

# Custom Code the Drupal Way

Matt Mendonca

# About Me

- IT Specialist (i.e. Web Developer) at the **National Institute of Standards and Technology**
- Previously a Developer at **VOX Global (FleishmanHillard)** and **High Rock Studios**
- 4+ years professional experience with Drupal

# About You

- Comfortable with Drupal
- Comfortable with php

# Content

- What are modules
  - Why you should modularize your code
  - What makes up a module
- What is the hook system
  - How does that (magic) work
- Resources
- Questions

# Preflight Check List

1. Check drupal.org.
2. Have you checked drupal.org?
3. google it too.
4. <https://drupalgovcon2016.hackpad.com>

switch ('what you should use')

1. Drupal core
2. Contrib
3. Contrib with a patch
4. Fork contrib
5. Custom

# New Concepts in Drupal 8

- MVC (Symfony)
  - [https://symfony.com/doc/current/book/from\\_flat\\_php\\_to\\_symfony2.html](https://symfony.com/doc/current/book/from_flat_php_to_symfony2.html)
- PSR Standards (Autoloading)
- Composer / Packagist
  - Package management / Autoloader

# Modules Are

- Building blocks

# Modules Can Be

- Functionality
- Frameworks
- API's

# Why Modularize Your Code

- Code organization
  - Enable / disable code
  - Cleanly extend core and / or contributed modules
    - Prevents hacking other's code
    - Preserves upgrade path
    - **Doesn't Hack Core**
- Allows you to share your code
- Allows your code to be extendable

# Modules and Themes

- Modules make things *work*
- Themes make things *pretty*
- Modules allow you to keep logic out of your theme
  - separation of concerns
    - decoupling
      - synergy
        - unidirectional dataflow (just kidding)
        - flyweight pattern (real programmer stuff right here)...

# Module Dissected D7

- Folder designated by the machine name of the module (/sites/all/modules/dev/my\_module)\*
  - Info file designated by the machine name of the module (my\_module.info)
  - Module file designated by the machine name of the module (my\_module.module)

\* Drupal's module scanning is recursive; you can (and should) add folders within the module folder and it will find it. E.g. /sites/all/module/contrib | /sites/all/module/custom | etc.

# Module Dissected D8

- Folder designated by the machine name of the module (/modules/dev/my\_module)\*
  - Info YAML file designated by the machine name of the module (my\_module.info.yml)
  - Routing YAML file designated by the machine name of the module (my\_module.routing.yml)
  - Composer json file to list package dependencies (composer.json)
  - Module file designated by the machine name of the module (my\_module.module)
  - Controller files designated by [PSR4](#) naming convention (./src/Controller/UiPageController.php)

# Info File (D7 & D8)

- The .info file describes your module
- At a minimum describe name, description, package, type (D8), and core

# Info File: Name

- **Name** is the user friendly name of your module

```
name = "My Module"
```

# Info File: Description

- **Description** is the description of your module

```
description = "This my module."
```

# Info File: Package

- **Package** is the grouping of your module
- Groups modules together on the module admin page

```
package = "User Interface"
```

# Info File: Core

- **Core** is the major version of Drupal core that your module is designed for

```
core = 7.x
```

# Info File: Version

- **Version** describes which version your module is at
- By convention, version of Core followed by version of the module
- *Note: only fill this out when your module is not on Drupal.org*

```
version = 7.x-1.0
```

# Info File: Dependencies

- **Dependencies** is an array listing all the modules that your module requires
- You do not need to list the dependencies of your dependencies

```
D7
dependencies[] = views
dependencies[] = panels

D8
dependencies:
- rules
```

# Info File: Configure

- **Configure** specifies the url (D7) or route (D8) of the module's configuration page (if any)
- Adds a configure link on the module admin page

```
D7  
configure = admin/config/content/my-module  
  
D8  
configure: my_module.admin_page
```

# Info File: Type (D8)

- Indicates the type of the extension
- E.g. module, theme, profile

```
[  
  D8  
  type: module  
]
```

# Example D7 Info File

```
name = "Matt's Module"  
description = "This is Matt's module"  
core = 7.x  
package = "Matt"  
version = 7.x-1.x
```

# Example D8 Info File

```
name: "Matt's Module"  
description: "This is Matt's module"  
type: module  
core: 8.x  
package: "Matt"  
version: 1.0
```

# Module File

- The module file is the file that Drupal always loads for enabled modules - **always**
- Should contain your bootstrap code / hooks (as little as possible)
- When you can, store code in .inc files

Note: D8 still uses module files for hooks, however, hooks are not used as much (routing, etc.).

# (Captain) Hook

- The hooks system provides access points to Drupal's response cycle
- Used by Modules and Themes (preprocessing)
- Like a roll call

# How? (D7)

- At certain points (an established hook) in Drupal's response cycle, Drupal (and module's with hooks) will run all functions that access that hook
- Further reading: <https://github.com/matt-mendonca/hooks-explained>

# Modules with no hooks

- Use Case: loading a php library for use by other modules
  - Remember that Drupal will always load the contents of .module file into memory (global scope)

# Resources

- [Google](#)
- [Drupal.org module development guide](#)
  - [D7 module tutorial](#)
  - [D8 module tutorial](#)
- [Drupal.org best practices](#)
- [Drupal API reference](#)
- [Drupal Answers \(Stack Exchange\)](#)
- [Stack Overflow \(questions tagged Drupal\)](#)

# Helper Functions

- dpm (devel print message)
  - can be used to pretty print objects / arrays
  - <https://api.drupal.org/api/devel/devel.module/function/dpm/7.x-1.x>
- print\_r
  - core php, useful when running things through the command line
  - <https://secure.php.net/manual/en/function.print-r.php>

Questions?

[https://github.com/matt-mendonca/example-d7-  
module](https://github.com/matt-mendonca/example-d7-module)

<https://github.com/matt-mendonca/Example-D8-Module>

<https://www.drupal.org/sandbox/mattm01/2487604>