



Drupal 8 Development Methodologies

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Build and Launch Tool (BLT)

- An Acquia-built tool for creating *new projects* from a **standardized template**
- A common set of tools for building, testing, validating, deploying, etc.
- A collection of **commands for automating** common project tasks
- A repository and enforcer of **best practices**



Where do I what now?



Agenda

- Overview of IDE / Drupal 8 / PHP Code
- Brief Intro to
 - Object Oriented PHP
 - Drupal 8 “Stuff”
- Examples for:
 - Routes
 - Blocks

Topics Covered

- Standard Development Tools
- Local Environment Configuration Using Acquia BLT + DrupalVM
- Debugging
- Code vs. Configuration
- Site Building vs. Custom Development
- Drupal 8 Hook System
- Plugin System
- Routes / Controllers
- Common Drupal 8 Classes

Code Samples

<https://github.com/mikemadison13/govcon2018php>

Quick and Dirty Intro



Take Away #1

<https://en.wikipedia.org/wiki/RTFM>



Evolution of Coding



Drupal 6/7

1. There's a hook for that
2. There's a quick function for that

Problems with This:

- How to customize a module / core?
- How to control order of operations?
- How to reuse code?

Evolution of Coding



Drupal 8

1. There's a class and method for that
2. (There might be a hook for that)

Problems with This:

- Naming / file placement REALLY matters
- Higher level of skill required
- More challenging to debug

Examples

```
45
46  /**
47   * Implements hook_form_FORM_ID_alter().
48   */
49  function dgc_deploy_form_ticket_register_form_alter(&$form, &$form_state) {
50    // Add honeypot to ticket register form.
51    honeypot_add_form_protection($form, $form_state, array('honeypot', 'time_restriction'));
52
53    // Force Submit button to bottom of form.
54    // $form['submit']['#weight'] = 1000;.
55  }
```

https://api.drupal.org/api/drupal/modules%21system%21system.api.php/function/hook_form_alter/7.x

Examples

```
22
23 /**
24  * Implements hook_form_FORM_ID_alter().
25  */
26 function capitalcamp_glue_form_webform_submission_registration_form_alter(array &$form, FormStateInterface $form_state) {
27     // Show 'Country' as first field.
28     $form['elements']['personal_information']['address']['#country__weight'] = -2;
29     // Show 'State' next, but conditionally.
30     $form['elements']['personal_information']['address']['#state_province__weight'] = -1;
31     $form['elements']['personal_information']['address']['#city__weight'] = 0;
32     $form['#attached']['library'][] = 'capitalcamp_glue/registration_form';
33     return $form;
34 }
```

https://api.drupal.org/api/drupal/core%21lib%21Drupal%21Core%21Form%21form.api.php/function/hook_form_alter/8.5.x

Evolution of Coding

OK...

Not so different.

- Typed Hinting of Variable(s)
- **NOT A DRUPAL THING**
- **NOT A SYMFONY THING**

<http://php.net/manual/en/functions.arguments.php#functions.arguments.type-declaration>



Take Away #2



Loading a Term

Drupal 7 - Load Taxonomy Term

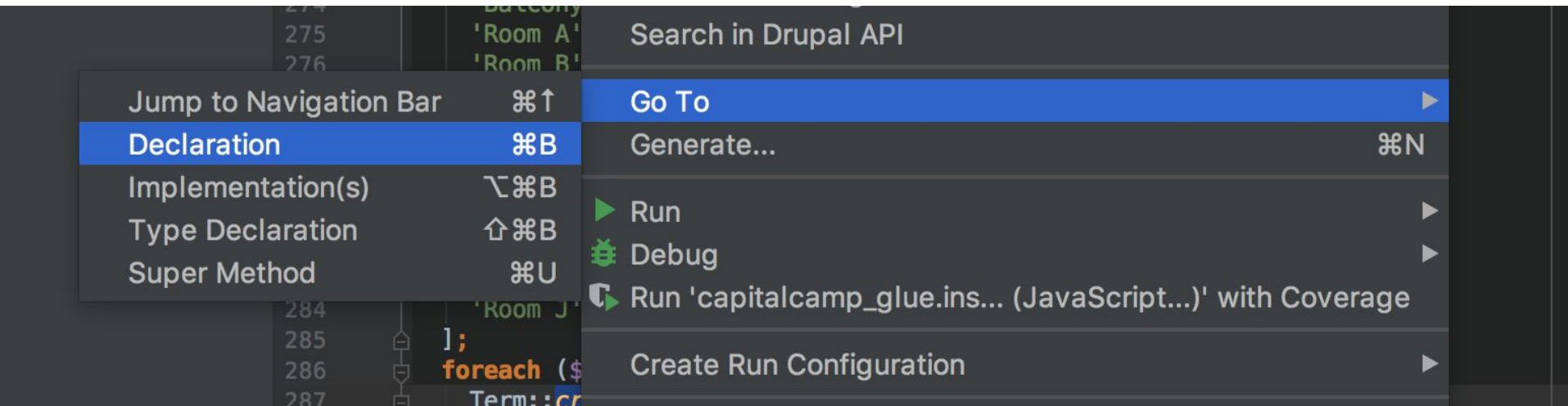
```
taxonomy_term_load($tid);
```

Drupal 8 - Load Taxonomy Term

```
use Drupal\taxonomy\Entity\Term;
```

```
Term::load($tid);
```


What's an Entity Load?

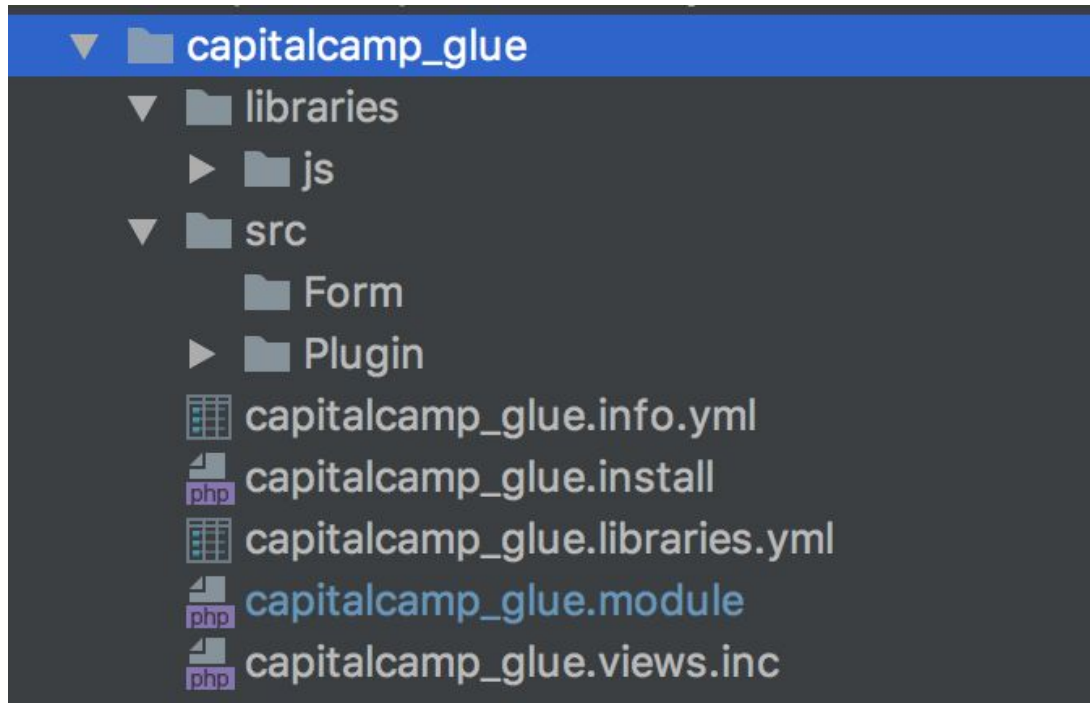


What's an Entity Load?

```
521 /**
522  * {@inheritdoc}
523  */
524 public static function load($id) {
525     $entity_type_repository = \Drupal::service('entity_type.repository');
526     $entity_type_manager = \Drupal::entityTypeManager();
527     $storage = $entity_type_manager->getStorage($entity_type_repository->getEntityTypeFromClass(get_called_class()));
528     return $storage->load($id);
529 }
```

docroot/core/lib/Drupal/Core/Entity/Entity.php

Where Do I Use an Entity Load?



.module files

- You can still use “many” traditional Drupal hooks
 - hook_form_alter
 - hook_entity_presave
 - hook_cron

.install files

- Install hooks
- Update hooks

Where Do I Use an Entity Load?

1. On forms
2. On entity actions
3. During a cron run
4. Turning on a module
5. Running a db update

How does code run in D8?

- Drush scripts
- Custom Fields
- Custom Entities
 - Nodes
 - Blocks
- Custom Pages / Forms
-

<https://symfony.com/doc/current/routing.html>

Take Away #3

- You **CANNOT** rely on a hook to do it all in D8



So where???

A few new things...

Classes



1. Exist in a particular namespace
2. Contain functions / methods
3. Define constants and variables
4. Can override / extend other classes

<http://php.net/manual/en/language.oop5.php>

<https://www.drupal.org/docs/develop/coding-standards/object-oriented-code>

Using Classes



Accessing methods on a class

```
521 /**
522  * {@inheritdoc}
523  */
524 public static function load($id) {
525     $entity_type_repository = \Drupal::service('entity_type.repository');
526     $entity_type_manager = \Drupal::entityTypeManager();
527     $storage = $entity_type_manager->getStorage($entity_type_repository->getEntityTypeFromClass(get_called_class()));
528     return $storage->load($id);
529 }
530
```

<http://php.net/manual/en/language.oop5.php>

<https://www.drupal.org/docs/develop/coding-standards/object-oriented-code>

Using Classes

Extending a class



<http://php.net/manual/en/language.oop5.php>

<https://www.drupal.org/docs/develop/coding-standards/object-oriented-code>

```
1  <?php
2
3  namespace Drupal\node;
4
5  use Drupal\Component\DateTime\TimeInterface;
6  use Drupal\Core\Entity\ContentEntityForm;
7  use Drupal\Core\Entity\EntityManagerInterface;
8  use Drupal\Core\Entity\EntityTypeBundleInfoInterface;
9  use Drupal\Core\Form\FormStateInterface;
10 use Drupal\Core\Session\AccountInterface;
11 use Drupal\Core\TempStore\PrivateTempStoreFactory;
12 use Symfony\Component\DependencyInjection\ContainerInterface;
13
14 /**
15  * Form handler for the node edit forms.
16  *
17  * @internal
18  */
19 class NodeForm extends ContentEntityForm {
20
```

docroot/core/modules/node/src/NodeForm.php

Using Classes



Instantiating a class

```
521 /**
522  * {@inheritdoc}
523  */
524 public static function load($id) {
525     $entity_type_repository = \Drupal::service('entity_type.repository');
526     $entity_type_manager = \Drupal::entityTypeManager();
527     $storage = $entity_type_manager->getStorage($entity_type_repository->getEntityTypeFromClass(get_called_class()));
528     return $storage->load($id);
529 }
530
```

docroot/core/lib/Drupal/Core/Entity/Entity.php

<http://php.net/manual/en/language.oop5.php>

<https://www.drupal.org/docs/develop/coding-standards/object-oriented-code>

Naming Conventions

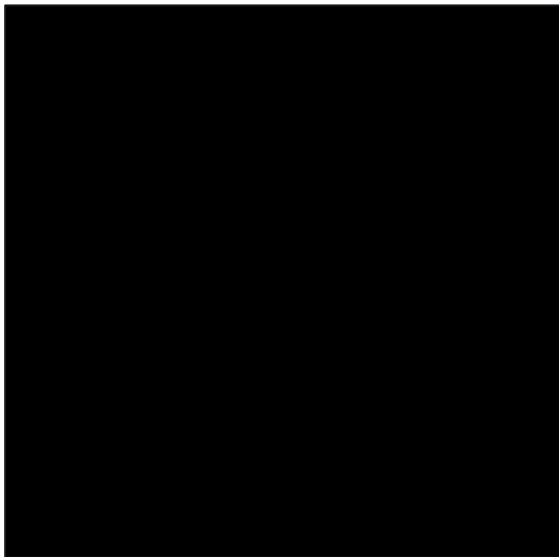
- YAML files
 - .info.yml
 - **.routing.yml**
 - .services.yml
 - .libraries.yml
- Folder names
 - src
 - Plugin
 - views



Symfony

Take Away #4

Some mistakes may not do... anything at all. Literally



Take Away #5

**Right Tool, Right Job, etc.
(Use an IDE. Use a Debugger.)**



Examples

Code Samples

<https://github.com/mikemadison13/govcon2018php>

Creating a Custom Page

Drupal 7

hook_menu defines the page, hook_PAGE_view generate the output

Drupal 8

Route / Controller used to define the page and generate the output

`docroot/core/modules/node/node.routing.yml`

EXAMPLE: Hello World

Goals:

1. Create a route that displays a message

EXAMPLE: Advanced Hello World

Goals:

1. Create a route that displays a message based on the current user's name

EXAMPLE: Custom block

Goals:

1. Create a block that can be placed and displayed throughout the site

EXAMPLE: Custom Block

Goals:

1. Use Configuration!
2. Display dynamically

Further Reading

1. Custom Drush Commands

<https://weitzman.github.io/blog/port-to-drush9>

2. Custom Views Fields

<https://www.webomelette.com/creating-custom-views-field-drupal-8>

3. Custom Entities

<https://events.drupal.org/baltimore2017/sessions/entities-201-creating-custom-entities>

Take Away #6

There is value in simplicity.



TOMORROW. CONFIG

Configuration Workflow in Drupal

- Managing different configuration for different environments (config split)
- Ignoring configuration entirely (config ignore)
- Basic configuration workflow (including git, CI, testing, etc.)
- Interaction with DevOps (using tools like Acquia BLT)
- Dependency interactions with other config, modules, and composer
- Working with configuration in code

Date / Time - Thu, 08/23/2018 - 3:00pm

Room - Room E1/E2

<https://www.drupalgovcon.org/2018/program/sessions/configuration-workflow-drupal-8>

Questions?