

# Drupal's CCK, Views and Panels

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# Agenda



- Introduction
- Definitions
- Content Construction Kit
- Views
- Panels
- Questions, discussion





# About Khalid



- 25 years in software development and consulting
- 1984 Sinclair ZX Spectrum, 1985: Mainframe (development, DBA), 1987: UNIX
- Linux “discovered” 1990, using it regularly since 1995, “LAMP” since 1999





# Khalid and Drupal



- Drupal since 2003, (develop, contributor, consult)
- Some core contributions (hook\_watchdog, site maintenance mode)
- 37+ modules on Drupal.org
- Member of the General Assembly of the Drupal Association
- Security team, webmasters team
- Co-founder of the Waterloo Region DUG
- Modules run on the Whitehouse web site (nagios, devel)!





# About 2bits.com, Inc.



- Founded 1999, incorporated since 2007
- Based in Waterloo, Ontario (Canada)
- Active member of the Drupal community since 2003
- Many contributed modules on drupal.org
- Listed on Drupal.org's service providers section







# 2bits.com Services



- Clients worldwide (USA, Canada, as well as Europe, China, Argentina, Australia, ...)
- Development & customization of modules
- Performance tuning & optimization
  - From 400,000 to 2.8 million pv/day
  - Hosting management for large sites
- Installation, upgrades





# Definitions



- Node
  - The building block of Drupal's core.
  - A “content item”
  - Instance of a content type
- Content Types
  - Types of nodes (e.g. “page”, “article”)
  - Each with different workflow, categories
  - In Drupal core since 6.x





# Definitions (cont'd)



- Category (Taxonomy)
  - Each can have terms
  - Each content type can belong to one or more taxonomy
- Block
  - A chunk of content that is less than an a page
  - Used in sidebars and elsewhere







# Modules for Demo



- CCK
  - content, fieldgroup, number, text, options widget
- Chaos Tools
  - ctools, page\_manager, views\_content
- Views 6.x-2.x
  - views, views\_ui
- Panels 6.x-3.x
  - panels
- Advanced Help





# CCK



- Allows **content types** to be created (e.g. “article”, “product”, ...etc.)
- Allow content types to have **fields**.
- Extensible API: define, format and theme fields
- Exposes fields to views
- Reusable fields (define once, reuse, e.g. phone)
- Various storage models (see Resources and Links)





# Fields by modules



- Extensibility means that you can write modules that implement new field types
- Examples
  - Date
  - Phone numbers (USA, France, ...)
  - Image
  - File
  - Email
  - Video, and many more ...





# Theming CCK nodes



- Several ways
  - `node-content_type.tpl.php`
  - contemplate module
    - Web based, hence “thru the web” [TTW]
    - Recent modification to be file based (use an editor, and have version control)





# Drawbacks?



- Added complexity, needed for functionality (always a trade-off)
- Added performance overhead (extra database tables insert/select/join, extra code executed)
- Extra theming effort (again functionality)
- Like with all contributed modules: watch out for longevity of CCK fields implemented by modules





# Future of CCK



Drupal 7 has “fields” in core ...

FieldAPI

Entities

Various storage engines (MongoDB)







# Views



- Written by Earl Miles (merlinofchaos)
- Really powerful module: all sorts of magic
- Essentially, a sophisticated SQL query builder
- Customized listing for almost anything
  - Custom blocks or lists from any content type
  - On selected fields
  - Filters
  - Sorting
  - Arguments





# Views (cont'd)



- Basic settings
  - Title, style, Menu, URL path
  - Access (view can visible only to selected roles, e.g. Administrators for moderation, Member only stuff)
  - Headers and Footers (HTML or PHP)
- Displays (variants)
  - Page (list, teaser, table, ...etc.)
  - Block
  - Feed
- Relationships (effectively database joins)





# Views (cont'd)



- Fields
  - Modules can expose fields to views (e.g. image module exposes the full image, thumbnail, ...etc.)
  - All CCK fields are exposed (and that is where the power is)
  - Core exposes many fields too
- Sort criteria
  - Ascending/Descending
  - On one or more fields





# Views Filters



- Filters
  - On one or more fields (e.g. Is node published? Is it in moderation? Which content types, taxonomy, ...etc.)
- Exposed Filters
  - Any filter can be exposed, so site visitors can refine the selections themselves.
  - Very useful feature.
  - Can be used in lieu of searching sometimes.





# Views (cont'd)



- Can be exported
  - No “code in database” drawbacks
  - Easier test -> production move
  - Easier to RAD/prototype, then move to code in modules, so it is under revision control
- Arguments
  - Can change the view
  - Allows PHP code for views
  - Same view works for many different things (e.g. terms)







# Theming views



- Theming link available in every view
- Provides a good headstart, but you have to provide details
- Tells you what `.tpl.php` files can be used
- Tip: make sure you test in the same theme, not an admin theme (horror story!)







# Drawbacks?



- More database queries, means increased load, so watch out for performance and scalability
- Watch for many JOINS, count queries, DISTINCT
- Should not be a concern for small to medium sites
- Time based caching: helps considerably
  - Has to be enabled manually for each display





# Future of Views



- Core inclusion?
  - Only the engine
  - Maybe Drupal 8.x?
- Covered later





# Panels



- Custom grouping of “elements” that form a page
  - nodes, blocks, HTML, php, views, and everything
- Suitable for a site's front page, or section pages
- Provides several pre-defined layouts
- You can add your own layout as a module (HTML + CSS)





# Panels (cont'd)



- Each panel has a URL (like views), as well as a title and CSS id.
- Content areas
  - Predefined in the panel, or module
  - Each can contain
    - One or more nodes
    - One or more views
    - One or more blocks
    - Custom content (HTML and/or PHP)





# Panels Scalability



- Simple Caching module provided.
  - Need to enable it for each “pane”
- Pressflow Preempt (old).





# Caution with PHP



- Drupal itself, and Panels and Views allow PHP
  - But ***use with caution!*** and ***use sparingly!***
- Security: access to code = site owned
- Maintenance: Hidden code
- Upgrades: API changes
- Performance: `node_load()`, `user_load()`, taxonomy stuff
- Content indexing (if in nodes)







# Views 3

## What's Ahead





# Big Changes



- Pluggable Datasource
  - Views can query external APIs, such as Solr
  - Views can query other data stores such as filesystems
- Query Constructors
  - OR
  - GROUP BY
  - LEFT JOIN
  - Subselects





# Under the Hood



- Better translation capability
- Result caching
- Incorporating Ctools, including contexts
- Improved support for Views as forms
- Header, footer, empty text are now pluggable
- Pagers are pluggable





# Editor Changes



- Displays can be reordered
- Display machine names can be changed
- Revision logging





# Exposed Elements



- Results per page and offset
- Sorts
- Exposed Forms overhaul
  - Own section in UI
  - Now a plugin
  - Form Builder Integration
  - Value required





# Resources and Links



- CCK
  - <http://drupal.org/project/cck>
  - <http://drupal.org/node/101723>
- Views
  - <http://drupal.org/project/views>
  - <http://drupal.org/handbook/modules/views>
- Panels
  - <http://drupal.org/project/panels>







# Resources (cont'd)



- What is CCK, Robert Douglass
  - A more technical discussion on the internal of the CCK  
[http://lullabot.com/articles/an\\_introduction\\_to\\_the\\_content\\_construction\\_kit](http://lullabot.com/articles/an_introduction_to_the_content_construction_kit)
- Build a CCK module, Karen Stephenson
  - <http://2007.oscms-summit.org/node/190>





# Conclusion



- Questions?
- Comments?
- Discussions?

