A NEW THEME LAYER FOR DRUPAL 8

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THE NEW THEME LAYER IN DRUPAL **8**

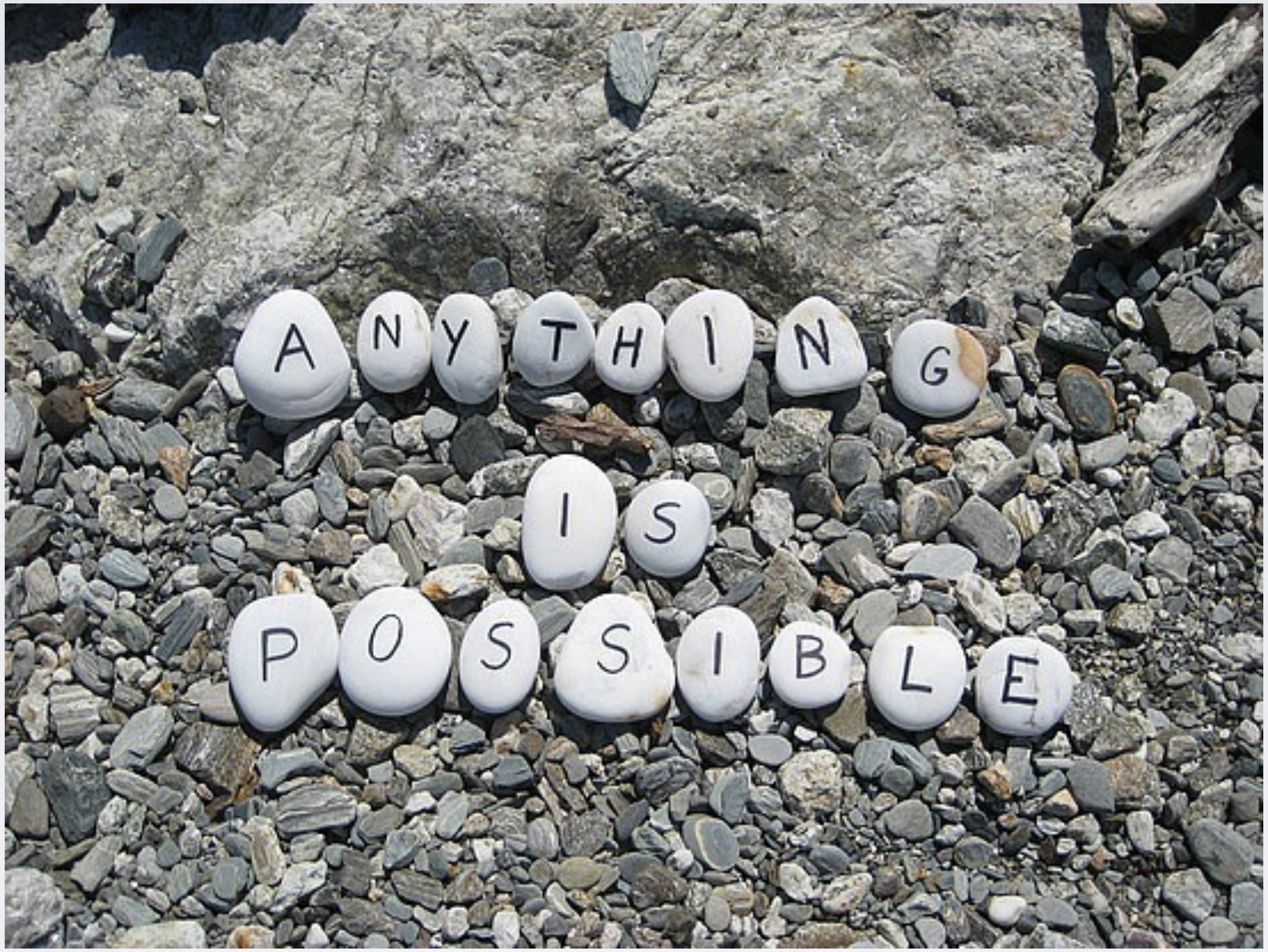
WHY?

DRUPAL 7: POSITIVE

DRUPAL 7: POSITIVE

flexible

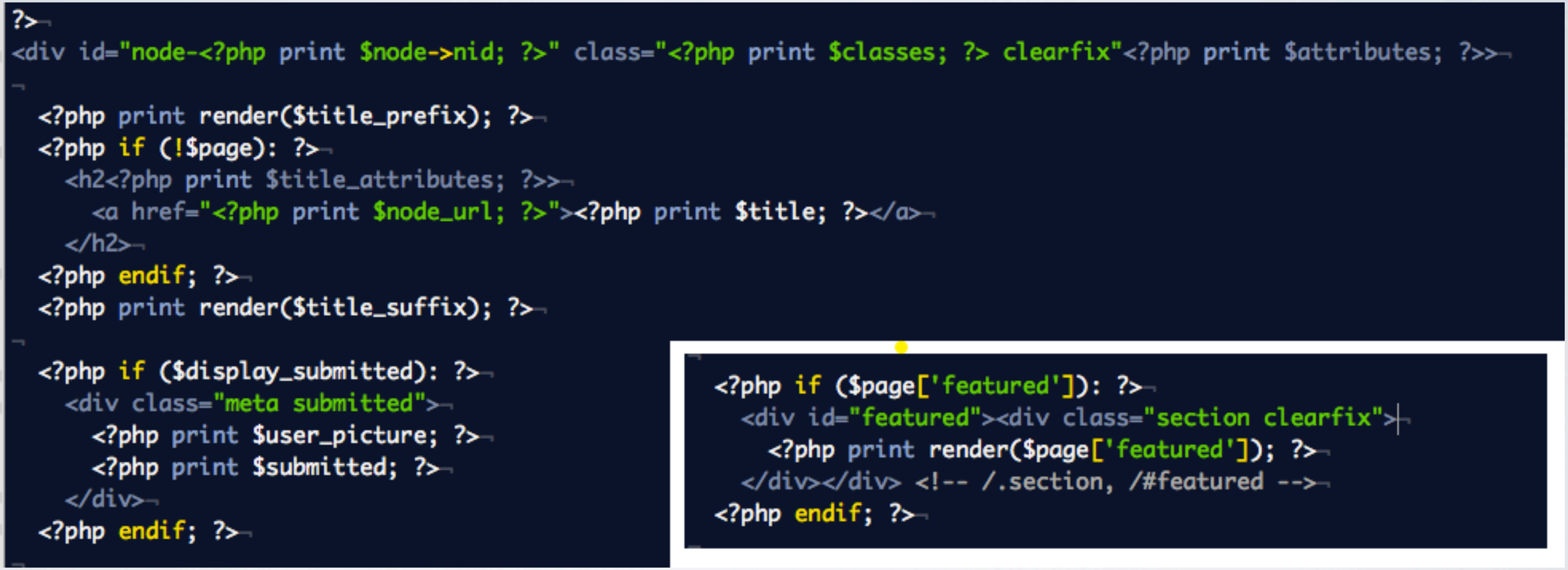
DRUPAL 7: POSITIVE



anything is possible

DRUPAL 7: NEGATIVE

DRUPAL 7: NEGATIVE



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

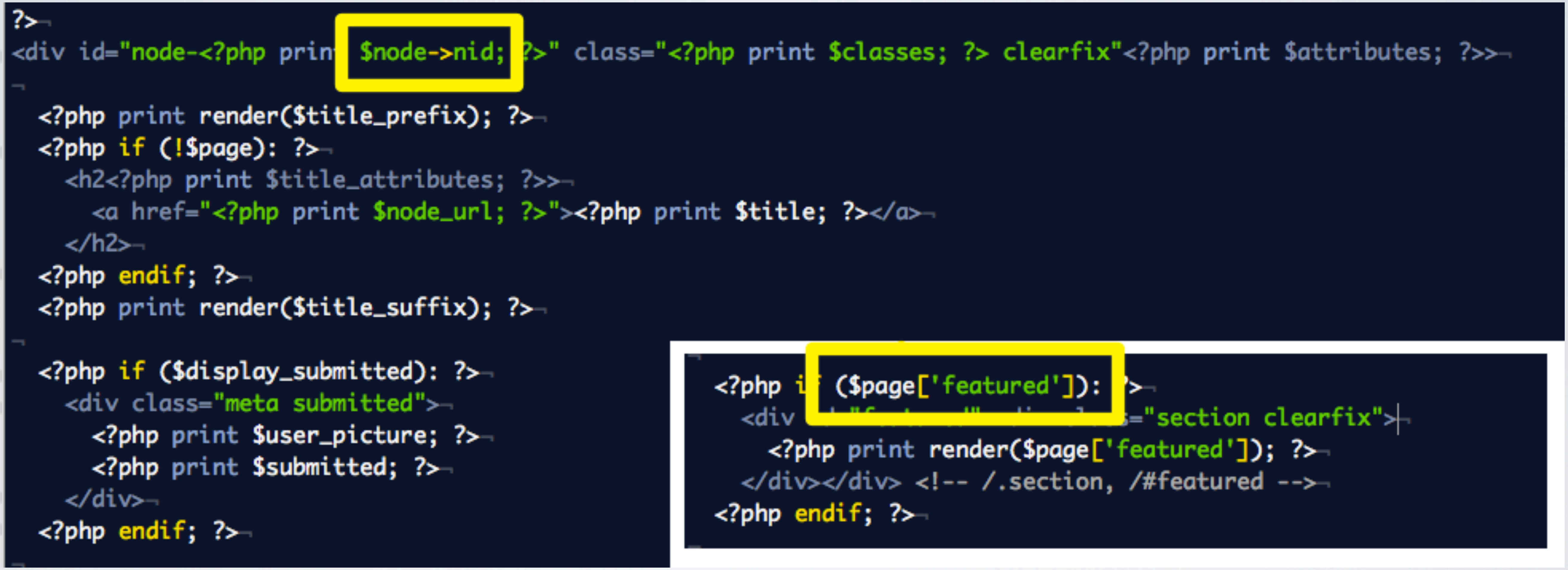
  <?php print render($title_prefix); ?>
  <?php if (!$page): ?>
    <h2<?php print $title_attributes; ?>>
      <a href="<?php print $node_url; ?>"><?php print $title; ?></a>
    </h2>
  <?php endif; ?>
  <?php print render($title_suffix); ?>

  <?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.

DRUPAL 7: NEGATIVE



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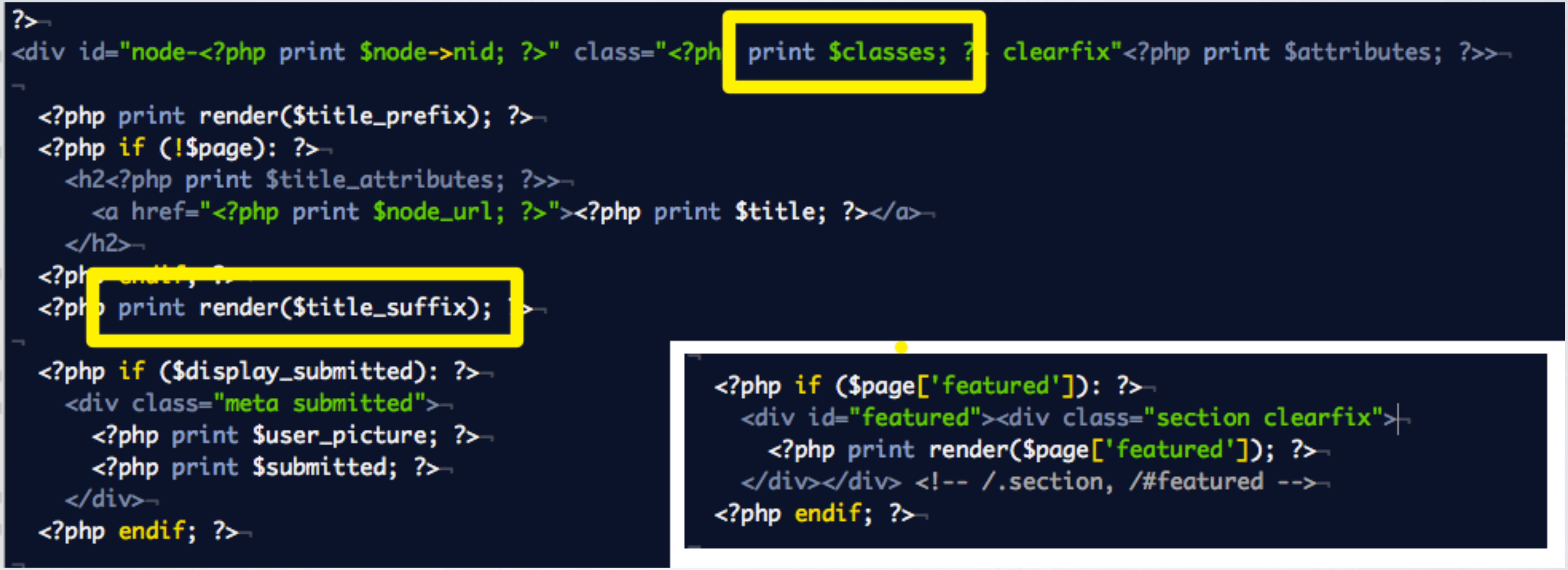
  </div></div> <!-- /.section, /#featured -->
<?php endif; ?>
```

Object or Array?

DRUPAL 7: NEGATIVE



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

  <?php print render($title_prefix); ?>
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```

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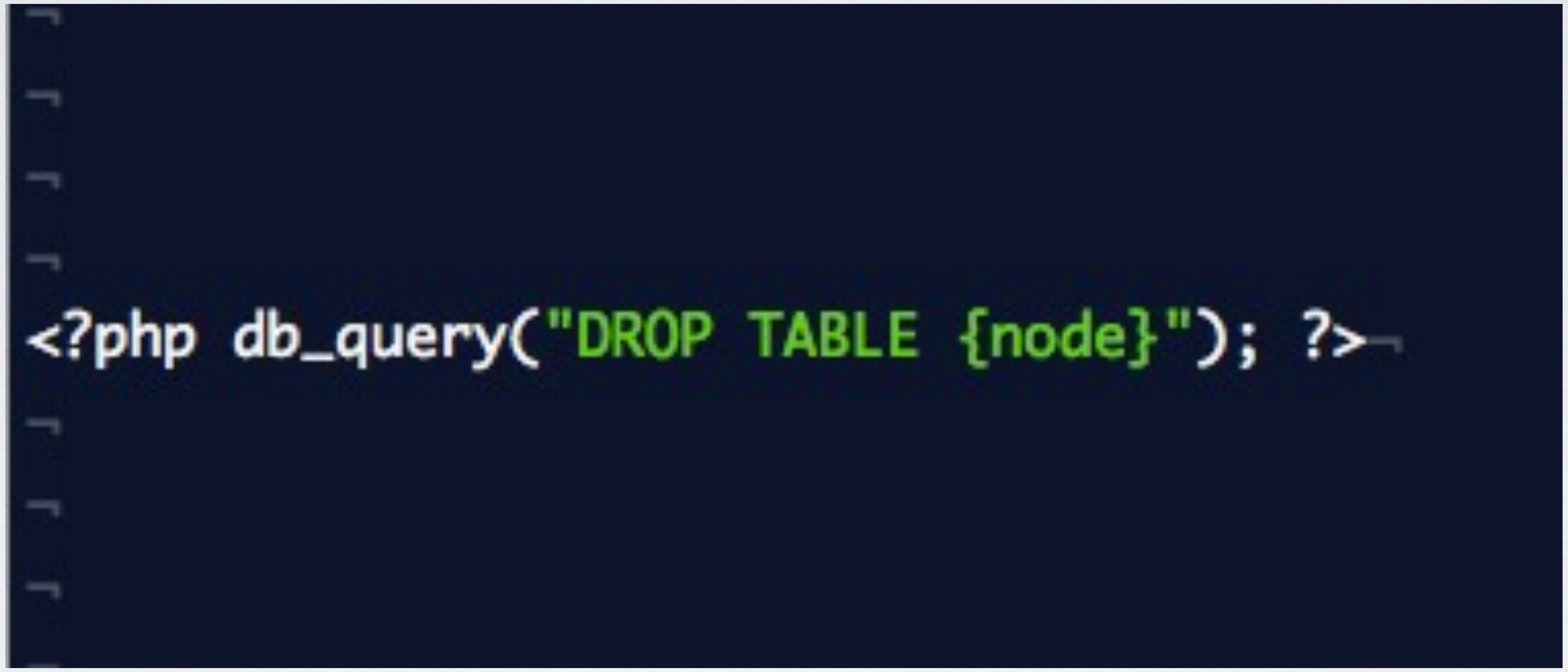
<?php if ($page['featured']): ?>
  <div id="featured"><div class="section clearfix">
    <?php print render($page['featured']); ?>
  </div></div> <!-- /.section, /#featured -->
<?php endif; ?>
```

print or print render() ?

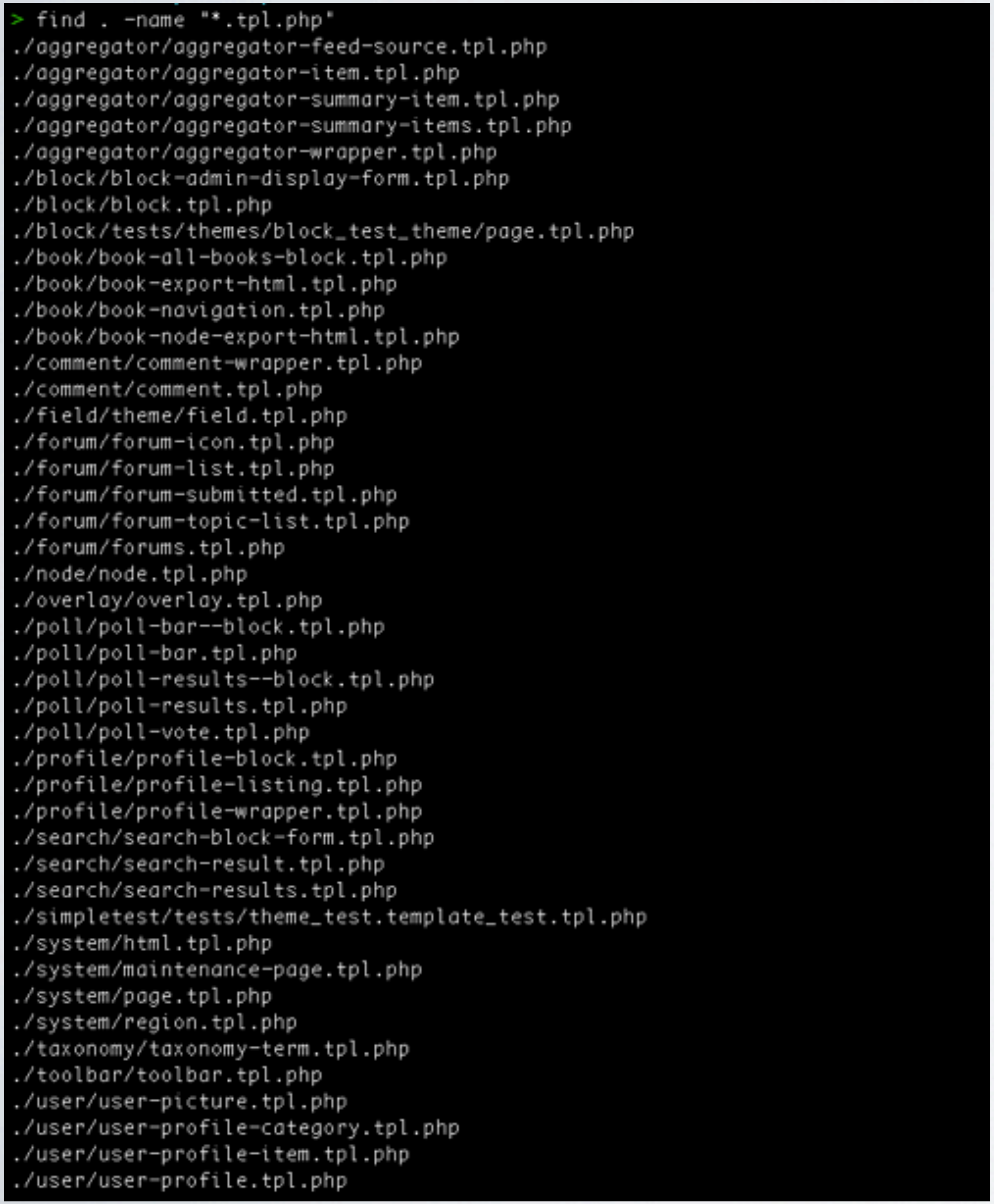
DRUPAL 7: NEGATIVE



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

PHP is insecure

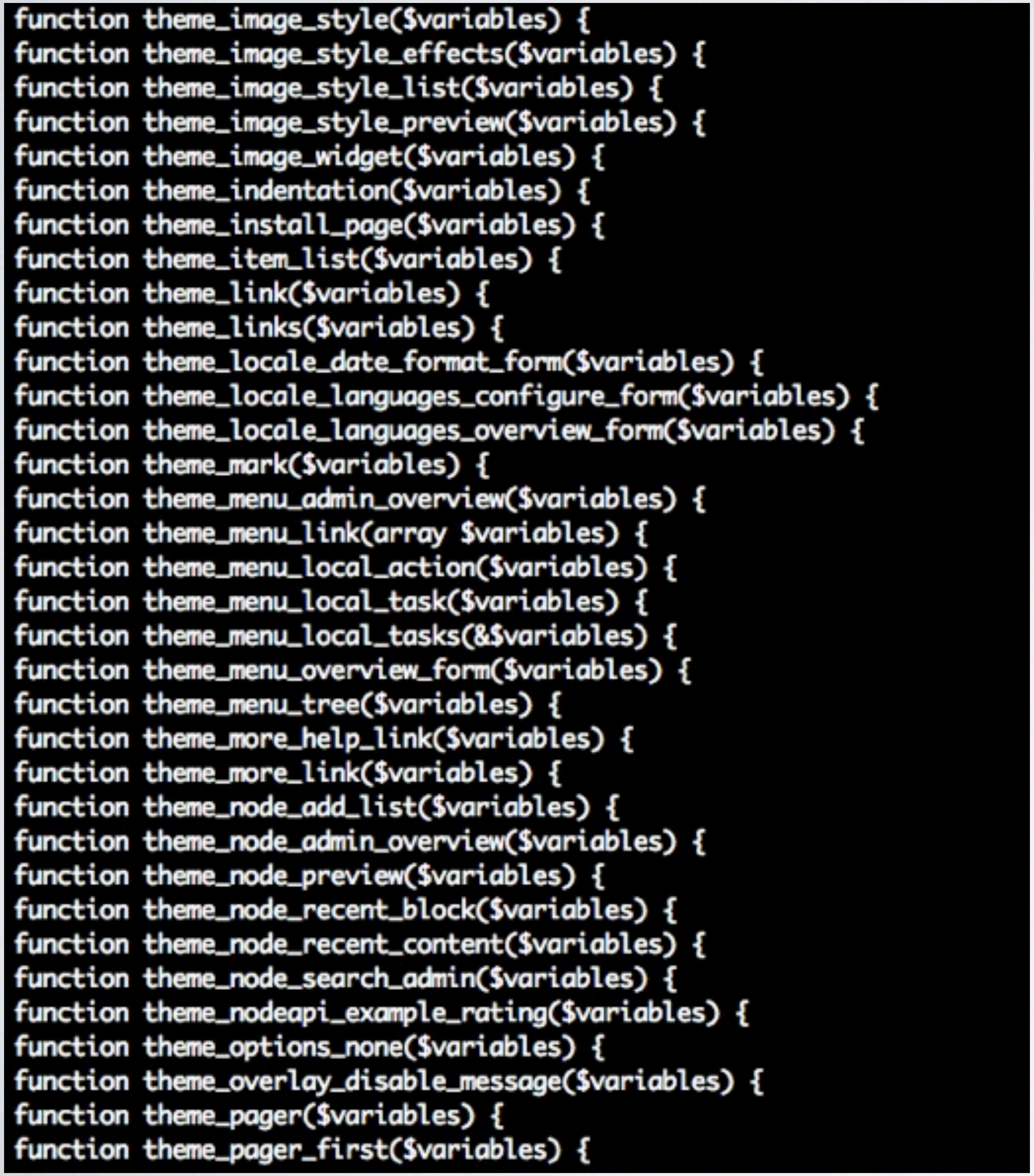
DRUPAL 7: NEGATIVE



```
> 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

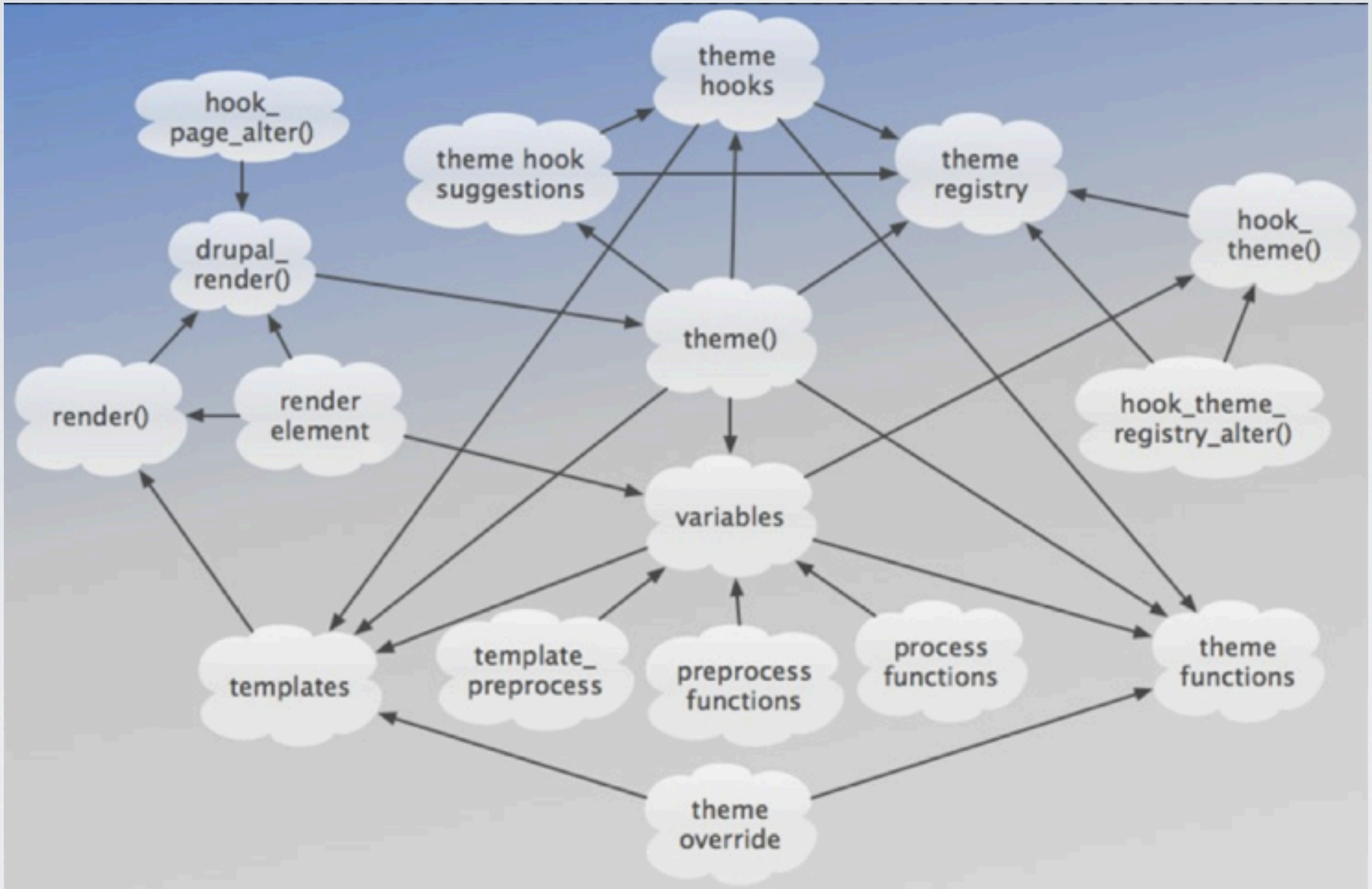
DRUPAL 7: NEGATIVE



```
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

DRUPAL 7: NEGATIVE



complex mix of subsystems

DRUPAL 7: NEGATIVE

Drupal 7 is too hard to learn!

THIS IS A LOT OF STUFF

- Drupal-specific template conventions
- Mixed data types (strings, objects & arrays)

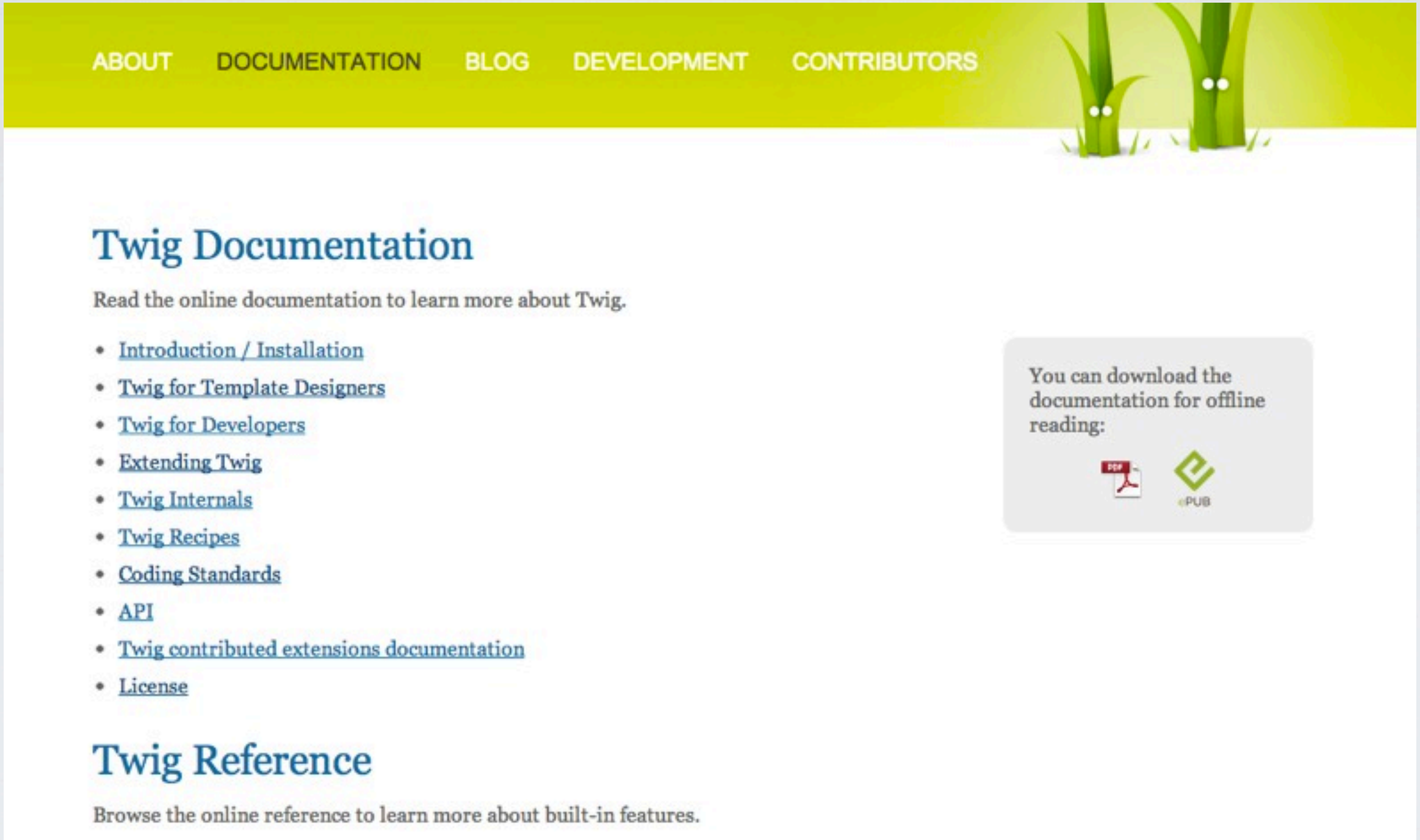
  $node->nid vs $content['links']
- Different methods of printing

  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

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

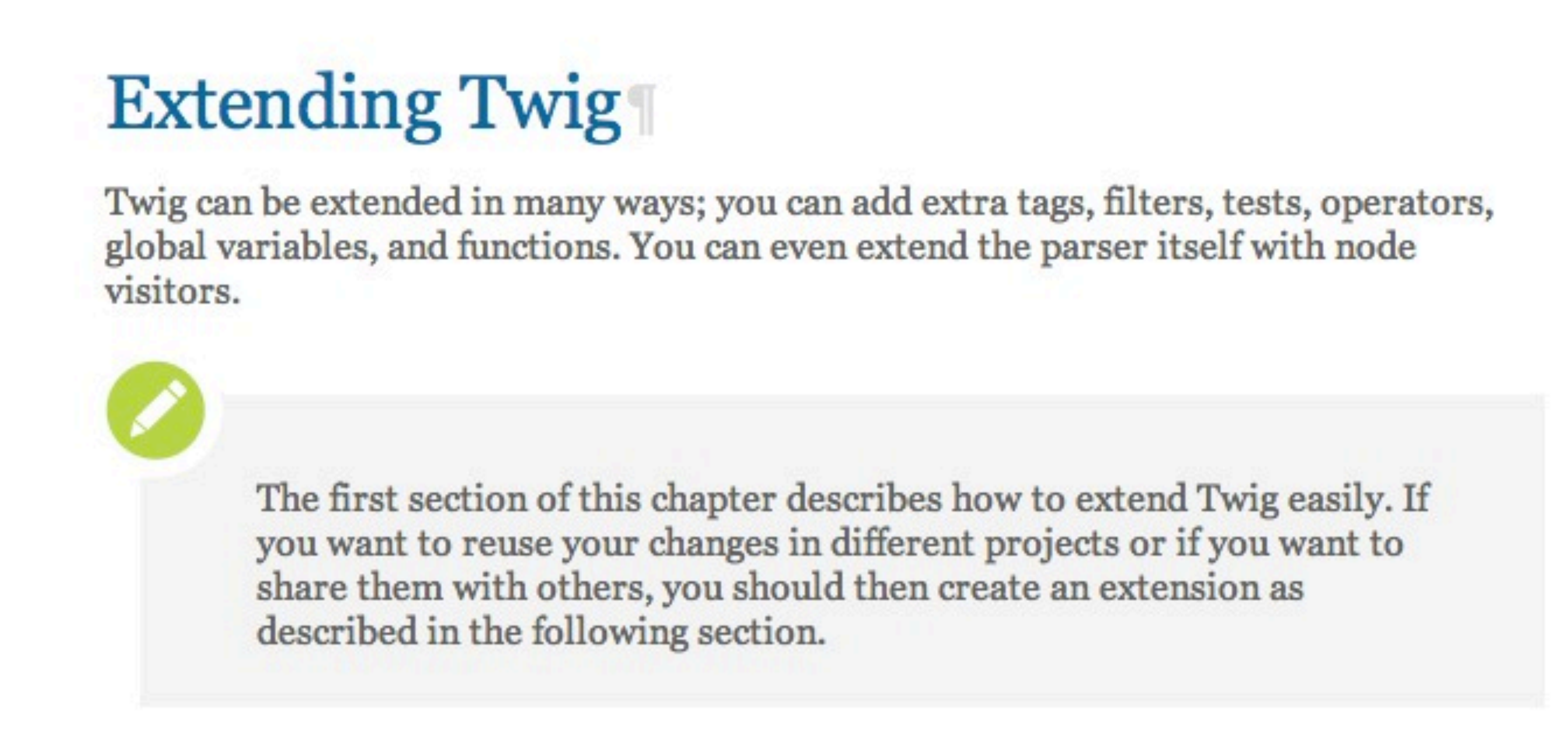
You can download the documentation for offline reading:

Twig Reference

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

well documented

TWIG



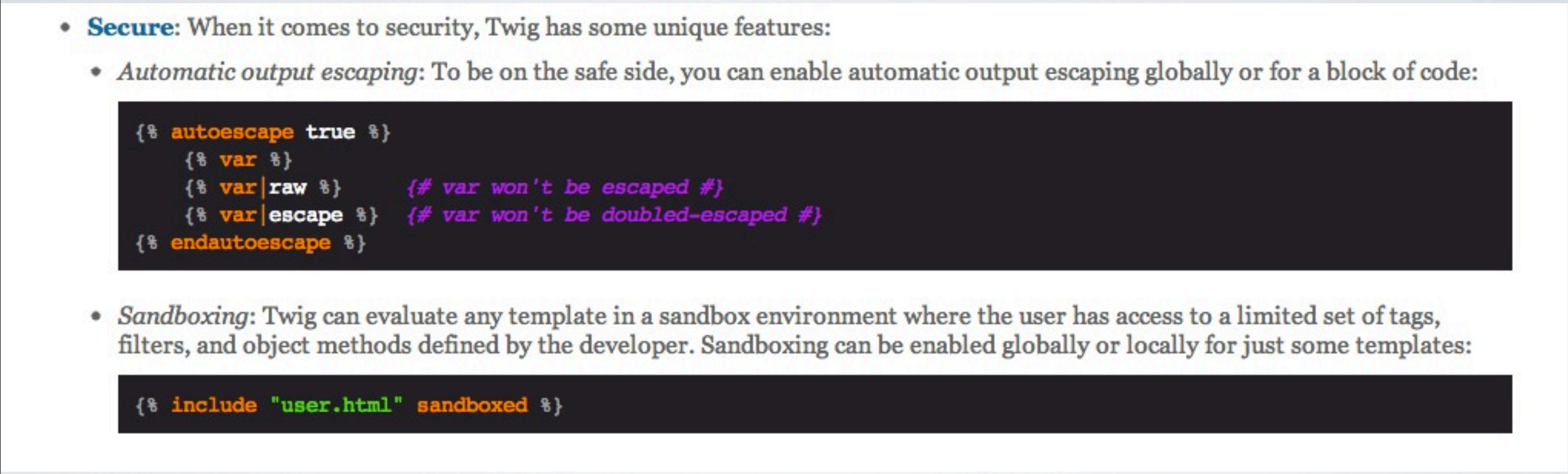
Extending Twig¶

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:

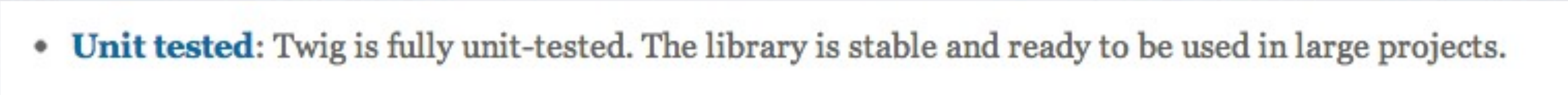
```
{% autoescape true %}
    {% var %}
    {% var|raw %}     {# var won't be escaped #}
    {% var|escape %}  {# var won't be doubled-escaped #}
{% endautoescape %}
```

  - *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

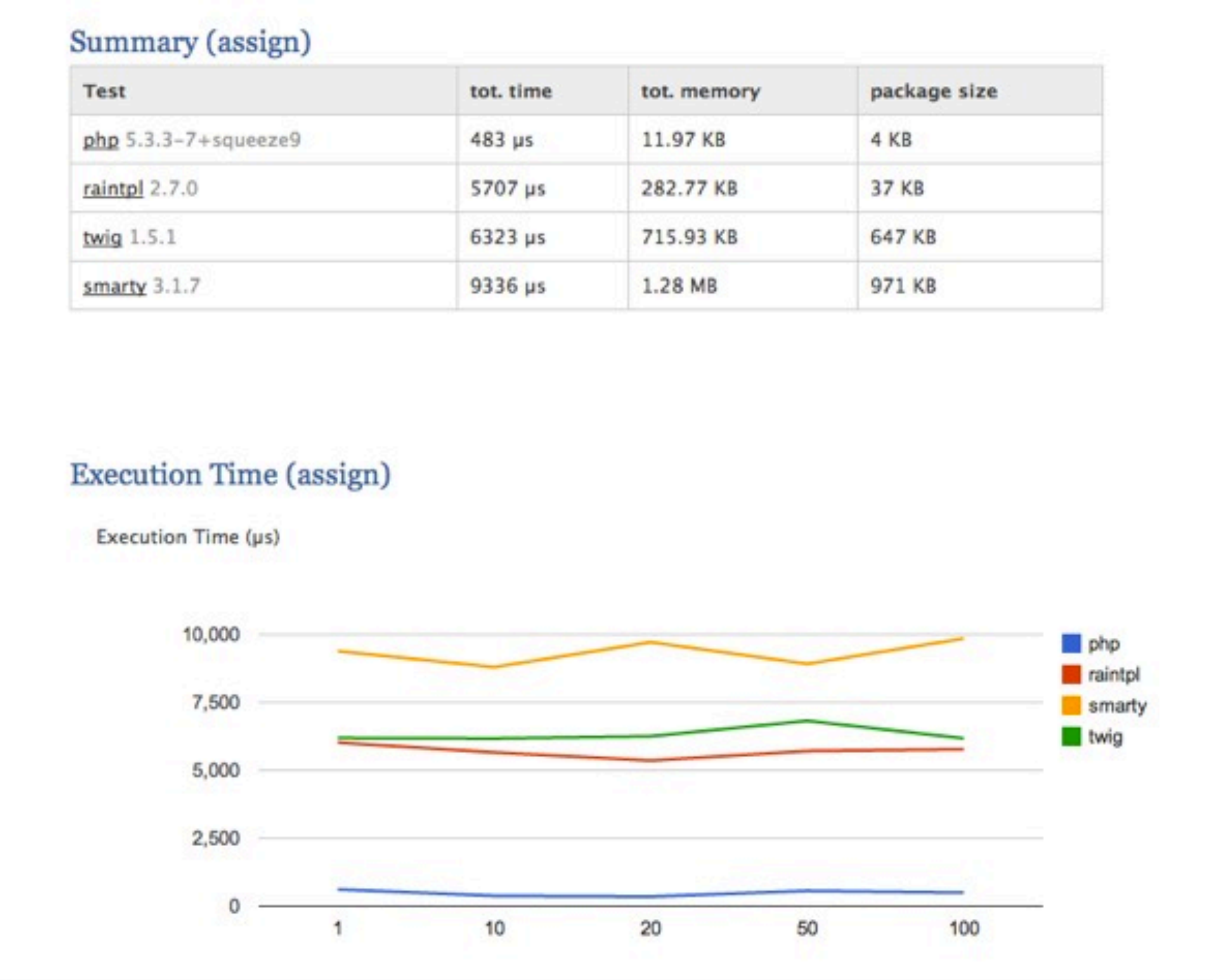
TWIG



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

well-tested

TWIG



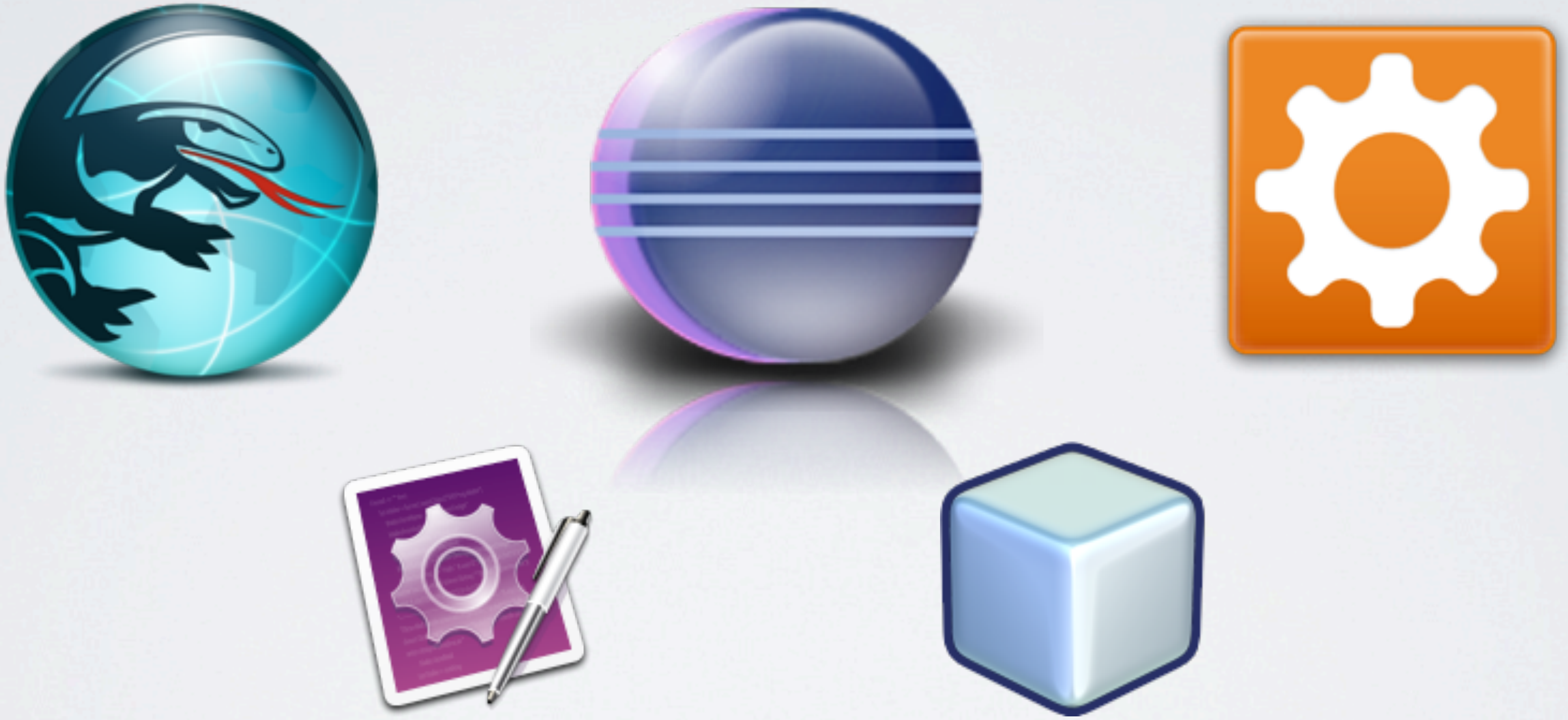
Summary (assign)

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)

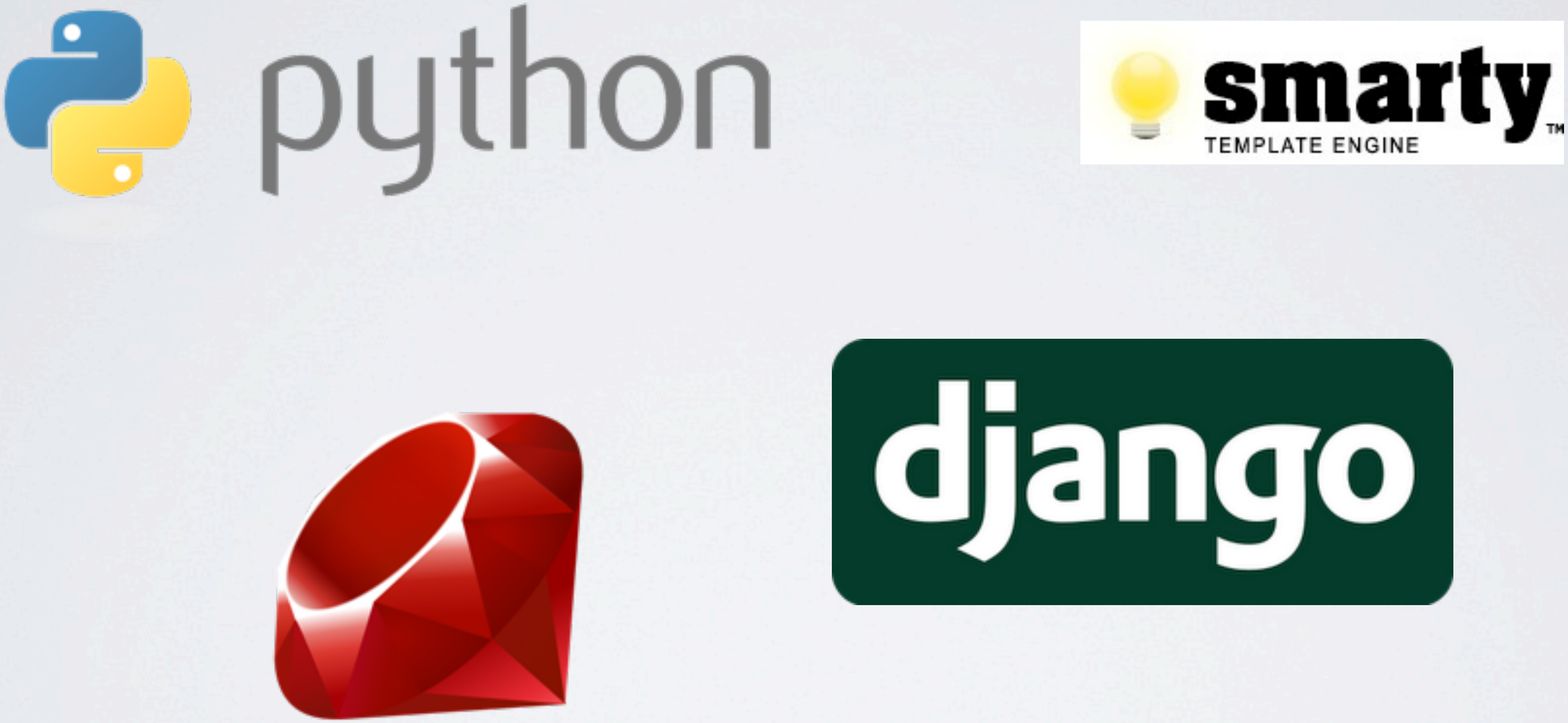
fast

TWIG



IDE integration

TWIG



recognizable syntax

TWIG

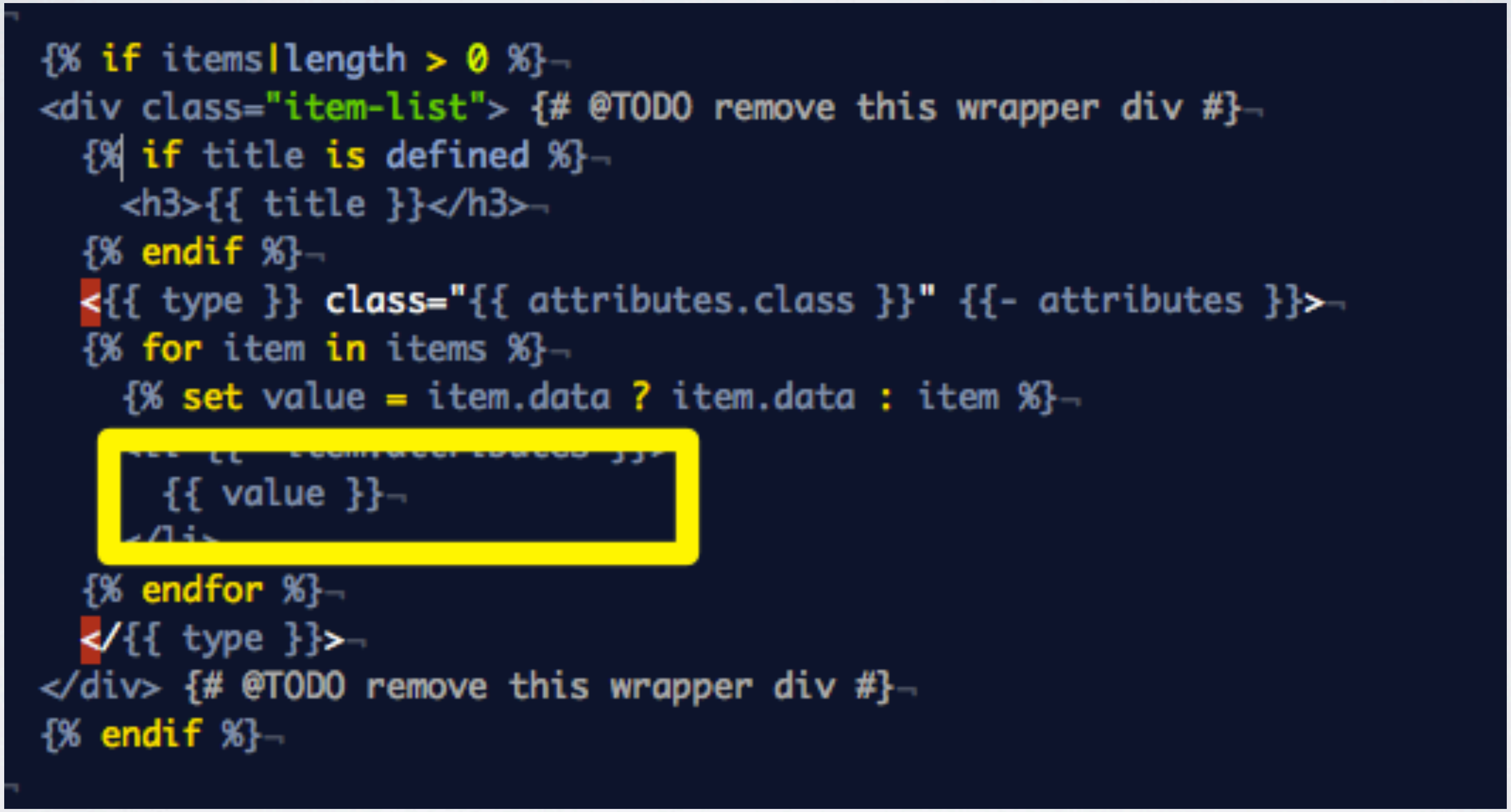
by Symfony’s author, Fabien Potencier

TWIG

what does it look like?

TWIG

what does it look like?

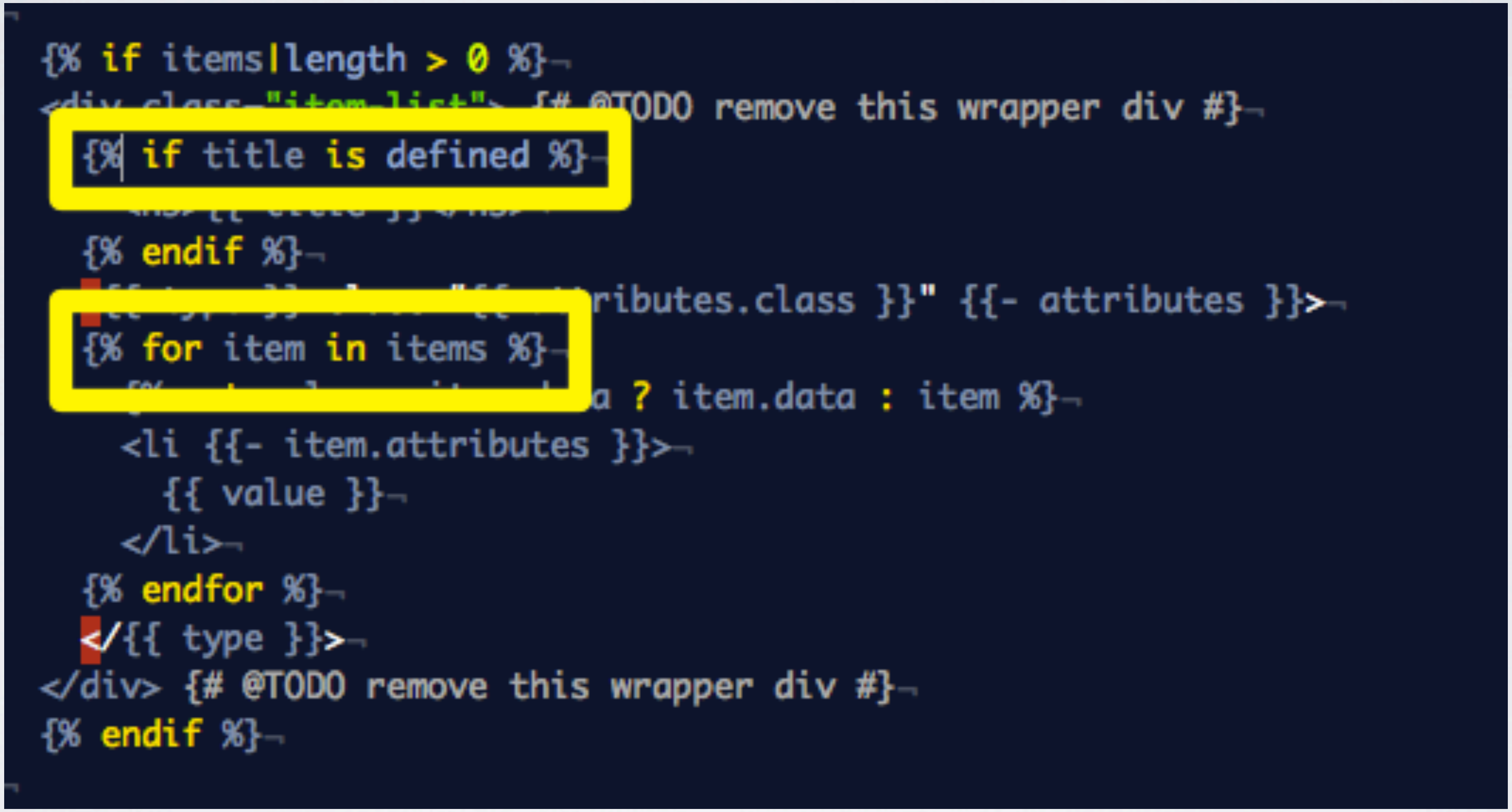


```
{% if items|length > 0 %}
<div class="item-list"> {# @TODO remove this wrapper div #}
  {% if title is defined %}
    <h3>{{ title }}</h3>
  {% endif %}
  <{{ type }} class="{{ attributes.class }}" {{- attributes }}>
  {% for item in items %}
    {% set value = item.data ? item.data : item %}
  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

print with {{ }}

TWIG

what does it look like?



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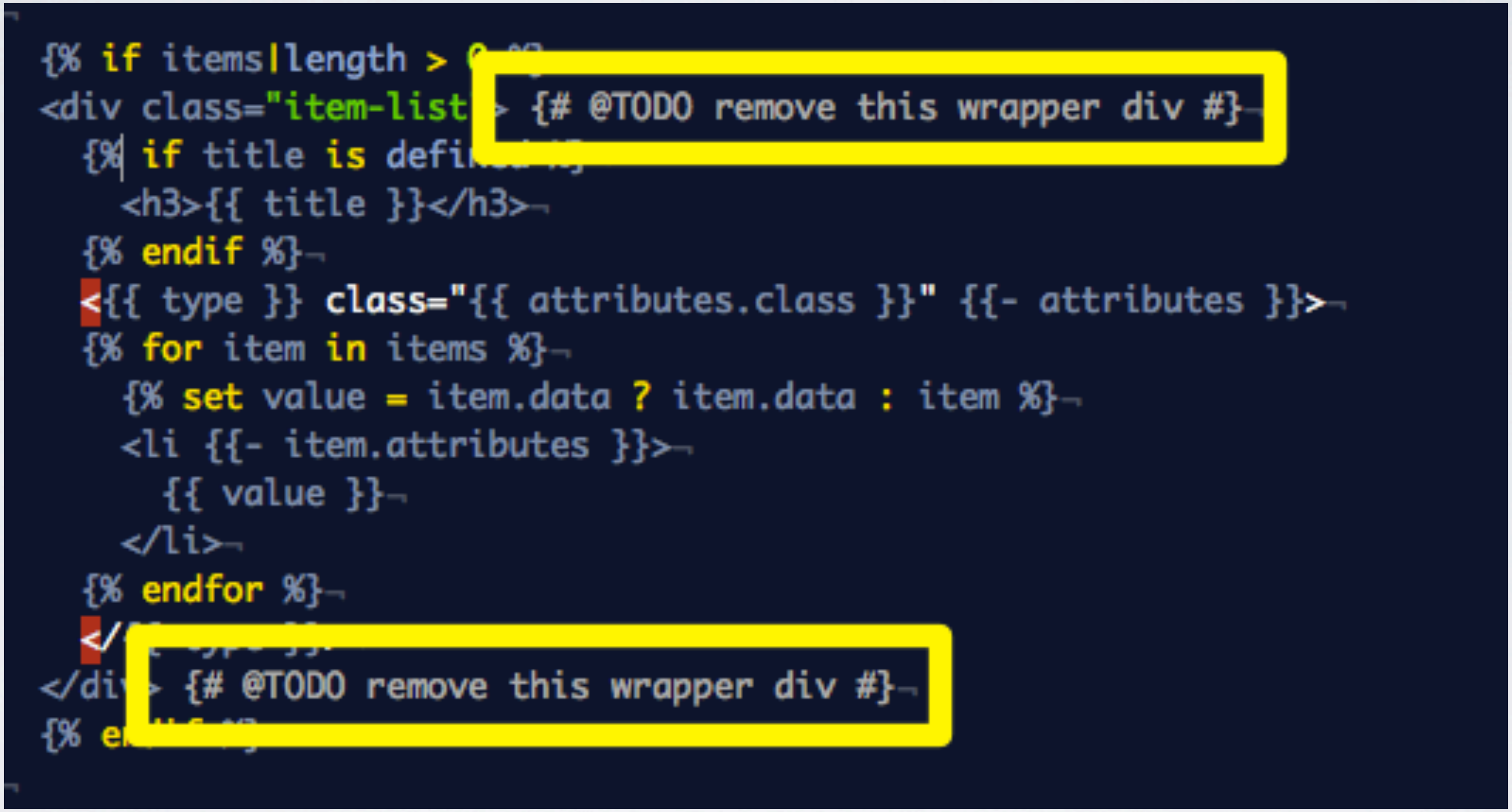
    <li {{- item.attributes }}>
      {{ value }}
    </li>
  {% endfor %}
  </{{ type }}>
</div> {# @TODO remove this wrapper div #}
{% endif %}
```

commands with {% %}

TWIG

what does it look like?



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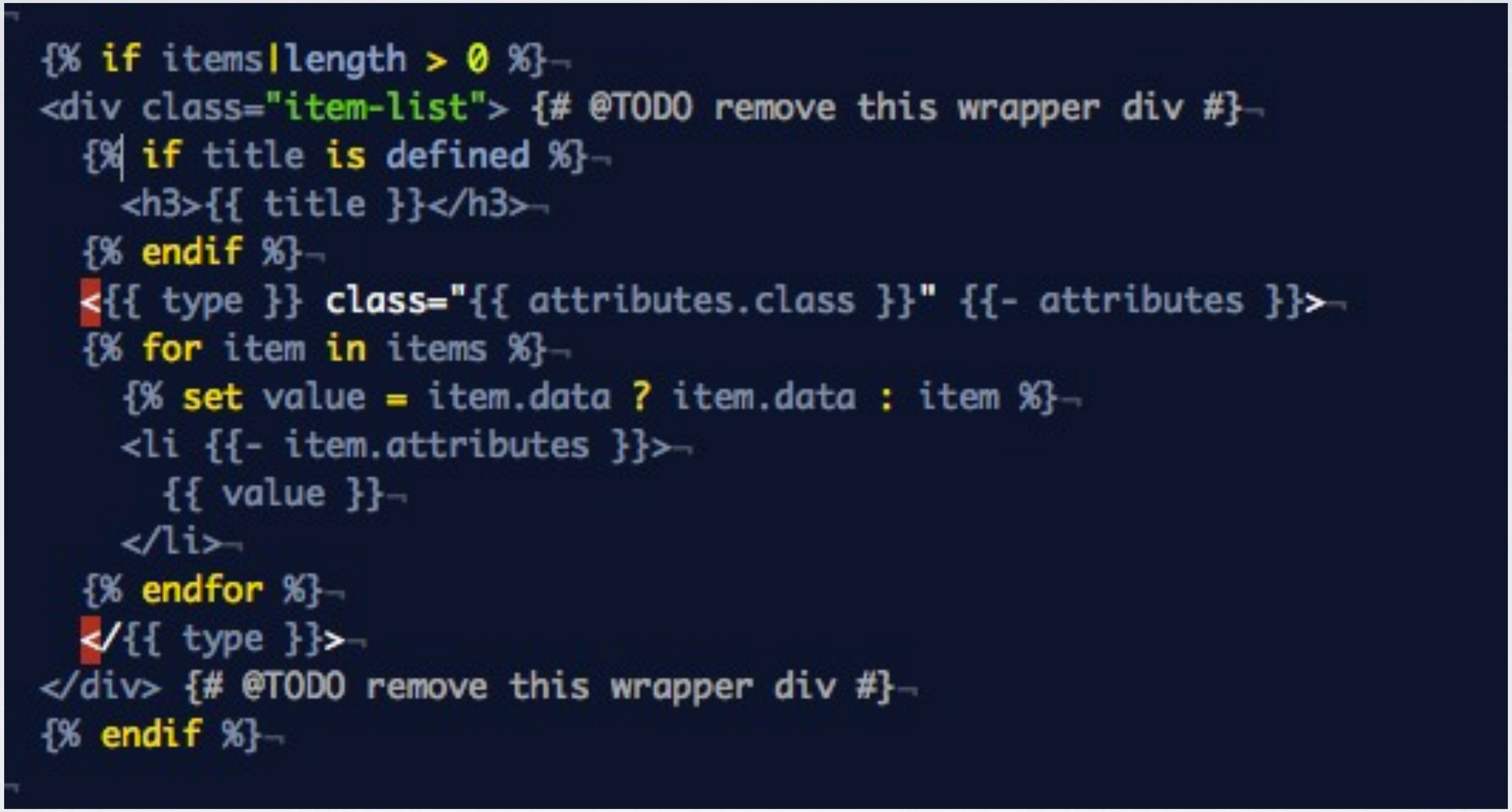
      {{ value }}
    </li>
  {% endfor %}
  </{{ type }}>
</div> {# @TODO remove this wrapper div #}
{% endif %}
```

comments with {# #}

TWIG

what does it look like?



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{% if items|length > 0 %}
<div class="item-list"> {# @TODO remove this wrapper div #}
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  {% for item in items %}
    {% set value = item.data ? item.data : item %}
    <li {{- item.attributes }}>
      {{ value }}
    </li>
  {% endfor %}
  </{{ type }}>
</div> {# @TODO remove this wrapper div #}
{% endif %}
```

simple and intuitive

TWIG

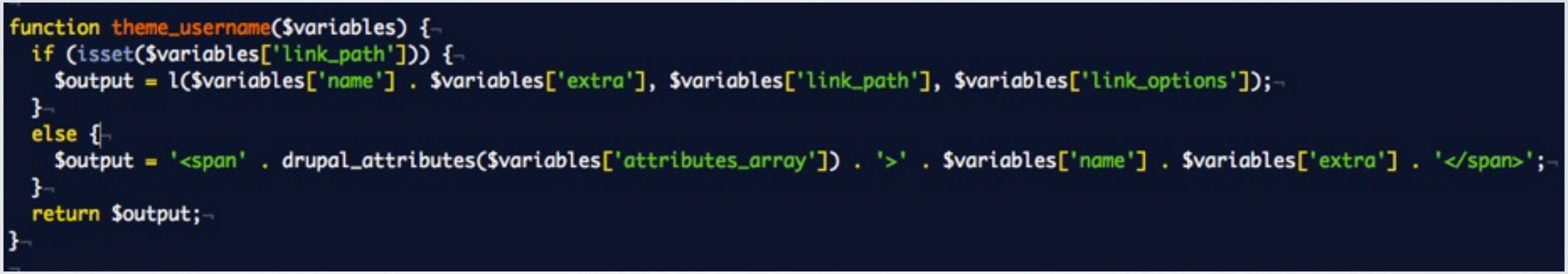
less code than PHP

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

TWIG

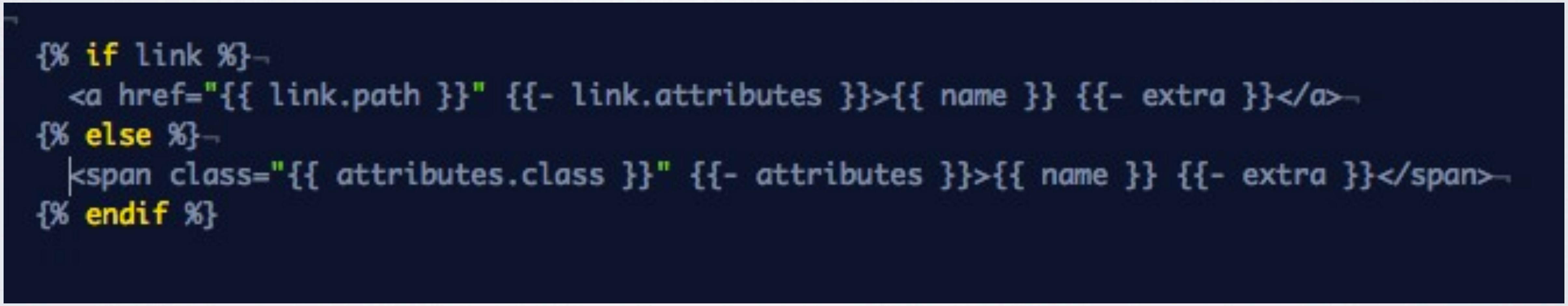
less code than PHP

D7



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

D8



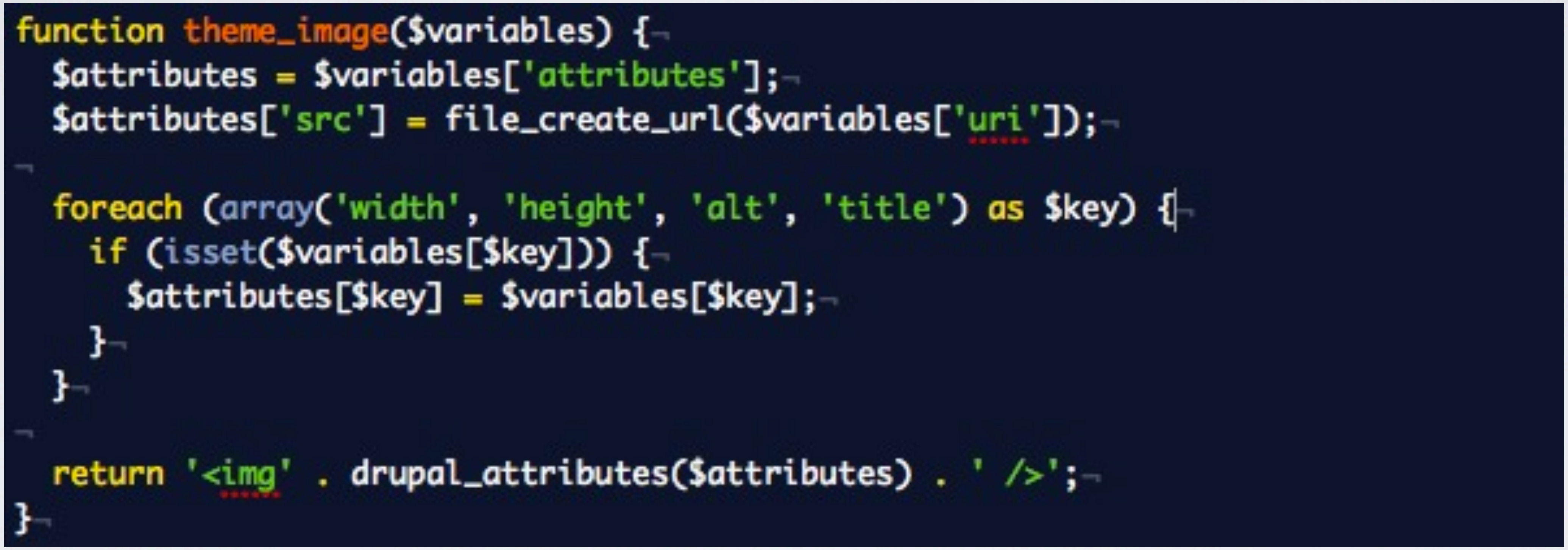
```twig
{% if link %}
  <a href="{{ link.path }}" {{- link.attributes }}>{{ name }} {{- extra }}</a>
{% else %}
  <span class="{{ attributes.class }}" {{- attributes }}>{{ name }} {{- extra }}</span>
{% endif %}
```

theme_username becomes username.html.twig

TWIG

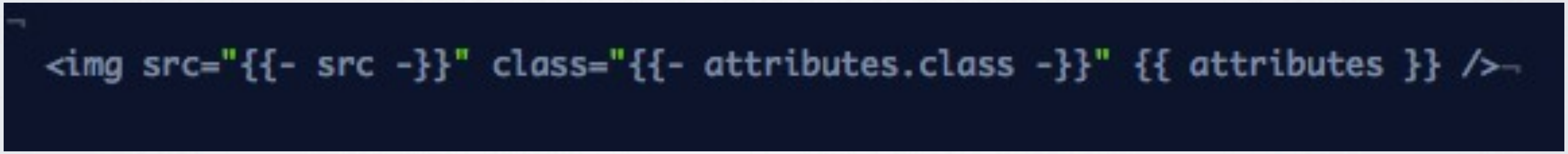
less code than PHP

D7



```php
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



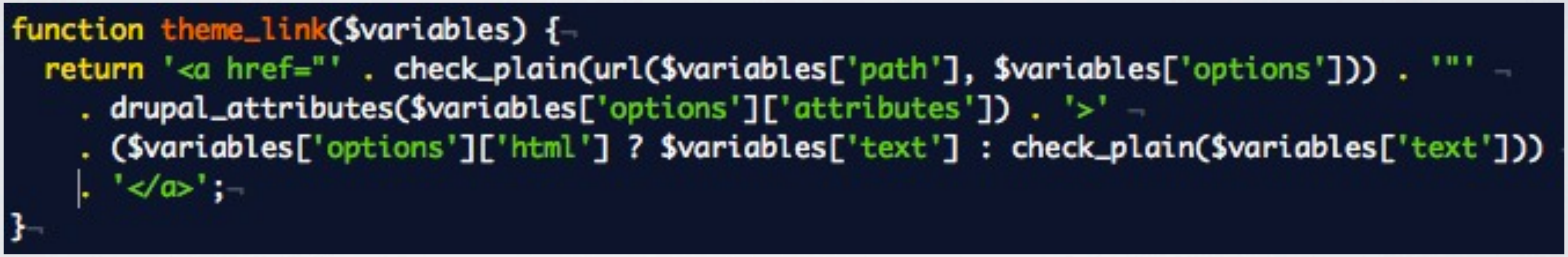
```twig

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

theme_image becomes image.html.twig

TWIG

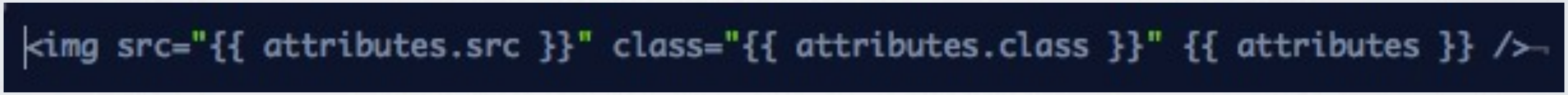
less code than PHP

D7



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

D8



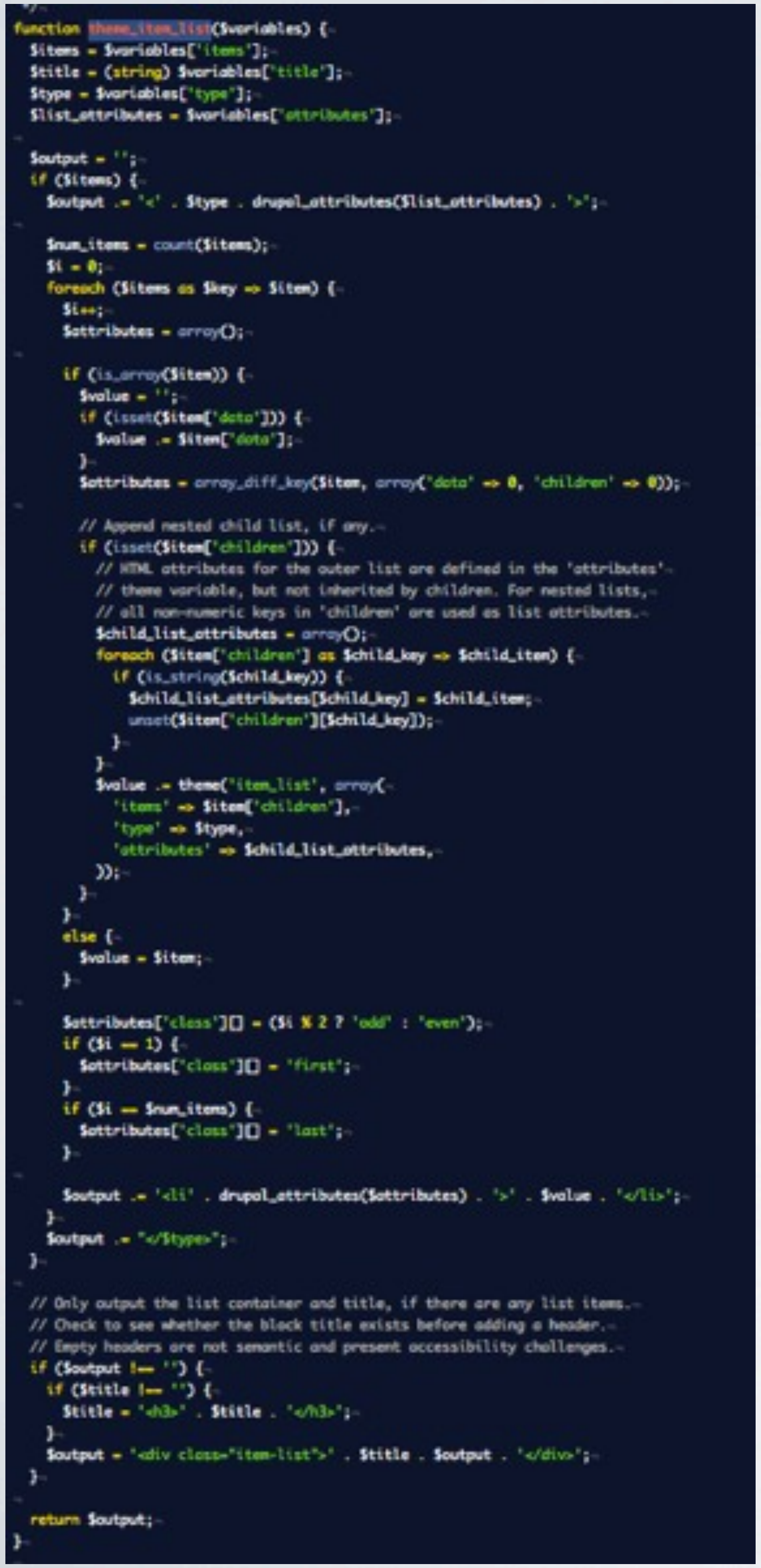
```
<img src="{{ attributes.src }}" class="{{ attributes.class }}" {{ attributes }} />
```

theme_link becomes link.html.twig

TWIG

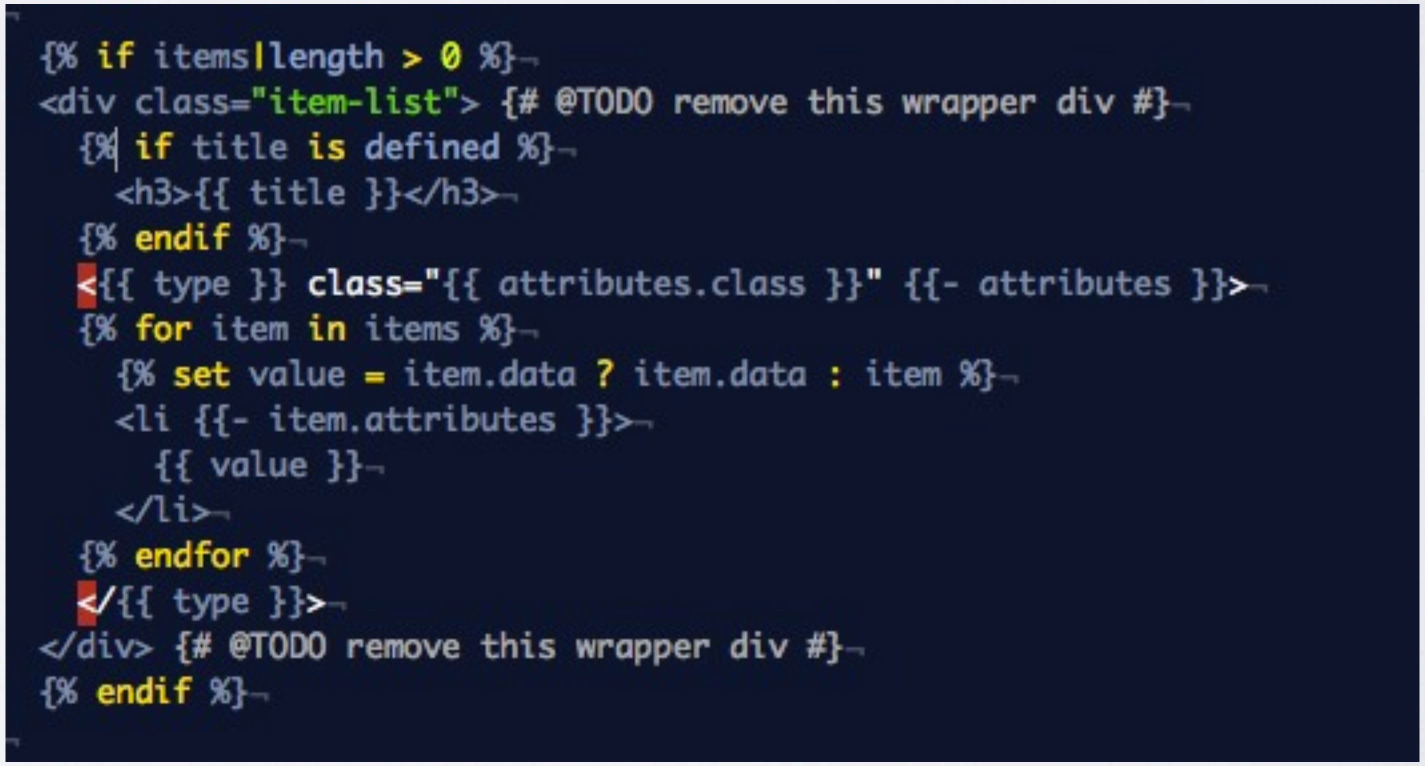
less code than PHP

D7



```php
 */
function theme_item_list($variables) {
  $items = $variables['items'];
  $title = (string) $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.
  // Check to see whether the block title exists before adding a header.
  // Empty headers are not semantic and present accessibility challenges.
  if ($output !== '') {
    if ($title !== '') {
      $title = '<h3>' . $title . '</h3>';
    }
    $output = '<div class="item-list">' . $title . $output . '</div>';
  }

  return $output;
}
```

D8



```twig
{% if items|length > 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 %}
    <li {{- item.attributes }}>
      {{ value }}
    </li>
  {% endfor %}
  </{{ type }}>
</div> {# @TODO remove this wrapper div #}
{% endif %}
```

theme_item_list beomes item_list.html.twig

REMEMBER DRUPAL 7?

- 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)

REMEMBER DRUPAL 7?

- Drupal-specific template conventions

Twig is used elsewhere on the web, and looks more like HTML.

REMEMBER DRUPAL 7?

- 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

REMEMBER DRUPAL 7?

- 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 }}

REMEMBER DRUPAL 7?

- 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 are automatically sanitized and PHP functions cannot be executed in template files.

REMEMBER DRUPAL 7?

- 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

REMEMBER DRUPAL 7?

- 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!)

REMEMBER DRUPAL 7?

- Drupal-specific template conventions **FIXED**
- Mixed data types (strings, objects & arrays) **FIXED**

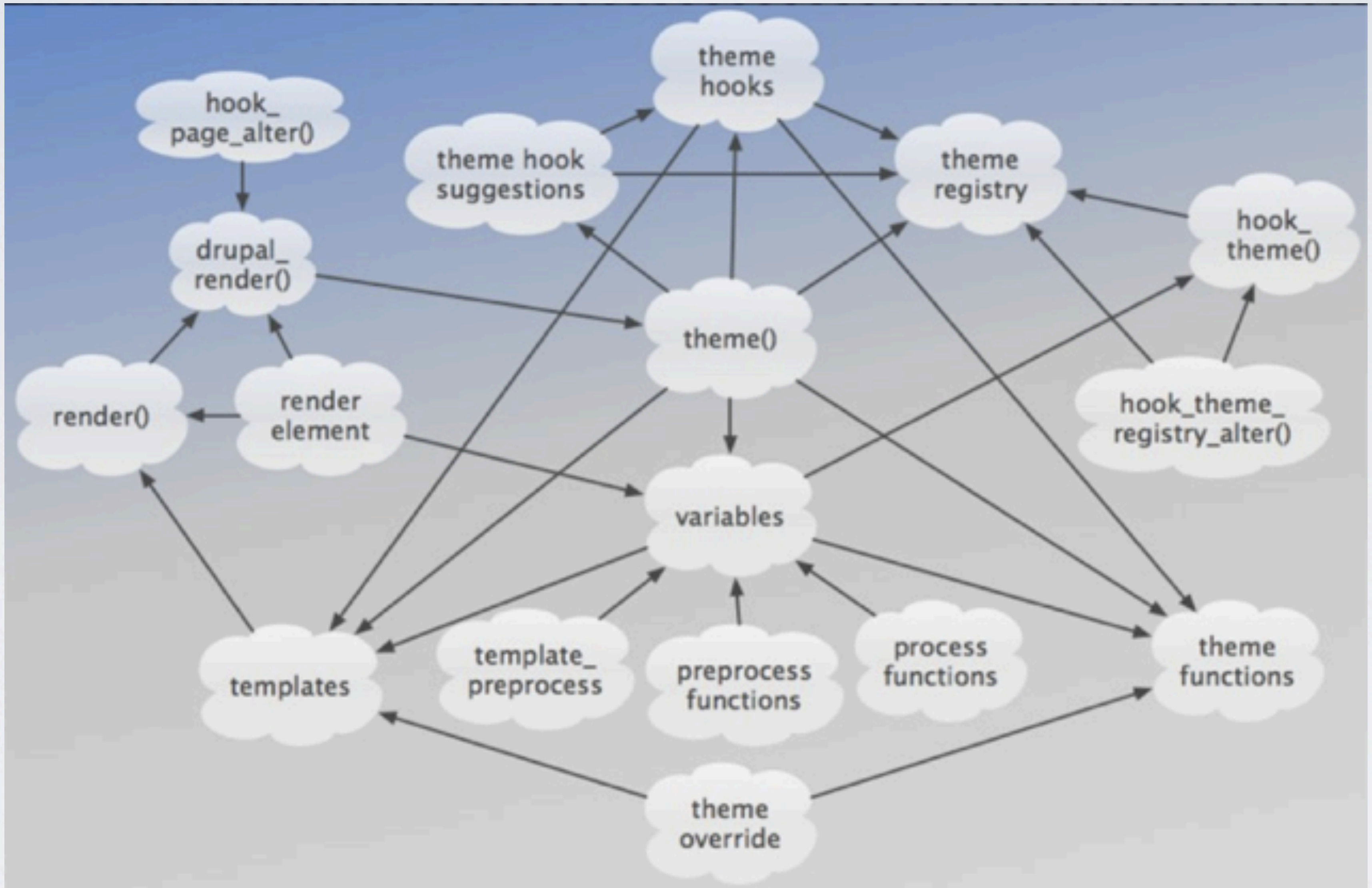
  $node->nid vs $content['links']
- Different methods of printing **FIXED**

  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

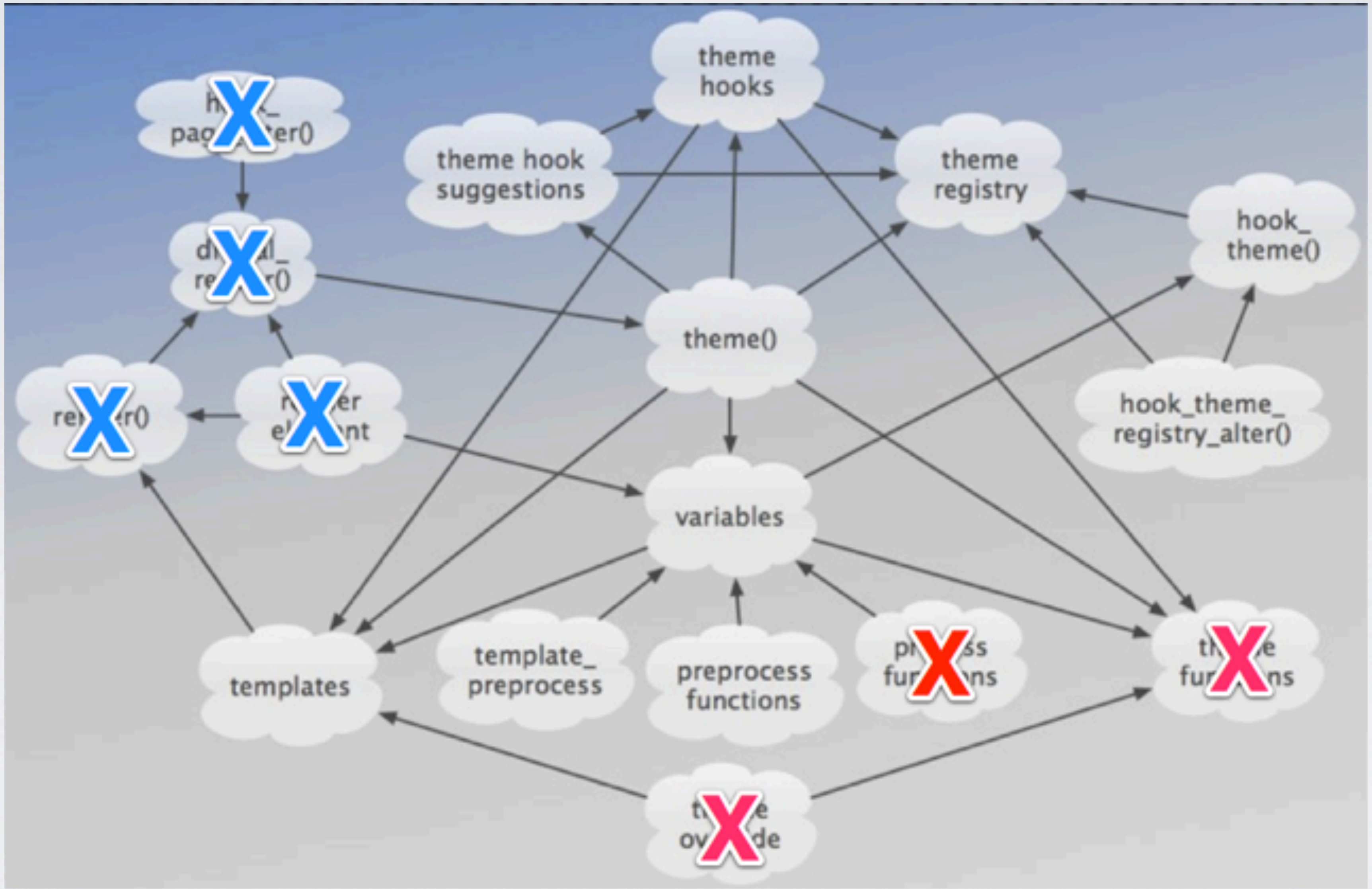
We can potentially remove theme functions, render, process.

REMEMBER DRUPAL 7?



remember the complexity of Drupal 7?

REMEMBER DRUPAL 7?



look what would happen in Drupal 8.

REMEMBER DRUPAL 7?

- 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)

REMEMBER DRUPAL 7?

- 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: NEXT TASKS

- Finish converting all existing core *.tpl.php files to Twig templates

- Finish converting all existing core theme functions to Twig templates

- Consolidate similar templates and identify template suggestions for extensibility

- Convert renderable arrays into Twig objects

- More TBD

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

HOW CAN I HELP?

TWIG AT BADCAMP

- Twig Sprint: Sunday in Pauley Ballroom
- Convert theme functions to template files
- Help create the Theme Component Library
- Help clean up markup in core
- More!

Come talk to us!

QUESTIONS?

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
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secure
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/

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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/

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.thespir.it/articles/scotch-101/?viewall=1