



# CTools plugins and You

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# Agenda

- CTools intro & concepts
- Our example site
- Demo each plugin type
- Questions



# CTools Intro & Concepts



# What is CTools

- merlinofchaos
- A Drupal Swiss Army Knife
- Integrates with Panels ecosystem
- CTools contexts at the heart of Panels (not to be confused with Context module)



# CTools and Drupal 8

- More plugin, less hook
- Block and layouts initiative (“SCOTCH”): page layout reworked, and includes context
- Much of CTools going into core
- Same concepts, different implementation
- Possible to write D7 plugins in D8 oo style now



# CTools plugins

- Extend the panels ecosystem
- Custom, swappable pieces of content, and the glue that holds them together
- Modular and small!





# CTools plugins

- Examples included w/ module
- Documentation is sparse!
- Gotcha: cache clearing



# Our Example Site



# Cars!

- Site:  
<http://pnwds.dev.forumone.com/>
- Repo:  
<https://github.com/forumone/ctools-session>
- Core + minimal contrib + one custom module with plugins



# Cars!

- Car content type with fields:
  - Type - taxonomy term (luxury, etc)
  - Available - boolean
- Drivers are users with fields:
  - Age
  - Favorite car - entityreference



# Cars!

- Cars list:  
<http://pnwds.dev.forumone.com/cars>
- Drivers list:  
<http://pnwds.dev.forumone.com/drivers>
- Car detail:  
<http://pnwds.dev.forumone.com/car/ferrari>
- Driver detail:  
<http://pnwds.dev.forumone.com/driver/alice>



# Plugin scaffolding

- `hook_ctools_plugin_directory`
- Plugin array
- Main callback function
- Edit & submit settings functions (optional)
- Summary function (optional)



# Context Plugin



# Context plugin

**Provide custom data to other elements on the page**





# Context plugin

- Created from an identifier
  - e.g URL argument
  - a setting from the context form
  - something else... e.g. global or session variable
- Convert list
  - Provides keywords to Page Manager
  - Can provide arguments to Views contextual filters
- Variant >> Contexts



# Cars! Context plugins

- `plugins/contexts/driver_context.inc`
- Driver username arg -> driver user object context
- <http://pnwds.dev.forumone.com/driver/carl>



# Argument Plugin



# Argument plugin

**Get a value from the URL, and  
use it to create a context**



# Argument plugin

- Settings >> Basic - Add argument to page path (%required or !optional)
- Settings >> Arguments - Assign context to argument



# Cars! Argument plugin

- `plugins/arguments/driver_argument.inc`
- Driver username arg -> driver user object context



# Relationship Plugin



# Relationship plugin

**Given one context, derive  
another**





# Relationship plugin

- In plugin array, require first context from which we're deriving the second
- Variant >> Contexts



# Cars! Relationship plugin

- `plugins/relationships/favorite_car_relationship.inc`
- Given a driver, provide the driver's favorite car (via entity reference from driver to car)
- <http://pnwds.dev.forumone.com/driver/alice/>



# Access Plugin



# Access plugin

**Determine page, variant or pane  
visibility based on your own  
custom logic**



# Access plugin

- Return TRUE or FALSE
- Settings >> Access (entire page)
- Variant >> Selection rules (variant)
- Variant >> Content >> pane >> visibility rules (pane)



# Cars! Access plugin

- Given a driver, is he/she old enough to rent a sports car?
- Configure min age in settings form
- Should we display content indicating that we're viewing the driver's favorite car?
- <http://pnwds.dev.forumone.com/car/ferrari/alice>



# Content Type Plugin



# Content type plugin

**Finally, add your own thing to the page!**





# Content Type plugins

- Renders content
- 'required context'
  - can have multiple contexts in an array
  - ctools\_context\_required vs ctools\_context\_optional



# Cars! Content Type plugins

- Render markup based on context(s)
- Can be static, a form, dynamic links, a View, anything
- <http://pnwds.dev.forumone.com/car/ferrari/>



# Resources



# Resources

- ctools/ctools\_plugin\_example/plugins
- Cars! Site:  
<http://pnwds.dev.forumone.com/>
- Cars! Repo:  
<https://github.com/forumone/ctools-session>
- Kris Vanderwater (EclipseGc) at BADCamp: <https://2015.badcamp.net/session/drupal-8-page-management>
- Plugin API in D8: <https://www.drupal.org/developing/api/8/plugins>





# Thanks, y'all

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