

THE FLEXIBILITY OF DRUPAL 8



MIKE MILES

Genuine (wearegenuine.com)

Dev(up); podcast (developingup.com)

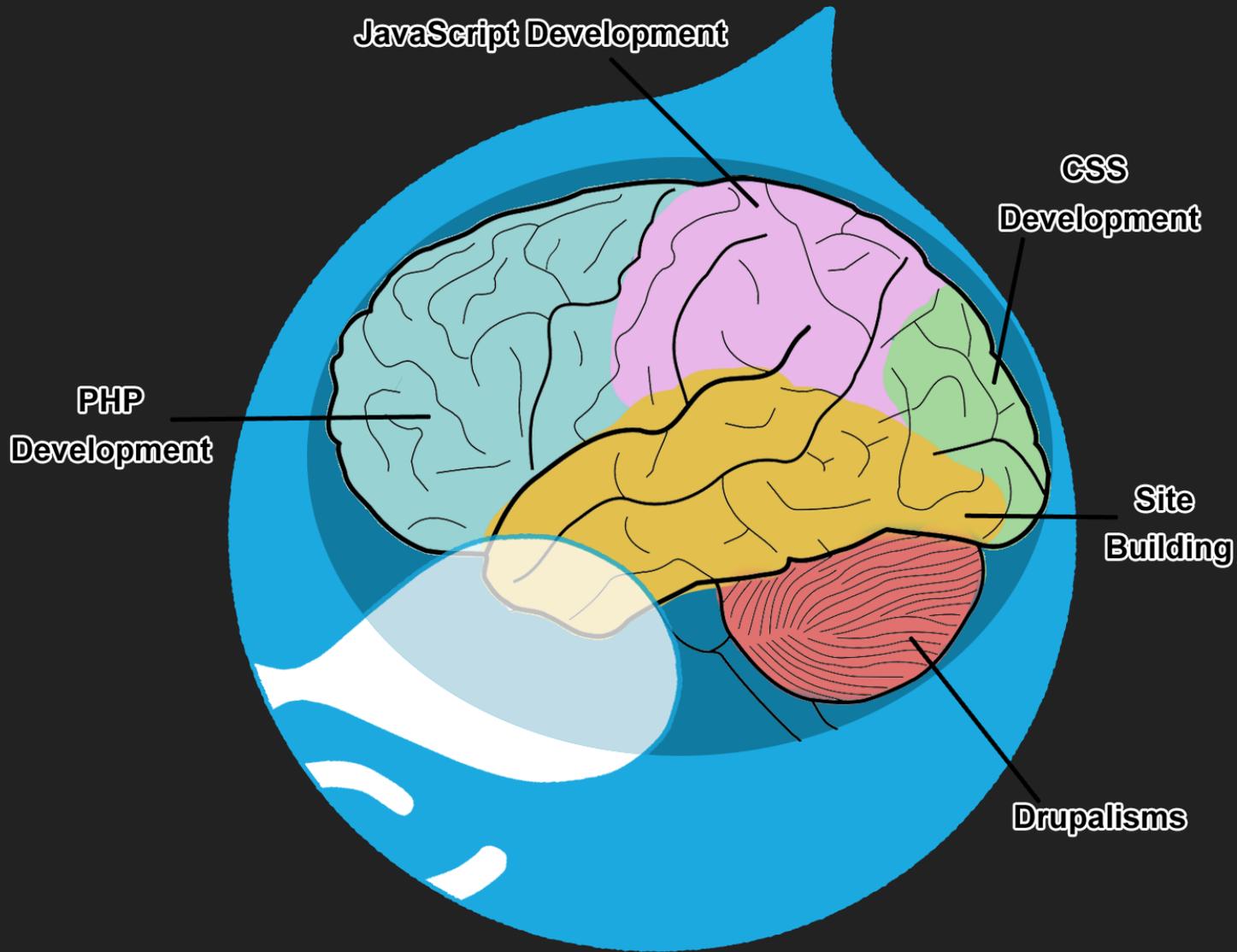
All the internet places: [mikemiles86](#)

A white robotic arm is shown in a factory environment, positioned over a large, light-colored cylindrical object. The arm is part of a complex industrial machine with various metal components and pipes. The background is slightly blurred, showing other parts of the factory and some lighting fixtures. A black horizontal banner is overlaid across the center of the image, containing the word 'FLEXIBILITY' in white, bold, uppercase letters.

FLEXIBILITY

WHAT MAKES DRUPAL FLEXIBLE

- Modular design
- Decoupled systems
- Open Source nature



bit.ly/DrupalBrain

The brain of a Drupalist is split into many skillsets, which can all be leveraged.

WHY FLEXIBILITY IS IMPORTANT

- Make Drupal do what you want
- No "right way", just a "right for me" way
- Adjust for skillsets, time and budget

ALONG COMES THE CLIENT...

"Could you change the menu things on the homepage?"

FOCUS OF THIS SESSION

- To prove the flexibility of Drupal
- To demonstrate abilities of all skillsets
- To discuss considerations and limitations

OPEN CLOSED BYPASS

GAS VALVE

VALVE OPEN

VALVE CLOSED

PUMP BYPASS

#1 DRUPAL CORE

LOW SULFUR VALVE

VALVE OPEN

VALVE CLOSED

PUMP BYPASS

← Back to site Manage ★ Shortcuts admin

Content Structure Appearance Extend Configuration People Reports Help

Home » Administration » Structure » Menus

Menu link title *

Core Alt.

The text to be used for this link in the menu.

Link *

Core (1)

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.

Enabled

A flag for whether the link should be enabled in menus or hidden.

Description

Shown when hovering over the menu link.

Show as expanded

If selected and this menu link has children, the menu will always appear expanded.

Parent link

<Main navigation>

The maximum depth for a link and all its children is fixed. Some menu links may not be available as parents if selecting them would exceed this limit.

Weight

-49

Use Drupal core to edit a main menu link. Limited to changing the title and the destination.

#2 MODULES



Menu Link Attributes

[View](#) [Version control](#) [Automated Testing](#)

Posted by [yannickoo](#) on *October 2, 2015 at 9:14am*

This module allows you to add attributes to your menu links.

Let's see whether we can merge this module into [Menu Attributes](#) - [#2174435: Port Menu attributes to Drupal 8](#)

You can create [issues](#) and [pull requests](#) on [Github](#).

Project Information

Maintenance status: [Actively maintained](#)

Development status: [Under active development](#)

Module categories: [Content Display](#) , [Utility](#)

Reported installs: **730** sites currently report using this module. [View usage statistics](#).

Downloads: 2,189

Last modified: October 20, 2015

Downloads

Recommended releases

| Version | Download | Date |
|-------------------------------|--|-------------|
| 8.x-1.0-beta1 | tar.gz (10.17 KB) zip (13.18 KB) | 2015-Oct-17 |

Development releases

| Version | Download | Date |
|-----------------------------|--|-------------|
| 8.x-1.x-dev | tar.gz (10.26 KB) zip (13.26 KB) | 2016-Feb-23 |

[View all releases](#)

Maintainers for Menu Link Attributes

[yannickoo](#) - 16 commits

last: 8 months ago, first: 9 months ago

[View all committers](#)

[View commits](#)

Resources

[Home page](#)

[Read documentation](#)

[Read license](#)

[Read complete log of changes](#)

[Try out a demonstration](#)

[View project translations](#)

Development

[View pending patches](#)

[Browse code repository](#)

[View commits](#)

[Report a security vulnerability](#)

[View change records](#)

Back to site Manage Shortcuts admin

Content Structure Appearance **Extend** Configuration People Reports Help

Extend

List Update Uninstall

Home » Administration

Download additional [contributed modules](#) to extend your site's functionality.

Regularly review and install [available updates](#) to maintain a secure and current site. Always run the [update script](#) each time a module is updated.

[+ Install new module](#)

Enter a part of the module name or description

▼ CORE

- RDF** ▶ Enriches your content with metadata to let other applications (e.g. search engines, aggregators) better understand its relationships and attributes.

▼ OTHER

- Menu Link Attributes** ▶ Allows you to add attributes to menu links.

[Install](#)

Many ways to download and enable modules. Will use the core interface to enable the Menu Links Attributes module after downloading.

Modules (2)

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.

Enabled

A flag for whether the link should be enabled in menus or hidden.

Description

Shown when hovering over the menu link.

Show as expanded

If selected and this menu link has children, the menu will always appear expanded.

▼ ATTRIBUTES

Manage available attributes [here](#).

Class

Enter value for `class` attribute.

Target

Enter value for `target` attribute.

Parent link

The maximum depth for a link and all its children is fixed. Some menu links may not be available as parents if selecting them would exceed this limit.

When editing a menu link, now have more attributes available to set.

Back to site Manage Shortcuts admin

Content Structure Appearance Extend Configuration People Reports Help

Menu link attributes

List Available attributes

Home » Administration » Configuration

 It is recommended to install the [YAML Editor](#) module for easier editing.

Configuration

```
attributes:
  class:
    label: ""
    description: ""
  target:
    label: ""
    description: ""
  options:
    _blank: 'New window (_blank)'
    _self: 'Same window (_self)'
  _core:
    default_config_hash: 9nRDOclwSlz2Os9mJXM1LXNbV2q-bADV0zipiWPXymk
```

Available attributes can be defined in YAML syntax.

▶ EXAMPLE STRUCTURE

Menu Links Attributes module requires some technical (YAML) knowledge to customize

```
1 attributes:
2   class:
3     label: ''
4     description: ''
5   target:
6     label: ''
7     description: ''
8     options:
9       _blank: 'New window (_blank)'
10      _self: 'Same window (_self)'
11  style:
12    label: ''
13    description: ''
14  _core:
15    default_config_hash: 9nRDOclwSlz2Os9mJXM1LXNbV2q-bADV0zipiWPXymk
```

Add a new configurable 'style' attribute (lines 11-13) to the YAML

Back to site Manage Shortcuts admin

Content Structure Appearance Extend Configuration People Reports Help

Description

Shown when hovering over the menu link.

Show as expanded
If selected and this menu link has children, the menu will always appear expanded.

▼ ATTRIBUTES

Manage available attributes [here](#).

Class

Enter value for `class` attribute.

Target

- Select -
Enter value for `target` attribute.

Style

background:black;color:yellow
Enter value for `style` attribute.

Parent link

<Main navigation>

The maximum depth for a link and all its children is fixed. Some menu links may not be available as parents if selecting them would exceed this limit.

Weight

-48

Link weight among links in the same menu at the same depth. In the menu, the links with high weight will sink and links with a low weight will be positioned nearer

After saving configuration, now able to add inline style to menu links



#3 TWIG TEMPLATES



Flexibility

Home

Core Alt.

Modules Alt

Twig

CSS

Javascript

Hooks

Services

Combo

Elements Console Sources Network Timeline Profiles Resources Security Audits

```

▼ <div class="content">
  <div class="menu-toggle-target menu-toggle-target-show" id="show-block-bartik-main-menu"></div>
  <div class="menu-toggle-target" id="hide-block-bartik-main-menu"></div>
  <a class="menu-toggle" href="#show-block-bartik-main-menu">Show - Main navigation</a>
  <a class="menu-toggle menu-toggle--hide" href="#hide-block-bartik-main-menu">Hide - Main navigation</a>
  <!-- THEME DEBUG -->
  <!-- THEME HOOK: 'menu__main' -->
  <!-- FILE NAME SUGGESTIONS:
    * menu--main.html.twig
    x menu.html.twig
  -->
  <!-- BEGIN OUTPUT from 'core/themes/classy/templates/navigation/menu.html.twig' -->
  ▼ <ul class="clearfix menu">
    ▶ <li class="menu-item">...</li>
    ▶ <li class="menu-item">...</li>
    ▶ <li class="menu-item">...</li>
    ▼ <li class="menu-item">
      ...
      <a href="/node/3" data-drupal-link-system-path="node/3">Twig</a> == $0
      </li>
    ▶ <li class="menu-item">...</li>
    ▶ <li class="menu-item">...</li>
    ▶ <li class="menu-item">...</li>
    ▶ <li class="menu-item">...</li>
  </ul>

```

html body #page-wrapper #page #header div div nav#block-bartik-main-menu.block.block-menu.navigation.menu--main div.content ul.clearfix.menu li.menu-item a

Console

Can use Twig debug to learn which template the main menu uses.

```
1 <!-- THEME DEBUG -->
2 <!-- THEME HOOK: 'menu__main' -->
3 <!-- FILE NAME SUGGESTIONS:
4     * menu--main.html.twig
5     x menu.html.twig
6 -->
7 <!-- BEGIN OUTPUT from 'core/themes/classy/templates/navigation/menu.html.twig'
8 <ul class="clearfix menu">
9 <!-- // ... -->
10 <li class="menu-item">
11     <a href="/node/3" data-drupal-link-system-path="node/3">Twig</a>
12 </li>
13 <!-- // ... -->
14 </ul>
15 <!-- END OUTPUT from 'core/themes/classy/templates/navigation/menu.html.twig'
```

Twig debug tells the available template names to override current template.

| Name | Kind |
|--|------------|
|  autoload.php | PHP |
| ▶  core | Folder |
|  index.php | PHP |
| ▶  modules | Folder |
| ▶  profiles | Folder |
|  robots.txt | Plain Text |
| ▶  sites | Folder |
| ▼  themes | Folder |
| ▼  flex_theme | Folder |
|  flex_theme.info.yml | YAML |
|  logo.svg | SVG Image |
| ▼  templates | Folder |
|  menu--main.html.twig | Document |
|  ... | PHP |
|  web.config | Document |

Create a custom theme (flex_theme), to override the menu--main.html.twig template.

```
1 {# ... #}
2 {% if items %}
3     {# ... #}
4     {% for item in items %}
5         {# ... #}
6         <li>{{ item.attributes.addClass(classes) }}>
7             {% if item.title == 'Twig' %}
8                 {% set style = 'background:#0F0;color:#F00' %}
9                 {{ link(item.title ~ ' Alt', item.url, { 'style': style }) }}
10            {% else %}
11                {{ link(item.title, item.url) }}
12            {% endif %}
13            {# ... #}
14        </li>
15    {% endfor %}
16 </ul>
17 {% endif %}
```

flex_theme/templates/menu--main.html.twig

Add logic to twig template (lines 7-12) to check title of current link and alter the styling.



#4 CSS

| | | | |
|---|----------|--------------------------|----------------|
| ▶ | folder | profiles | Folder |
| | document | robots.txt | Plain Text |
| ▶ | folder | sites | Folder |
| ▼ | folder | themes | Folder |
| ▼ | folder | flex theme | Folder |
| ▼ | folder | css | Folder |
| | document | menu_alter.css | Casca...cument |
| | document | flex_theme.info.yml | YAML |
| | document | flex_theme.libraries.yml | YAML |
| | image | logo.svg | SVG Image |
| ▼ | folder | templates | Folder |
| | document | menu--main.html.twig | Document |
| | document | update.php | PHP |
| | document | web.config | Document |

Will add some custom styling to existing custom theme (flex_theme)

```
1 .menu--main .menu li:nth-child(5) a {  
2     background: #0000FF;  
3     color: #FFF;  
4 }
```

themes/flex_theme/css/menu_alter.css

Use custom CSS to target the 5th item in the main menu

```
1 menu-alter:
2   version: VERSION
3   css:
4     component:
5       css/menu_alter.css: {}
```

themes/flex_theme/flex_theme.libraries.yml

*Custom CSS and JavaScript need to be added to a custom library. Custom libraries are defined in a *.libraries.yml file.*

```
1 name: Flex Theme
2 type: theme
3 description: An theme to demo the flexibility of Drupal 8.
4 package: Core
5 version: VERSION
6 core: 8.x
7 base theme: bartik
8 libraries:
9   - flex_theme/menu-alter
```

themes/flex_theme/flex_theme.info.yml

*Add custom library as a dependency of the theme in the *.info.yml file. Drupal will include this library on any page where this theme is used.*

#5 JAVASCRIPT

25

15.15.0104

02 - "Captain Drupal"

Dries Buytaert

26.9.08

| | | | |
|---|--------|--------------------------|----------------|
| ▶ | folder | sites | Folder |
| ▼ | folder | themes | Folder |
| ▼ | folder | flex_theme | Folder |
| ▼ | folder | css | Folder |
| | | menu_alter_main.css | Casca...cument |
| | | menu_alter.css | Casca...cument |
| | | flex_theme.info.yml | YAML |
| | | flex_theme.libraries.yml | YAML |
| ▼ | folder | js | Folder |
| | | menu_alter_main.js | JavaSc...ument |
| | | logo.svg | SVG Image |
| ▼ | folder | templates | Folder |
| | | menu--main.html.twig | Document |
| | | update.php | PHP |
| | | web.config | Document |

Will add new JavaScript and CSS to custom theme to alter data using custom JavaScript.

```
1 (function ($, Drupal) {
2   "use strict";
3   Drupal.behaviors.flexThemeMenuAlterMain = {
4     attach: function (context) {
5       $('.menu--main ul.menu li a').each(function(){
6         if ($(this).attr('href') == '/node/5') {
7           $(this).addClass('yellow-menu');
8           $(this).attr('style', 'color: #000;');
9           $(this).attr('target', '_blank');
10          $(this).text($(this).text() + Drupal.t(' Alt'));
11        }
12      });
13    }
14  }
15 })(jQuery, Drupal);
```

themes/flex_theme/js/menu_alter_main.js

Write a Drupal Behaviour that will trigger whenever the DOM loads. Target a specific menu item to change value and add a custom class.

```
1 .yellow-menu {  
2     background: #FFFF00;  
3 }
```

themes/flex_theme/css/menu_alter_main.css

Add some basic CSS for to a custom class name.

```
1 menu-alter:
2   version: VERSION
3   css:
4     component:
5       css/menu_alter.css: {}
6 menu-alter-main:
7   version: VERSION
8   css:
9     component:
10      css/menu_alter_main.css: {}
11   js:
12     js/menu_alter_main.js: {}
13   dependencies:
14     - core/jquery
15     - core/jquery.once
16     - core/drupal
```

`themes/flex_theme/flex_theme.libraries.yml`

Add a second library to libraries.yml file. A Library can define both CSS and JS files to include, as well as, any dependencies on other libraries.

```
1 {{ attach_library('flex_theme/menu-alter-main') }}
2 {# ... #}
3 {% if items %}
4     {# ... #}
5     {% for item in items %}
6         {# ... #}
7         <li>{{ item.attributes.addClass(classes) }}>
8             {% if item.title == 'Twig' %}
9                 {% set style = 'background:#0F0;color:#F00' %}
10                {{ link(item.title ~ ' Alt', item.url, { 'style': style }) }}
11            {% else %}
12                {{ link(item.title, item.url) }}
13            {% endif %}
14        {# ... #}
```

themes/flex_theme/templates/menu--main.html.twig

Libraries can be attached from within a template files, by using the twig function 'attach_library'. Attaching new library only when the template menu--main.html.twig is included on page.



#6 HOOKS



Flexibility

Home

Core Alt.

Modules Alt

Twig Alt

CSS

Javascript Alt

Hooks

Services

Combo

Elements Console Sources Network Timeline Profiles Resources Security Audits

```

<a class="menu-toggle" href="#show-block-flex-theme-main-menu">Show - Main navigation</a>
<a class="menu-toggle menu-toggle--hide" href="#hide-block-flex-theme-main-menu">Hide - Main navigation</a>
<!-- THEME DEBUG -->
<!-- THEME HOOK: 'menu__main' -->
<!-- FILE NAME SUGGESTIONS:
  x menu--main.html.twig
  x menu--main.html.twig
  * menu.html.twig
-->
<!-- BEGIN OUTPUT from 'themes/flex_theme/templates/menu--main.html.twig' -->
<ul class="clearfix menu">
  <li class="menu-item">...</li>
  <li class="menu-item">...</li>
  <li class="menu-item">...</li>
  <li class="menu-item">...</li>
  <li class="menu-item">...</li>
  <li class="menu-item">...</li>
  <li class="menu-item">
    <a href="/node/6" data-drupal-link-system-path="node/6">Hooks</a> == $0
  </li>
  <li class="menu-item">...</li>
  <li class="menu-item">...</li>
  ::after
</ul>

```

html body #page-wrapper #page #header div div nav#block-flex-theme-main-menu.block.block-menu.navigation.menu--main div.content ul.clearfix.menu li.menu-item a

Console

Can use Twig debug to learn naming convention for hooks

```
1 <!-- THEME DEBUG -->
2 <!-- THEME HOOK: 'menu__main' -->
3 <!-- FILE NAME SUGGESTIONS:
4     X menu--main.html.twig
5     X menu--main.html.twig
6     * menu.html.twig
7 -->
8 <!-- BEGIN OUTPUT from 'themes/flex_theme/templates/menu--main.html.twig' -->
9 <ul class="clearfix menu">
10 <!-- // ... -->
11 </ul>
12 <!-- END OUTPUT from 'themes/flex_theme/templates/menu--main.html.twig'
```

Twig debug information informs that theme hooks should contain 'menu__main' (line 2)

| Name | Kind |
|----------------------|----------------|
| autoload.php | PHP |
| ▶ core | Folder |
| index.php | PHP |
| ▼ modules | Folder |
| ▶ contrib | Folder |
| ▼ custom | Folder |
| ▶ ajax_blog | Folder |
| ▼ flex_module | Folder |
| flex_module.info.yml | YAML |
| flex_module.module | Subli...cument |
| ▶ profiles | Folder |
| robots.txt | Plain Text |
| ▶ sites | Folder |
| ▶ themes | Folder |
| update.php | PHP |
| web.config | Document |

Will create a custom module (flex_module) to implement hooks.

```

1 // Implements hook_preprocess_HOOK().
2 function flex_module_preprocess_menu__main(&$variables) {
3   // Loop through all menu tabs.
4   foreach ($variables['items'] as &$menu_tab) {
5     // Current tab pointing to node/6 ?
6     if ($menu_tab['url']->toString() == '/node/6') {
7       // Alter Title
8       $menu_tab['title'] .= ' Alt';
9       // Existing attributes?
10      $attributes = $menu_tab['url']->getOption('attributes');
11      // Add custom styling.
12      $attributes['style'] .= 'color:#FFF;background:#F00;';
13      // Add back modified attributes.
14      $menu_tab['url']->setOption('attributes', $attributes);
15    }
16  }
17 }

```

module/custom/flex_module/flex_module.module

Implement a preprocess hook targeted at the main menu. Loop through all the menu items and alter any that point to node/6

The image shows a screenshot of a Drupal administration interface. At the top, there is a navigation bar with 'Back to site', 'Manage', 'Shortcuts', and 'admin'. Below this, the 'Extend' section is visible, with a 'List' tab selected. A terminal window is overlaid on the page, showing the following text:

```
bosgen-nmx0608:web mike.miles$ drush en flex_module
The following extensions will be enabled: flex_module
Do you really want to continue? (y/n): y
flex_module was enabled successfully. [ok]
bosgen-nmx0608:web mike.miles$
```

The background page includes a warning message: 'There are updates available for one or more of your modules or themes. To ensure the proper functioning of your site, you should update as soon as possible. See the available updates page for more information and to install your missing updates.' Below this, there is a section for 'Download additional contributed modules to extend your site's functionality.' and a '+ Install new module' button. A search filter is also present: 'Filter by name or description' with the input 'Enter a part of the module name or description'. Under the 'CORE' section, 'Actions' and 'Activity Tracker' are listed with their descriptions.

Can enable modules from command line using Drush.

An aerial photograph of a parking lot with a grid of yellow lines. The lot is decorated with numerous red balloons, some of which are tied to the metal poles of a structure. A semi-transparent black rectangular box is centered over the image, containing the text "#7 SERVICES" in white, bold, sans-serif font.

#7 SERVICES

| | | |
|---|-------------------------------|----------------|
| ▼ | modules | Folder |
| ▶ | contrib | Folder |
| ▼ | custom | Folder |
| ▶ | ajax_dblog | Folder |
| ▼ | flex_module | Folder |
| | flex_module.info.yml | YAML |
| | flex_module.module | Subli...cument |
| ▼ | src | Folder |
| | FlexModuleMenuLinkTree.php | PHP |
| | FlexModuleServiceProvider.php | PHP |
| ▶ | promises | Folder |
| | robots.txt | Plain Text |
| ▶ | sites | Folder |
| ▶ | themes | Folder |

Using a custom service requires some PHP classes within a custom module.

```
1 namespace Drupal\flex_module;
2
3 use Drupal\Core\DependencyInjection\ServiceProviderBase;
4 use Drupal\Core\DependencyInjection\ContainerBuilder;
5
6 class FlexModuleServiceProvider extends ServiceProviderBase {
7     /**
8      * {@inheritdoc}
9      */
10    public function alter(ContainerBuilder $container) {
11        // Override menu_link_tree class with custom.
12        $definition = $container->getDefinition('menu.link_tree');
13        $definition->setClass('Drupal\flex_module\FlexModuleMenuLinkTree');
14    }
15 }
```

modules/custom/flex_module/src/FlexModuleServiceProvider.php

*Need to create a `*ServiceProvider` class that extends the `ServiceProviderBase` class (line 6). Will override the 'alter' method (lines 10 -14), and change the PHP class uses for the menu Tree service (lines 12 - 13)*

```

1 namespace Drupal\flex_module;
2 use Drupal\Core\Menu\MenuLinkTree;
3
4 class FlexModuleMenuLinkTree extends MenuLinkTree {
5     // Overrides \Drupal\Core\Menu\MenuLinkTree::build().
6     public function build(array $tree) {
7         $build = parent::build($tree);
8         if (isset($build['#items']) && $build['#theme'] == 'menu__main') {
9             $n = 0;
10            foreach ($build['#items'] as &$item ) {
11                if (++$n == 8) {
12                    // Change Title, path and add styling.
13                    $item['title'] .= ' Alt';
14                    $item['url']->setOption('attributes', array(
15                        'style' => 'color:#00F;background:#FFA500;',
16                    ));
17                }
18            }
19        }
20        return $build;

```

modules/custom/flex_module/src/FlexModuleMenuLinkTree.php

Create a new service class that extends the core MenuLinkTree service (line 4). Will override the core 'build' method, so that can use custom logic to target the 8th main menu item.

ALONG COMES THE CLIENT...

"Could you change the menu things on the homepage?"

"Could you make Drupal (8) do X, Y and Z?"

YES. YES I CAN.

...but I need more details

WHAT DID WE LEARN?

- Drupal can do "that"
- No "right way", just "right for me way"

RESOURCES

bit.ly/DCN17Flex

This presentation

bit.ly/DCN17FlexSlides

Annotated Slides

bit.ly/DCN17FlexCode

Demo code (theme and module)

bit.ly/DrupalBrain

Drupal Brain Diagram

developingup.com

My podcast

FEEDBACK

@MIKEMILES86

THANK YOU!