » Re-usability
- » Debugging

Manage display

Edit Manage fields Manage form display **Manage display** Devel

Default Full content Search index Teaser Teaser Plus Teaser Portrait

Home > Administration > Structure > Content types > Listing > Manage display

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M Location Street	Above	Plain text	

DISPLAY FORMATTERS

Re-use and learn from core modules

```
<?php

namespace Drupal\ivc_utility\Plugin\Field\FieldFormatter;

use Drupal\Core\Field\FormatterBase;
use Drupal\Core\Field\FieldItemListInterface;
use Drupal\Core\Form\FormStateInterface;

/**
 * Plugin implementation of the 'boolean_label' formatter.
 *
 * @FieldFormatter(
 *   id = "boolean_label",
 *   label = @Translation("Boolean Label"),
 *   field_types = {
 *     "boolean",
 *   }
 * )
 */
class BooleanLabelFormatter extends FormatterBase {

  /**
   * {@inheritDoc}
   */
  public static function defaultSettings() {
    $settings = [];

    $settings['hide_if_false'] = TRUE;

    return $settings;
  }
}
```

DISPLAY FORMATTERS (EX)

The screenshot shows a list of accessibility features with their current status:

- Wheelchair Accessible: checked
- Closed Captioning: unchecked
- Mother's Room: checked
- Assistive Listening Systems: checked
- Volume Control Telephone: unchecked
- Telephone Typewriter (TTY): unchecked
- Sensory-Friendly: unchecked
- Braille: unchecked
- Sign language interpreter: unchecked
- Large Print: unchecked
- Audio Description: unchecked
- Service Animals Welcome: checked

```
<?php

namespace Drupal\ivc_utility\Plugin\Field\FieldFormatter;

use Drupal\Core\Field\FormatterBase;
use Drupal\Core\Field\FieldItemListInterface;
use Drupal\Core\Form\FormStateInterface;

/**
 * Plugin implementation of the 'boolean_label' formatter.
 *
 * @FieldFormatter(
 *   id = "boolean_label",
 *   label = @Translation("Boolean Label"),
 *   field_types = {
 *     "boolean",
 *   }
 * )
 */
class BooleanLabelFormatter extends FormatterBase {

  /**
   * {@inheritDoc}
   */
  public static function defaultSettings() {
    $settings = [];

    $settings['hide_if_false'] = TRUE;

    return $settings;
  }
}
```

SERVICES

SERVICES

What is a Service

- » In Drupal 8 speak, a service is any object managed by the services container.
- » OOP for the win!

SERVICES

Smoothie Maker



SERVICES (EX)

» Taxonomy Terms with icons

```
class IconTaxService {

    public $icons;

    /**
     *
     */
    public function __construct() {
        $this->icons = \Drupal::entityTypeManager()->getStorage(
            'taxonomy_term')->loadTree('icons', 0, NULL, TRUE);
    }

    /**
     *
     */
    public function getSVGRenderArray($term) {
        if ($term->bundle() != 'icons') {
            return FALSE;
        }

        $uri = $term->field_svg_icon_file->entity->getFileURI();
        $build = [
            '#theme' => 'svg_image',
            '#path' => $uri,
        ];
        return $build;
    }

    /**
     *
     */
    public function getFormOptions() {
        $options = [
            '' => '--SELECT--',
        ];

        foreach ($this->icons as $i) {
            $options[$i->id()] = $i->getName();
        }
    }
}
```

DOKENS

TOKENS

- » Expose your data however you want to
- » REALLY Easy

Home Manage admin Devel

Content Structure Appearance Extend Configuration People Reports

Edit default meta tags

Home » Administration » Configuration » Search and metadata » Metatag

Configure the meta tags below.

To view a summary of the individual meta tags and the pattern for a specific configuration, click on its name below. Use tokens to avoid redundant meta data and search engine penalization. For example, a 'keyword' value of "example" will be shown on all content using this configuration, whereas using the [node:field_keywords] automatically inserts the "keywords" values from the current entity (node, term, etc).

Browse available tokens.

BASIC TAGS

Simple meta tags.

Page title

The text to display in the title bar of a web browser or favorites this page, or as the page title in search engines. It is recommended that the title is no greater than 70 characters.

Description

[node:field_short_description]

A brief and concise summary of the page, used by search engines about the page in search results.

Abstract

A brief and concise summary of the page, used by search engines about the page in search results.

Keywords

A comma-separated list of keywords about the page.

ADVANCED

OPEN GRAPH

Available tokens

Click a token to insert it into the field you've last clicked.

NAME	TOKEN	DESCRIPTION
► Current date	current-date	Tokens related to the current date and time.
► Current page	current-page	Tokens related to the current page request.
► Current user	current-user	Tokens related to the currently logged in user.
▼ Nodes	node	Tokens related to individual content items, or "nodes".
► Address	[node:field_address]	Address field.
► Ad Link	[node:field_partner_link]	Link field. Also known as <i>Partner Link</i> .
► Alert Message	[node:field_alert_message]	Text (formatted, long) field.
► Ambient Media	[node:field_ambient_media]	Entity reference field.
► Answer	[node:field_answer]	Text (formatted, long) field.
► Assistive Listening Systems	[node:field_a_assistive_listening]	Boolean field.
► Audio Description	[node:field_a_audio_description]	Boolean field.
► Author	[node:author]	
► Background Media	[node:field_slide_media]	Entity reference field.
► Badge Color	[node:field_badge_color]	Entity reference field.
► Badge Text	[node:field_badge_text]	Text (plain) field.
Body	[node:body]	The main body text of the node.
► Braille	[node:field_a_braille]	Boolean field.
► Closed Captioning	[node:field_a_closed_captioning]	Boolean field.
► Color	[node:field_gd_color]	Entity reference field.
► Content	[node:field_content]	Entity reference revisions field.
Content ID	[node:nid]	The unique ID of the content item, or "node".
► Content type	[node:content-type]	The content type of the node.
► CTA Link	[node:field_cta_link]	Link field.
► Date changed	[node:changed]	The date the node was most recently updated.
► Date created	[node:created]	
► Description	[node:field_description]	Text (formatted, long, with summary) field.

Save Delete

TOKENS

```
/**  
 * Implements hook_token_info().  
 */  
function hook_token_info() {  
 // Define your token.  
}  
  
/**  
 * Implements hook_tokens().  
 */  
function hook_tokens($type, $tokens,  
array $data, array $options, BubbleableMetadata $bubbleable_metadata) {  
 // Code to replace your tokens  
}
```

20 CONTENT

2 CONTENT

and helping your site Authors

**FORM
STATES**

FORM STATES

- » Clean up your forms
- » Lead content Authors through the data

FORM STATES (EX)

The screenshot shows a Drupal 8 administrative interface for creating a new node of type 'flex_page'. The page title is 'node/add/flex_page'. The top navigation bar includes links for Manage, admin, and Devel.

CONTENT

Featured Callout

Select existing featured callout?
Select a re-useable featured callout, this will override content entered in fields below

Title
FEATURE IMAGE

Description

CTA LINK

URL
Start typing the title of a piece of content to select it. You can also enter an internal path such as `/node/add` or an external URL such as `http://example.com`.
Enter `<front>` to link to the front page.

Link text

BADGE
 Badge

Paragraph type
Featured Callout ▾

to Content

OPTIONS
EDS

OPTIONS FIELDS

and preprocess!

- » Basically, fields that define layout/content, but don't actually show on the FE

OPTIONS FIELDS (EX)



Half Width Callout #1

Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

[Learn More](#) ➔



Half Width Callout #3

Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

[Read More](#) ➔



Half Width Callout #1

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

[Read more](#) ➔



Half Width Callout #4

Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

[Learn More](#) ➔

fantastic

PETE INGE | BLUECADET | D8: THE MISSING PARTS

OPTIONS FIELDS (EX)

- » define color theme
- » define Image alignment
- » define Image shape
- » define background shape
(hidden|circle|square)
- » define background message

Half Width Callout

Label

Membership at the Mann

IMAGE

MEDIA NAME	THUMBNAIL	OPERATIONS
Donor Terrace		Edit Remove

Description

B I U S | [Source](#)

Get early access to tickets before the general public, VIP parking, member-only entry to the Mann, and more!

Text format Basic HTML [About text formats ?](#)

CTA

URL

Membership (49)

Start typing the title of a piece of content to select it. You can also enter an internal path such as /node/add or an external URL such as <http://example.com>. Enter <front> to link to the front page.

Link text

Become a Member

▼ CALLOUT DISPLAY OPTIONS

Color Theme * Red

Image Alignment * Left

Image Shape * Circle

Shape Background

Message Background Option

SHININGS PAINTS

SETTINGS PAGES

and preprocess!

SETTINGS PAGES

- » Most content here was global (but editable)
- » Most content was allowed/disallowed for an event
- » These were simple bools, and I didn't want to bake into field config

Dining



Picnics are not allowed for this performance.

If you are 21 years of age or older and plan to consume alcohol at the concert, please be prepared to present proper I.D.

CRESCENDO

[Make a Reservation](#)

Seating



Lawn chairs are **not permitted** for this performance.



Not sure where to go?

[Find your seat](#)

Travel

Parking is available at all shows.

Cars	\$20
RVs	\$40

Want to park closer to the gates? Members of the Mann receive perks (including upgraded parking) for all shows!

[Become a Member](#)

Getting to the Mann is easier than ever!



Driving
Directions



Biking



Ride Share



Public Transit

More Info



No photography is permitted at this performance.

SETTINGS PAGES (EX)

Picnics Allowed
Check if Picnics will be allowed.

Food Trucks Available
Check if Food Trucks will be available?

Crescendo Dining
Check if Crescendo Dining will be available.

Alcohol Served
Check if Alcohol will be served.

Chairs Allowed
Check if Chairs will be allowed.

Blankets allowed
Check if Blankets are allowed for this event.

Show Find Your Seat
Click to show the Find your seat link.

Free Parking
Check to show Free Parking text.

Car Price Override

If the price for Cars has changed for this event, fill out this field.

RV Price Override

If the price for RVs has changed for this event, fill out this field.

Show Membership
Check to show Membership tease and link.

Show Getting to the Mann
Check to show the Getting to the Mann Links.

Photography Permitted
Check if Photography will be permitted.

Dining

 **CRESCEDO**
[Make a Reservation](#)

If you are 21 years of age or older and plan to consume alcohol at the concert, please be prepared to present proper I.D.

Seating

 **Lawn chairs are not permitted for this performance.**
[Find your seat](#)

Travel

Parking is available at all shows.

Cars	\$20
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Getting to the Mann is easier than ever!
 
Driving Directions → Biking →
 
Ride Share → Public Transit →
[Become a Member](#)

More Info

 No photography is permitted at this performance.

CKED OUT OR PLUGGINS

CKEDITOR PLUGINS

- » Clients always want more functionality in the WYSIWYG
- » Our typical response is NO
- » but really?
- » Con: have to learn new system
- » Overall improves Admin experience

CKEDITOR PLUGINS (EX)

PETE INGE | BLUECADET | D8: THE MISSING PARTS

Ladysmith Black Mambazo

On July 19, 2016, the Mann presented a Master Class with four-time Grammy® Award-winning performers Ladysmith Black Mambazo. Over the course of six weeks, students from The Philadelphia Clef Club, The Philadelphia Girls and Boys Choir, and students from Artistas y Músico

s Latino Americanos (ALMA) studied and learned South African musical traditions in preparation for this unique Master Class. 50 students performed songs composed by South African great Hugh Masekela and performed their prepared South African folk songs. Ladysmith Black Mambazo then provided constructive and meaningful feedback to the students before sharing song and dance demonstrations of *isichatamiya*—their style of singing—and discussed its rich Zulu heritage. The Master Class concluded with a full-scale group dance and sing-a-long led by Ladysmith Black Mambazo, which had everyone in the house on their feet in a rousing rendition of “Siyahamea,” a traditional South African hymn.

Al Jarreau

The 2015 Master Class program welcomed 72 students from three regional schools to experience an intimate, hands-on workshop with seven-time Grammy® Award-winning jazz artist Al Jarreau. Students from the Girard Academic Music Program, Philadelphia Performing Arts: A String Theory Charter School, and The Creative Arts Morgan Village Academy were selected by their administrators as top-vocalists to participate in a workshop designed around artistic excellence, mentorship, and inspiration. For six weeks preceding the Master Class, three teaching artists met twice a week to work with the selected students and their coaches in preparation for the three-day residency. Students learned two selections from Al Jarreau’s repertoire and prepared a selection of their own choosing. Students were accompanied by a jazz ensemble that included Justin Faulkner, a former Master Class participant and member of the Branford Marsalis Quartet.

Terence Blanchard

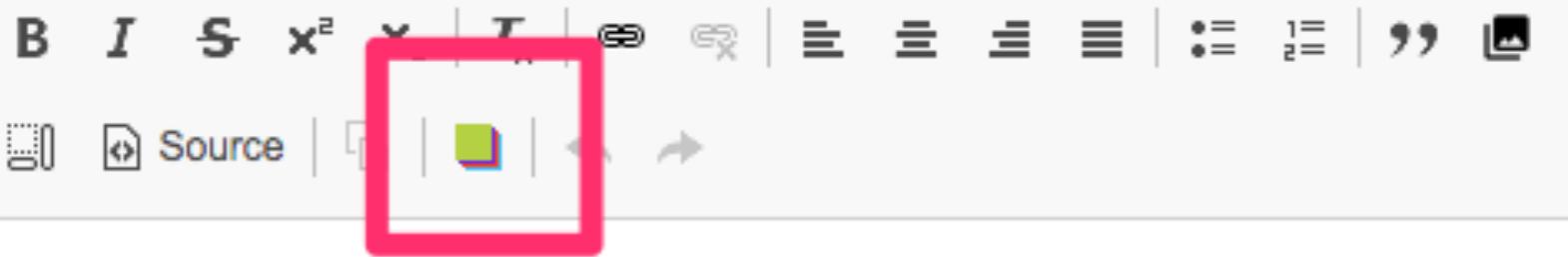
On April 15-17, 2013, the Mann presented a very special Master Class project with Grammy Award-winning musician and composer Terence Blanchard. Joining him in the project were two teaching artists, Marc Johnson and Lovett Hines, as well as 36 high school music students from the Girard Academic Music Program and Philadelphia High School for the Creative and Performing Arts. Additional students in the audience included young musicians from West Philadelphia High School as well as The Creative Arts Morgan Village Academy in Camden, NJ. The first two days of the residency included Master Classes held at the Philadelphia Clef Club of Jazz. Students in attendance had the opportunity to listen to Blanchard’s motivating words as well as receive hands-on tutoring from Blanchard himself. The second day concluded with a dinner celebrating Jazz Appreciation Month in honor of Mr. Blanchard at Chris’ Jazz Cafe. Ultimately, the three-day residency culminated with student performances and critiques on stage at the Girard Academic Music Program. Video footage was recorded of all three days and is currently being edited into a short documentary highlighting this spectacular Master Class. Special thanks to Ms. Saly Glassman for her incredible support on this special project.

Chris Botti

On July 18, 2012, the Mann welcomed world-renowned trumpeter Chris Botti to a Master Class at the Philadelphia Clef Club of Jazz and Performing Arts. Approximately 50 students of all ages from both the Clef Club’s summer camp and Creative Arts High School in Camden, NJ performed three compositions for Botti. After each performance, Botti gave detailed feedback on each song in hopes of educating and inspiring the students. Following those performances, Botti opened the floor for any questions the students had for him. Concluding the Meet-the-Artist session, Botti joined some of the very talented students on stage with his trumpet in hand for a group performance. Each student, along with Botti, demonstrated their talents by performing their own solos with various levels of improvisation with their mastered instrument. By the end of this enlightening Meet the Artist session, it was undeniable the impact Botti’s encouraging words had on the students and all that attended that day.

CKEDITOR PLUGINS (EX)

Content



The Master Class program features internationally acclaimed artists who facilitate multi-day, immersive classes with selected music, art, and dance high school students. This once-in-a-lifetime opportunity guides students through the fundamentals of dance, music, and theatre with professional artists. Master Classes are conducted during the formal school calendar year at selected performing arts venues and high schools.

Past Master Classes include Debbie Allen, Al Jarreau, Ladysmith Black Mambazo, Branford Marsalis, Terence Blanchard, and Chris Botti.

Edit Background Shape

Select the shape: Square

Select the position: Left

Select the color: Blue

OK Cancel

WYSIWYG

Content

Debbie Allen

Our 2017 Master Class program featured international...
four 90-minute, immersive Master Classes with a total...
Theory Charter School and the Philadelphia High Sch...
May 9th and 10th.

During the classes, the high school students had the opportunity to work directly with Allen as they learned...
choreography and technique while receiving valuable feedback. Allen's insights gave students an...
exclusive look into the world of professional dance to better prepare them for future careers in the...

body div

Text format Full HTML About text formats ?

Edit

Full Width Text Callout

Contact Us

BATCH PROCESSES

CUSTOM BATCH PROCESSES

What is a batch Process?

- » Functions allowing forms processing to be spread out over several page requests, thus ensuring that the processing does not get interrupted because of a PHP timeout, while allowing the user to receive feedback on the progress of the ongoing operations. - api.drupal.org

CUSTOM BATCH PROCESSES (EX)

- » Simple Migrations or content updates
- » Prebuild Image styles (or whatever assets) for something else (headless)
- » combine with cron jobs to run large tasks as needed

```
/**  
 * Fields Update Finished Callback function.  
 */  
public static function finishedCallback($success, $results, $operations) {  
    if ($success) {  
        $message = \Drupal::translation()->formatPlural(  
            count($results['titles']),  
            'One file processed.', '@count file processed.'  
        );  
  
        $message2 = \Drupal::translation()->formatPlural(  
            count($results['errors']),  
            'One file errored.', '@count files errored.'  
        );  
  
        drupal_set_message($message);  
        drupal_set_message($message2);  
  
        if (isset($results['errors'])) {  
            $element = [  
                '#theme' => 'item_list',  
                '#items' => $results['errors'],  
            ];  
  
            $full_messages = render($element);  
            drupal_set_message($full_messages, 'error');  
        }  
    }  
    else {  
        $message = t('Finished with an error.');  
        drupal_set_message($message, 'error');  
    }  
}
```

HONORABLE MENTIONS:

- » Build your own Blocks
- » Build your own Forms
- » Cron Jobs

CUSTOM CODE
VS.
CONTRIB MODULE

CUSTOM CODE VS. CONTRIB MODULE

- » Pros
 - » Simplify everything (code/config)
 - » Potentially reduce extraneous for content authors

CUSTOM CODE VS. CONTRIB MODULE

- » Cons
- » Updates/Maintenance
- » Do you really know enough to do it yourself?

CUSTOM CODE VS. CONTRIB MODULE (EX)

SAVE & EDIT MODULE

- » Creates a "Save & Edit" button on node pages
- » Provides a number of options to configure that
- » Overall great module 

CUSTOM CODE VS. CONTRIB MODULE (EX)

SAVE & EDIT MODULE

- » Adds 2 permissions
- » Adds 1 config file
- » 11 files to the module
- » Prob 20-30 lines or less of custom code

Links:

<https://www.drupal.org/docs/8/creating-custom-modules/adding-stylesheets-css-and-javascript-js-to-a-drupal-8-module>

<https://www.drupal.org/docs/8/api/services-and-dependency-injection/services-and-dependency-injection-in-drupal-8>

<https://api.drupal.org/api/drupal/core!core.api.php/group/extending/8.2.x>

<https://www.drupal.org/docs/8/creating-custom-modules>

<https://api.drupal.org/api/drupal/core%21includes%21form.inc/group/batch/8.2.x>

<https://www.drupal.org/docs/8/api/state-api/overview>

**THANKS!
QUESTIONS?**