

FRONT END TRACK | FEBRUARY 8 2013

THE NEW THEME LAYER IN DRUPAL 8

THE NEW THEME LAYER IN D8

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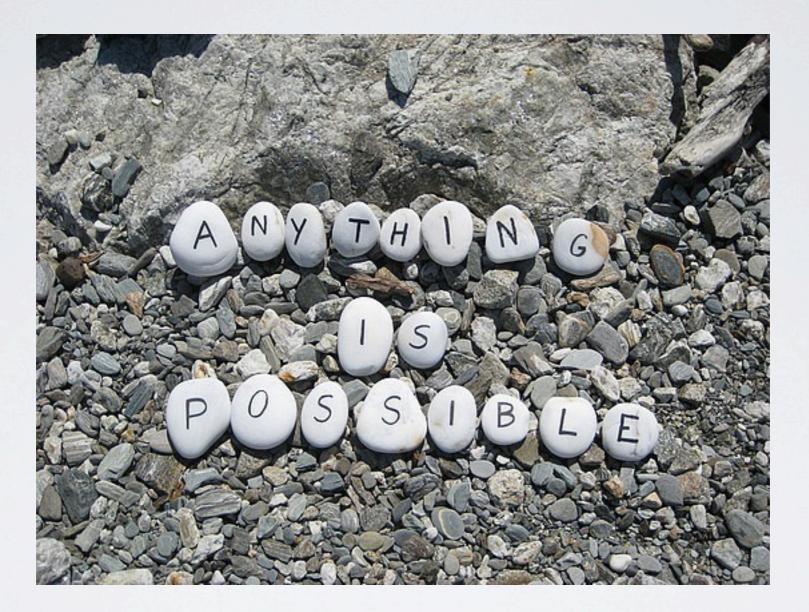
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DRUPAL 7: POSITIVE

DRUPAL 7: POSITIVE



anything is possible

• Drupal-specific template conventions

?>-<div id="node-<?php print \$node->nid; ?>" class="<?php print \$classes; ?> clearfix"<?php print \$attributes; ?>>-<?php print render(\$title_prefix); ?>-<?php if (!\$page): ?>-<h2<?php print \$title_attributes; ?>>-<a href="<?php print \$node_url; ?>"><?php print \$title; ?>-</h2> <?php endif; ?>-<?php print render(\$title_suffix); ?>¬ <?php if (\$display_submitted): ?>-<?php if (\$page['featured']): ?>¬ <div class="meta submitted">--<div id="featured"><div class="section clearfix">-<?php print \$user_picture; ?>-<?php print render(\$page['featured']); ?>-<?php print \$submitted; ?>-</div></div> <!-- /.section, /#featured -->-</div>-<?php endif; ?>-<?php endif; ?>-

Drupalism noun Something that only exists in Drupal.

Mixed data types (strings, objects & arrays)



Object or Array?

Different methods of printing



print or print render() ?

• PHPTemplate is insecure



PHP is insecure

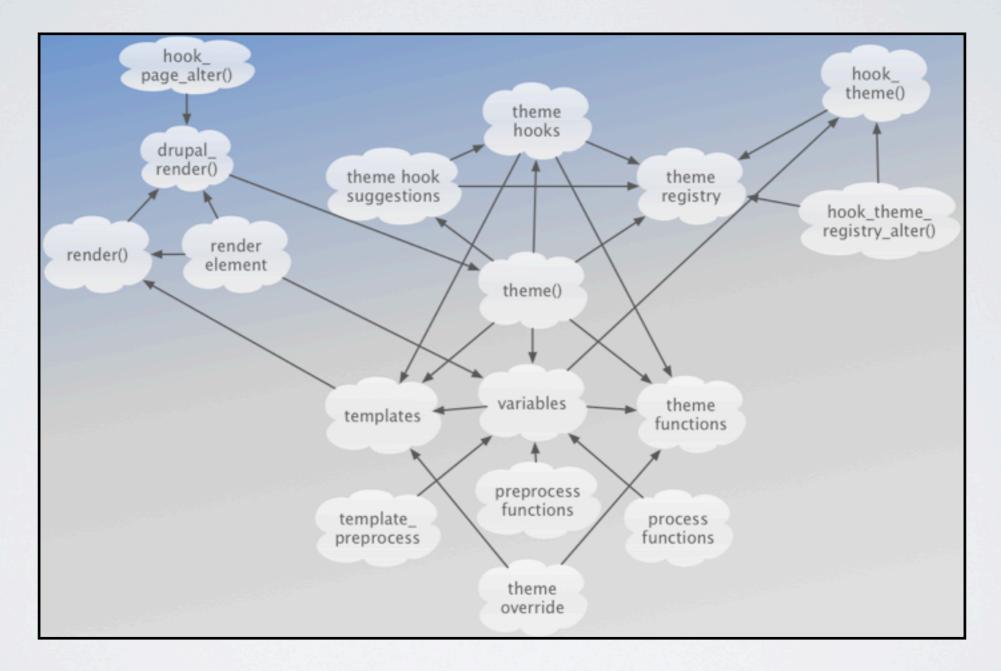
> find . -name "*.tpl.php"

/aggregator/aggregator-feed-source.tpl.php /aggregator/aggregator-item.tpl.php /aggregator/aggregator-summary-item.tpl.php /aggregator/aggregator-summary-items.tpl.php /aggregator/aggregator-wrapper.tpl.php /block/block-admin-display-form.tpl.php ./block/block.tpl.php /block/tests/themes/block_test_theme/page.tpl.php /book/book-all-books-block.tpl.php /book/book-export-html.tpl.php /book/book-navigation.tpl.php /book/book-node-export-html.tpl.php /comment/comment-wrapper.tpl.php ./comment/comment.tpl.php /field/theme/field.tpl.php /forum/forum-icon.tpl.php /forum/forum-list.tpl.php ./forum/forum-submitted.tpl.php /forum/forum-topic-list.tpl.php /forum/forums.tpl.php ./node/node.tpl.php /overlay/overlay.tpl.php /poll/poll-bar--block.tpl.php /poll/poll-bar.tpl.php /poll/poll-results--block.tpl.php /poll/poll-results.tpl.php /poll/poll-vote.tpl.php /profile/profile-block.tpl.php /profile/profile-listing.tpl.php /profile/profile-wrapper.tpl.php /search/search-block-form.tpl.php /search/search-result.tpl.php /search/search-results.tpl.php /simpletest/tests/theme_test.template_test.tpl.php /system/html.tpl.php /system/maintenance-page.tpl.php /system/page.tpl.php ./system/region.tpl.php /taxonomy/taxonomy-term.tpl.php /toolbar/toolbar.tpl.php /user/user-picture.tpl.php /user/user-profile-category.tpl.php /user/user-profile-item.tpl.php /user/user-profile.tpl.php

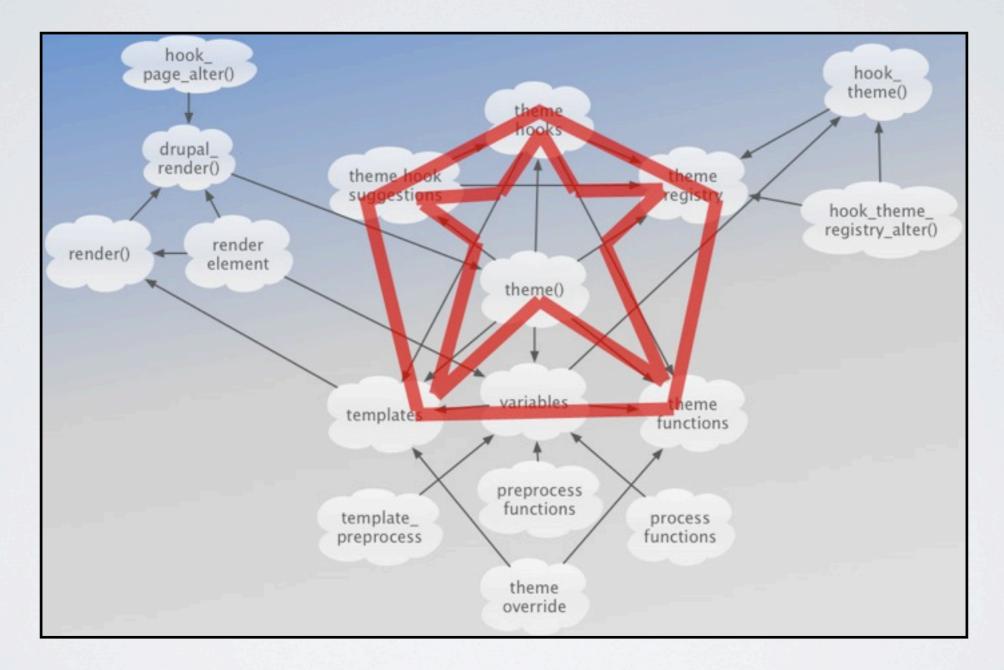
Too many template files

function theme_image_style(\$variables) { function theme_image_style_effects(\$variables) { function theme_image_style_list(\$variables) { function theme_image_style_preview(\$variables) { function theme_image_widget(\$variables) { function theme_indentation(\$variables) { function theme_install_page(\$variables) { function theme_item_list(\$variables) { function theme_link(\$variables) { function theme_links(\$variables) { function theme_locale_date_format_form(\$variables) { function theme_locale_languages_configure_form(\$variables) { function theme_locale_languages_overview_form(\$variables) { function theme_mark(\$variables) { function theme_menu_admin_overview(\$variables) { function theme_menu_link(array \$variables) { function theme_menu_local_action(\$variables) { function theme_menu_local_task(\$variables) { function theme_menu_local_tasks(&\$variables) { function theme_menu_overview_form(\$variables) { function theme_menu_tree(\$variables) { function theme_more_help_link(\$variables) { function theme_more_link(\$variables) { function theme_node_add_list(\$variables) { function theme_node_admin_overview(\$variables) { function theme_node_preview(\$variables) { function theme_node_recent_block(\$variables) { function theme_node_recent_content(\$variables) { function theme_node_search_admin(\$variables) { function theme_nodeapi_example_rating(\$variables) { function theme_options_none(\$variables) { function theme_overlay_disable_message(\$variables) { function theme_pager(\$variables) { function theme_pager_first(\$variables) {

Too many theme functions



too many complex of subsystems



Satanic?



Drupal 7 is too hard to learn!

THIS IS A LOT OF STUFF

Drupal-specific template conventions
Mixed data types (strings, objects & arrays) \$node->nid vs \$content['links']
Different methods of printing print \$node->nid vs print render(\$content['links'])
PHPTemplate is insecure

- Two ways to override markup Templates: *.tpl.php vs functions: theme_foo()
- Many template files, many similar theme functions
- Complex mix of subsystems
- Difficult to learn for newcomers (and D6 veterans)

DRUPAL 8

DRUPAL 8

TWIG

Tuesday, February 5, 2013

ABOUT DOCUMENTATION BLOG DEVELOPMENT CONTRIBUTORS

Twig Documentation

Read the online documentation to learn more about Twig.

- Introduction / Installation
- Twig for Template Designers
- Twig for Developers
- Extending Twig
- Twig Internals
- Twig Recipes
- · Coding Standards
- <u>API</u>
- Twig contributed extensions documentation
- License

Twig Reference

Browse the online reference to learn more about built-in features.

well documented

You can download the documentation for offline reading:

PUB

Extending Twig

Twig can be extended in many ways; you can add extra tags, filters, tests, operators, global variables, and functions. You can even extend the parser itself with node visitors.

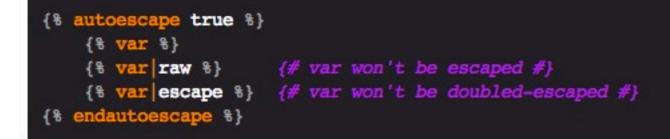


The first section of this chapter describes how to extend Twig easily. If you want to reuse your changes in different projects or if you want to share them with others, you should then create an extension as described in the following section.

extensible

• Secure: When it comes to security, Twig has some unique features:

• Automatic output escaping: To be on the safe side, you can enable automatic output escaping globally or for a block of code:



• Sandboxing: Twig can evaluate any template in a sandbox environment where the user has access to a limited set of tags, filters, and object methods defined by the developer. Sandboxing can be enabled globally or locally for just some templates:

{% include "user.html" sandboxed %}

secure

• Unit tested: Twig is fully unit-tested. The library is stable and ready to be used in large projects.

well-tested

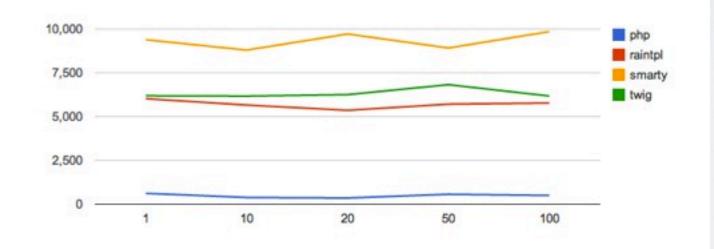
Tuesday, February 5, 2013

Summary (assign)

Test	tot. time	tot. memory	package size
php 5.3.3-7+squeeze9	483 µs	11.97 KB	4 KB
raintpl 2.7.0	5707 µs	282.77 KB	37 KB
twig 1.5.1	6323 µs	715.93 KB	647 KB
smarty 3.1.7	9336 µs	1.28 MB	971 KB

Execution Time (assign)

Execution Time (µs)



fast





IDE integration











recognizable syntax

Tuesday, February 5, 2013





by Symfony's author, Fabien Potencier

TWIG

Principals to guide us. BADCamp, 2012.

Principals to guide us

I. Start with nothing

Core default markup should strive for semantic simplicity, with few HTML elements, added only as needed

Principals to guide us

I. Start with nothing

2. Build from use cases

Don't assume you know what people want or add features based on "What-if?" Think about the 90% of use cases.

Principals to guide us

- I. Start with nothing
- 2. Build from use cases

3. Provide tools

Give front-end experts a way to achieve specific goals; goals that apply to the remaining 10% of use cases. Keep in mind that complex problems may require complex solutions.

Principals to guide us

- I. Start with nothing
- 2. Build from use cases
- 3. Provide tools

4. Consolidate

"Your markup is not special." Don't make something new. Work toward common theme functions that modules leverage (i.e. a Theme Component Library).

Principals to guide us

- I. Start with nothing
- 2. Build from use cases
- 3. Provide tools
- 4. Consolidate

5. Visibility

You should be able to see what's going on in a template without reading docs. Twig provides a lot of this by virtue of its syntax (it looks like HTML). Form follows function.

Principals to guide us

- I. Start with nothing
- 2. Build from use cases
- 3. Provide tools
- 4. Consolidate
- 5. Visibility

6. Consistency

Do the same things everywhere, follow patterns. Use similar variable names across templates if they represent similar things.

Principals to guide us

- I. Start with nothing
- 2. Build from use cases
- 3. Provide tools
- 4. Consolidate
- 5. Visibility
- 6. Consistency
- 7. Don't dumb it down

Complexity should be reduced but not obscured. Themers *can* understand template logic and loops. When complexity does happen, use comments to explain why.

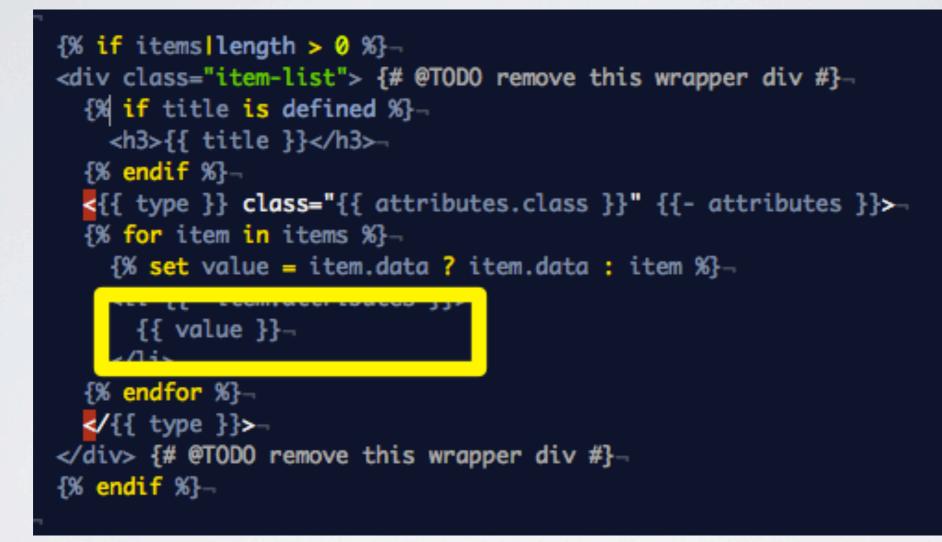
Principals to guide us

- I. Start with nothing
- 2. Build from use cases
- 3. Provide tools
- 4. Consolidate
- 5. Visibility
- 6. Consistency
- 7. Don't dumb it down

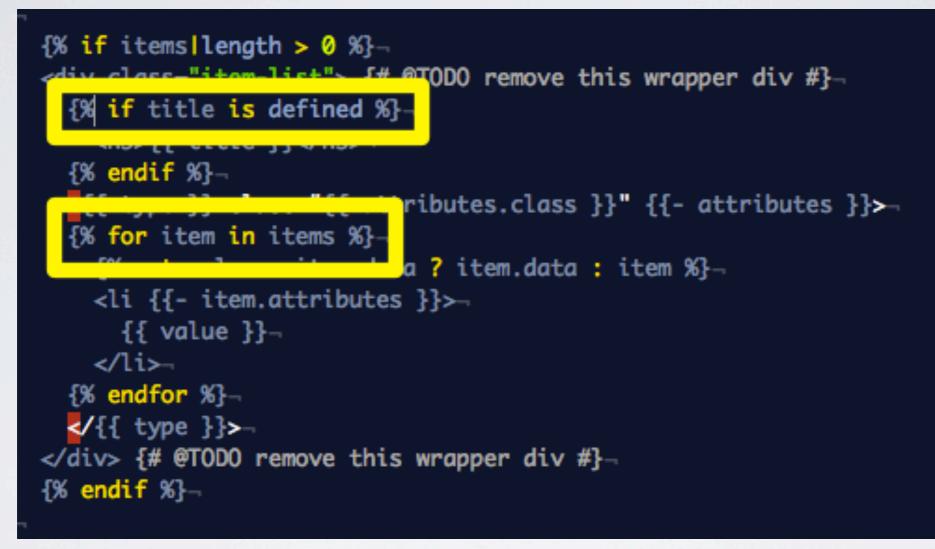
8. Organization should be driven by meaning and semantics over technical convenience

Consider what an element means rather than how it structurally appears. Names and locations of templates should be self-evident. Themers want to see markup in templates, not abstraction.

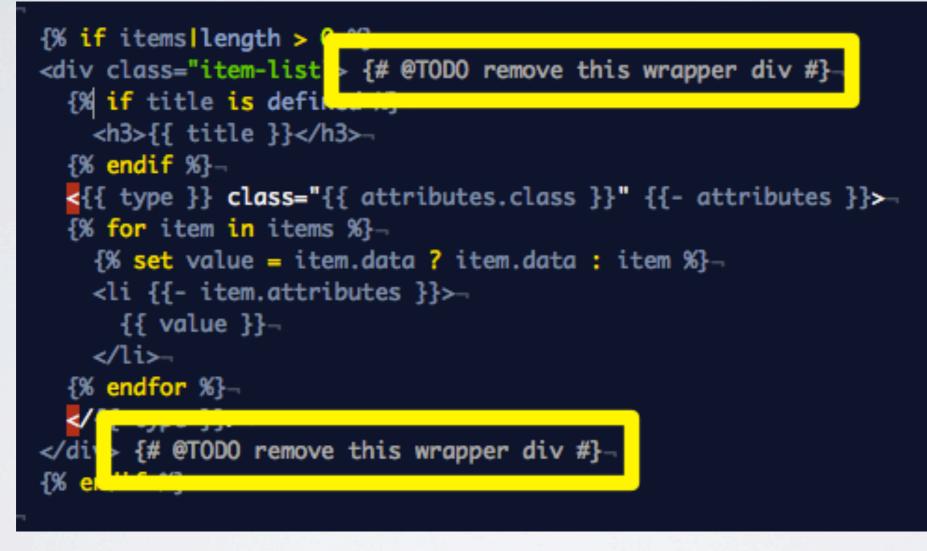
TWIG what does it look like?



print with {{ }}



commands with {% %}



comments with {# #}

```
{% if itemsllength > 0 %}-
<div class="item-list"> {# @TODO remove this wrapper div #}-
{% if title is defined %}-
<h3>{{ title }}</h3>-
{% endif %}-
{{ title }} class="{{ attributes.class }}" {{- attributes }}>-
{% for item in items %}-
{% set value = item.data ? item.data : item %}-
-
{{ value }}-
{{ value }}-
{{ title - item.attributes }}-
{{ endif %}-
{{ title - item.ove this wrapper div #}-
{{ endif %}-
{{ endif %}-
```

simple and intuitive

all theme functions become template files. a single way to override markup!

```
function theme_username($variables) {-
    if (isset($variables['link_path'])) {-
        Soutput = l($variables['name'] . $variables['extra'], $variables['link_path'], $variables['link_options']);-
    }-
    else {-
        Soutput = '<span' . drupal_attributes($variables['attributes_array']) . '>' . $variables['name'] . $variables['extra'] . '</span>';-
    }-
```

return \$output;-

```
D8
```

theme_username becomes username.html.twig

```
function theme_image($variables) {-
    $attributes = $variables['attributes'];-
    $attributes['src'] = file_create_url($variables['uri']);-
    foreach (array('width', 'height', 'alt', 'title') as $key) {-
        if (isset($variables[$key])) {-
            $attributes[$key] = $variables[$key];-
            }-
        }-
        return '<img' . drupal_attributes($attributes) . ' />';-
}
```

D8

D7

-

theme_image becomes image.html.twig

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function theme_link(\$variables) { return ''-

. (\$variables['options']['html'] ? \$variables['text'] : check_plain(\$variables['text']))
. '';-

D8

D7

{{ text }}-

theme_link becomes link.html.twig

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TWIG

less code than PHP

 $| \rangle /$

D8

unction them.item.lis(Sveriables) { Sitems - Sveriables['items'];-Stitle = (string) Svoriables['title'];Stype = Svoriables['type'];-Slist_attributes = Svariables['attributes'];-

Soutput = ";-(f (Sitems) {-Soutput .= '<' . Stype . drupel_attributes(Slist_attributes) . '>';-

Soun_items - count(Sitems): \$1 = 0;foreach (Sitems as Skey -> Sitem) (-Stee;-Sattributes - array();

if (is_array(Sites)) [-Svolue - ";if (isset(Sitem['doto'])) {-Svalue .= Sites['doto'];-

Sottributes - orray_diff_key(Sites, array('dota' -> 0, 'children' -> 0));-

// Aapend mested child list, if any. if (isset(Sitem['children'])) {-// WITHL attributes for the outer list are defined in the 'attributes' // theme variable, but not inherited by children. For nested lists,-// all non-numeric keys in 'children' are used as list attributes. \$child_list_ottributes = orrey();foreach (Sitem['children'] as Schild_key -> Schild_iten) {if (is_string(Schild_key)) {-\$child_list_attributes[\$child_key] = \$child_iter; unset(Siten['children'][Schild_key]); Svalue .- theme('iten_list', proy(-'itoms' -> Sitem['children'].-'type' - Stype,-'attributes' - Schild_list_attributes,));-3 else (-Svolue - Sitem:

Sattributes['class'][] = (\$i \$ 2 7 'odd' : 'even');if (\$i = 1) {-Sottributes['closs'][] = 'first':-

if (\$i - \$num_itens) {-Sottributes['closs'][] = 'lost';-

Soutput .= 'di' . drupol_attributes(Sattributes) . '>' . Svalue . 'dlis';-Soutput .= "-ofStypes":-

// Only output the list container and title, if there are any list items. // Check to see whether the block title exists before adding a header. // Empty headers are not semantic and present accessibility challenges. if (Soutput !-- '') (-

if (Stitle !-- '') {-Stitle - 'dab' . Stitle . 'whas';-

Soutput = "adiv closs="item-list">" . Stitle . Soutput . 'a/divs":-

{% if items llength > 0 %}-<div class="item-list"> {# @TODO remove this wrapper div #}-{% if title is defined %}-<h3>{{ title }}</h3> {% endif %}-{{ type }} class="{{ attributes.class }}" {{- attributes }}>-{% for item in items %}-{% set value = item.data ? item.data : item %}--{{ value }}-{% endfor %}-</{{ type }}>-</div> {# @TODO remove this wrapper div #}-{% endif %}-

theme_item_list beomes item_list.html.twig

return Soutput:

 Drupal-specific template conventions Mixed data types (strings, objects & arrays) \$node->nid vs \$content['links'] Different methods of printing print \$node->nid vs print render(\$content['links']) • PHPTemplate is insecure • Two ways to override markup Templates: *.tpl.php vs functions: theme_foo() Many template files, many similar theme functions Complex mix of subsystems

Difficult to learn for newcomers (and D6 veterans)

• Drupal-specific template conventions **Twig is used elsewhere on the web.** ...and looks a lot more like HTML.

 Drupal-specific template conventions FIXED
 Mixed data types (strings, objects & arrays) \$node->nid vs \$content['links']
 All template variables are accessed consistently: node.nid content.links

 Drupal-specific template conventions FIXED
 Mixed data types (strings, objects & arrays) FIXED \$node->nid vs \$content['links']
 Different methods of printing print \$node->nid vs print render(\$content['links'])
 We're removed calls to render() from templates: {{ node.nid }} {{ content.links }}

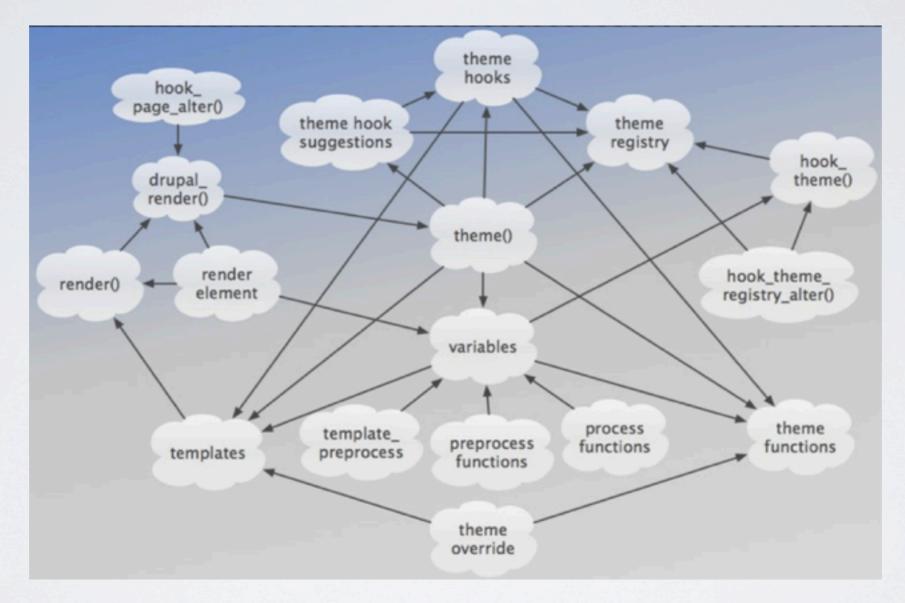
 Drupal-specific template conventions FIXED
 Mixed data types (strings, objects & arrays) FIXED \$node->nid vs \$content['links']
 Different methods of printing FIXED print \$node->nid vs print render(\$content['links'])
 PHPTemplate is insecure All variables will be *automatically* sanitized. ...and most PHP functions cannot be executed in template files.

• Drupal-specific template conventions **FIXED** • Mixed data types (strings, objects & arrays) FIXED \$node->nid vs \$content['links'] • Different methods of printing **FIXED** print \$node->nid vs print render(\$content['links']) • PHPTemplate is insecure **FIXED** • Two ways to override markup Templates: *.tpl.php vs functions: theme_foo() All theme functions are converted to template files node.tpl.php becomes node.html.twig theme_table() becomes table.html.twig

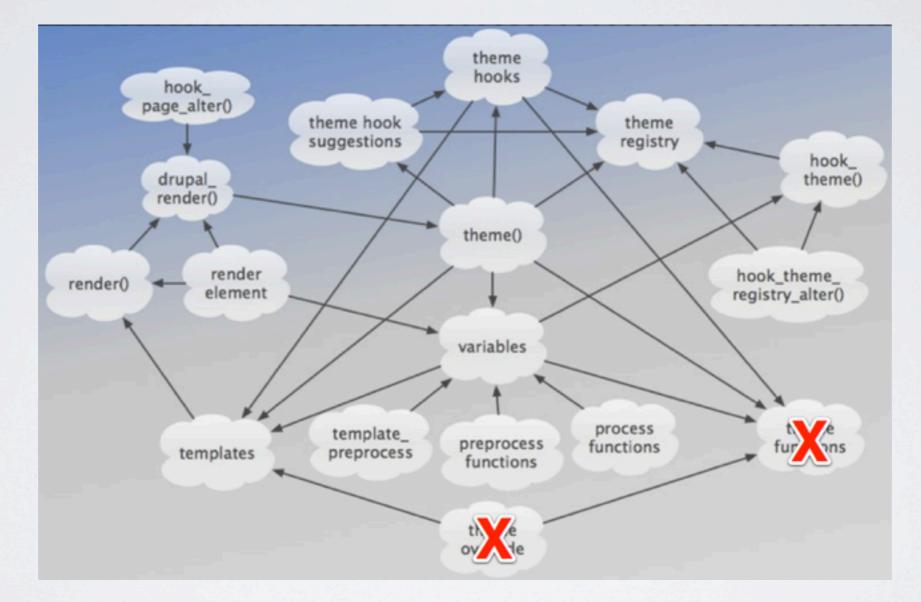
• Drupal-specific template conventions FIXED • Mixed data types (strings, objects & arrays) FIXED \$node->nid vs \$content['links'] Different methods of printing FIXED print \$node->nid vs print render(\$content['links']) • PHPTemplate is insecure **FIXED** Two ways to override markup FIXED Templates: *.tpl.php vs functions: theme_foo() Many template files, many similar theme functions We're working on this right now (Sprints!)

• Drupal-specific template conventions FIXED • Mixed data types (strings, objects & arrays) FIXED \$node->nid vs \$content['links'] Different methods of printing FIXED print \$node->nid vs print render(\$content['links']) • PHPTemplate is insecure **FIXED** Two ways to override markup FIXED Templates: *.tpl.php vs functions: theme_foo() • Many template files, many similar theme functions @todo Complex mix of subsystems

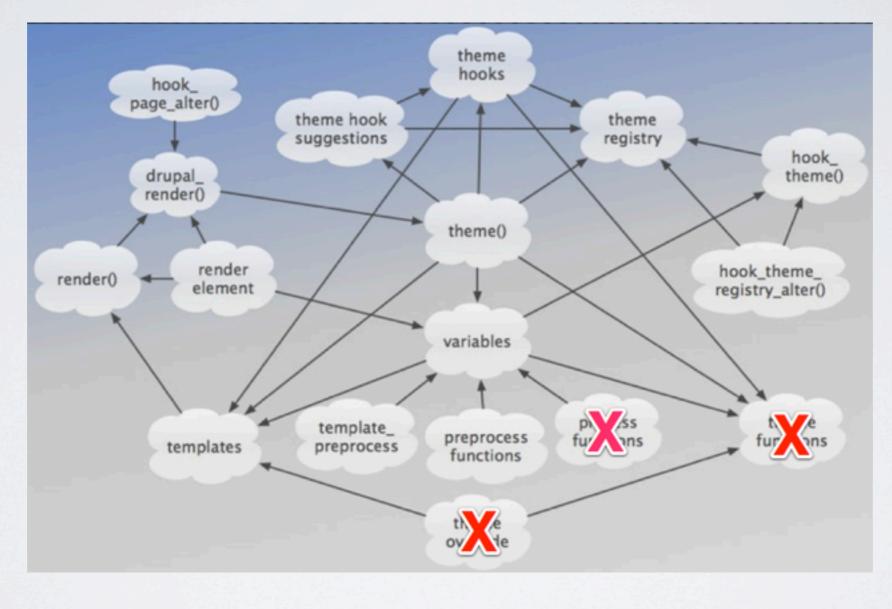
We can remove all theme functions, and potentially render, process & (maybe) preprocess.



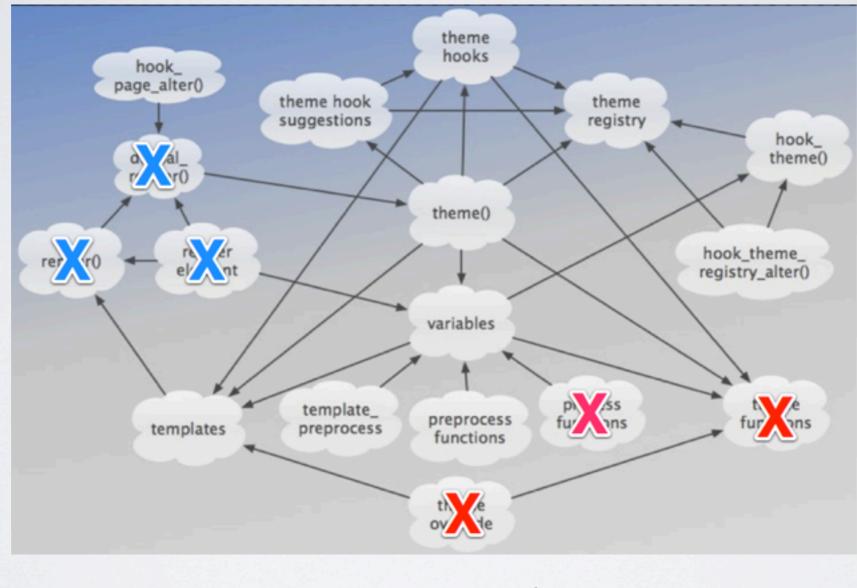
remember the complexity of Drupal 7?



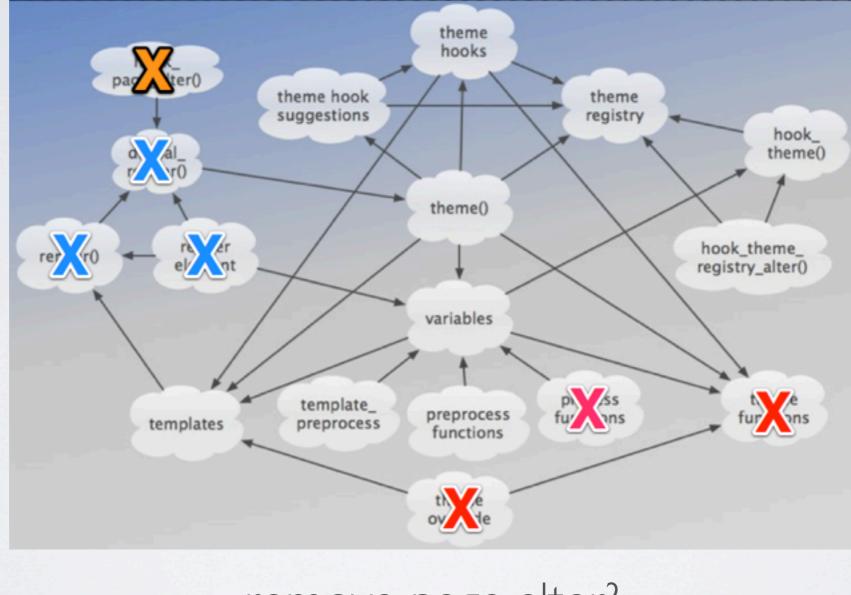
remove theme functions (and overrides) entirely.



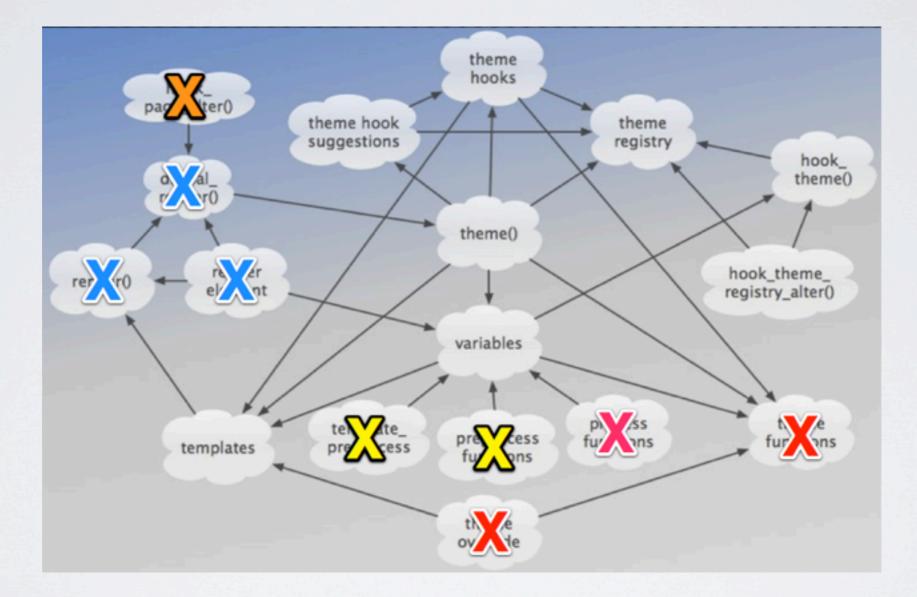
remove process.



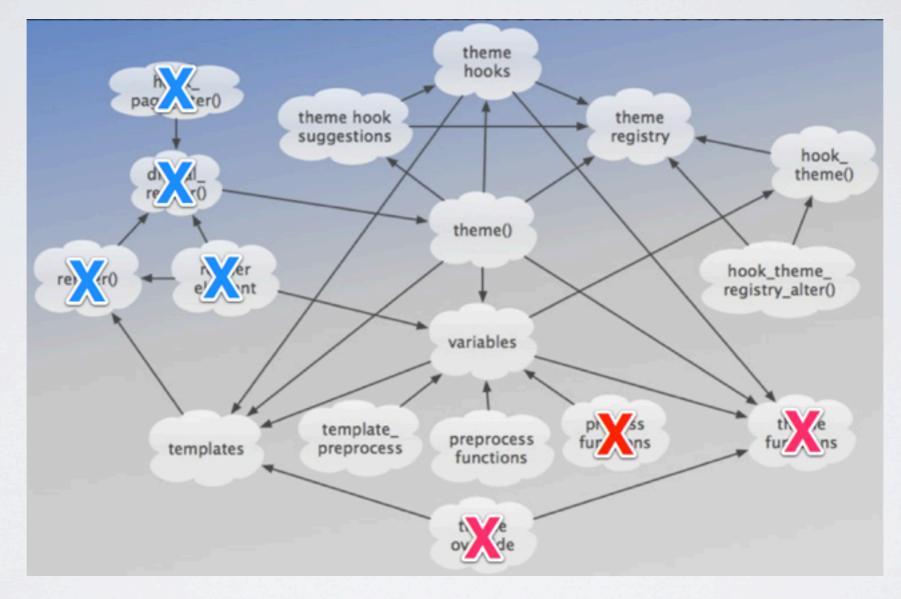
remove render.



remove page alter?



remove preprocess?



look what would happen in Drupal 8.

• Drupal-specific template conventions FIXED • Mixed data types (strings, objects & arrays) FIXED \$node->nid vs \$content['links'] • Different methods of printing **FIXED** print \$node->nid vs print render(\$content['links']) • PHPTemplate is insecure **FIXED** Two ways to override markup FIXED Templates: *.tpl.php vs functions: theme_foo() Many template files, many similar theme functions @todo Complex mix of subsystems @todo • Difficult to learn for newcomers (and D6 veterans)

 Drupal-specific template conventions FIXED • Mixed data types (strings, objects & arrays) FIXED \$node->nid vs \$content['links'] • Different methods of printing **FIXED** print \$node->nid vs print render(\$content['links']) • PHPTemplate is insecure **FIXED** • Two ways to override markup **FIXED** Templates: *.tpl.php vs functions: theme_foo() Many template files, many similar theme functions @todo Complex mix of subsystems @todo • Difficult to learn for newcomers (and D6 veterans) **Consistency FTW**

TWIG: OTHER WINS

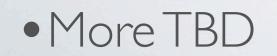
- Twig template inheritance
- Variable inspection: Twig's dpm()
- Possible performance gains: (much TBD) faster than render()?

• 2-way communication between UI and code: The UI can understand what variables exist (or not) in a template (but, contrib only folks!)

HOW CAN I HELP?

NEXTTASKS

- Finish converting all existing core *.tpl.php files to Twig templates (sandbox) DONE
- Finish converting all existing core theme functions to Twig templates (sandbox) **CLOSE?**
- Create & test patches for each module (core) HELP!
- Help clean up markup in core (sandbox/core) HELP!
- Consolidate similar templates (core) **HELP**!
- Identify & enable template suggestions (core) HELP!
- Rethink preprocess / __to_string() methods (maybe?)
- Convert renderable arrays into Twig objects (maybe?)



SPRINT!

Twig Sprint: **Saturday** Feb 9th, Centenial Room (<u>http://sydney2013.drupal.org/program/code-sprint</u>)

• Create & test patches for each module in core.

- Convert theme functions to template files.
- Help clean up markup in core.More!

Come talk to us!



A NEW THEME LAYER FOR DRUPAL 8

photo credits:

lolcat-flexible http://cheezburger.com/2679924736

anything is possible pebbles http://www.invergordontours.com/aip.html

lolcat questionmark http://icanhascheezburger.com/2007/10/31/11197/

wheel-reinvented http://www.brainwads.net/drewhawkins/2012/01/dont-re-invent-the-wheel-make-something-better/

> objects http://2teachers1classroom.blogspot.com/2009_02_01_archive.html

shapes http://englishclass.jp/reading/topic/For_Screening_Purposes_Only

secure

http://blog.stratepedia.org/2010/06/03/what-is-a-secure-site/

consistency

http://icsigns.org/press/2010/03/23/consistency-staying-on-the-mark/

twig bird comic

http://s302.photobucket.com/albums/nn105/walkseva/?action=view¤t=thebirdneedsthattwig.gif¤ttag=bird%20park%20twig%20comic%20need%20it

twig docs screenshots http://twig.sensiolabs.org/documentation

twig speed graphs <u>http://phpcomparison.net/</u>

python icon http://python-hosting.org/

ruby icon http://itmediaconnect.ro/en/web

django logo http://py-arahat.blogspot.com/2010/08/django-vs-pylons.html

> symfony logo http://symfony.com/logo

scotch glass http://www.thespirit/articles/scotch-101/?viewall=1