THE NEW THEME LAYER IN DRUPAL 8

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MY BACKGROUND

Building websites since 1997

MY BACKGROUND

Working with Drupal since 2006

MY BACKGROUND

Consider myself a developer.

MY BACKGROUND

Also a Drupal trainer.

MY BACKGROUND

Accidental Drupal 8 “initiative” leader.

MY “INITIATIVE”

A new theme layer for Drupal 8

THEME LAYER?

1) Generation of Markup:

- Template files (as close to HTML as possible)
- Preparation of data (for insertion into template files)
- Addition of assets (CSS + JS)

THEME LAYER?

2) System of complete overrides:

- Alteration of HTML in template files
- Alteration of data (before insertion into templates)
- Inclusion of additional assets
  (or exclusion of existing assets)

THEME LAYER?

3) System of partial overrides:

- Alteration of HTML in template files
- Alteration of data (before insertion into templates)
- Inclusion of additional assets
  (or exclusion of existing assets)

...but only under certain circumstances.

DRUPAL 7 THEME LAYER

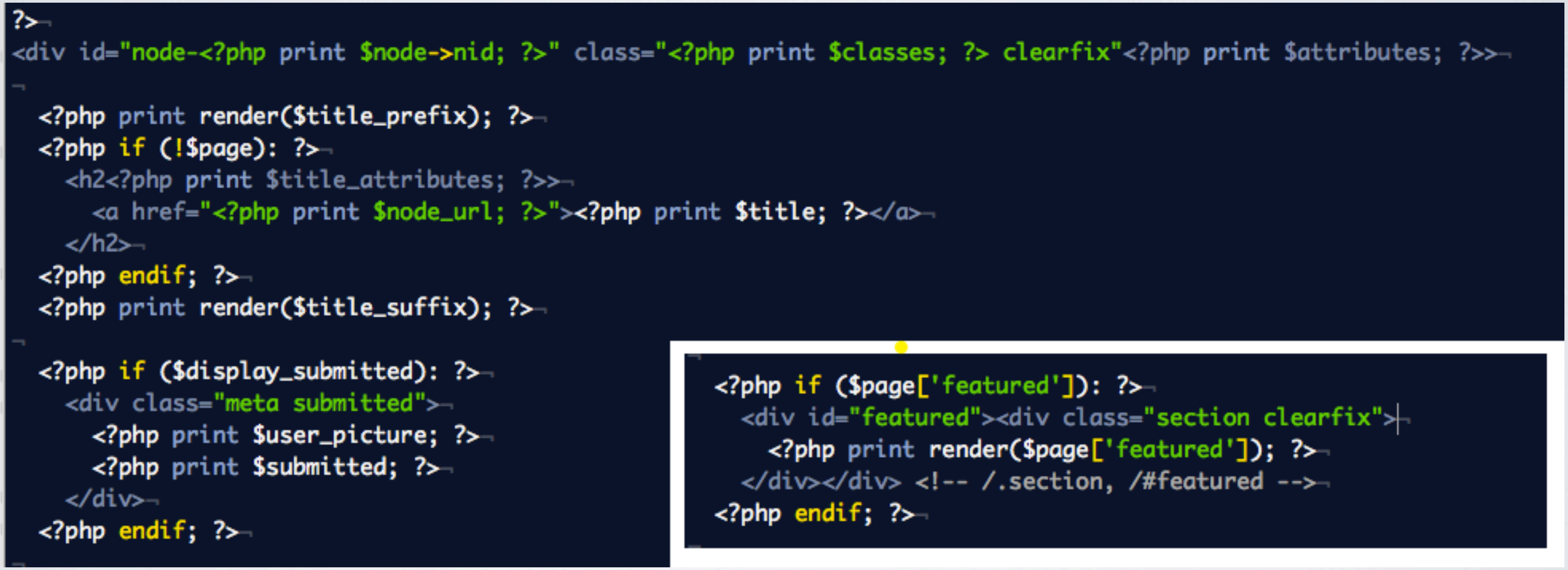
we have this now!

DRUPAL 7 THEME LAYER

...but it is so hard to learn!

HARD TO LEARN

Drupal-specific template conventions



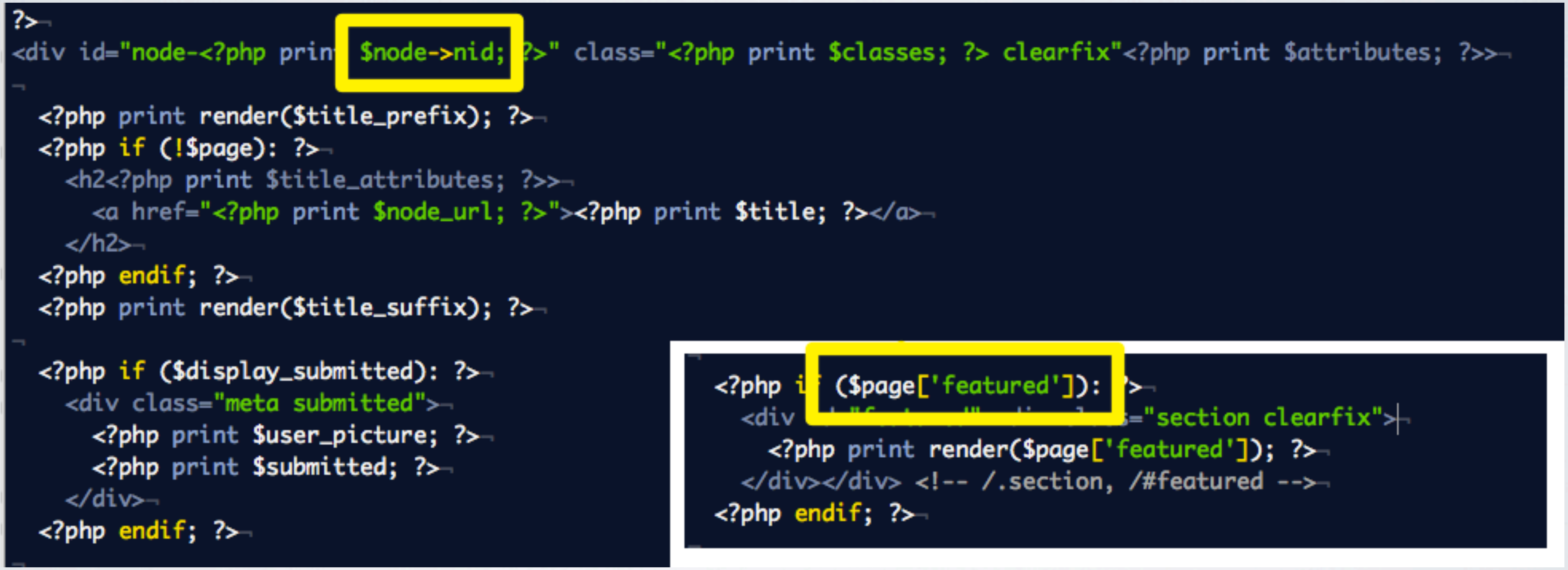
```
?>
<div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print $attributes; ?>>

  <?php print render($title_prefix); ?>
  <?php if (!$page): ?>
    <h2<?php print $title_attributes; ?>>
      <a href="<?php print $node_url; ?>"><?php print $title; ?></a>
    </h2>
  <?php endif; ?>
  <?php print render($title_suffix); ?>

  <?php if ($display_submitted): ?>
    <div class="meta submitted">
      <?php print $user_picture; ?>
      <?php print $submitted; ?>
    </div>
  <?php endif; ?>
```

```
<?php if ($page['featured']): ?>
  <div id="featured"><div class="section clearfix">
    <?php print render($page['featured']); ?>
  </div></div> <!-- /.section, /#featured -->
<?php endif; ?>
```

Drupalism *noun* Something that only exists in Drupal.

HARD TO LEARN

Mixed data types



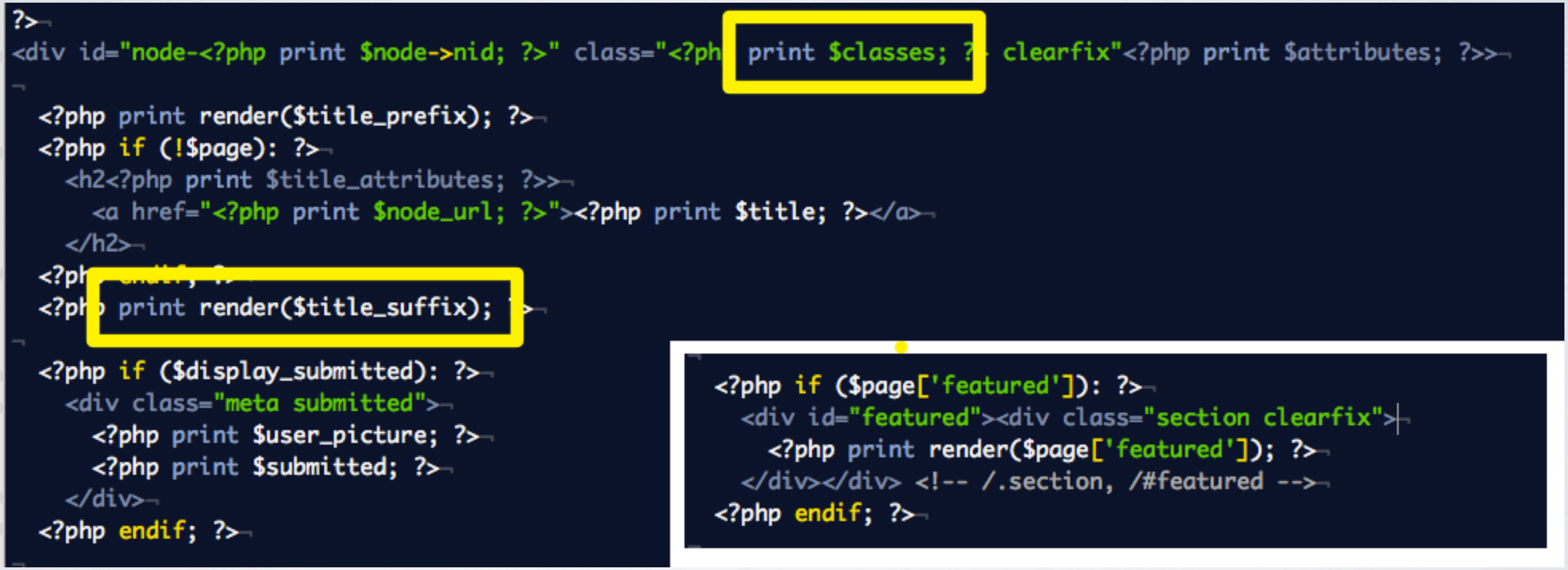
```
?>
<div id="node-<?php prin $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print $attributes; ?>>

  <?php print render($title_prefix); ?>
  <?php if (!$page): ?>
    <h2<?php print $title_attributes; ?>>
      <a href="<?php print $node_url; ?>"><?php print $title; ?></a>
    </h2>
  <?php endif; ?>
  <?php print render($title_suffix); ?>

  <?php if ($display_submitted): ?>
    <div class="meta submitted">
      <?php print $user_picture; ?>
      <?php print $submitted; ?>
    </div>
  <?php endif; ?>
```

```
  <?php i  ($page['featured']): ?>
    <div          ="section clearfix">
      <?php print render($page['featured']); ?>
    </div></div> <!-- /.section, /#featured -->
  <?php endif; ?>
```

String, Object or Array?

HARD TO LEARN

Different methods of printing



```
?>
<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 $title; ?></a>
    </h2>
  <?php endif; ?>
  <?php print render($title_suffix); ?>

  <?php if ($display_submitted): ?>
    <div class="meta submitted">
      <?php print $user_picture; ?>
      <?php print $submitted; ?>
    </div>
  <?php endif; ?>
```

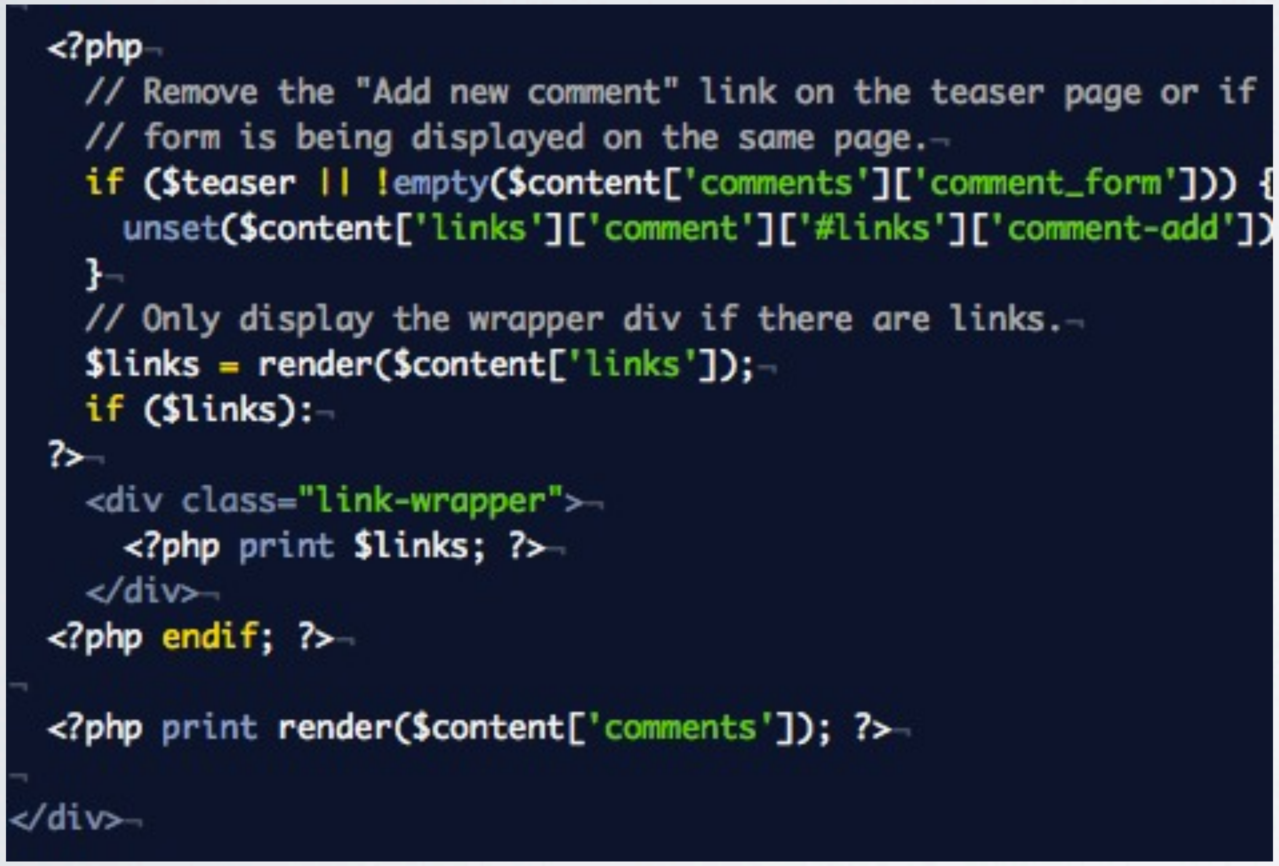
```
<?php if ($page['featured']): ?>
  <div id="featured"><div class="section clearfix">
    <?php print render($page['featured']); ?>
  </div></div> <!-- /.section, /#featured -->
<?php endif; ?>
```

print or print render()?

HARD TO LEARN

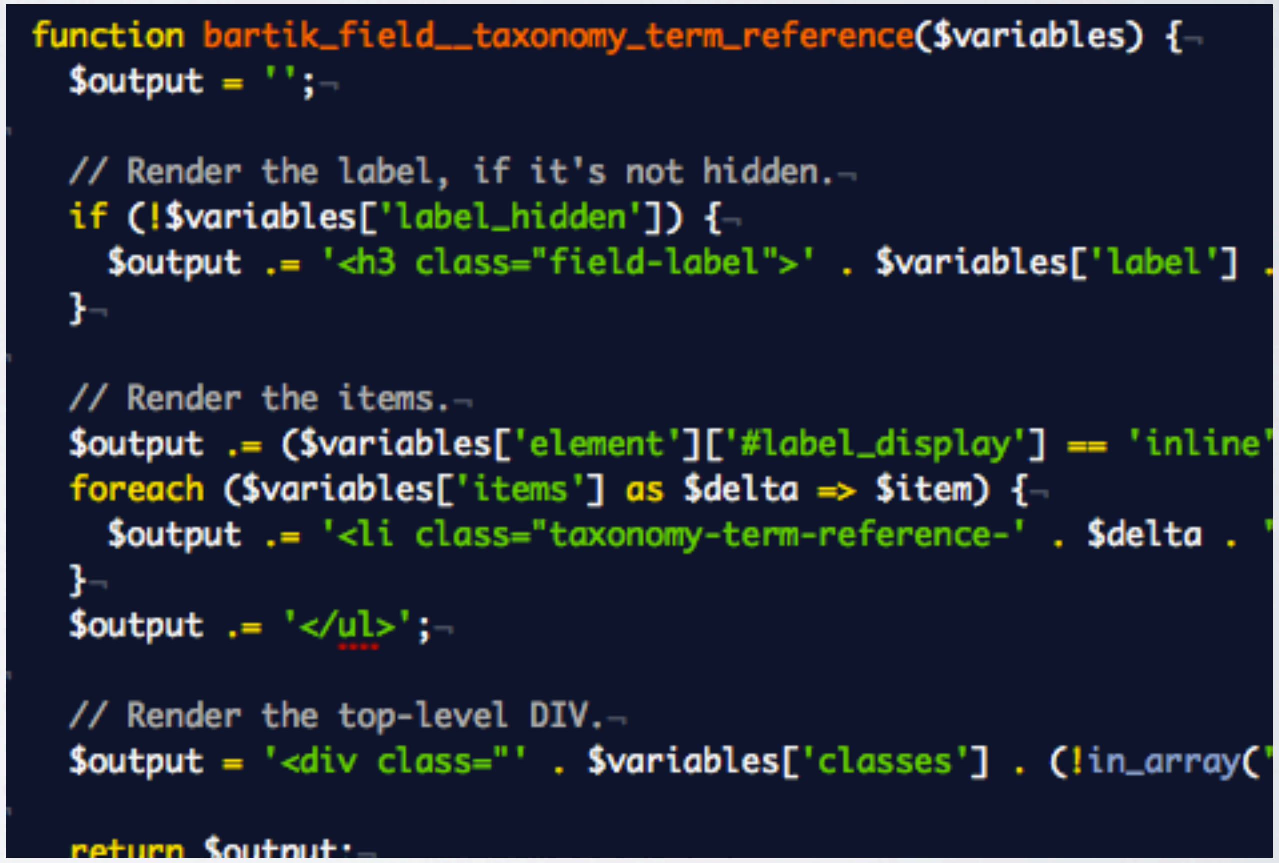
Two ways to override markup:

TEMPLATE FILES



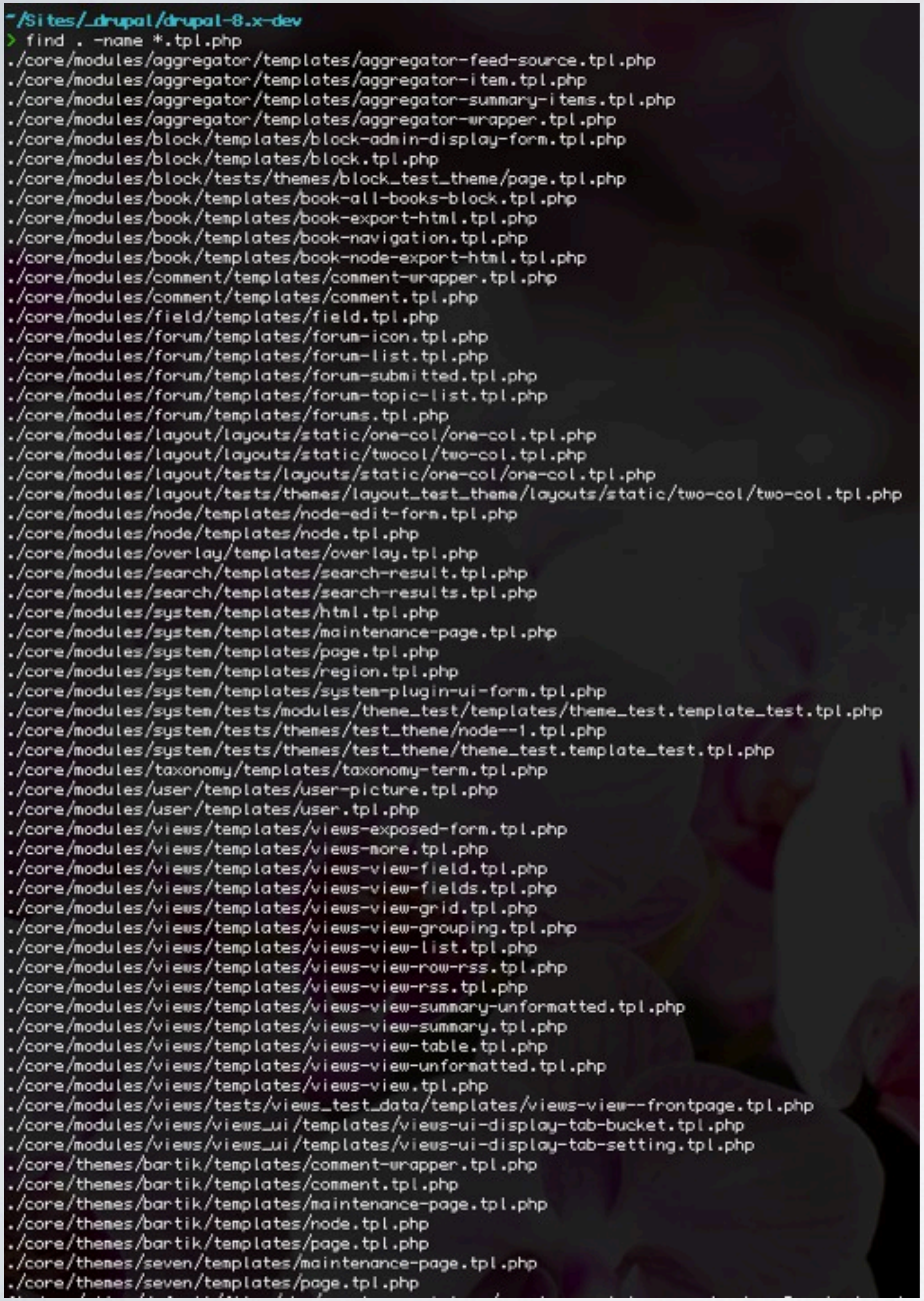
```
<?php
  // Remove the "Add new comment" link on the teaser page or if
  // form is being displayed on the same page.
  if ($teaser || !empty($content['comments']['comment_form'])) {
    unset($content['links']['comment']['#links']['comment-add'])
  }
  // Only display the wrapper div if there are links.
  $links = render($content['links']);
  if ($links):
?>
  <div class="link-wrapper">
    <?php print $links; ?>
  </div>
<?php endif; ?>

<?php print render($content['comments']); ?>

</div>
```

THEME FUNCTIONS



```
function bartik_field__taxonomy_term_reference($variables) {
  $output = '';

  // Render the label, if it's not hidden.
  if (!$variables['label_hidden']) {
    $output .= '<h3 class="field-label">' . $variables['label'] .
  }

  // Render the items.
  $output .= ($variables['element']['#label_display'] == 'inline'
  foreach ($variables['items'] as $delta => $item) {
    $output .= '<li class="taxonomy-term-reference-' . $delta . '
  }
  $output .= '</ul>';

  // Render the top-level DIV.
  $output = '<div class="' . $variables['classes'] . (!in_array('

  return $output;
```

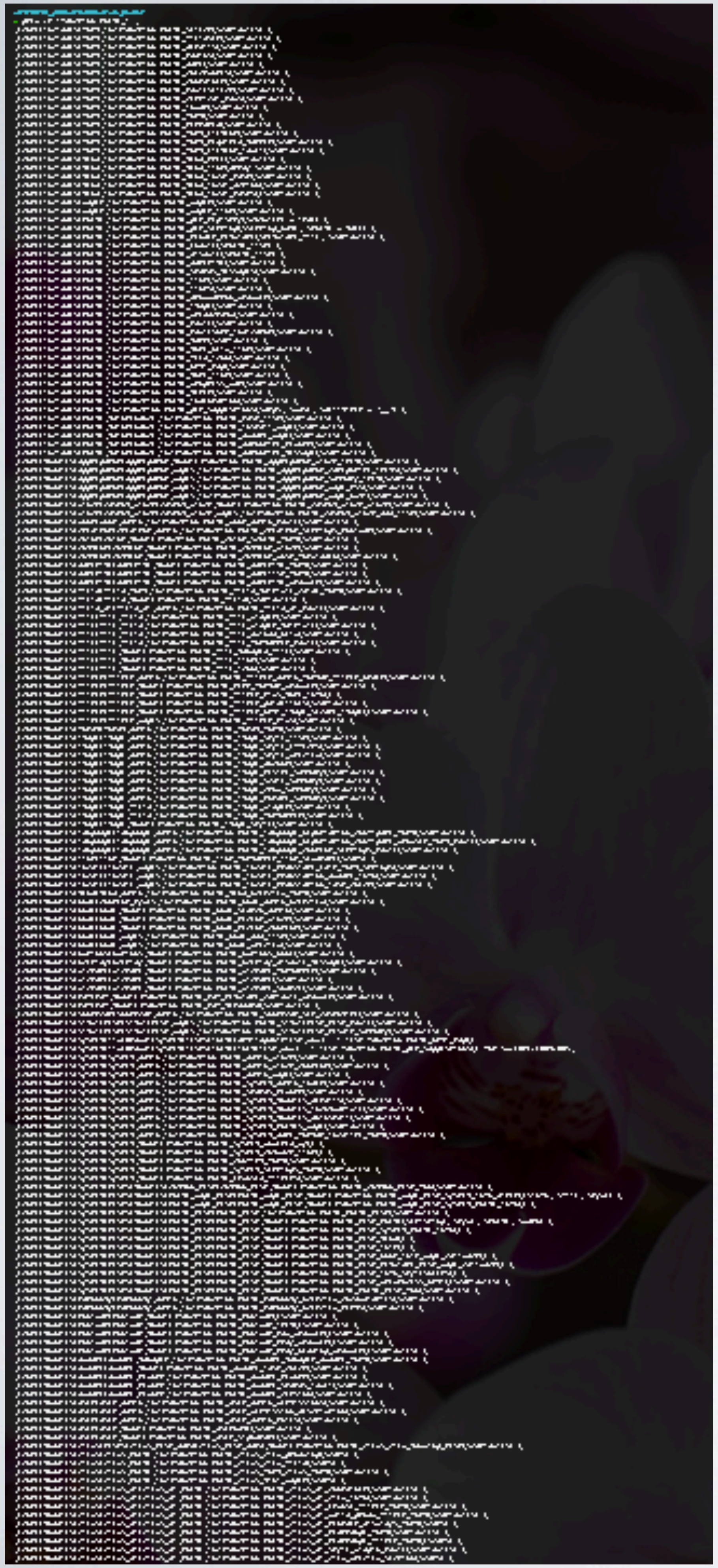
When do I use each?



```
~/Sites/_drupal/drupal-8.x-dev
> find . -name *.tpl.php
./core/modules/aggregator/templates/aggregator-feed-source.tpl.php
./core/modules/aggregator/templates/aggregator-item.tpl.php
./core/modules/aggregator/templates/aggregator-summary-items.tpl.php
./core/modules/aggregator/templates/aggregator-wrapper.tpl.php
./core/modules/block/templates/block-admin-display-form.tpl.php
./core/modules/block/templates/block.tpl.php
./core/modules/block/tests/themes/block_test_theme/page.tpl.php
./core/modules/book/templates/book-all-books-block.tpl.php
./core/modules/book/templates/book-export-html.tpl.php
./core/modules/book/templates/book-navigation.tpl.php
./core/modules/book/templates/book-node-export-html.tpl.php
./core/modules/comment/templates/comment-wrapper.tpl.php
./core/modules/comment/templates/comment.tpl.php
./core/modules/field/templates/field.tpl.php
./core/modules/forum/templates/forum-icon.tpl.php
./core/modules/forum/templates/forum-list.tpl.php
./core/modules/forum/templates/forum-submitted.tpl.php
./core/modules/forum/templates/forum-topic-list.tpl.php
./core/modules/forum/templates/forums.tpl.php
./core/modules/layout/layouts/static/one-col/one-col.tpl.php
./core/modules/layout/layouts/static/twocol/two-col.tpl.php
./core/modules/layout/tests/layouts/static/one-col/one-col.tpl.php
./core/modules/layout/tests/themes/layout_test_theme/layouts/static/two-col/two-col.tpl.php
./core/modules/node/templates/node-edit-form.tpl.php
./core/modules/node/templates/node.tpl.php
./core/modules/overlay/templates/overlay.tpl.php
./core/modules/search/templates/search-result.tpl.php
./core/modules/search/templates/search-results.tpl.php
./core/modules/system/templates/html.tpl.php
./core/modules/system/templates/maintenance-page.tpl.php
./core/modules/system/templates/page.tpl.php
./core/modules/system/templates/region.tpl.php
./core/modules/system/templates/system-plugin-ui-form.tpl.php
./core/modules/system/tests/modules/theme_test/templates/theme_test.template_test.tpl.php
./core/modules/system/tests/themes/test_theme/node--1.tpl.php
./core/modules/system/tests/themes/test_theme/theme_test.template_test.tpl.php
./core/modules/taxonomy/templates/taxonomy-term.tpl.php
./core/modules/user/templates/user-picture.tpl.php
./core/modules/user/templates/user.tpl.php
./core/modules/views/templates/views-exposed-form.tpl.php
./core/modules/views/templates/views-more.tpl.php
./core/modules/views/templates/views-view-field.tpl.php
./core/modules/views/templates/views-view-fields.tpl.php
./core/modules/views/templates/views-view-grid.tpl.php
./core/modules/views/templates/views-view-grouping.tpl.php
./core/modules/views/templates/views-view-list.tpl.php
./core/modules/views/templates/views-view-row-rss.tpl.php
./core/modules/views/templates/views-view-rss.tpl.php
./core/modules/views/templates/views-view-summary-unformatted.tpl.php
./core/modules/views/templates/views-view-summary.tpl.php
./core/modules/views/templates/views-view-table.tpl.php
./core/modules/views/templates/views-view-unformatted.tpl.php
./core/modules/views/templates/views-view.tpl.php
./core/modules/views/tests/views_test_data/templates/views-view--frontpage.tpl.php
./core/modules/views/views_ui/templates/views-ui-display-tab-bucket.tpl.php
./core/modules/views/views_ui/templates/views-ui-display-tab-setting.tpl.php
./core/themes/bartik/templates/comment-wrapper.tpl.php
./core/themes/bartik/templates/comment.tpl.php
./core/themes/bartik/templates/maintenance-page.tpl.php
./core/themes/bartik/templates/node.tpl.php
./core/themes/bartik/templates/page.tpl.php
./core/themes/seven/templates/maintenance-page.tpl.php
./core/themes/seven/templates/page.tpl.php
```

HARD

Too many template files



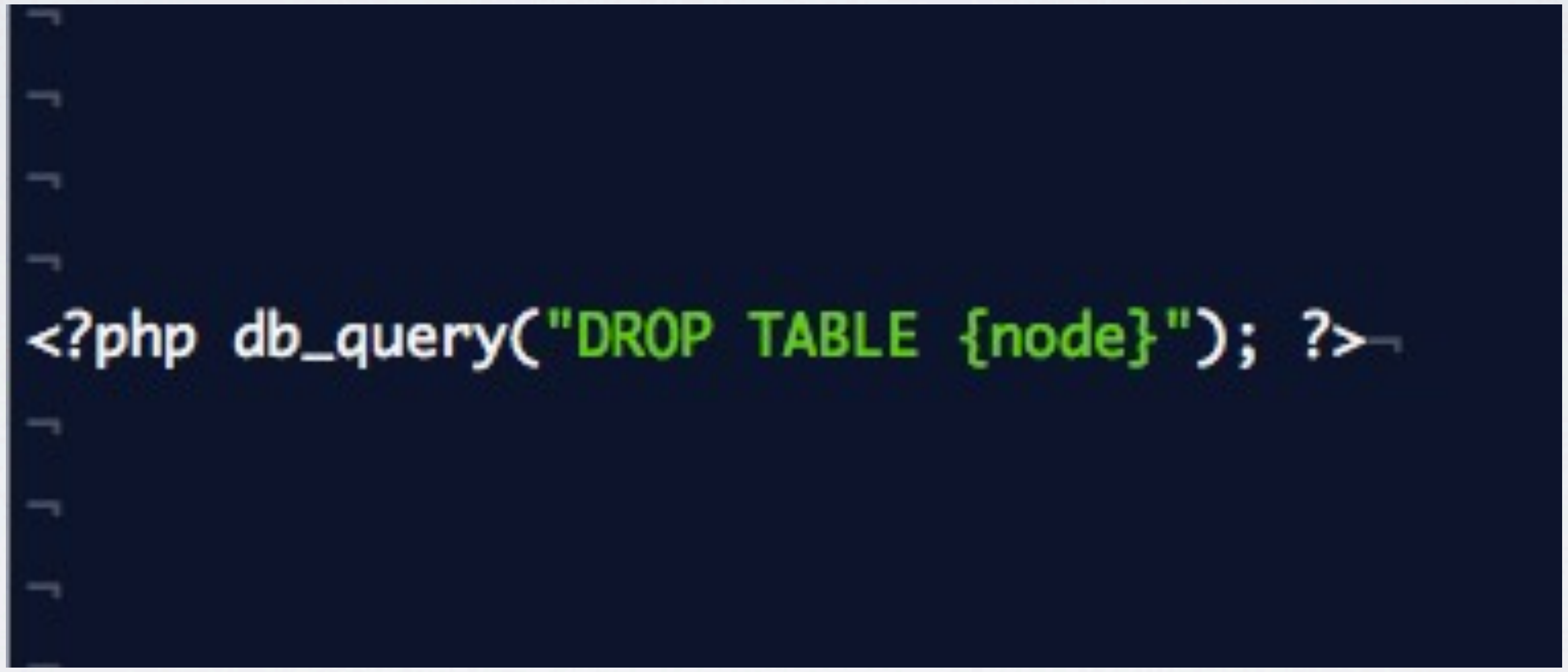
```
[illegible]
```

HARDER

Way too many theme functions

HARD TO LEARN

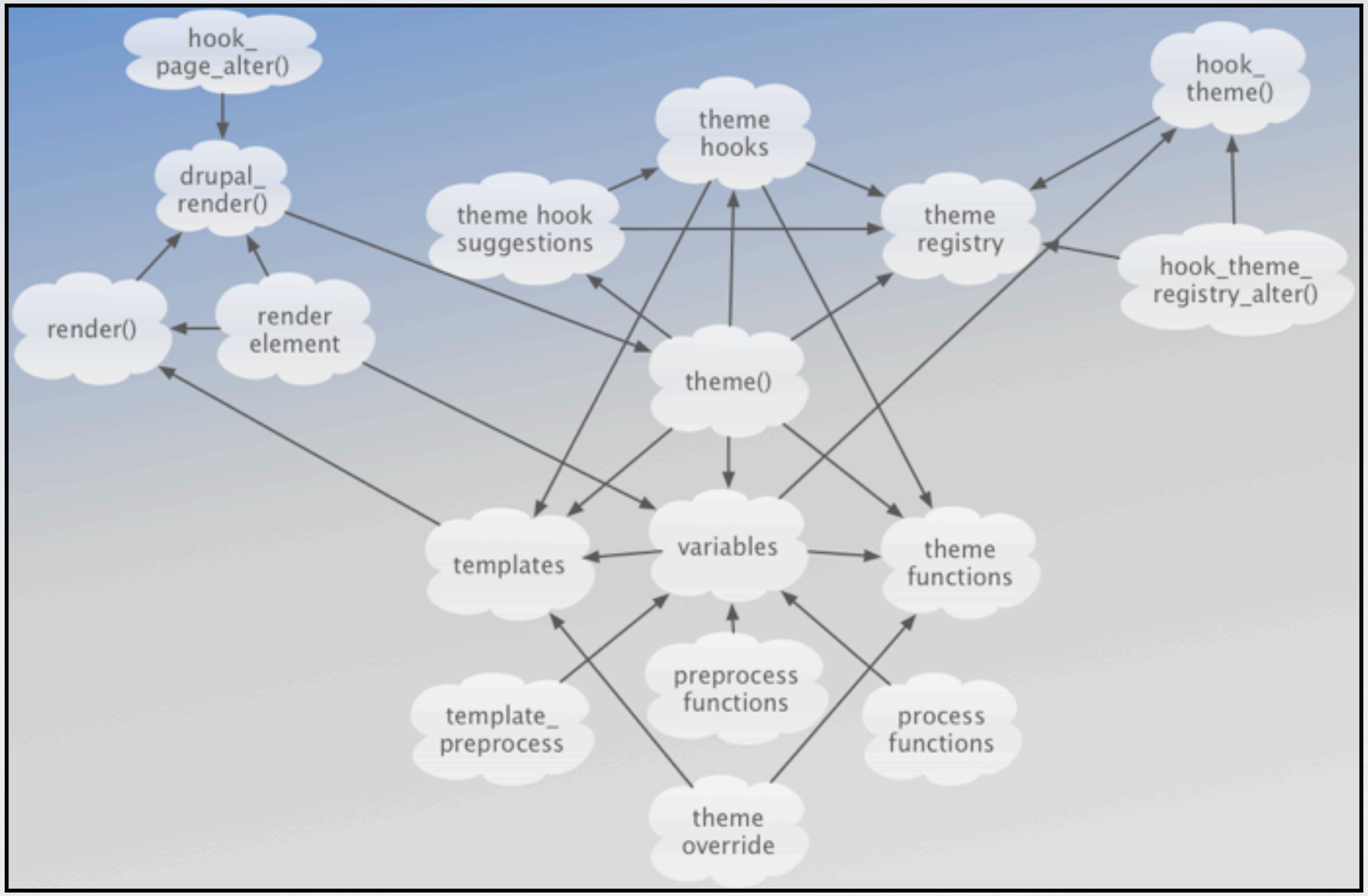
Insecure.



```
<?php db_query("DROP TABLE {node}"); ?>
```

(because PHP is insecure)

WAY TOO HARD TO LEARN



too many complex subsystems

HARD TO LEARN, BECAUSE:

- 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'])
- Two ways to override markup

  Templates: *.tpl.php vs functions: theme_foo()
- Too many template files, too many theme functions
- Insecure
- Complex mix of subsystems

DRUPAL 8 THEME LAYER

Principals to guide us.

lb.com/twig#principles

DRUPAL 8 THEME LAYER

Principals to guide us

1. **Start with nothing**
   Core default markup should strive for semantic simplicity, with few HTML elements, added only as needed

DRUPAL 8 THEME LAYER

Principals to guide us

1. **Start with nothing**
2. **Build from use cases**

   We won't assume we know what people want or add features based on "What-if...?" We will think about the 90% of use cases.

DRUPAL 8 THEME LAYER

Principals to guide us

1. **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.

DRUPAL 8 THEME LAYER

Principals to guide us

1. **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 all modules leverage (i.e. a Theme Component Library).

DRUPAL 8 THEME LAYER

Principals to guide us

1. **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.

DRUPAL 8 THEME LAYER

Principals to guide us

1. **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.

DRUPAL 8 THEME LAYER

Principals to guide us

1. **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. Theme developers can understand template logic and loops. When complexity does happen, use comments to explain why.

DRUPAL 8 THEME LAYER

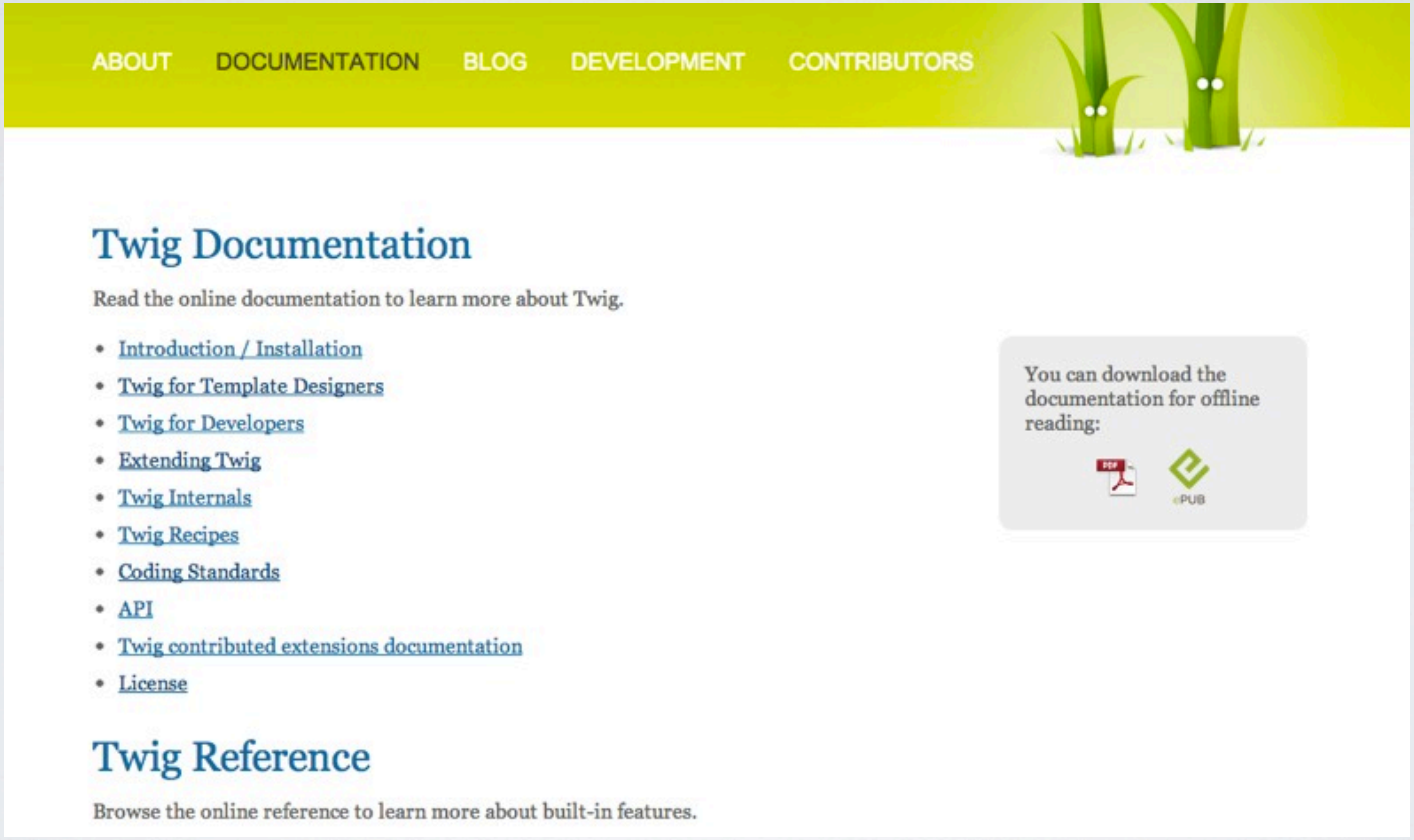
Principals to guide us

1. **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. Theme developers want to see markup in templates, not abstraction.

A NEW THEME ENGINE?

TWIG



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
- API
- Twig contributed extensions documentation
- License

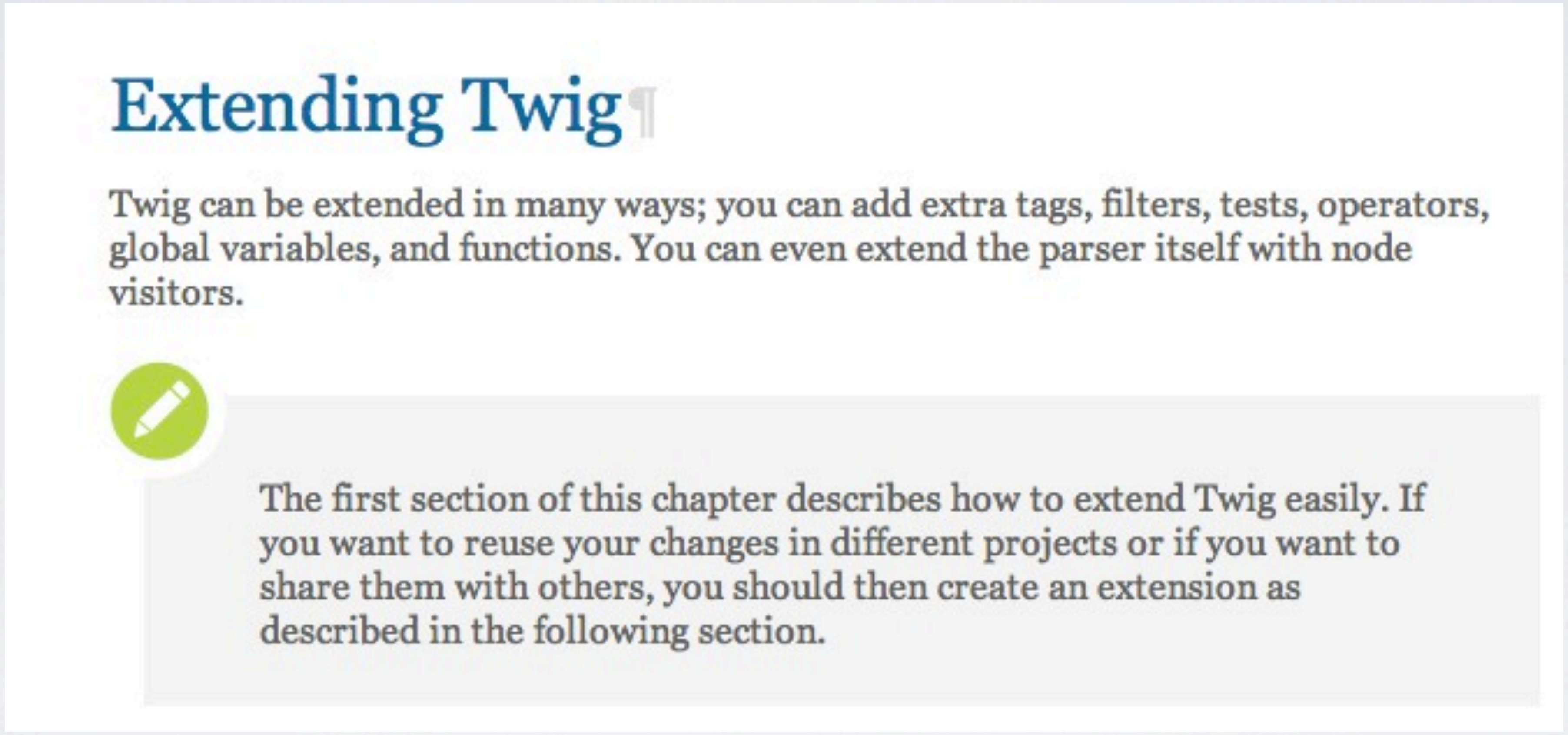
You can download the documentation for offline reading:

Twig Reference

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

well documented

TWIG



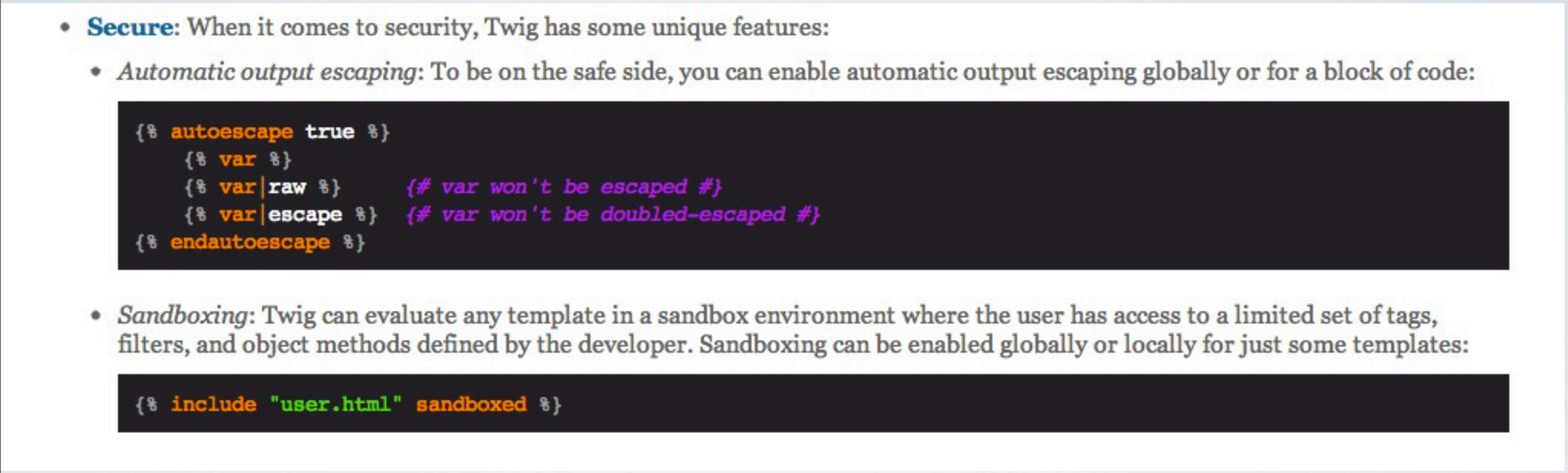
Extending Twig¶

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

TWIG



- **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:

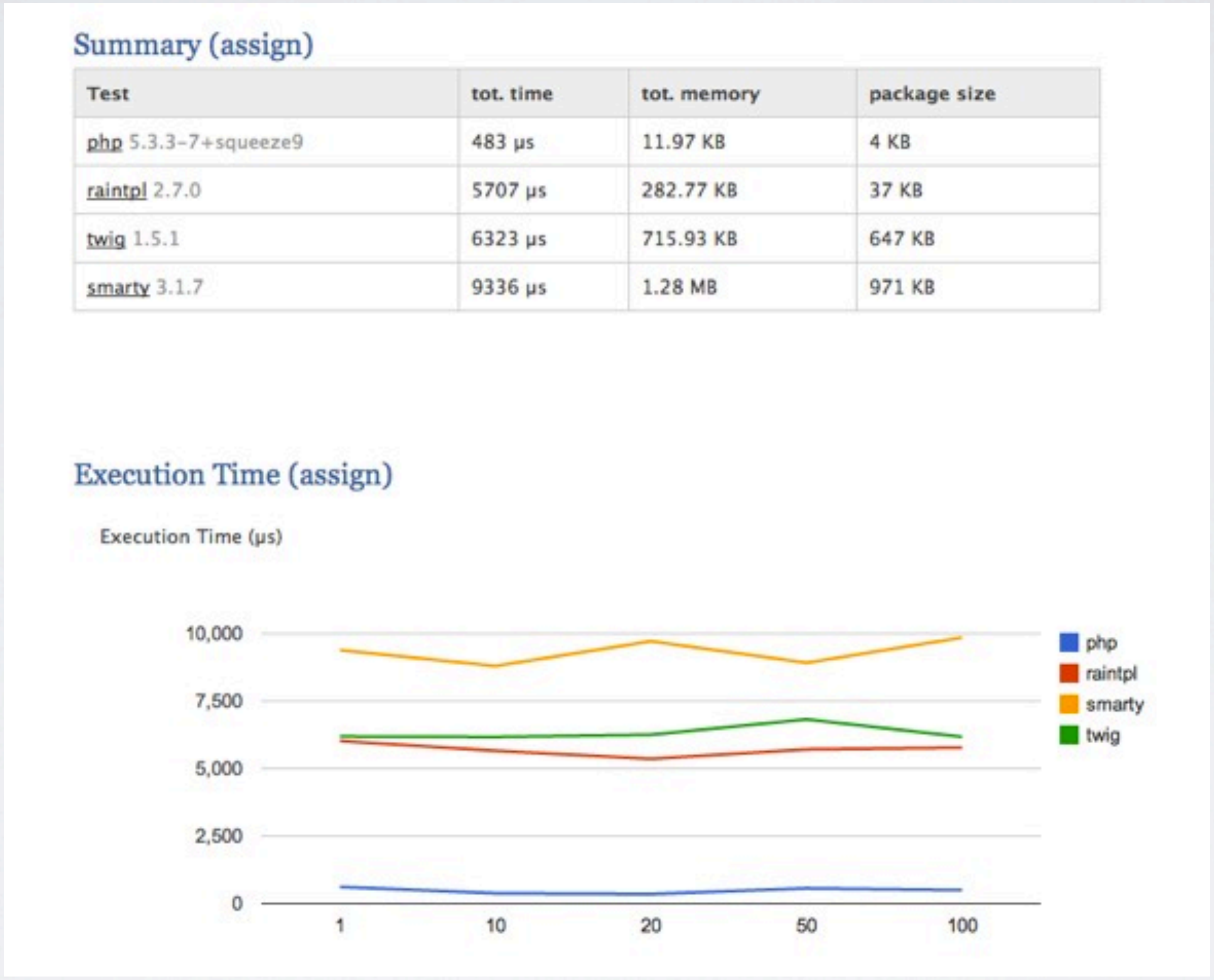
```
{% autoescape true %}
    {% var %}
    {% var|raw %}     {# var won't be escaped #}
    {% var|escape %}  {# var won't be doubled-escaped #}
{% endautoescape %}
```

  - *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

TWIG



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)

fast

TWIG

IDE integration

TWIG

python

smarty™
TEMPLATE ENGINE

django

recognizable syntax

TWIG

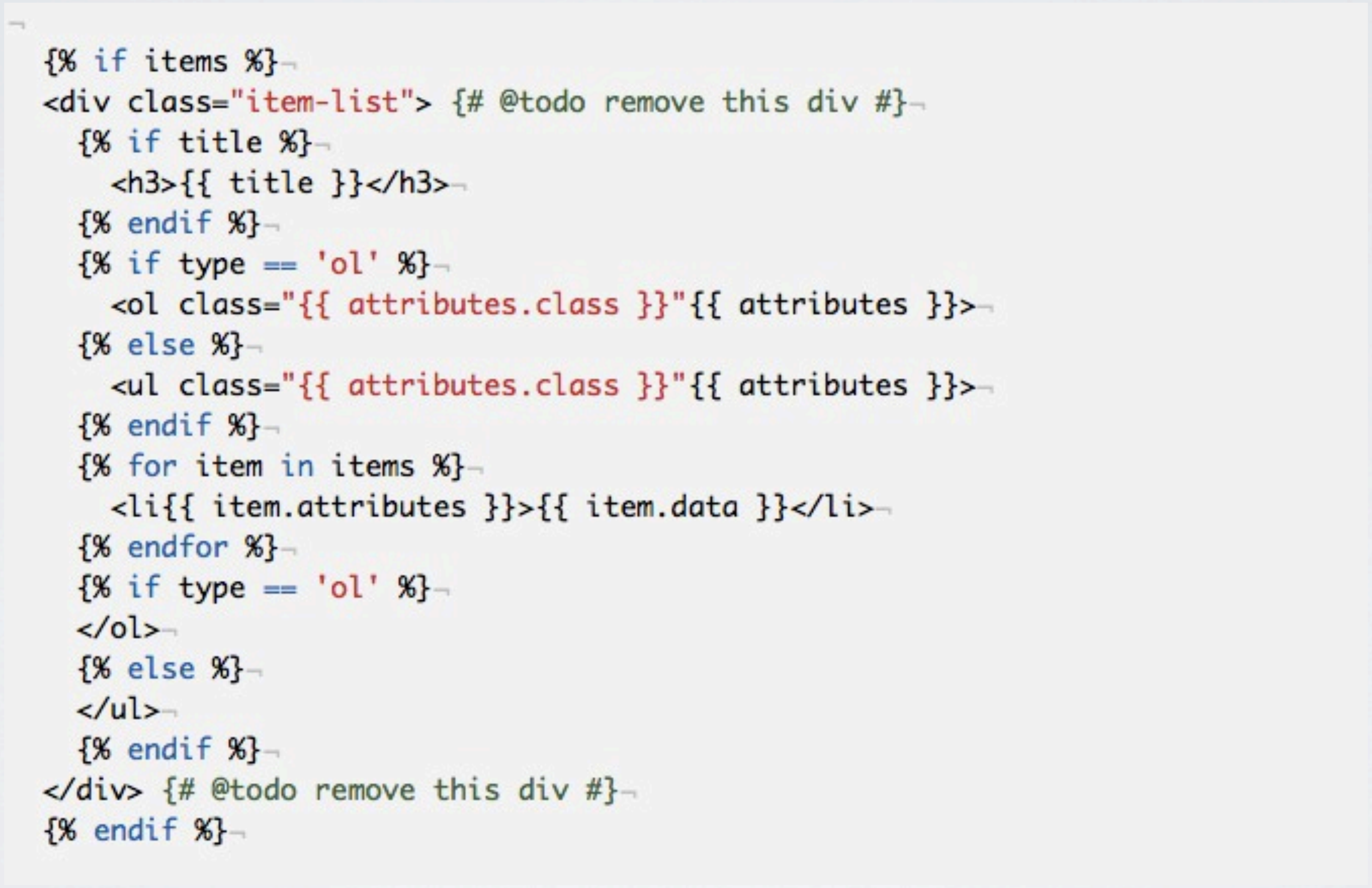
by the creator of Symfony, Fabien Potencier

TWIG

what does it look like?

TWIG

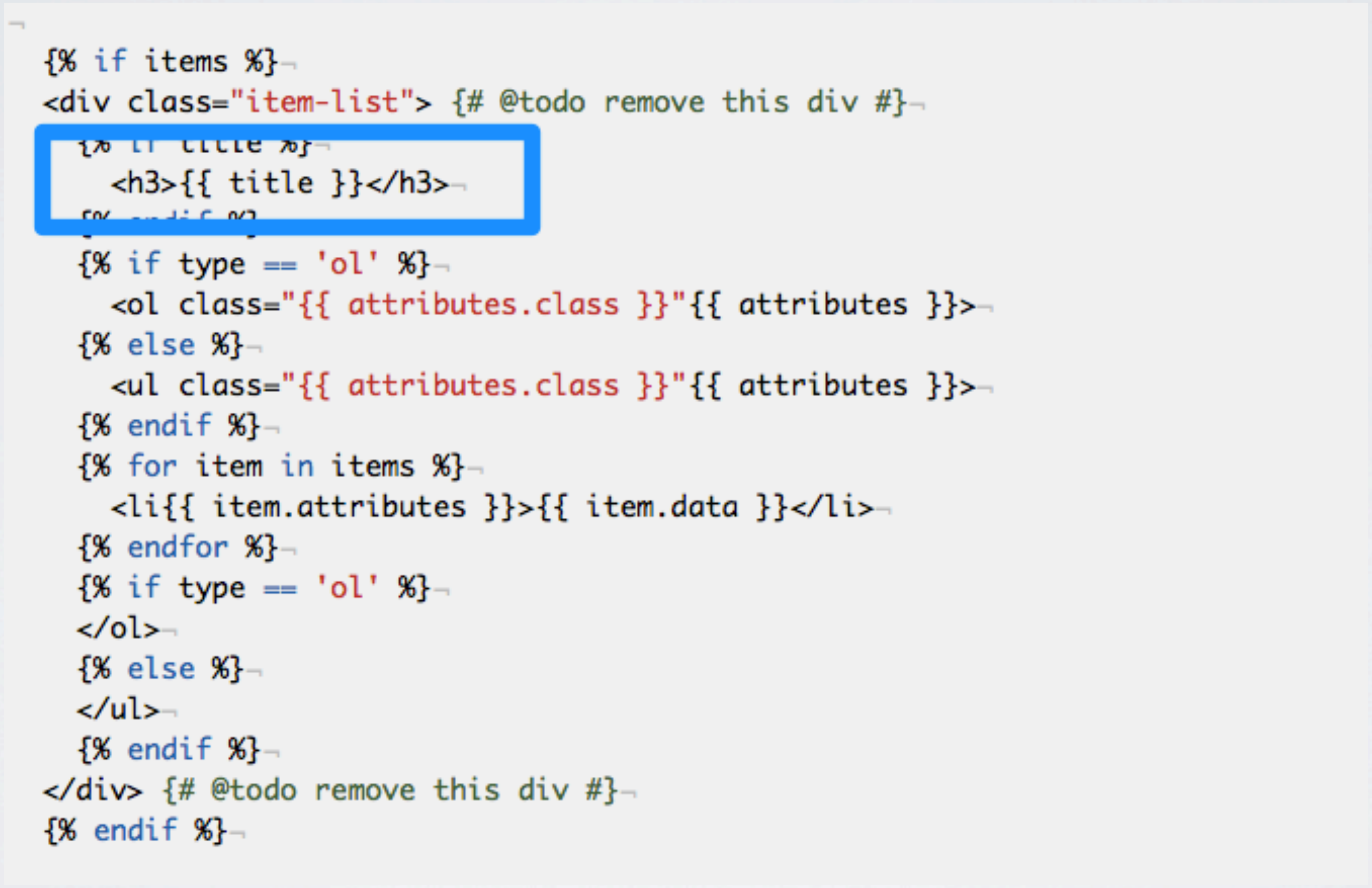
what does it look like?



```
{% if items %}
<div class="item-list"> {# @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
  </ol>
  {% else %}
  </ul>
  {% endif %}
</div> {# @todo remove this div #}
{% endif %}
```

TWIG

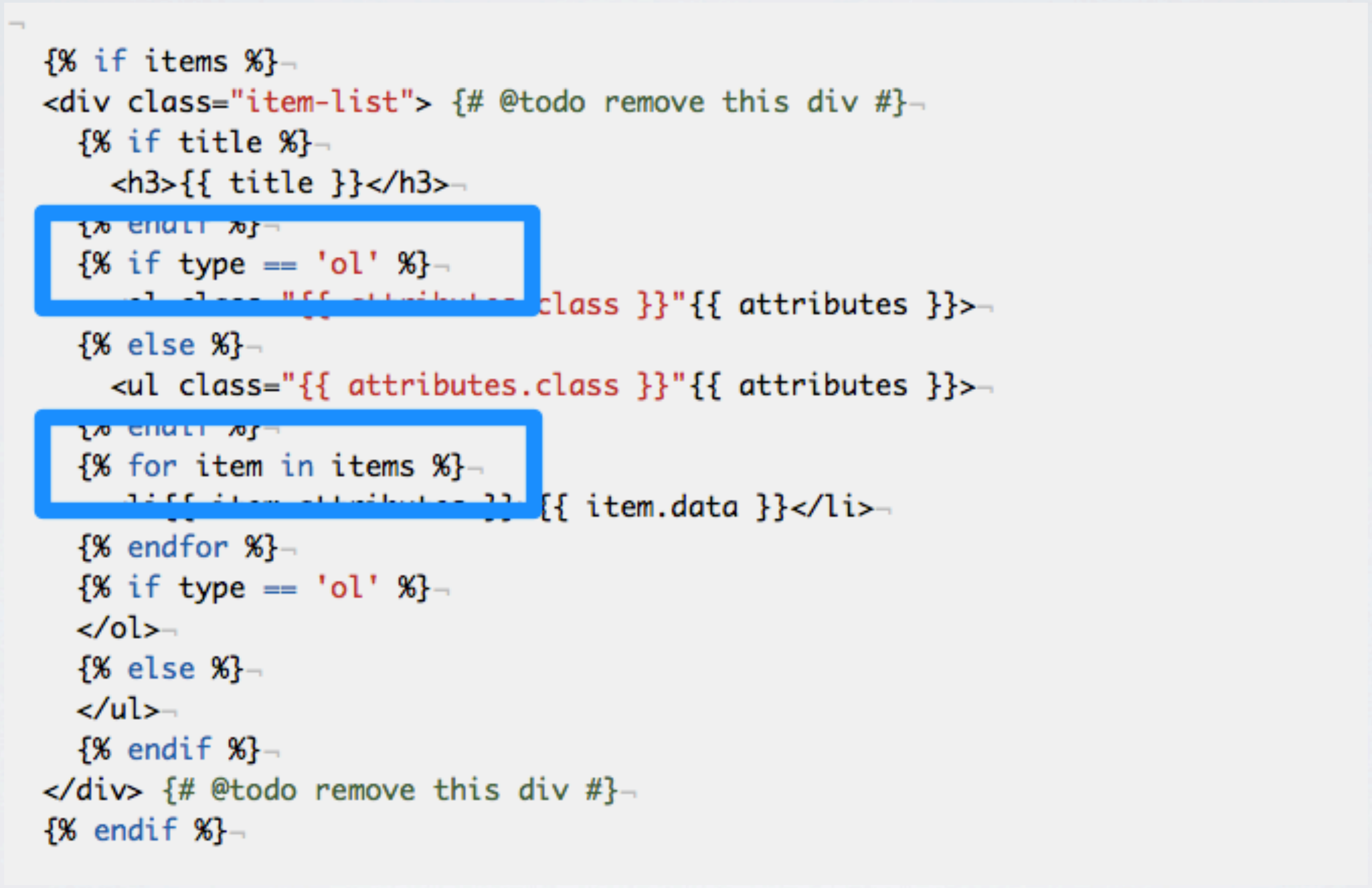
print with {{ }}



```
{% if items %}
<div class="item-list"> {# @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
  </ol>
  {% else %}
  </ul>
  {% endif %}
</div> {# @todo remove this div #}
{% endif %}
```

TWIG

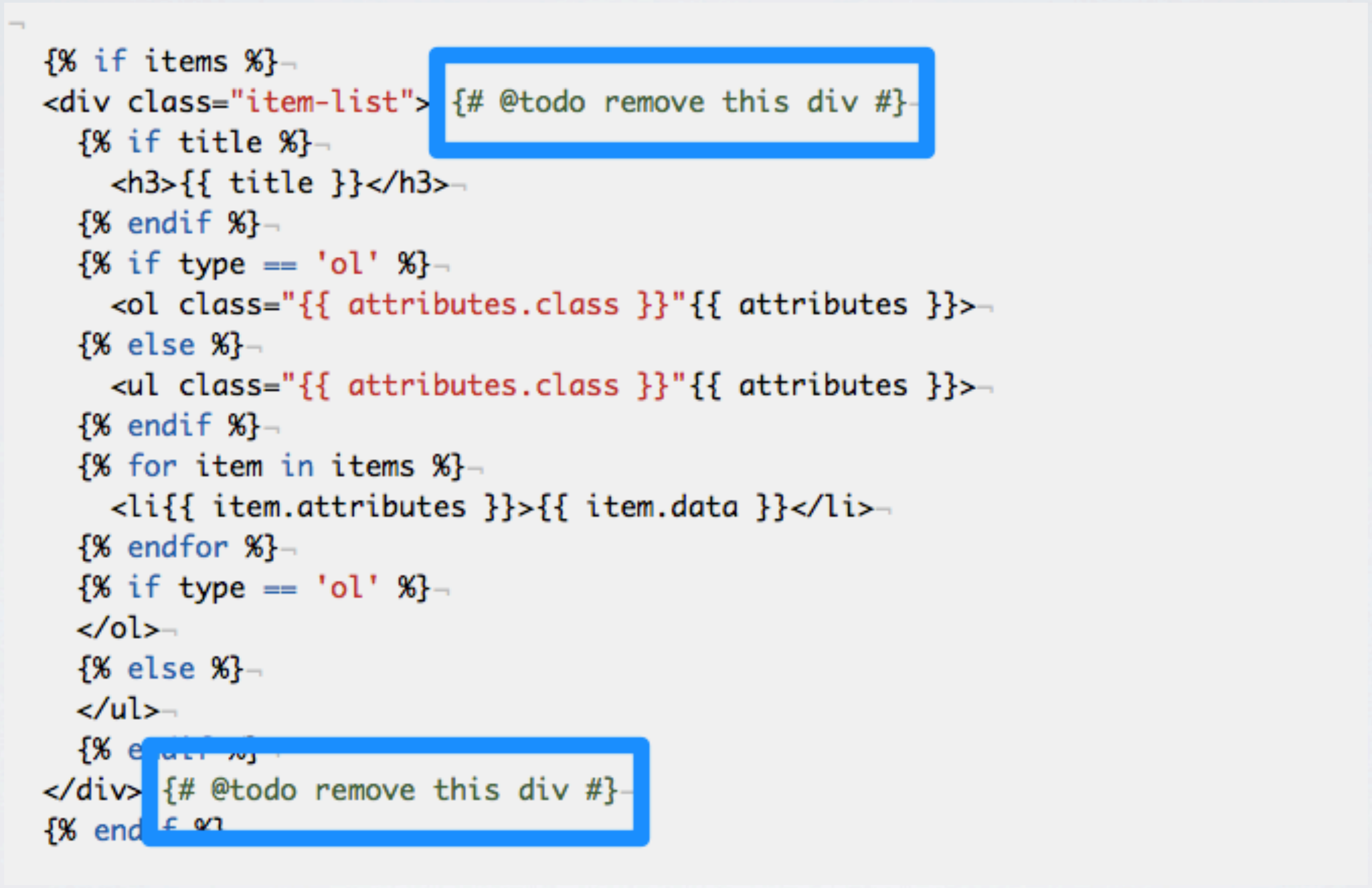
commands with {% %}



```
{% if items %}
<div class="item-list"> {# @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
  </ol>
  {% else %}
  </ul>
  {% endif %}
</div> {# @todo remove this div #}
{% endif %}
```

TWIG

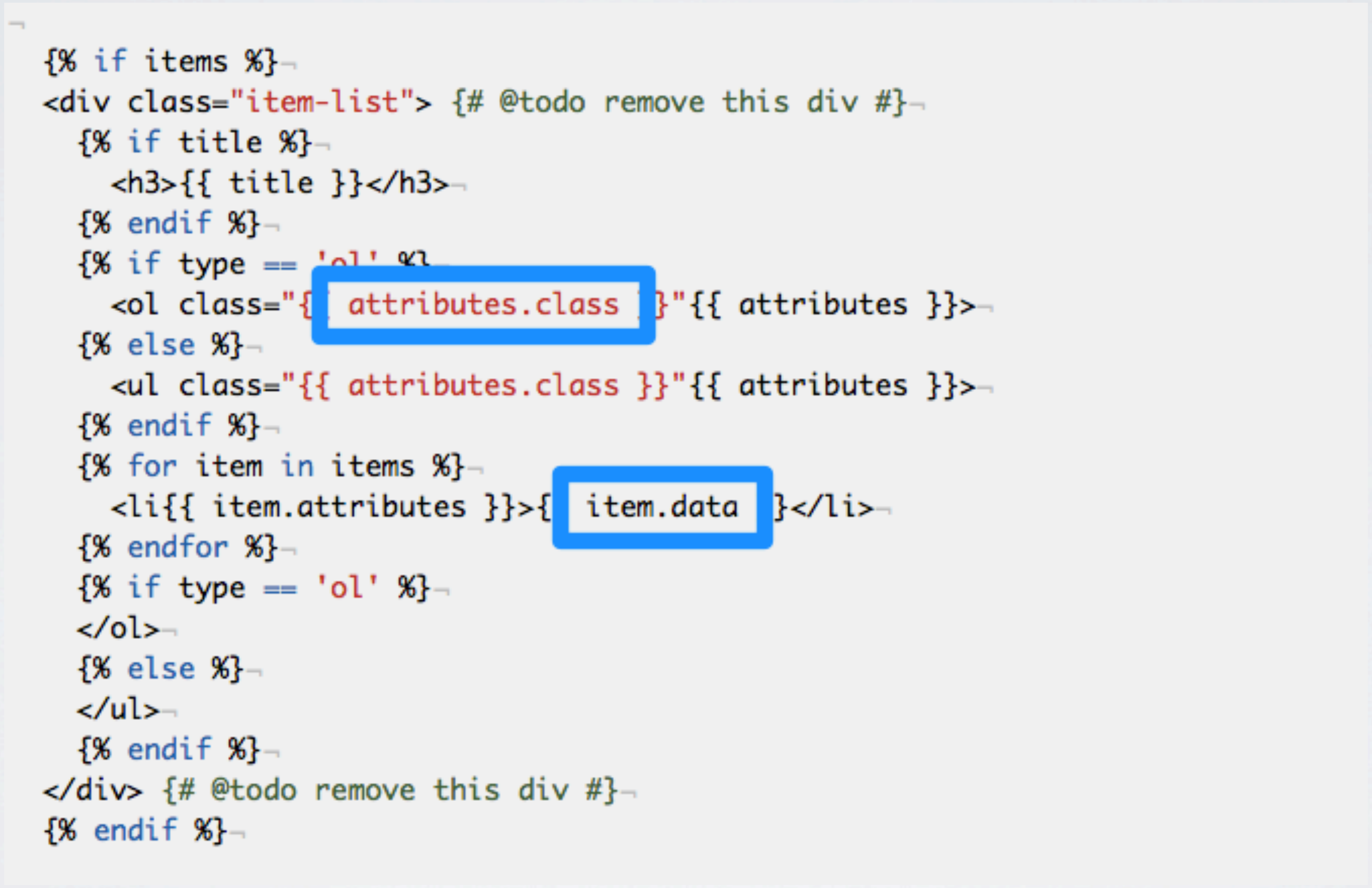
comments with {# #}



```
{% if items %}
<div class="item-list"> {# @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
  </ol>
  {% else %}
  </ul>
  {% e
</div> {# @todo remove this div #}
{% end
```

TWIG

drill down into all variables with **.**

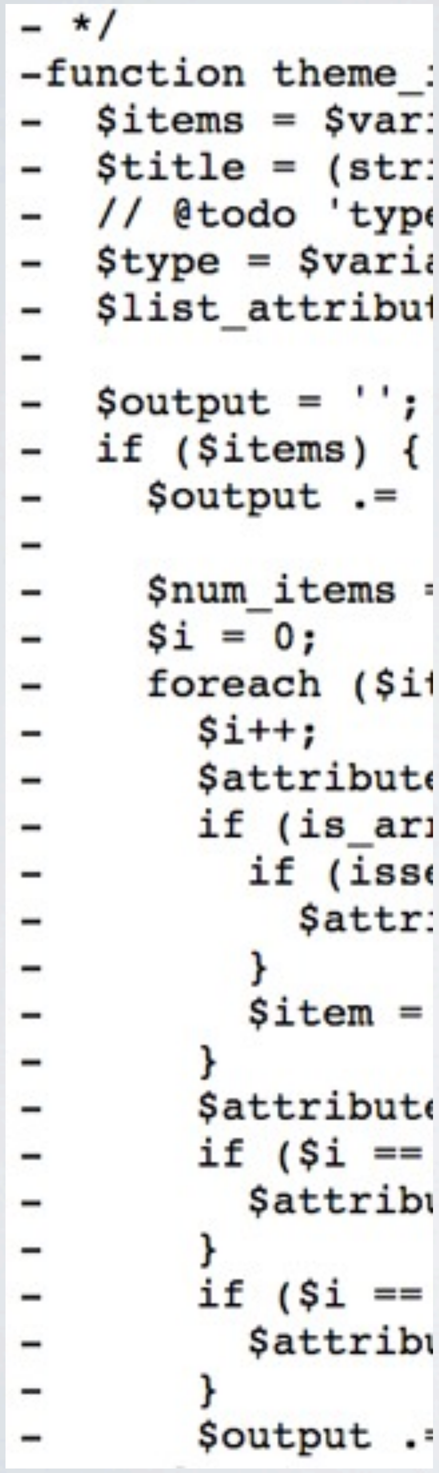


```
{% if items %}
<div class="item-list"> {# @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{ attributes.class }"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{ item.data }</li>
  {% endfor %}
  {% if type == 'ol' %}
  </ol>
  {% else %}
  </ul>
  {% endif %}
</div> {# @todo remove this div #}
{% endif %}
```

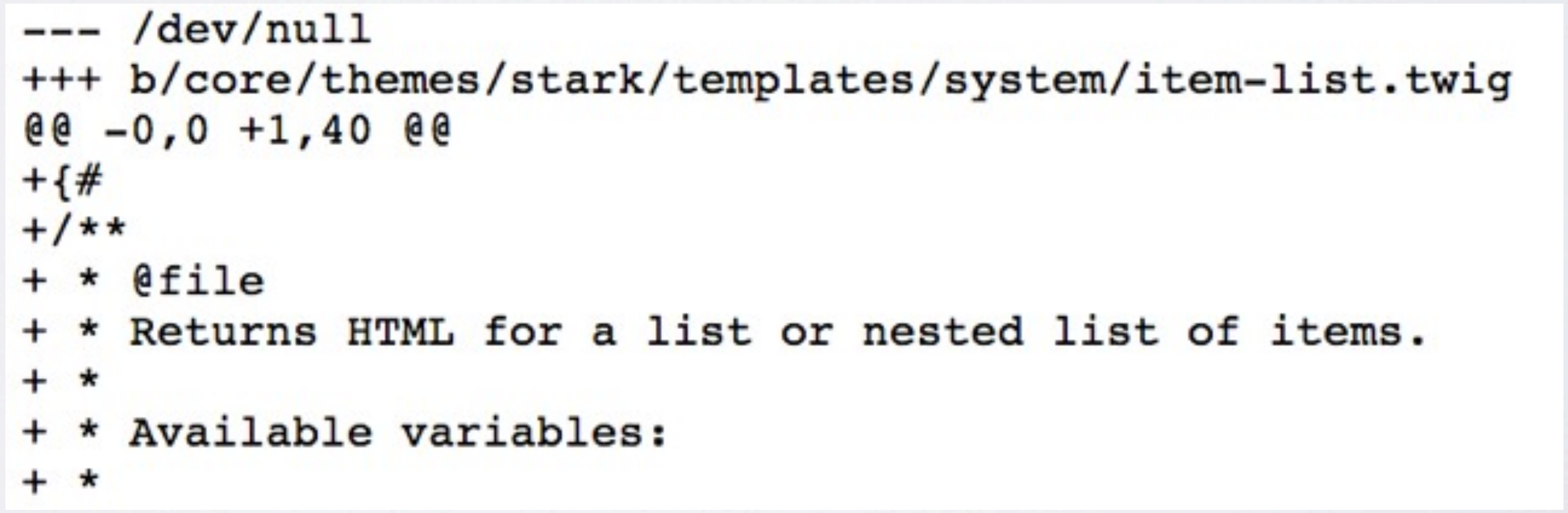
TWIG

All markup is generated from template files.
(no more theme functions)

A **single way** to override markup!



```
- */
-function theme_
-  $items = $var
-  $title = (str
-  // @todo 'type
-  $type = $varia
-  $list_attribut
-
-  $output = '';
-  if ($items) {
-    $output .=
-
-    $num_items =
-    $i = 0;
-    foreach ($it
-      $i++;
-      $attribute
-      if (is_arr
-        if (isse
-          $attr
-        }
-        $item =
-      }
-      $attribute
-      if ($i ==
-        $attribu
-      }
-      if ($i ==
-        $attribu
-      }
-      $output .=
```



```
--- /dev/null
+++ b/core/themes/stark/templates/system/item-list.twig
@@ -0,0 +1,40 @@
+{#
+/**
+ * @file
+ * Returns HTML for a list or nested list of items.
+ *
+ * Available variables:
+ *
```

D7 DIFFICULTIES

- 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

D7 DIFFICULTIES

- Drupal-specific template conventions

Twig is used elsewhere on the web.
...is syntactically similar to other languages,
...and looks a lot more like HTML.

D7 DIFFICULTIES

- 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

D7 DIFFICULTIES

- 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 }}

D7 DIFFICULTIES

- 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.

D7 DIFFICULTIES

- 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

D7 DIFFICULTIES

- 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

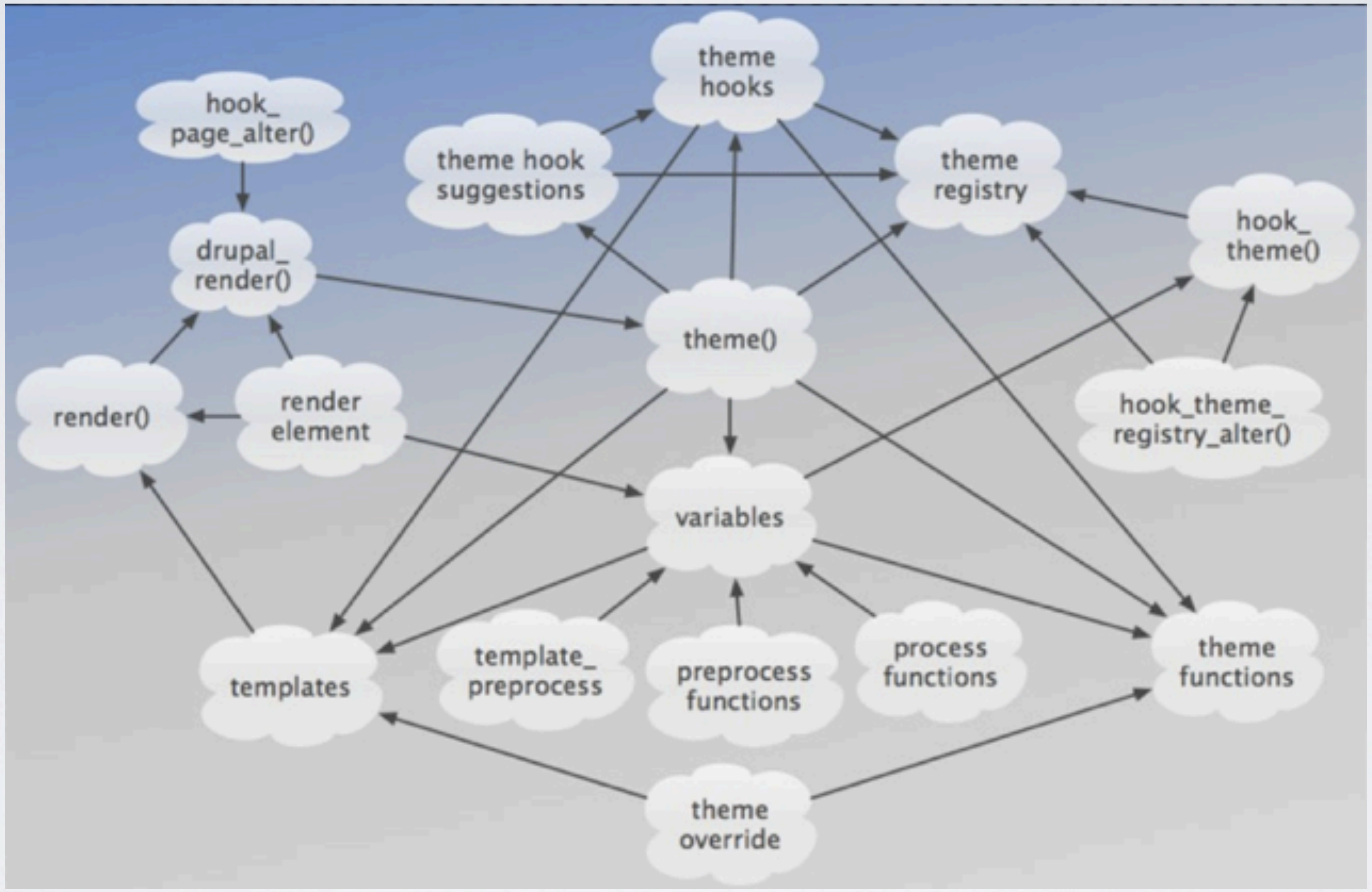
We're working on this right now

D7 DIFFICULTIES

- 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

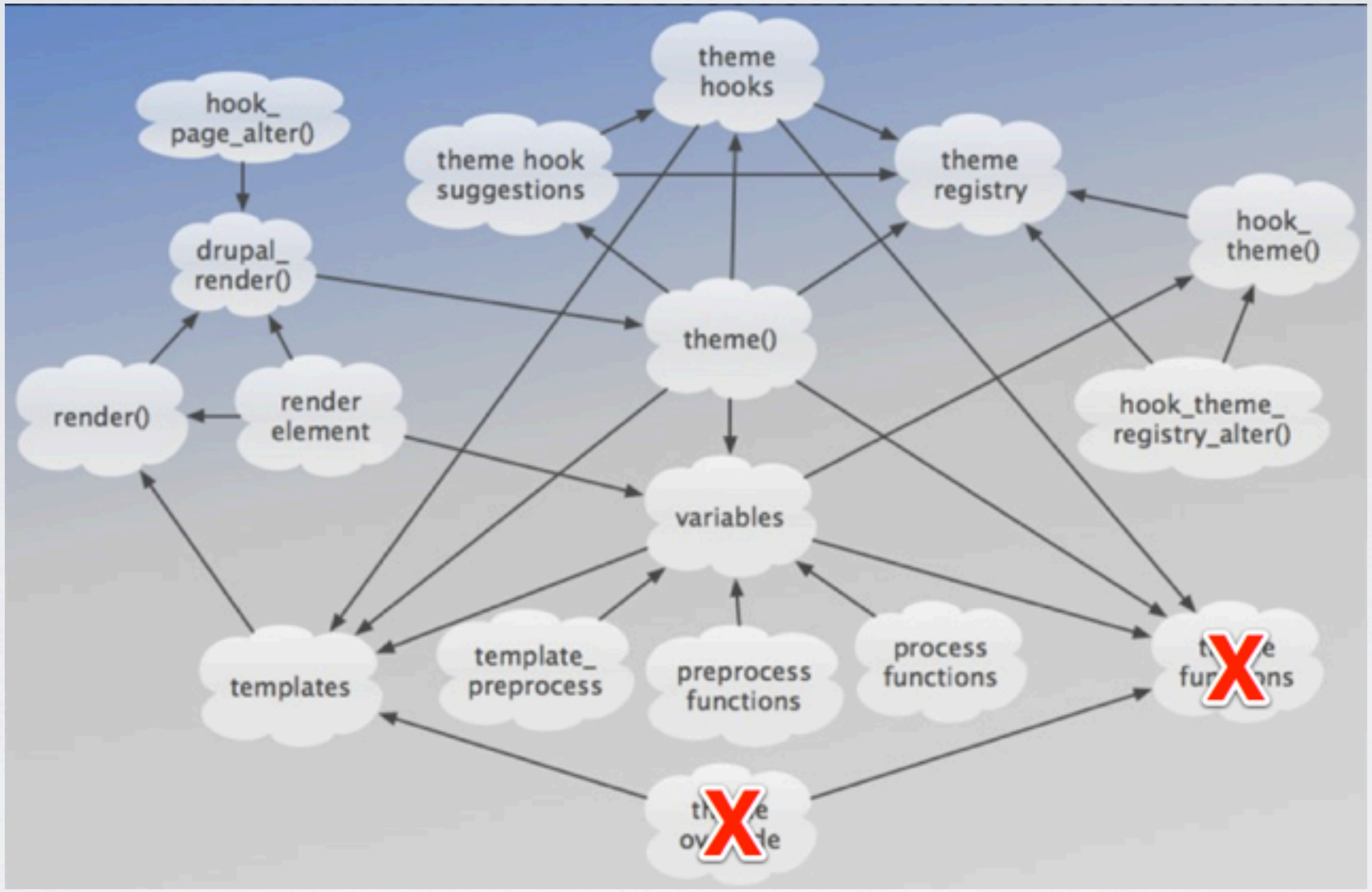
We can remove all theme functions, and potentially render, process & (maybe) preprocess.

D7 DIFFICULTIES



remember the complexity of Drupal 7?

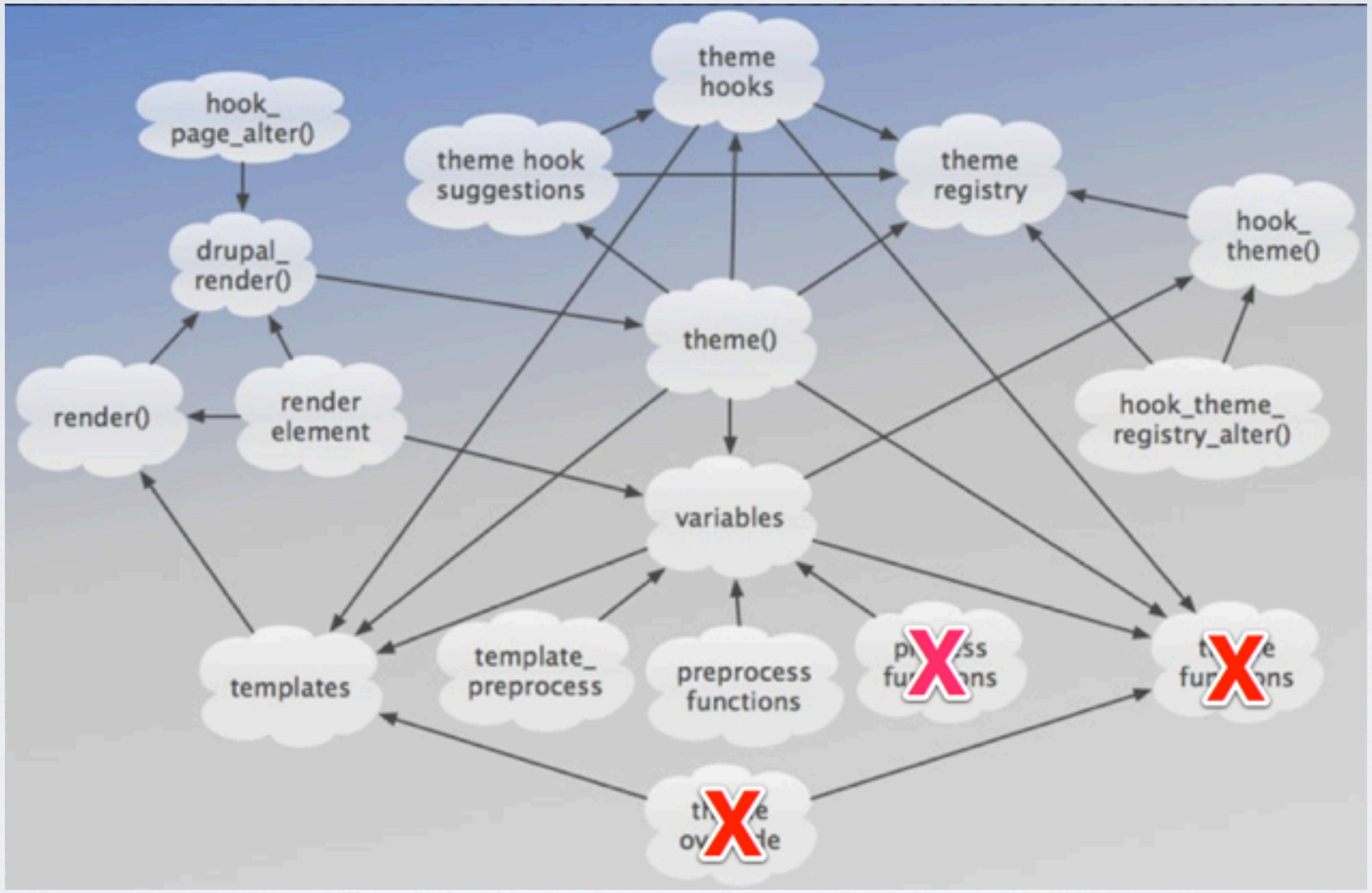
D7 DIFFICULTIES



remove theme functions (and overrides) entirely.

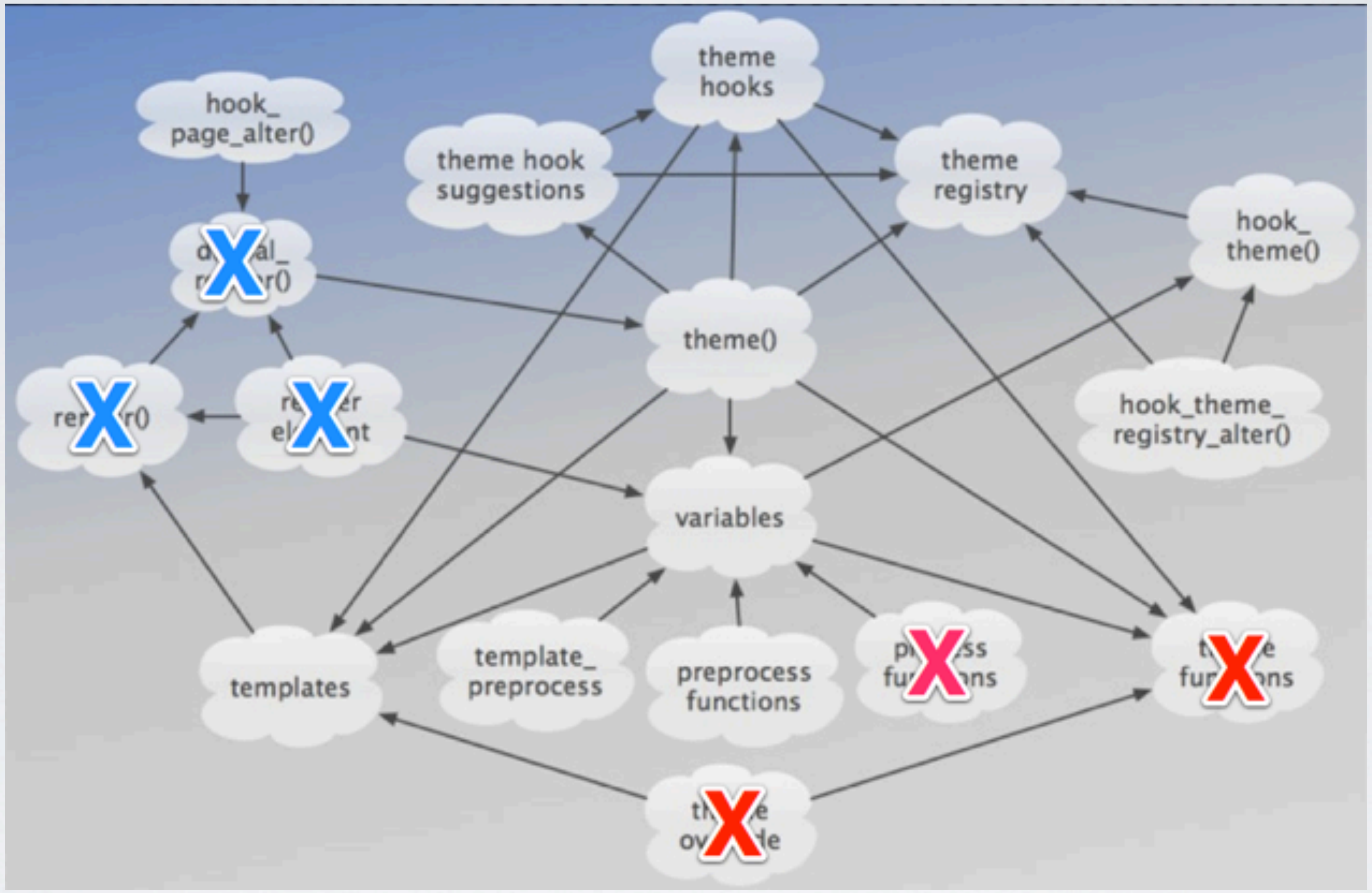
Monday, April 1, 2013

D7 DIFFICULTIES



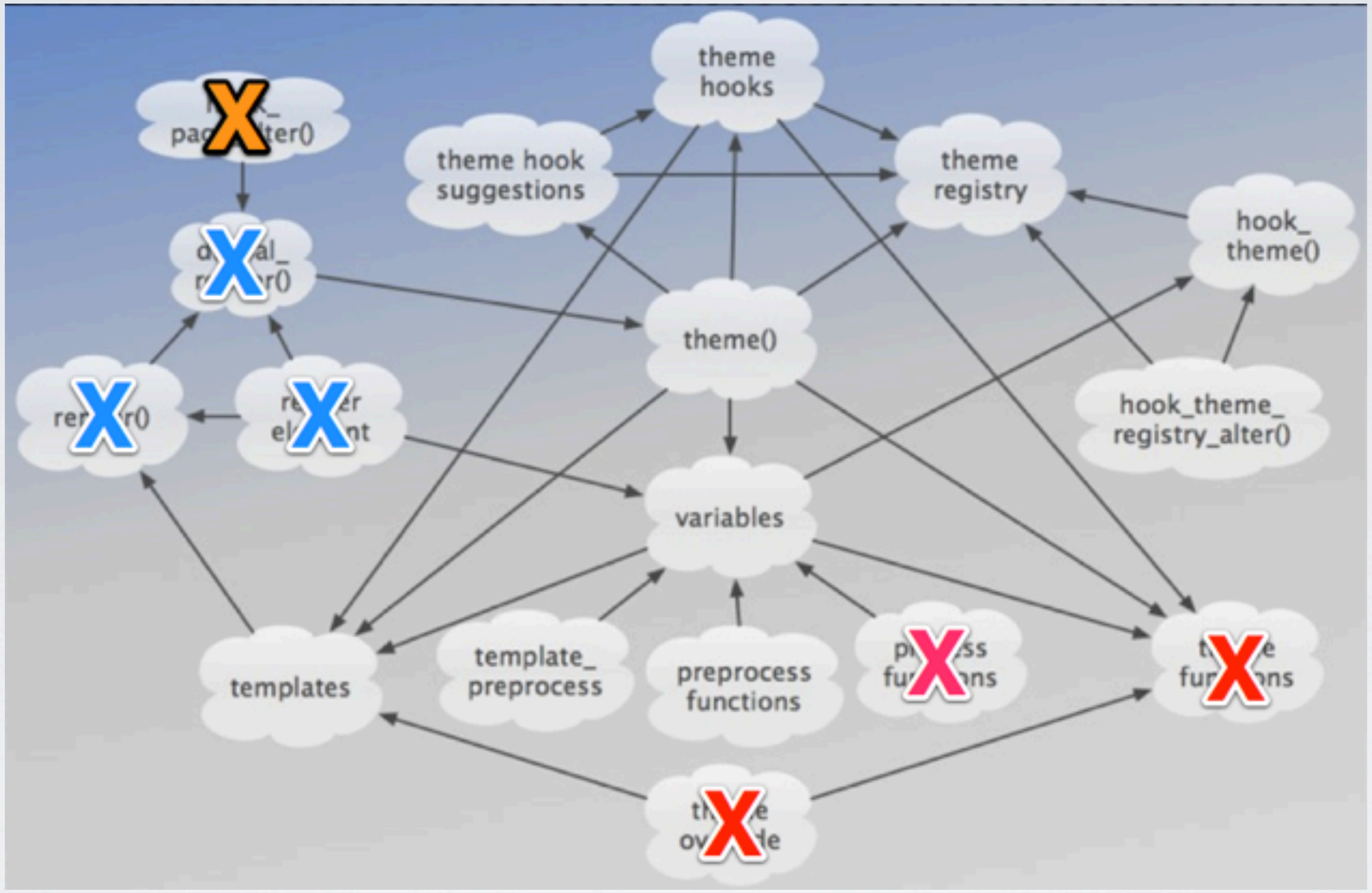
remove process.

D7 DIFFICULTIES



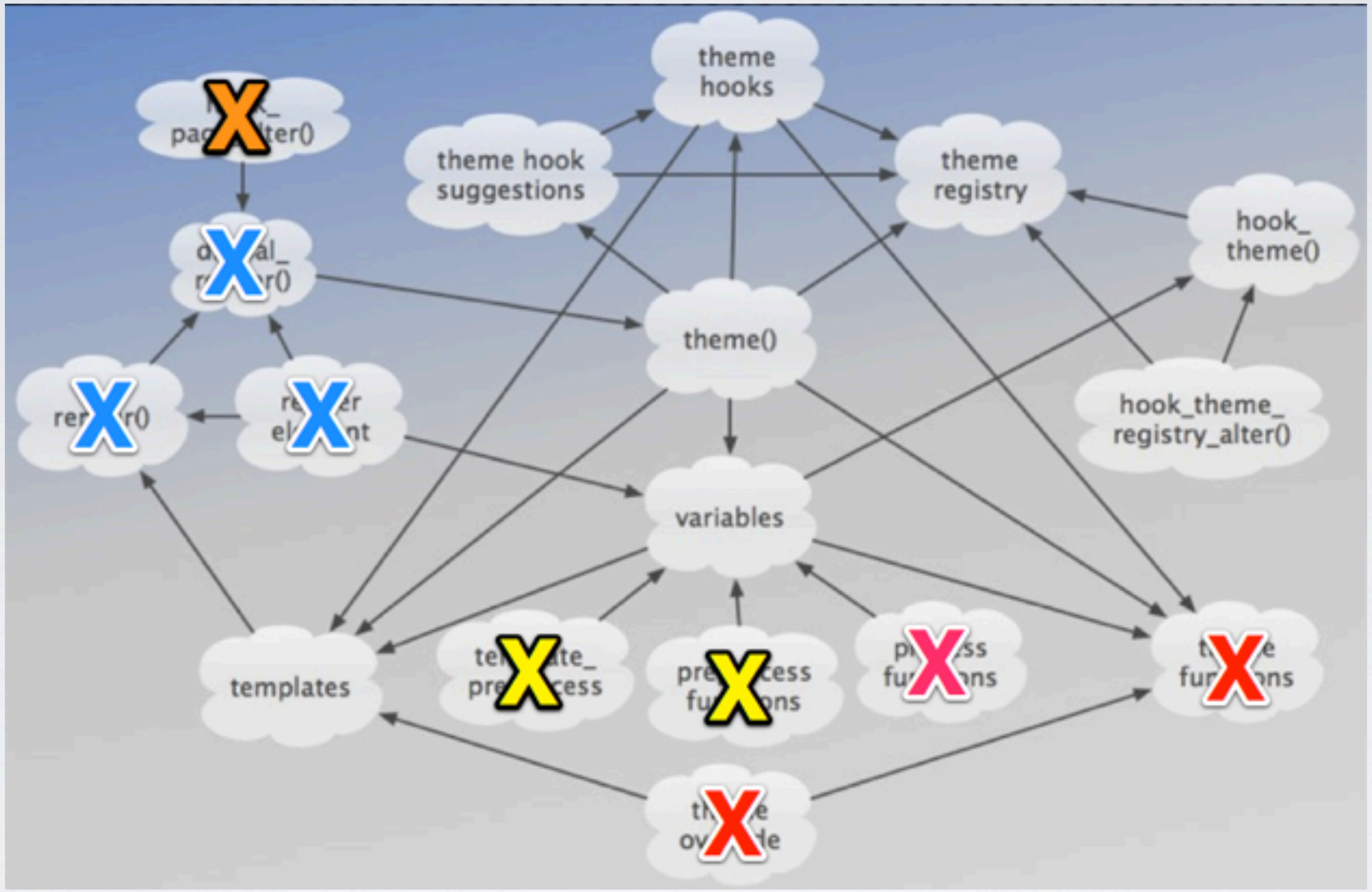
remove render.

D7 DIFFICULTIES



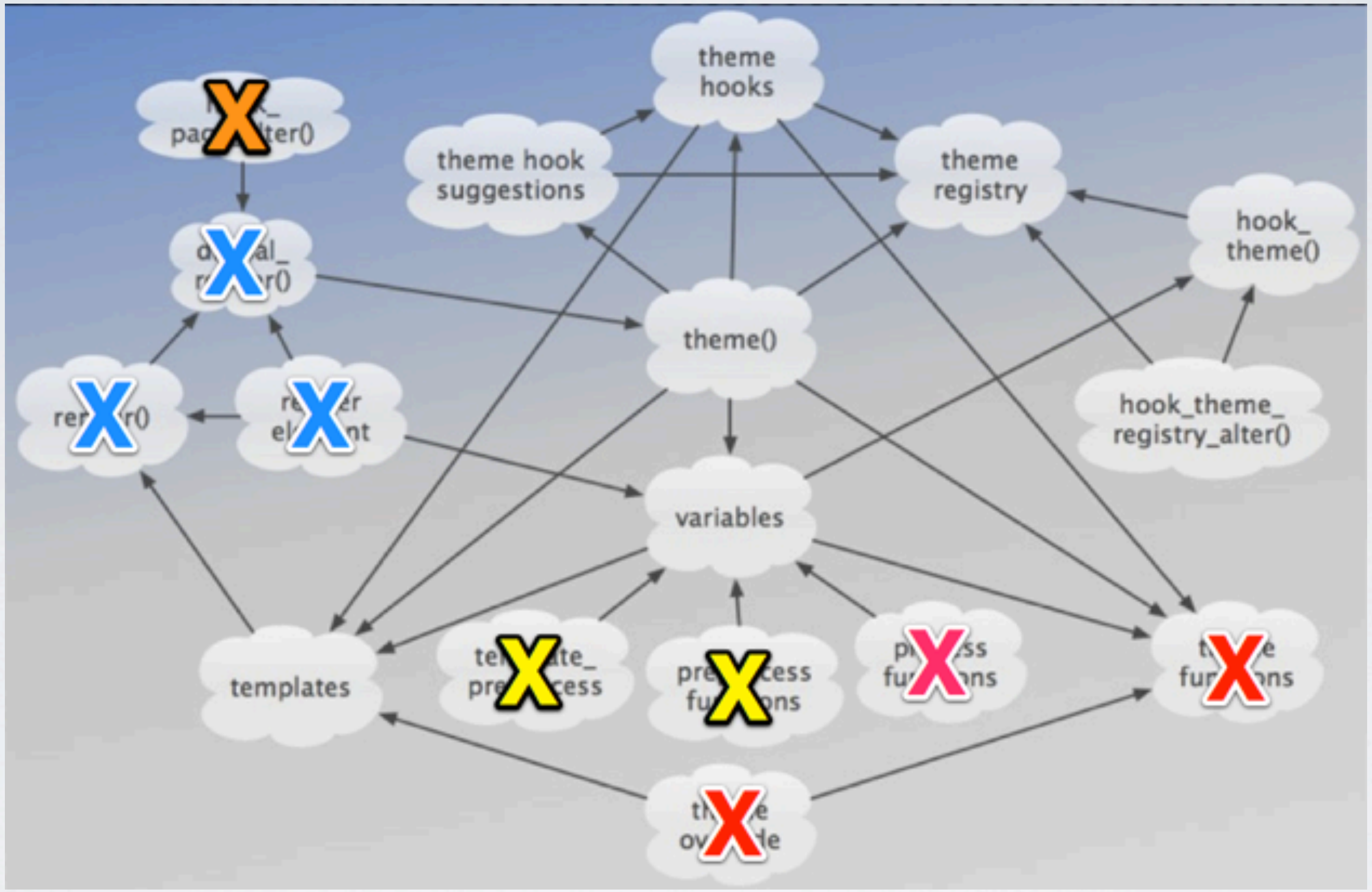
remove page alter?

D7 DIFFICULTIES



remove preprocess?

D7 DIFFICULTIES



look what could happen in Drupal 8.

D7 DIFFICULTIES

- 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**

TWIG: OTHER WINS

TWIG: OTHER WINS

less code than PHP functions

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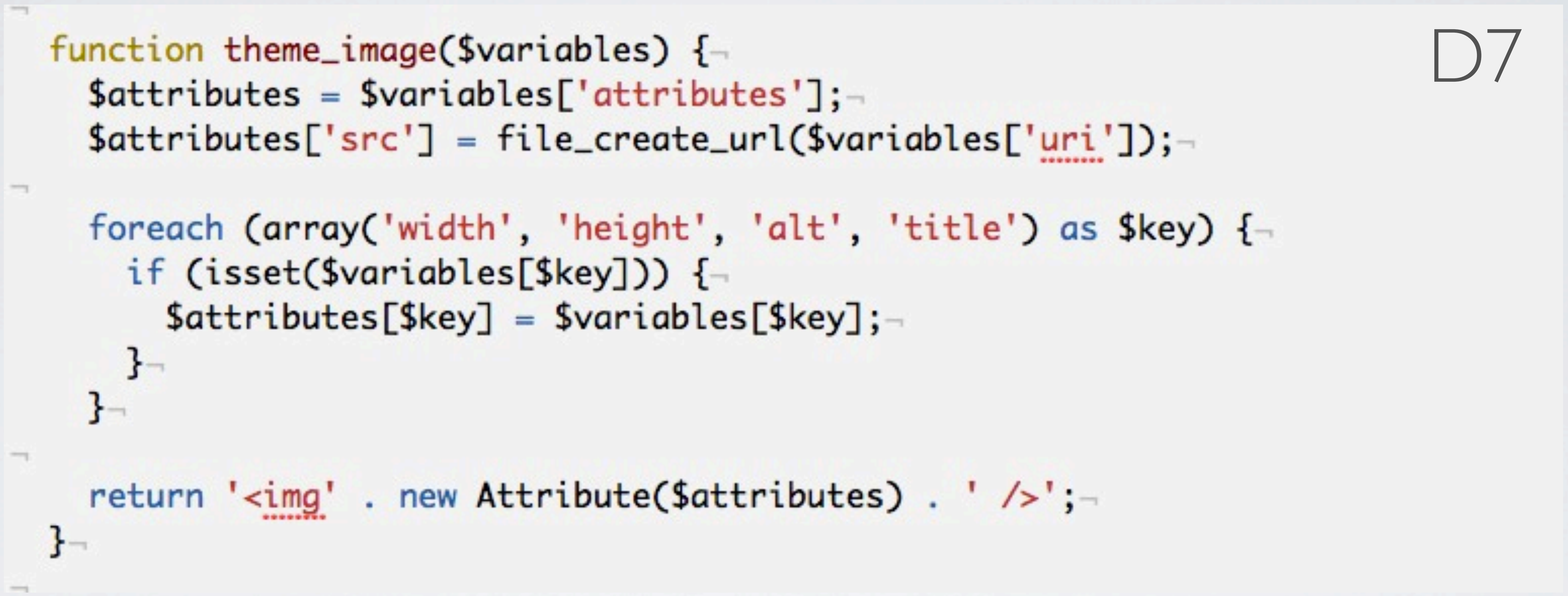
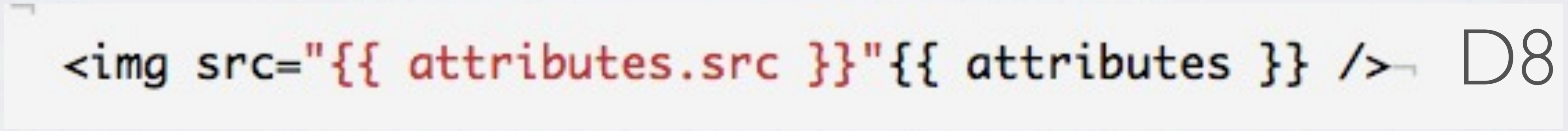
less code than PHP functions



D7

```
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' . new Attribute($attributes) . ' />';
}
```



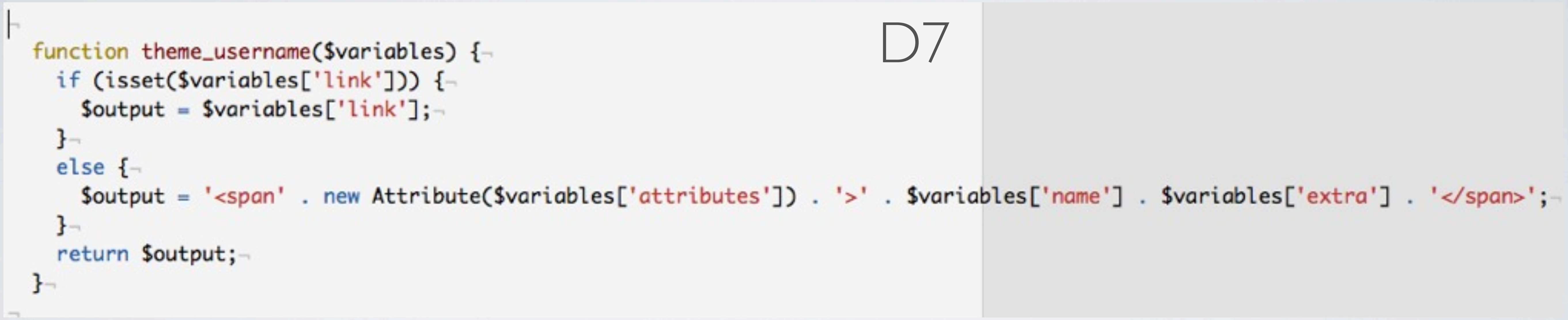
D8

```
<img src="{{ attributes.src }}"{{ attributes }} />
```

theme_image becomes image.html.twig

TWIG

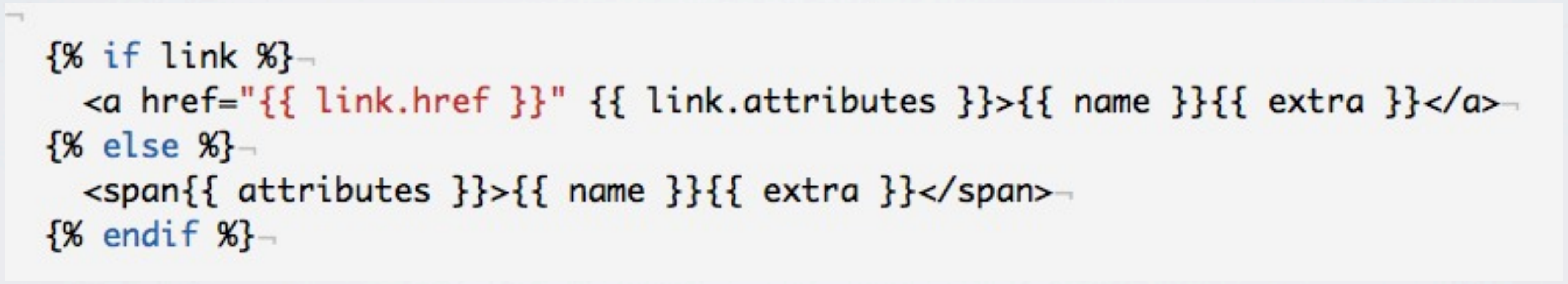
less code than PHP functions



D7

```
function theme_username($variables) {
  if (isset($variables['link'])) {
    $output = $variables['link'];
  }
  else {
    $output = '<span' . new Attribute($variables['attributes']) . '>' . $variables['name'] . $variables['extra'] . '</span>';
  }
  return $output;
}
```

D8

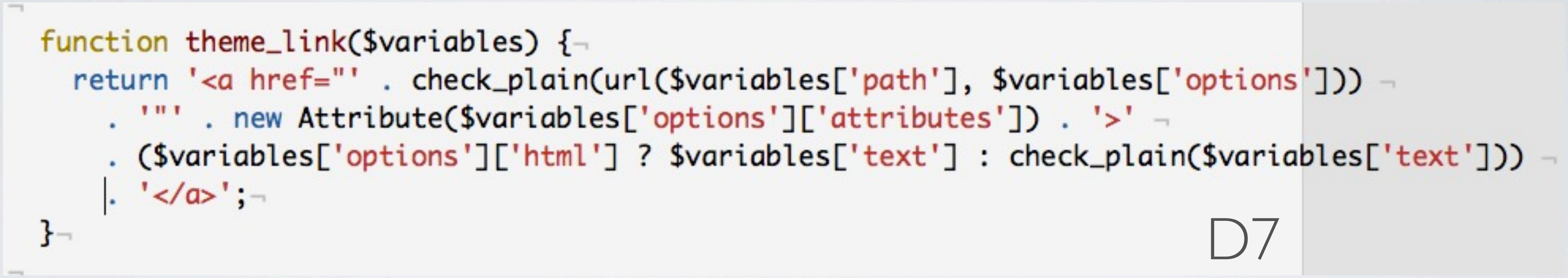


```
{% if link %}
  <a href="{{ link.href }}" {{ link.attributes }}>{{ name }}{{ extra }}</a>
{% else %}
  <span{{ attributes }}>{{ name }}{{ extra }}</span>
{% endif %}
```

theme_username becomes username.html.twig

TWIG

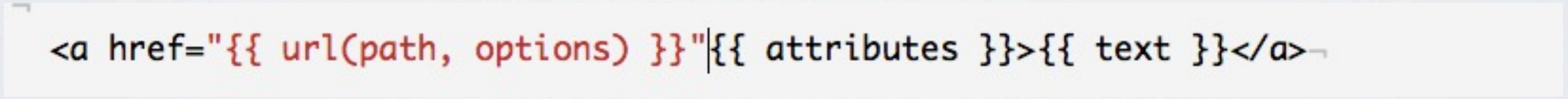
less code than PHP functions



```php
function theme_link($variables) {
  return '<a href="' . check_plain(url($variables['path'], $variables['options']))
    . '"' . new Attribute($variables['options']['attributes']) . '>'
    . ($variables['options']['html'] ? $variables['text'] : check_plain($variables['text']))
    . '</a>';
}
```

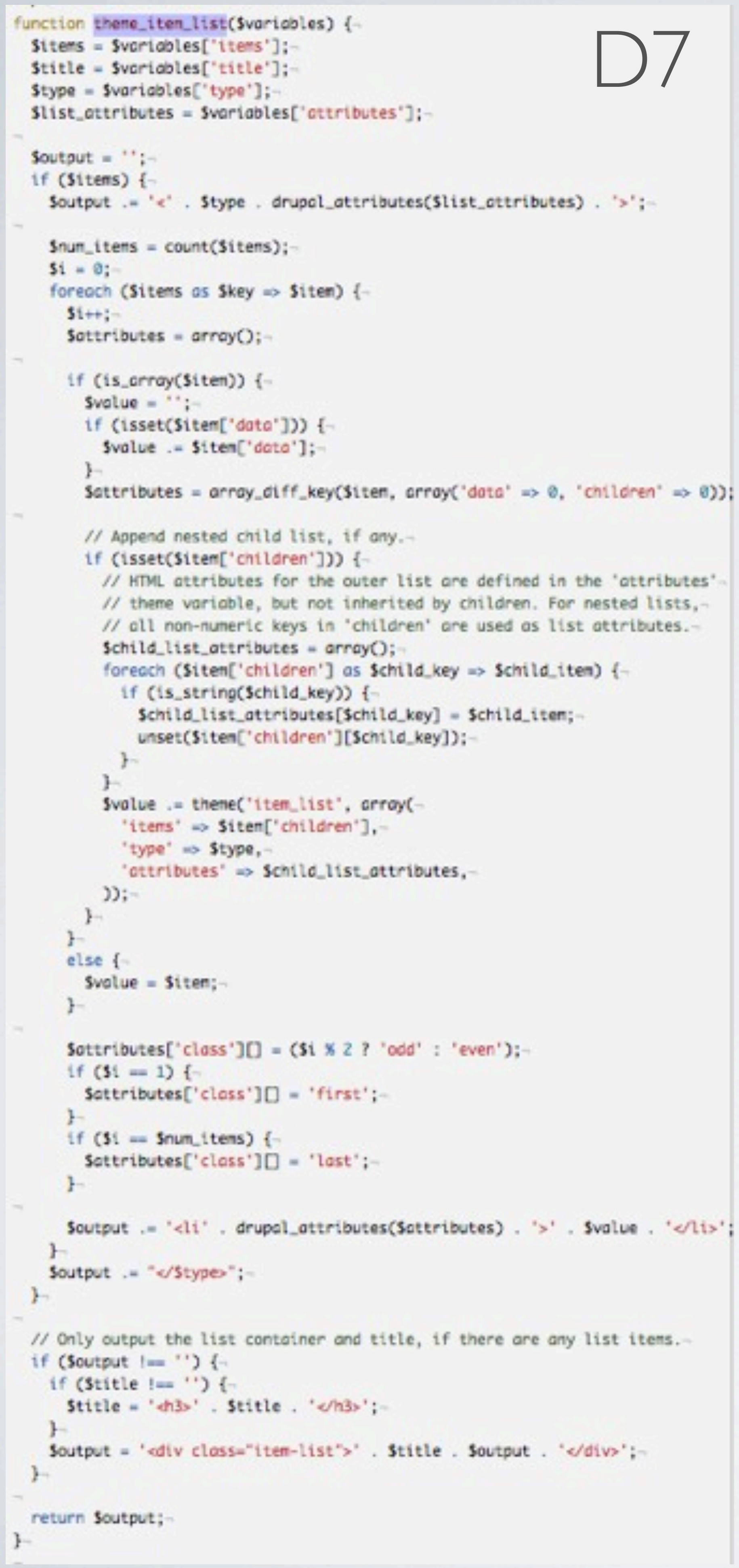
D7

D8



```twig
<a href="{{ url(path, options) }}"{{ attributes }}>{{ text }}</a>
```

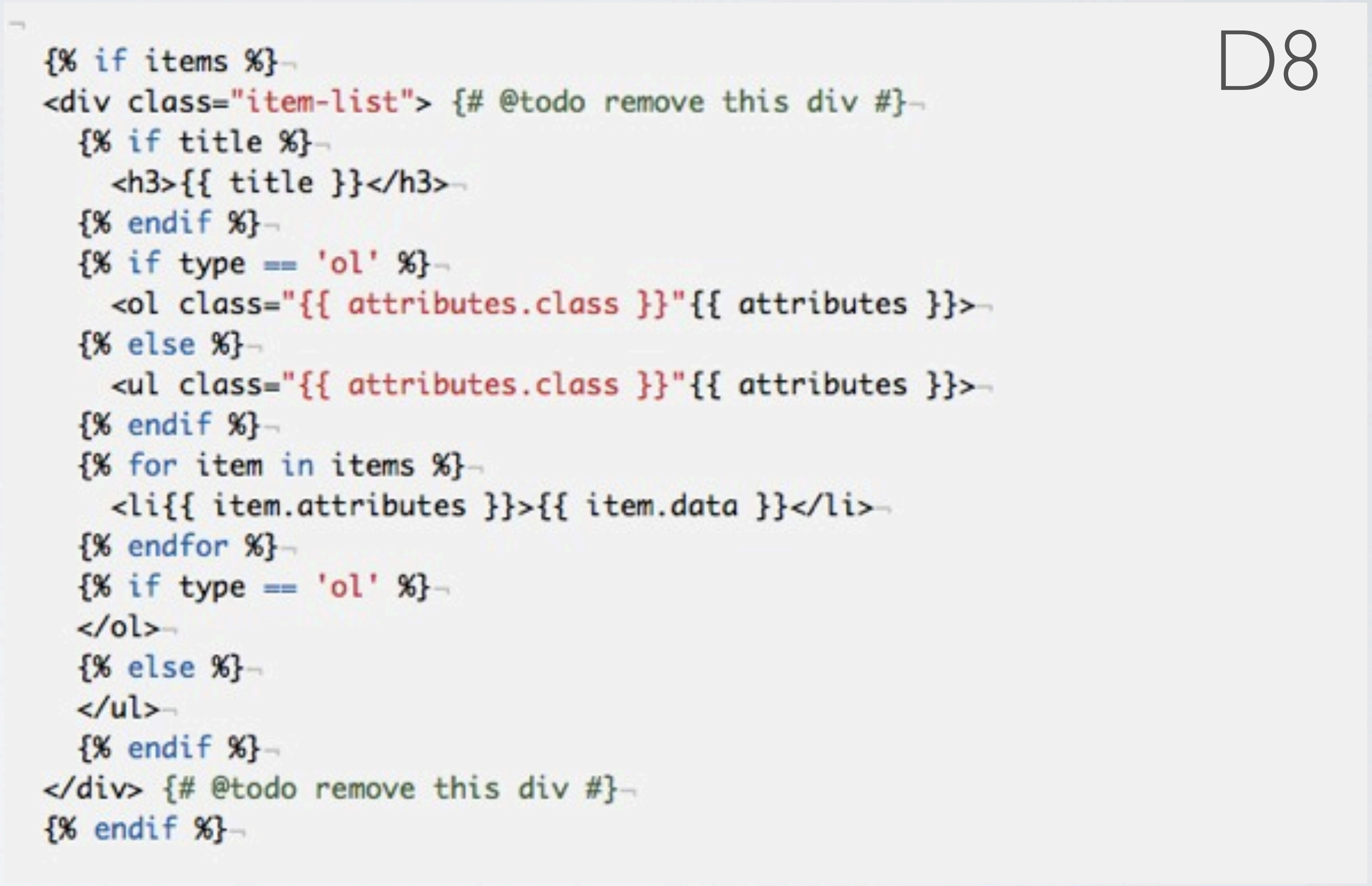
theme_link becomes link.html.twig



D7

```php
function theme_item_list($variables) {
  $items = $variables['items'];
  $title = $variables['title'];
  $type = $variables['type'];
  $list_attributes = $variables['attributes'];

  $output = '';
  if ($items) {
    $output .= '<' . $type . drupal_attributes($list_attributes) . '>';

    $num_items = count($items);
    $i = 0;
    foreach ($items as $key => $item) {
      $i++;
      $attributes = array();

      if (is_array($item)) {
        $value = '';
        if (isset($item['data'])) {
          $value .= $item['data'];
        }
        $attributes = array_diff_key($item, array('data' => 0, 'children' => 0));

        // Append nested child list, if any.
        if (isset($item['children'])) {
          // HTML 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.
          $child_list_attributes = array();
          foreach ($item['children'] as $child_key => $child_item) {
            if (is_string($child_key)) {
              $child_list_attributes[$child_key] = $child_item;
              unset($item['children'][$child_key]);
            }
          }
          $value .= theme('item_list', array(
            'items' => $item['children'],
            'type' => $type,
            'attributes' => $child_list_attributes,
          ));
        }
      }
      else {
        $value = $item;
      }

      $attributes['class'][] = ($i % 2 ? 'odd' : 'even');
      if ($i == 1) {
        $attributes['class'][] = 'first';
      }
      if ($i == $num_items) {
        $attributes['class'][] = 'last';
      }

      $output .= '<li' . drupal_attributes($attributes) . '>' . $value . '</li>';
    }
    $output .= "</$type>";
  }

  // Only output the list container and title, if there are any list items.
  if ($output !== '') {
    if ($title !== '') {
      $title = '<h3>' . $title . '</h3>';
    }
    $output = '<div class="item-list">' . $title . $output . '</div>';
  }

  return $output;
}
```

lots less code than PHP functions



D8

```twig
{% if items %}
<div class="item-list"> {# @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
  </ol>
  {% else %}
  </ul>
  {% endif %}
</div> {# @todo remove this div #}
{% endif %}
```

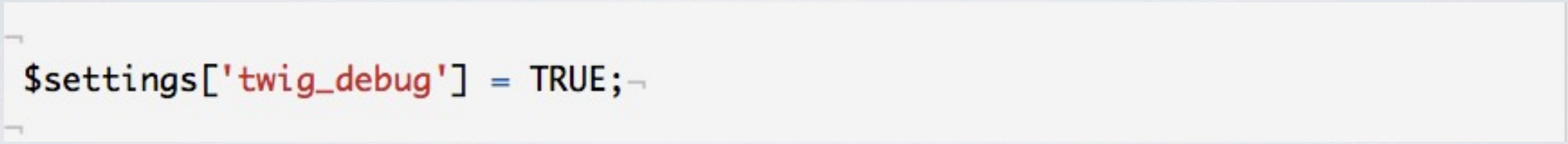
theme_item_list becomes
item_list.html.twig

TWIG: OTHER WINS

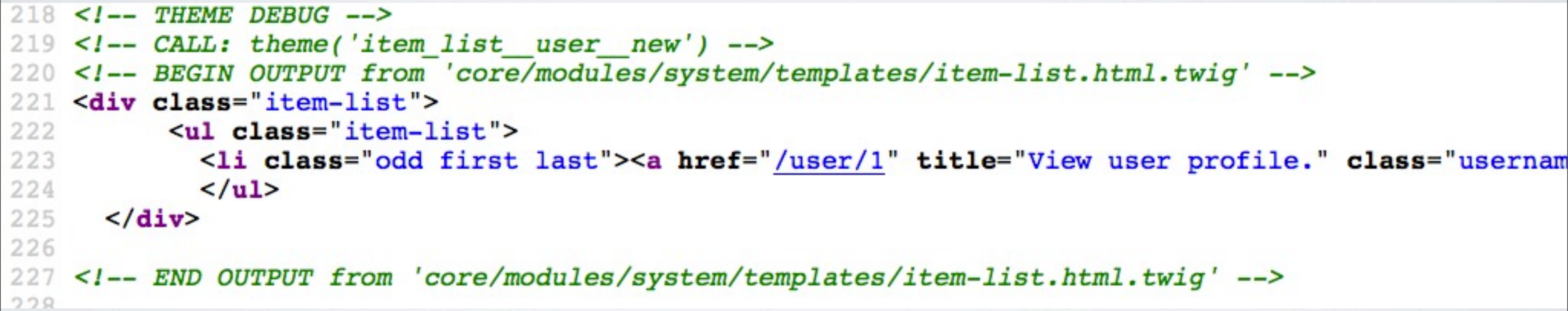
Awesome template inspection.

TWIG: OTHER WINS

Awesome template inspection.



```
$settings['twig_debug'] = TRUE;
```



```
<!-- THEME DEBUG -->
<!-- CALL: theme('item_list__user__new') -->
<!-- BEGIN OUTPUT from 'core/modules/system/templates/item-list.html.twig' -->
<div class="item-list">
      <ul class="item-list">
        <li class="odd first last"><a href="/user/1" title="View user profile." class="usernam
        </ul>
  </div>

<!-- END OUTPUT from 'core/modules/system/templates/item-list.html.twig' -->
```

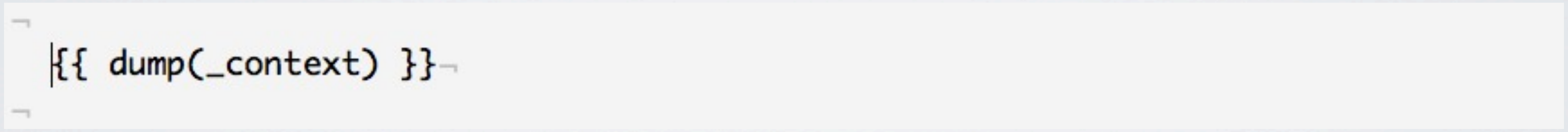
("devel themer" in core)

TWIG: OTHER WINS

Awesome variable inspection.

TWIG: OTHER WINS

Awesome variable inspection.



```
{{ dump(_context) }}
```

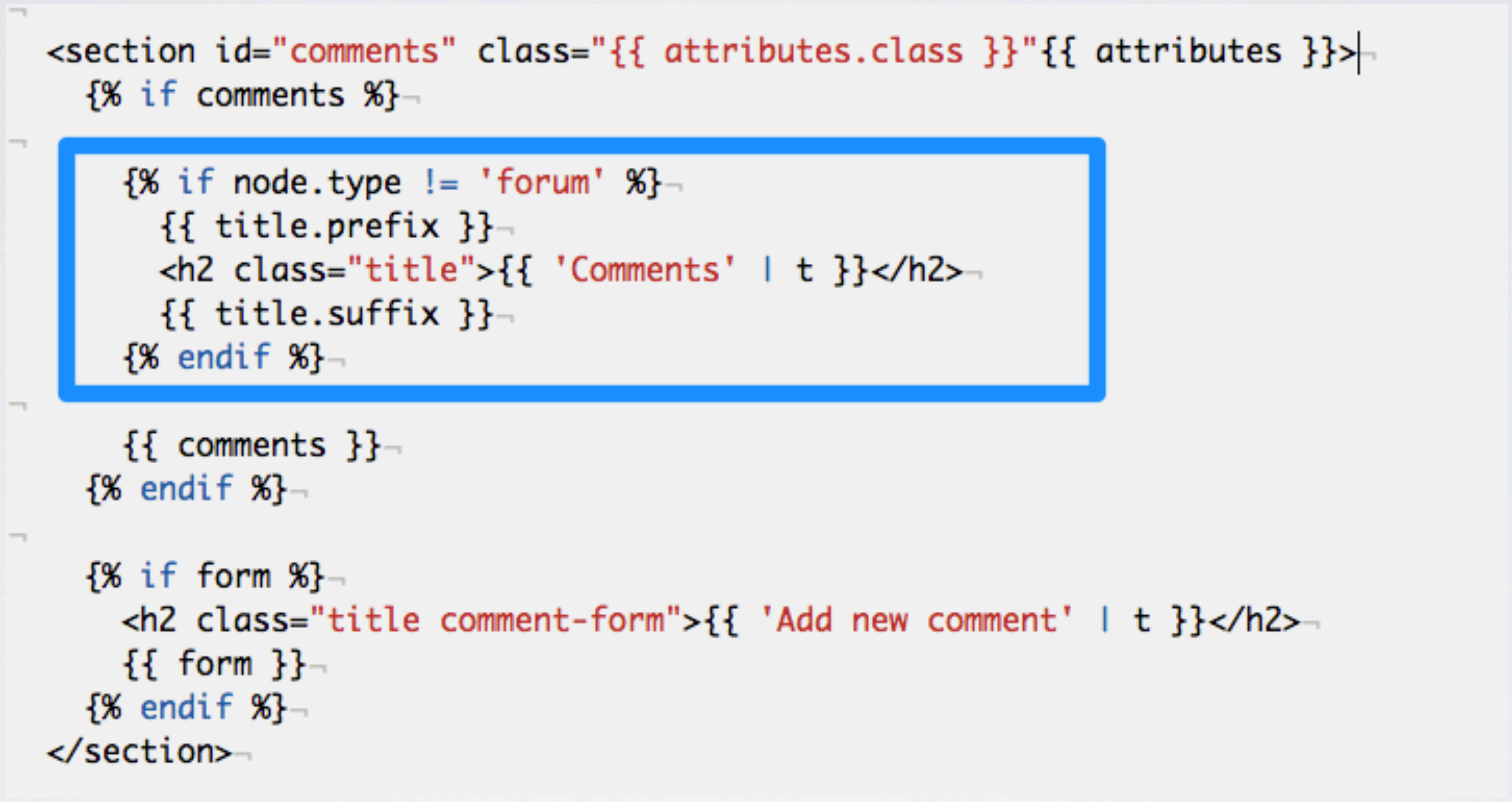
(devel's dpm() in core)

TWIG: OTHER WINS

Template inheritance

TWIG: OTHER WINS

Template inheritance

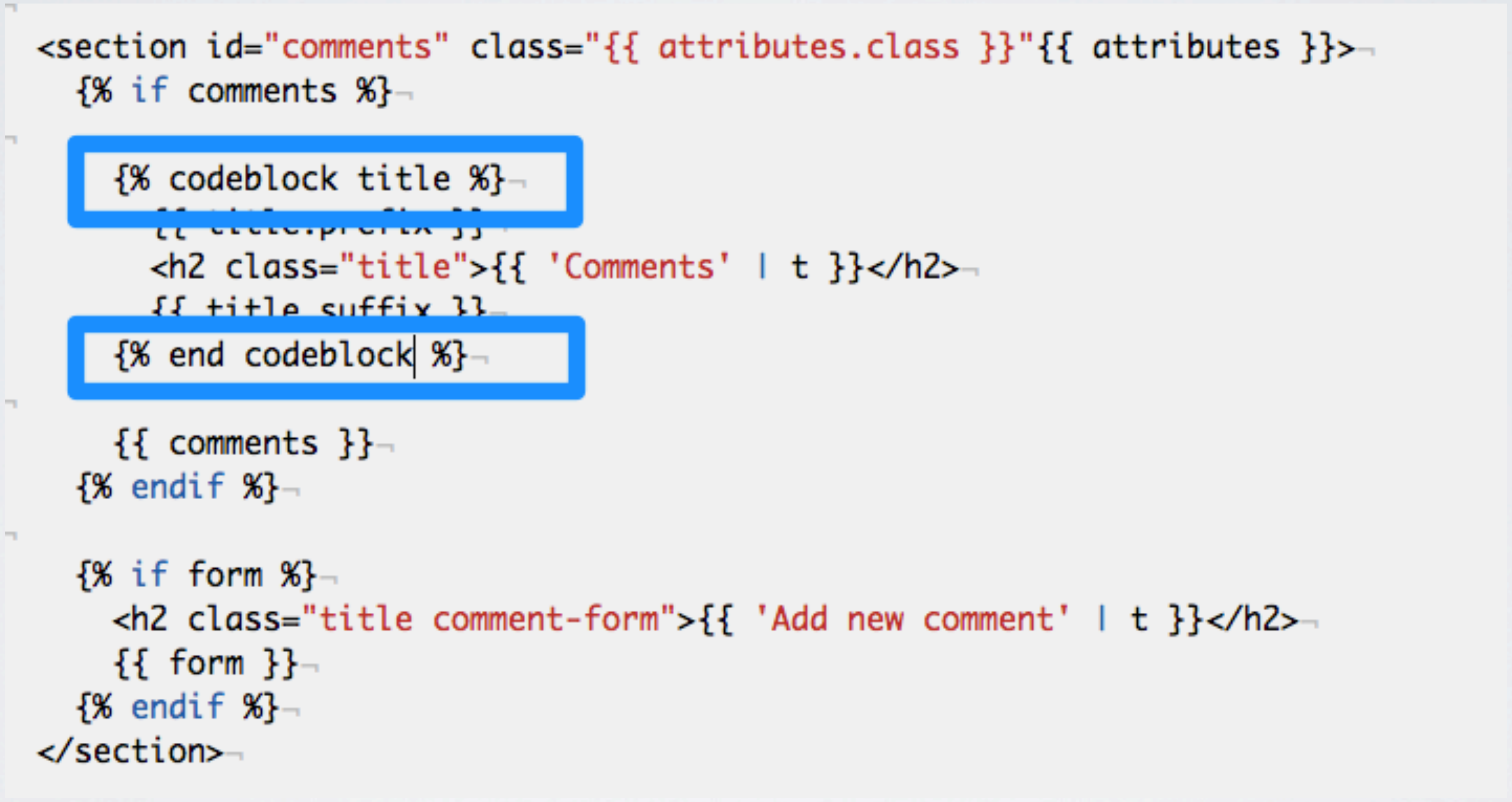


```
<section id="comments" class="{{ attributes.class }}"{{ attributes }}>
  {% if comments %}

    {% if node.type != 'forum' %}
      {{ title.prefix }}
      <h2 class="title">{{ 'Comments' | t }}</h2>
      {{ title.suffix }}
    {% endif %}

    {{ comments }}
  {% endif %}

  {% if form %}
    <h2 class="title comment-form">{{ 'Add new comment' | t }}</h2>
    {{ form }}
  {% endif %}
</section>
```

comment-wrapper.html.twig before

TWIG: OTHER WINS

Template inheritance

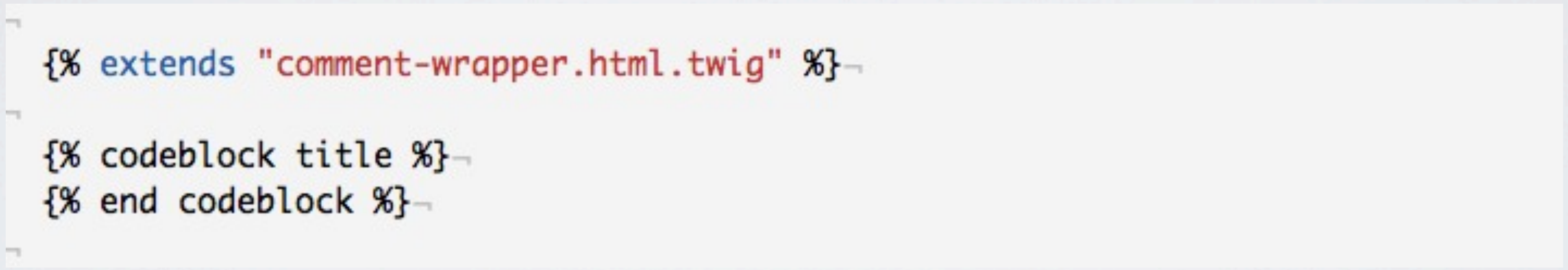


```
<section id="comments" class="{{ attributes.class }}"{{ attributes }}>
  {% if comments %}

    {% codeblock title %}
      {{ title.prefix }}
      <h2 class="title">{{ 'Comments' | t }}</h2>
      {{ title.suffix }}
    {% end codeblock %}

    {{ comments }}
  {% endif %}

  {% if form %}
    <h2 class="title comment-form">{{ 'Add new comment' | t }}</h2>
    {{ form }}
  {% endif %}
</section>
```

comment-wrapper.html.twig after

TWIG: OTHER WINS

Template inheritance



```
{% extends "comment-wrapper.html.twig" %}

{% codeblock title %}
{% end codeblock %}
```

comment-wrapper--forum.html.twig
(child template)

TWIG: OTHER WINS

Possible performance gains (Much TBD)

- PHPtemplate reads files from disk on every use (or stat()s them with APC)
- Twig templates are read once & compiled into classes

Rendering should get much faster when the same content element appears multiple times on the page.

Consolidating many similar templates will result in an additional gain.

TWIG: OTHER WINS

In-browser template editing finally safe.

- Saving PHP code in the database is a HUGE no-no.
- Twig is not PHP, and is safe to store!

Modules like 'Contemplate' (Content templates) will finally be safe to use.

In-browser template editing is something WordPress users have been asking of Drupal for a very long time.

TWIG: OTHER WINS

Twig template files can be used on the front end.

One template can return markup for both your PHP-generated pages, as well as pages generated vi JS in AJAX callbacks.

We can use other open source libraries like TwigJS. (https://github.com/schmittjoh/twig.js)

TWIG: OTHER WINS

2-way communication between UI and code.

Drupal's user interface can finally understand what variables exist (or not) in a template file.

Template files can be created first, and the Drupal site can build itself* based on the presence and location of variables in the templates.

*within reason

THE NEW THEME LAYER IN DRUPAL 8

looks pretty awesome, right?

QUESTIONS?

THE NEW THEME LAYER IN DRUPAL 8

Jen Lampton ~ @jenlampton
www.jenlampton.com

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

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

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

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

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

twig speed graphs
http://phpcomparison.net/

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

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

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http://symfony.com/logo

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