## MIGRATE ALL THE HINGS!

Better Drupal workflows, using Migrate

Dave Vasilevsky vasi@evolvingweb.ca twitter.com/djvasi @vasi on drupal.org, github



## ABOUTME

- Doing Drupal since 2008
- Love open source and the Drupal community
- Contributor to Migrate in core (eg: multilingual nodes in D6 → D8 upgrades



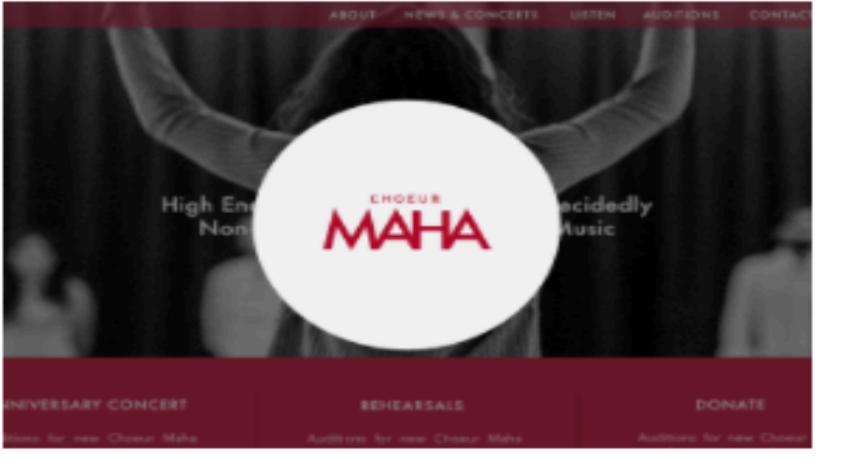


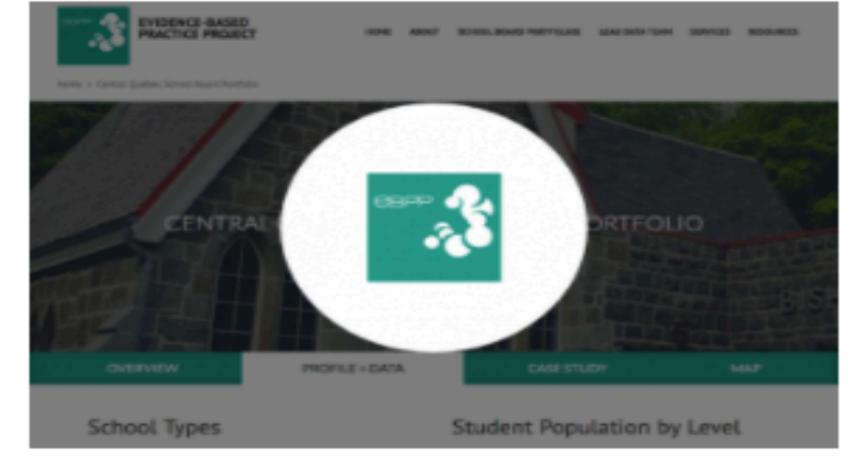
### http://evolvingweb.ca

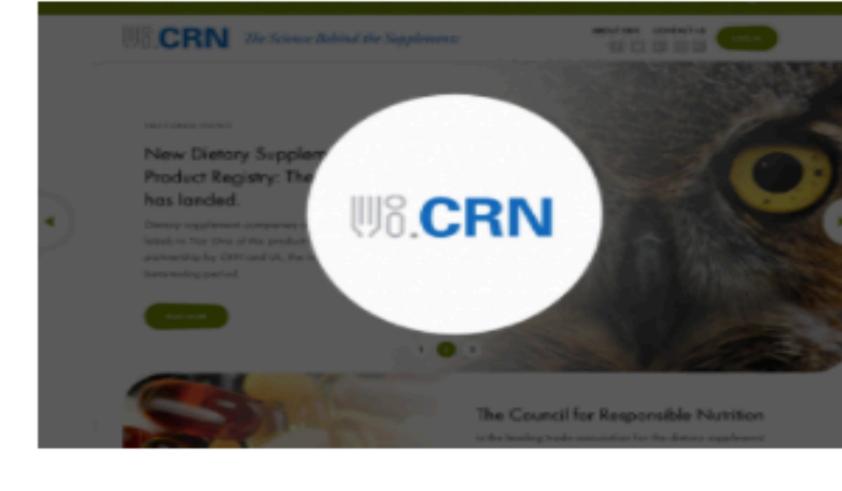
- · Drupal development, consulting and training since 2007
- · Based in Montreal, clients all over Canada and USA
- · Very involved in the Drupal community

#### **Our specialties**

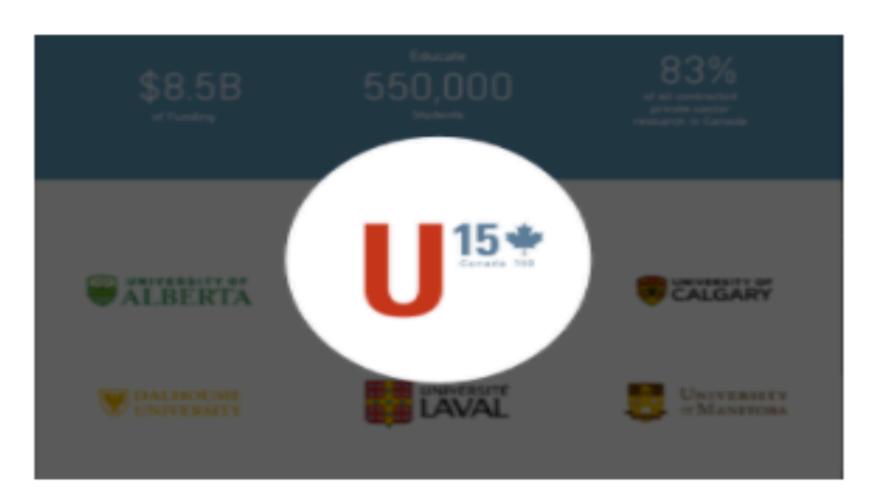
Multilingual	Solr search	Testing
Custom Drupal applications	Responsive themes	and of course  Migrate

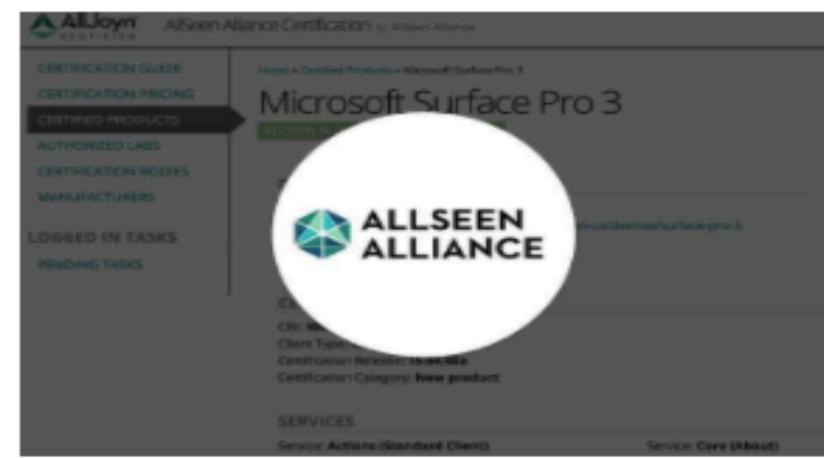


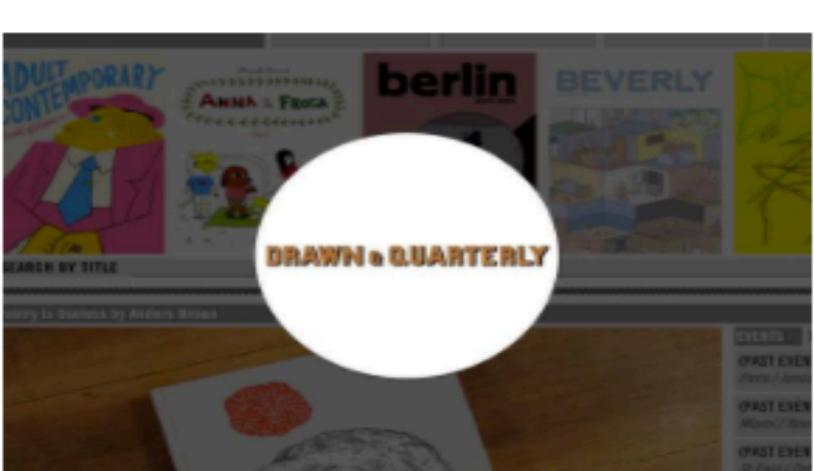


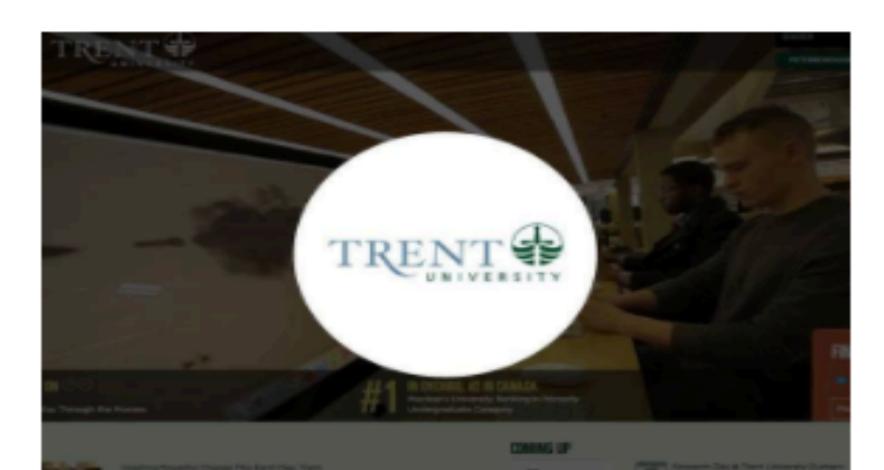














## ONCE UPONATIME...



## ONCE UPONATIME...

"We're going to save some money. You just build the site—we'll add all the content ourselves."

- The Client



## ONCE UPON ATIME...

A beautiful site, only missing content



## ONCE UPONATIME...

A beautiful site, only missing content



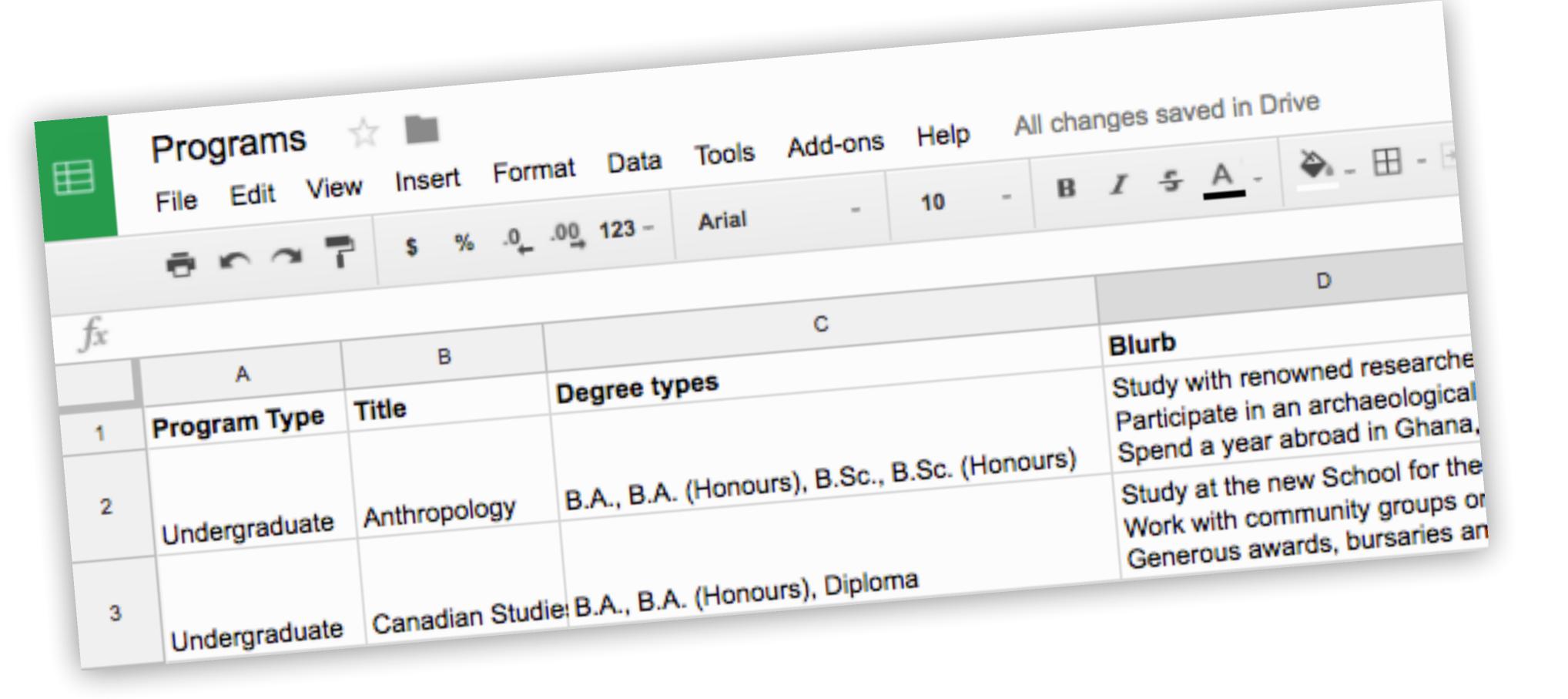
## ONCE UPONATIME...

So many things can go wrong!

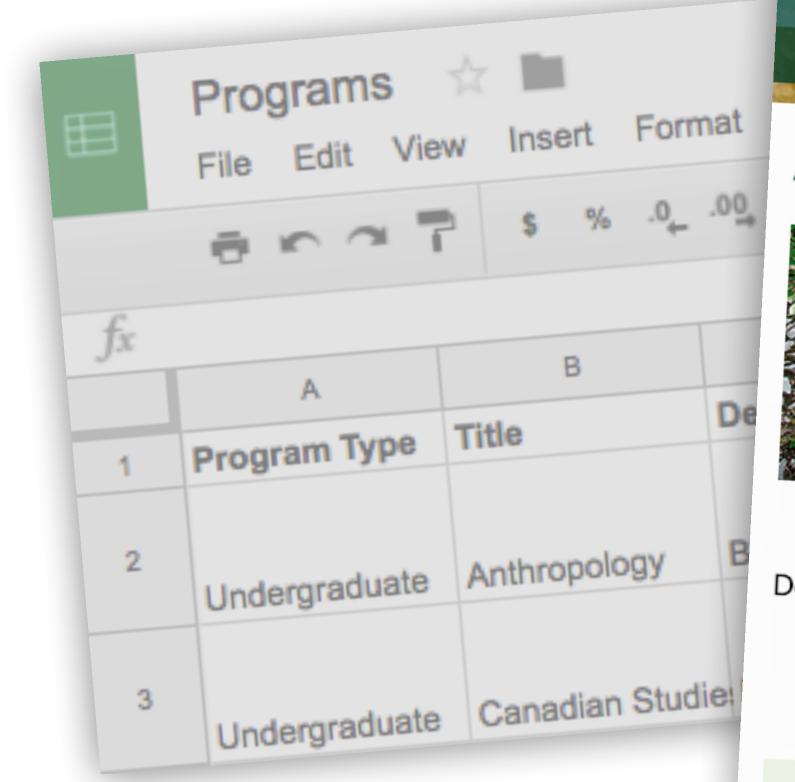
- · Bodies that are only images or tables
- · Relationships or tags that weren't identified
- · Much shorter or longer text than expected
- · Many more or fewer nodes than expected



# EX: TRENT UNIVERSITY



## EX: TRENT UNIVERSITY





PROGRAMS

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### Anthropology



Anthropology is the study of the human experience, from our earliest ancestors to contemporary digital society. You will learn to see humankind as complex social and biological beings with the capacity for language and culture. Drawing on insights from archaeology, and cultural, linguistic, and biological anthropology, you will explore the extraordinary variability in human adaptation, organization and belief, and how the common circumstances we face unite us.

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OUR 2017 VIEWBOOK

#### Degree Type

- B.A.
- B.A. (Honours)
- B.Sc.
- B.Sc. (Honours)

THE TREAT ADMANTAGE

### A SOLUTION

- · Force client to actually write content quickly, improves likelihood of launch on-time
- · Client can use tools they know, even without Drupal training
- · Can check if IA is correct, and adjust before it's too late
- · Each developer can import data on their own computer



· Yes, it's about migrate. So what's migrate?



- · Yes, it's about migrate. So what's migrate?
  - · A system that allows importing structured data into Drupal, usually as entities: nodes, users, terms...
  - · Data can come from many different places: DB, CSV, XML...
  - Very extensible
  - · Included in Drupal 8 core (experimental)
  - · What is migrate not?



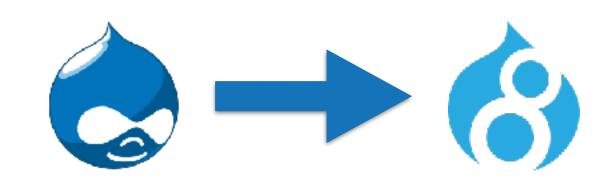
- · There's already lots of info about what migrations are, how to write a migration:
  - · Michael Anello at DCNJ 2017: <a href="http://tiny.cc/ultimikeMigrate">http://tiny.cc/ultimikeMigrate</a>
  - · Evolving Web blog series: <a href="http://tiny.cc/ewMigrate">http://tiny.cc/ewMigrate</a>
- · These aren't the focus of the talk



- This talk isn't just about **how to start.** More about **why and when.**
- · Common impression is that migrate is only for:

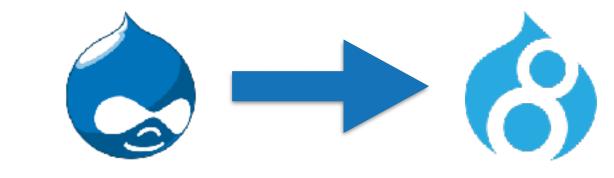


- · This talk isn't just about how to start. More about why and when.
- · Common impression is that migrate is only for:
  - · Upgrades from D6/D7 to Drupal 8





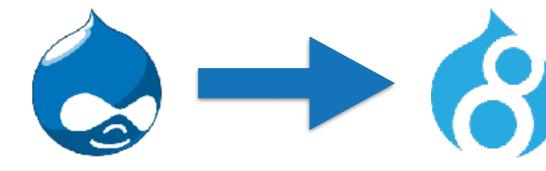
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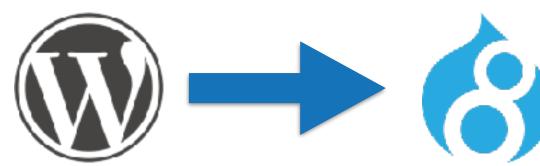
Moving from legacy sites to Drupal



- This talk isn't just about how to start. More about why and when.
- Common impression is that migrate is only for:
  - · Upgrades from D6/D7 to Drupal 8



· Moving from legacy sites to Drupal ( ) -





- But there are also many new content workflows that migrate enables
- So don't just migrate things that feel like migrations—migrate all the things



## MIGRATE?

- But there are also many new content workflows that migrate enables
- So don't just migrate things that feel like migrations—migrate all many of the things

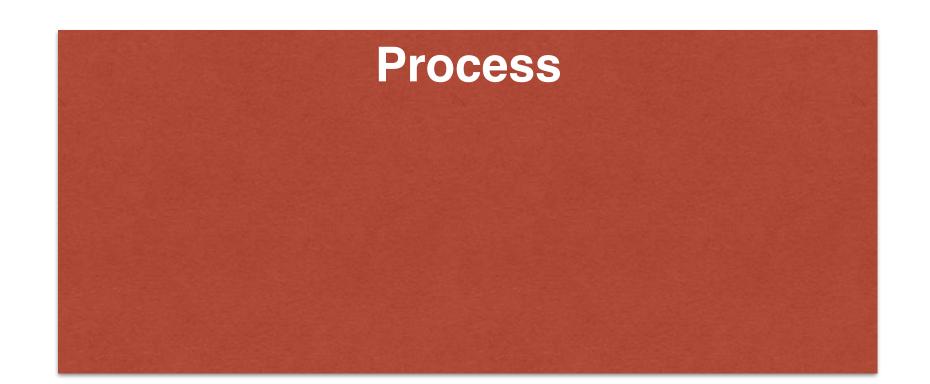


## WORKFLOW: CONTENT FIRST

Implementation

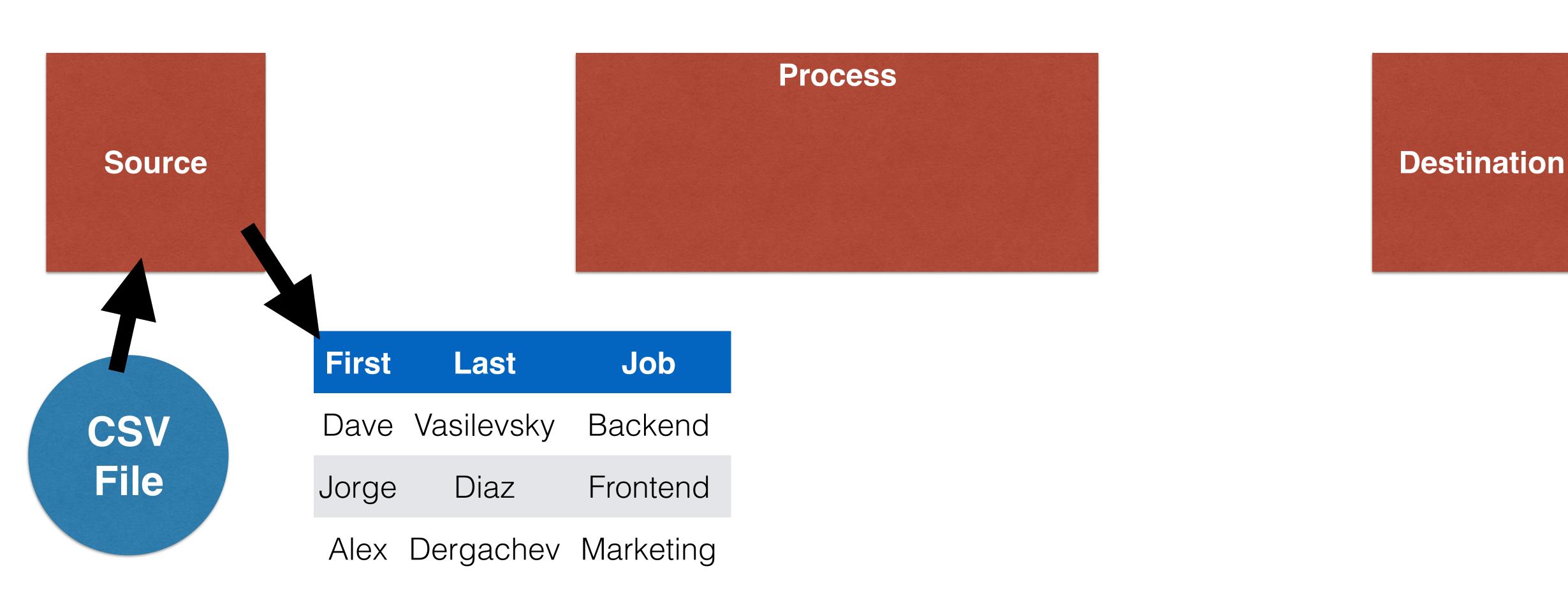


Source

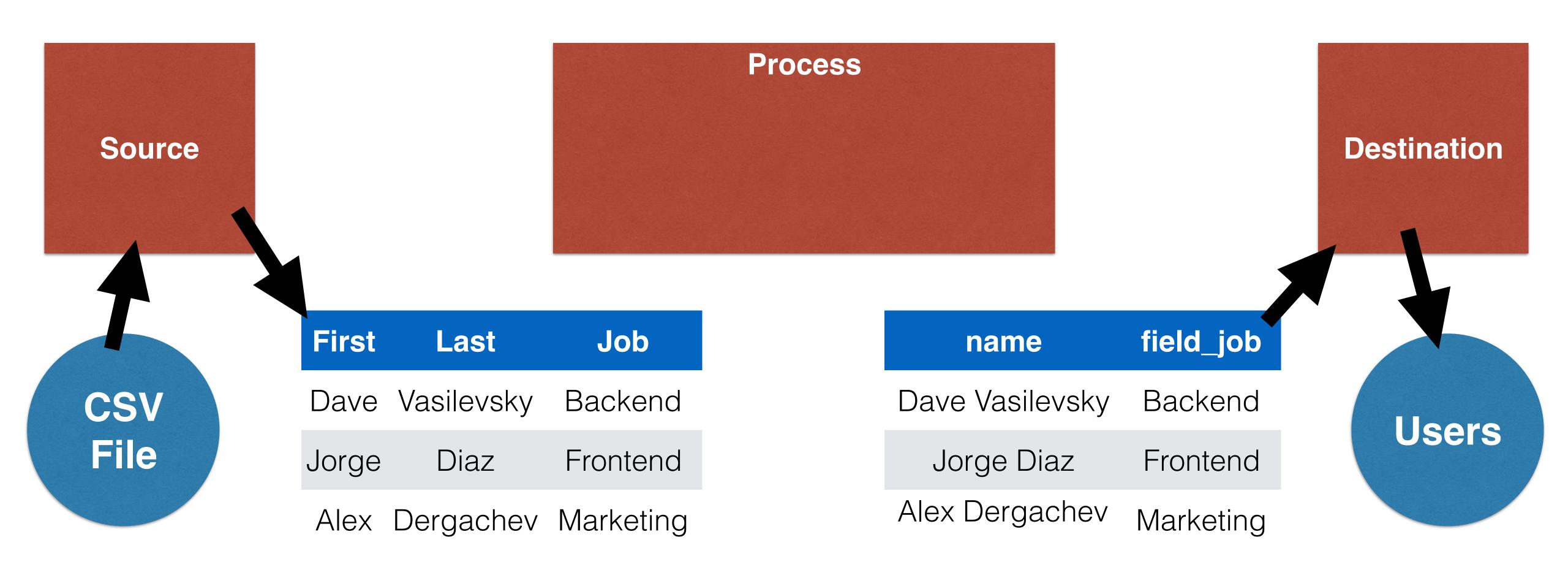




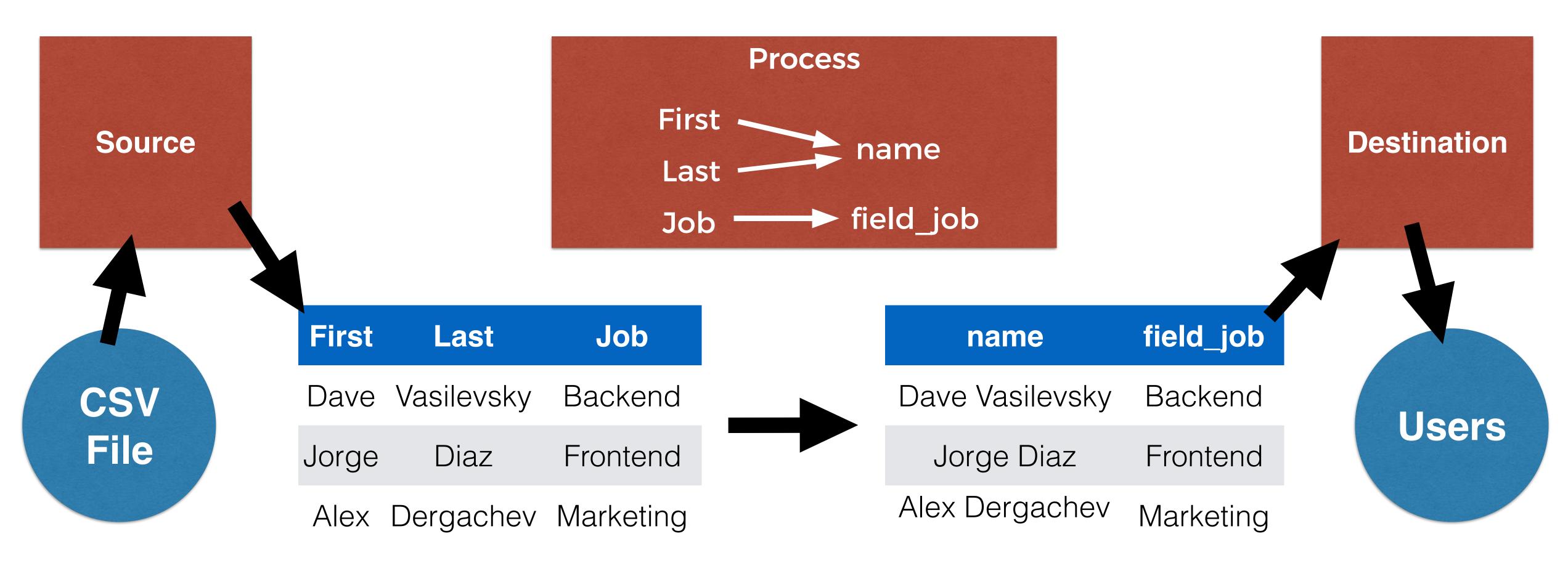














#### Contrib modules

- migrate\_plus: Allows a migration to be defined with YAML config file
  - 'Migration': Definition of source + process + destination
- migrate\_tools: Allows running migrations using drush



Title	Body
About	Evolving Web
Careers	If you're interested
Projects	We work with

```
id: test
label: Test CSV migration
source:
  plugin: csv
  path: public://test.csv
  header_row_count: 1
  keys: [Title]
destination:
  plugin: entity:node
  default_bundle: page
process:
  title: Title
  body: Body
```



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## A SOLUTION

### What we gain

- Force client to actually write content quickly, improves likelihood of launch on-time
- · Client can use tools they know, even without Drupal training
- · Can check if IA is correct, and adjust before it's too late
- · Each developer can import data on their own computer. No database sharing!



## WORKFLOW: CONTENT FIRST

### DANGER 4

- · Only migrate when it's worth it
- · Spreadsheets are too simple
  - · Images are hard
  - · Related content is hard



### WORKFLOW: CONTENT FIRST, IN DRUPAL

- · Drupal has great content management UI
  - Rich text editor
  - Images
  - · References
  - Don't need complete theme and behaviour to create content, just content type definitions



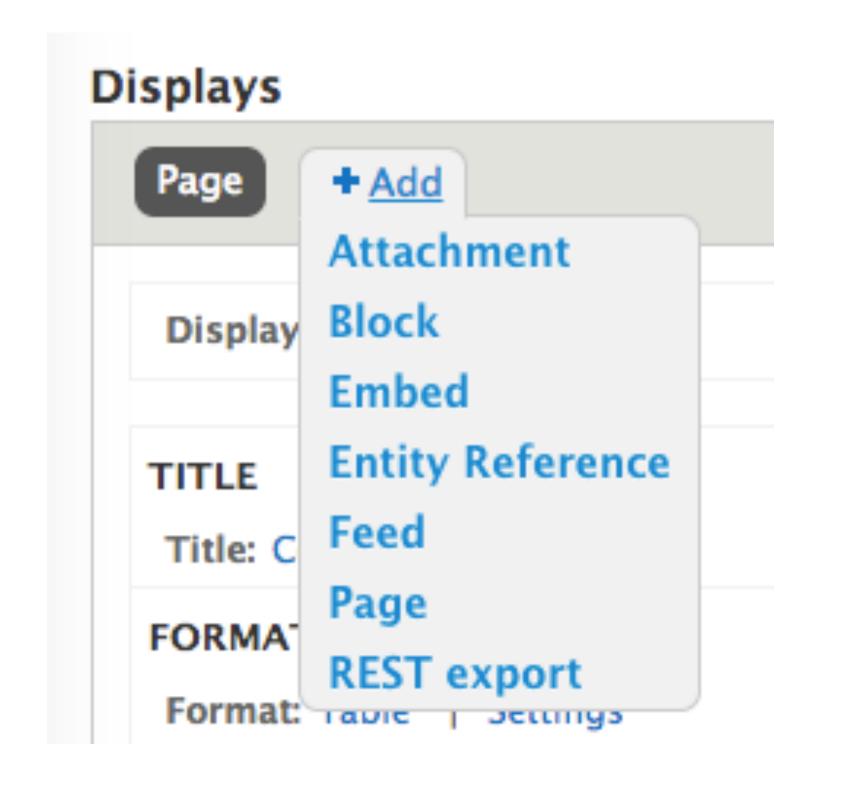
### WORKFLOW: CONTENT FIRST, IN DRUPAL

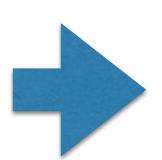
- · Provide client a content staging site
- · They can build all the content there
- · Migrate it into Drupal, just like before
  - · Same advantages of "Content first" workflow



### WORKFLOW: CONTENT FIRST, IN DRUPAL

### REST module to export content as JSON





```
"title": "My node",
   "path": "/node/1",
   "body": "This is a
sample node.\n"
   "title": "Another node",
  },
```



#### Relationships

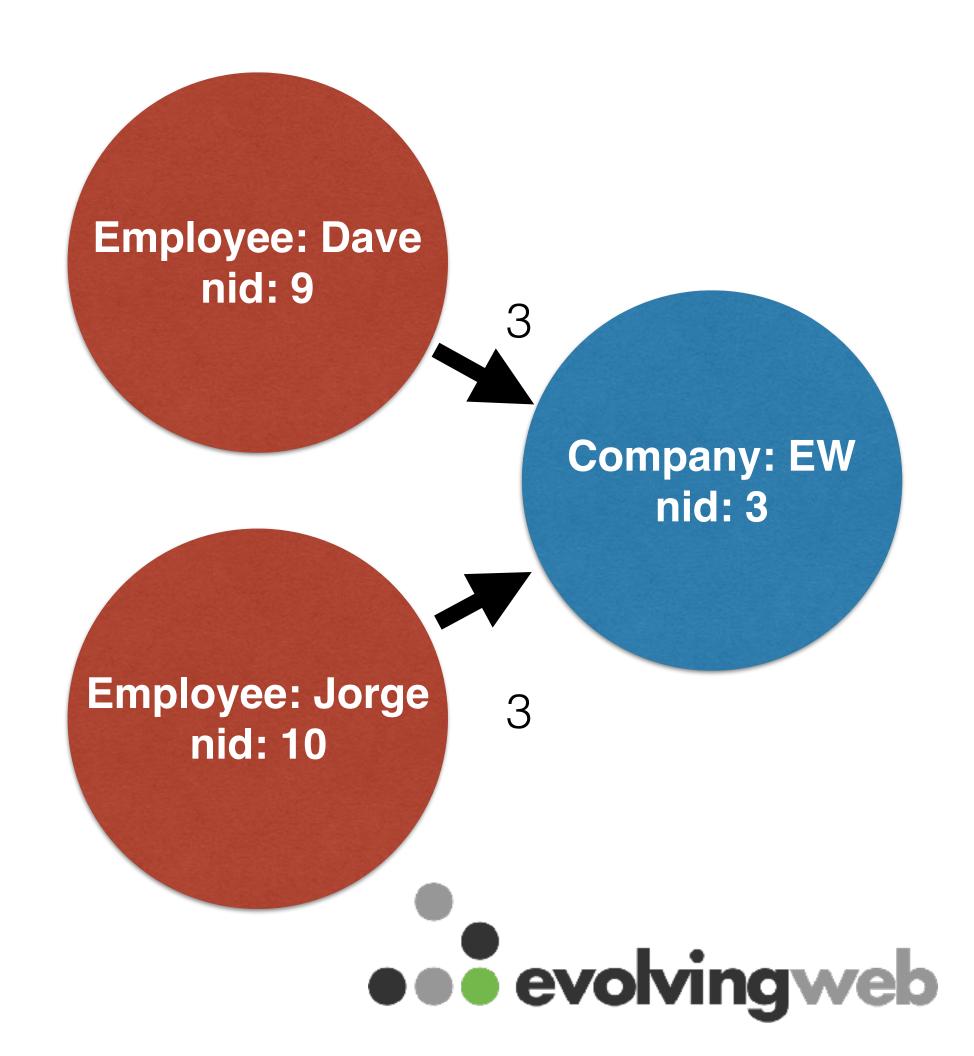
Company

Evolving Web

IBM

Apple

User	Company
Dave	Evolving Web
Jorge	Evolving Web



#### Relationships

- Migrate supports more complex mappings: "process plugins"
- There's a list of ones in core: <a href="https://www.drupal.org/docs/8/api/migrate-api/migrate-process">https://www.drupal.org/docs/8/api/migrate-api/migrate-process</a>



#### Relationships

Company

**Evolving Web** 

IBM

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process:

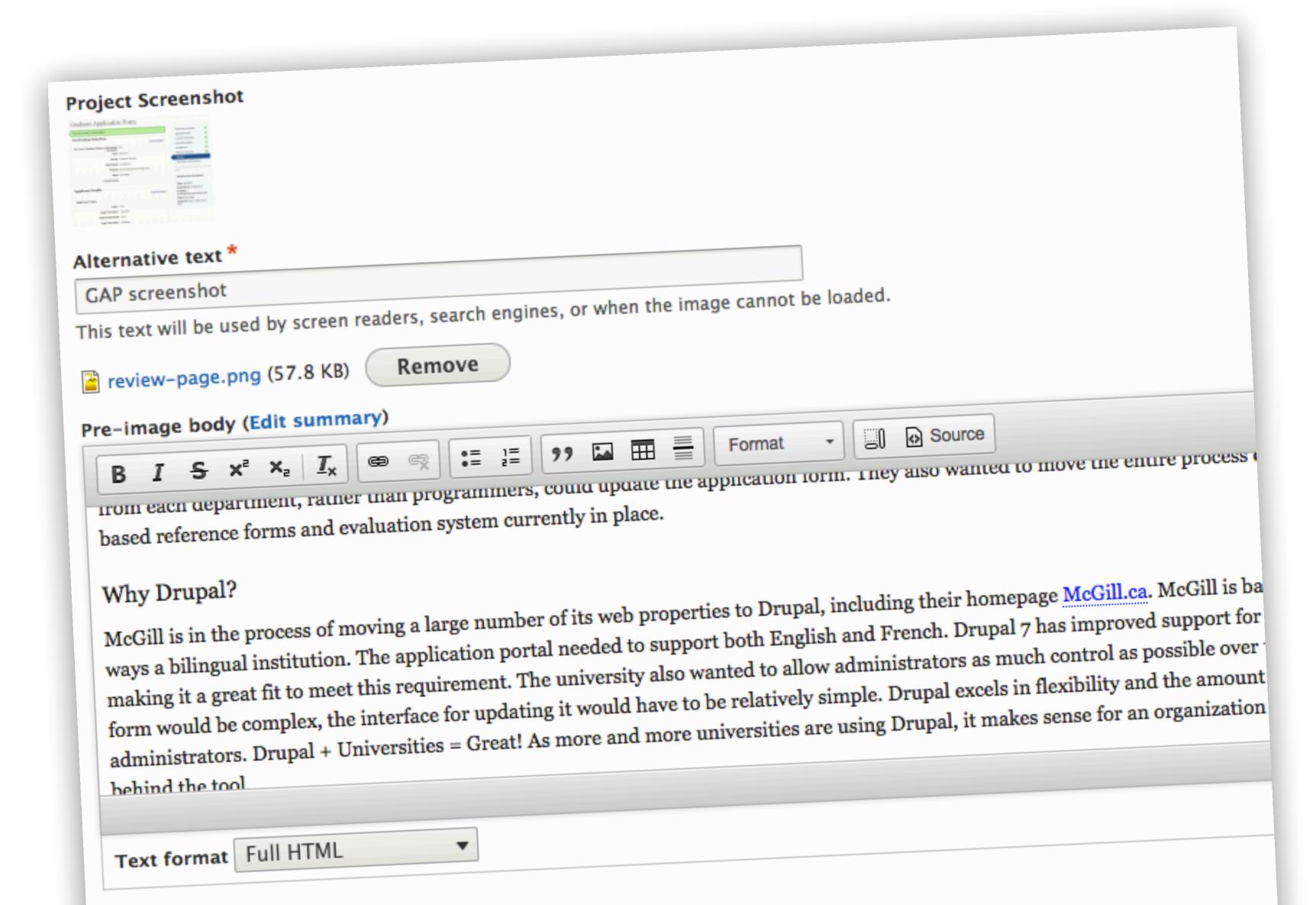
field\_employer:

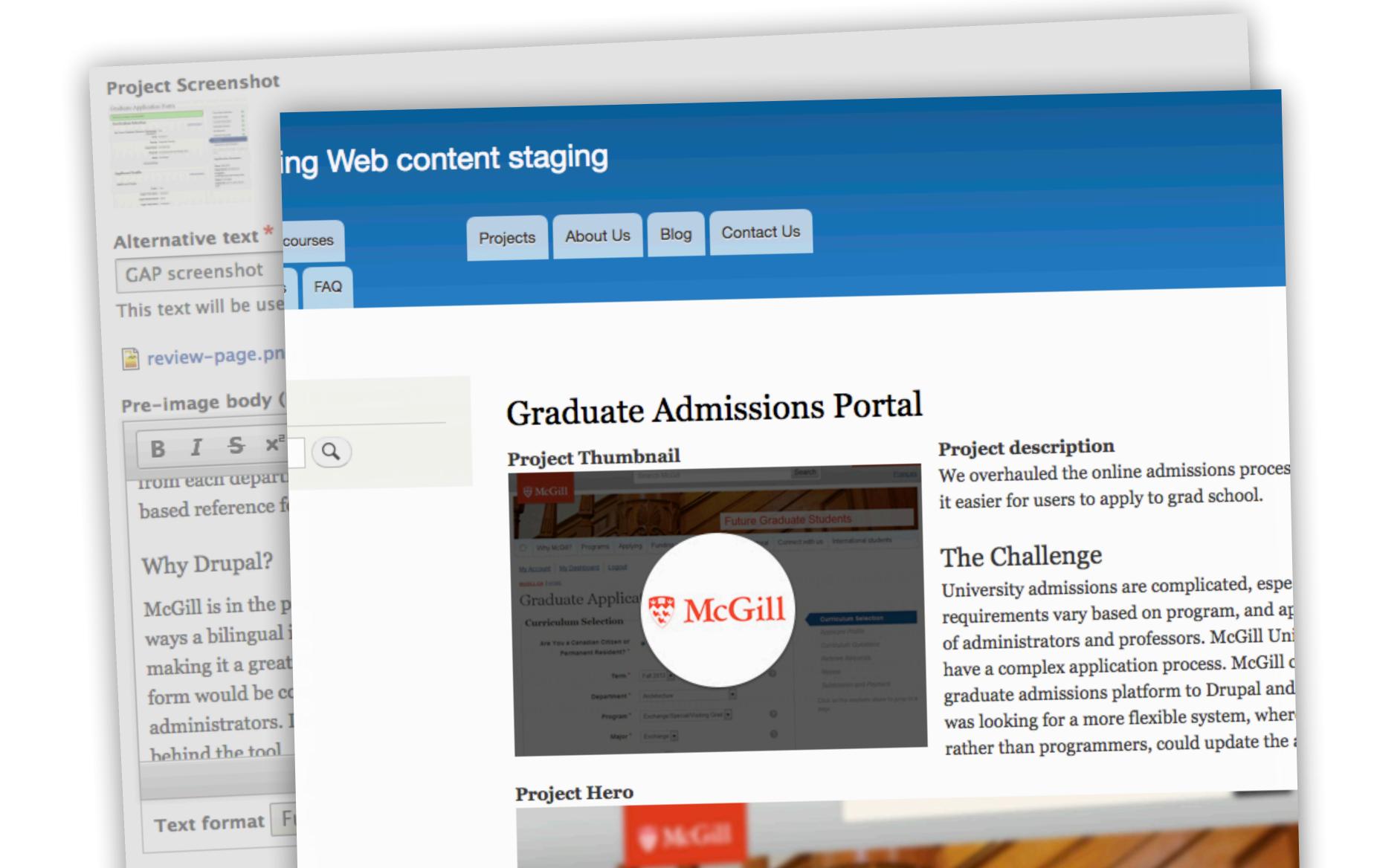
plugin: migration

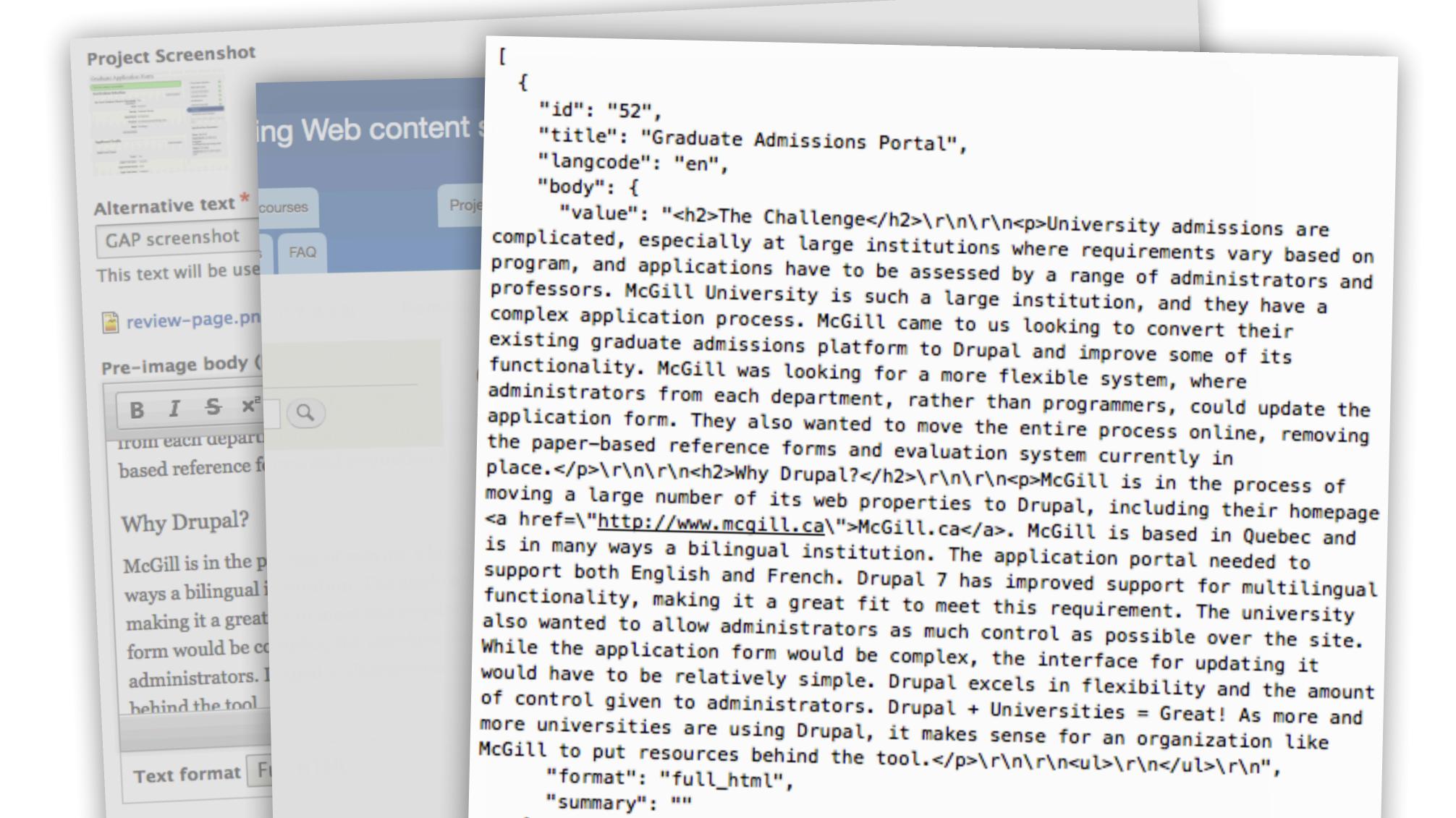
source: employer

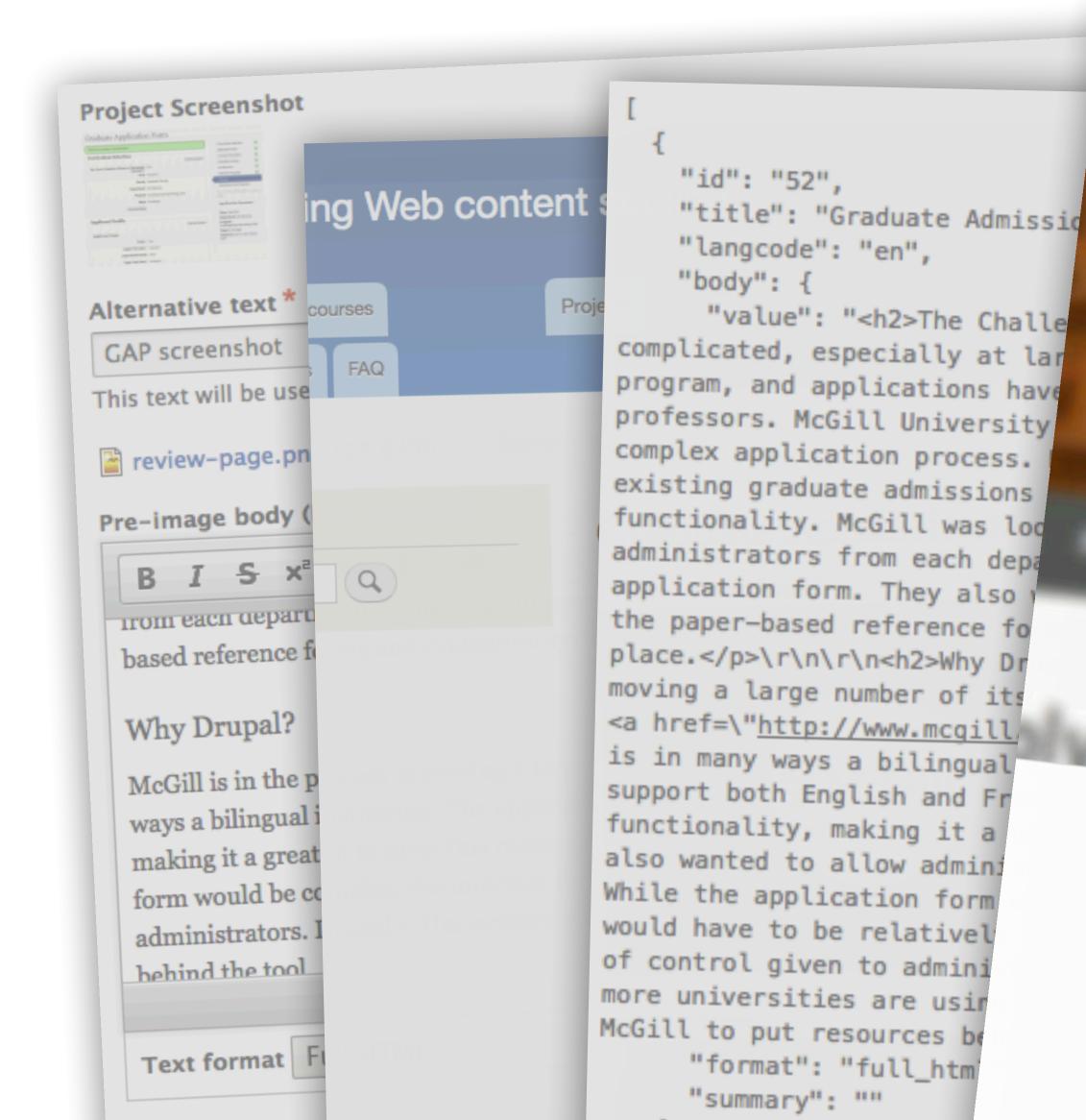
migration: companies

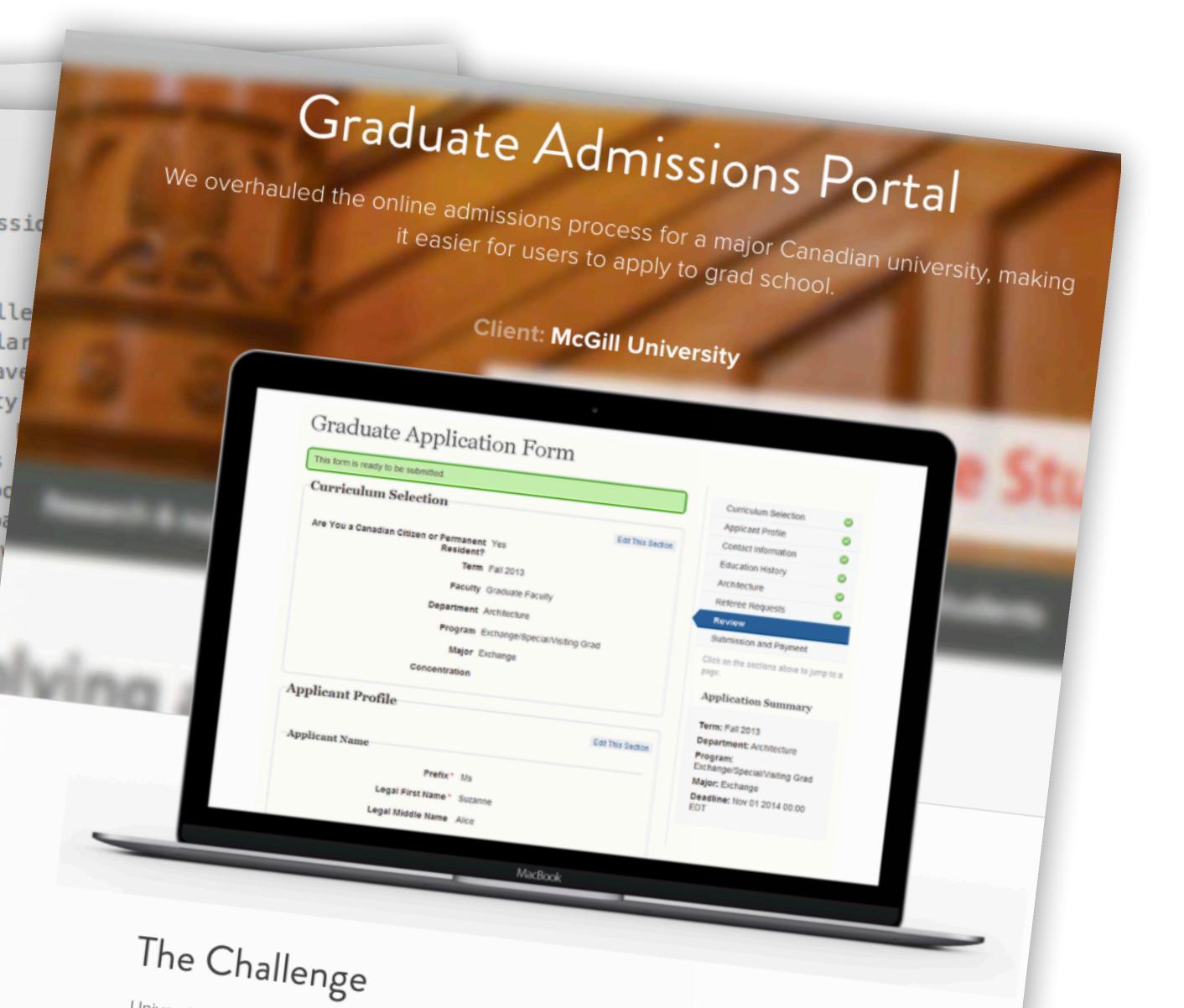












What we gain

- · Users can gather complex content, early
  - · Use polished Drupal UI to do so



#### Complications

- · Authentication: Shield + migrate\_plus
- · Translations: Two migrations
- · No built-in export: Menus, custom blocks



#### 1 DANGER 1

- · Site doesn't look pretty
- · Once the IA is nailed down—stop!



- External tool may be better than Drupal for managing certain content. Eg:
  - · Membership management system
  - · Image management systems
  - · Tools specific to data type, like course catalog
- · Manage data with external system
- Keep Drupal in sync



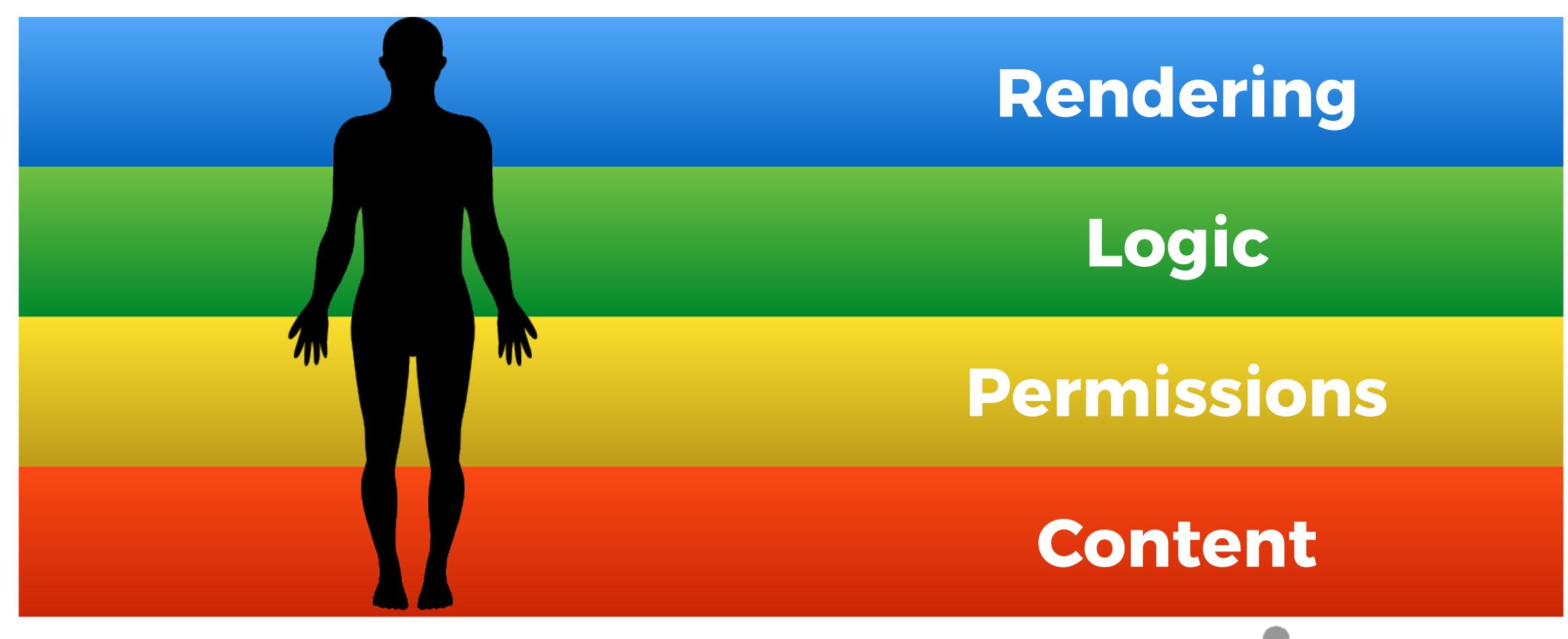
Rendering

Logic

Permissions

Content



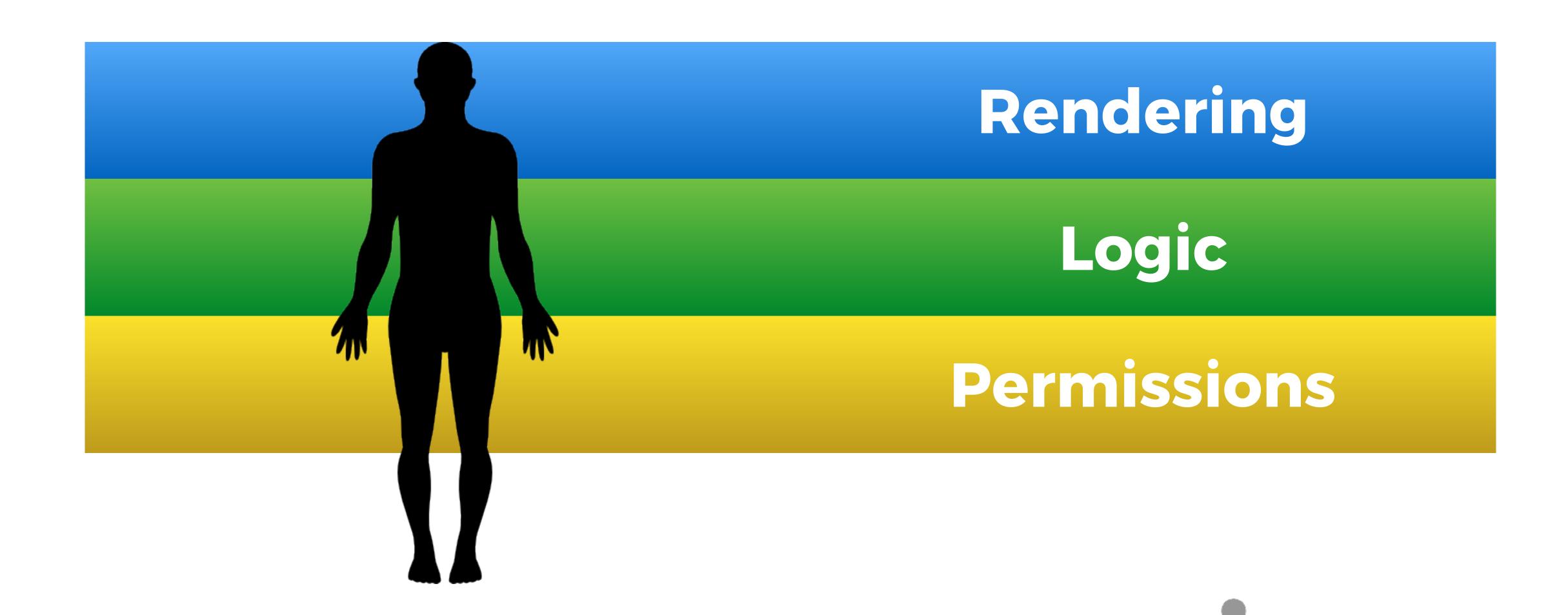




#### Headless Drupal







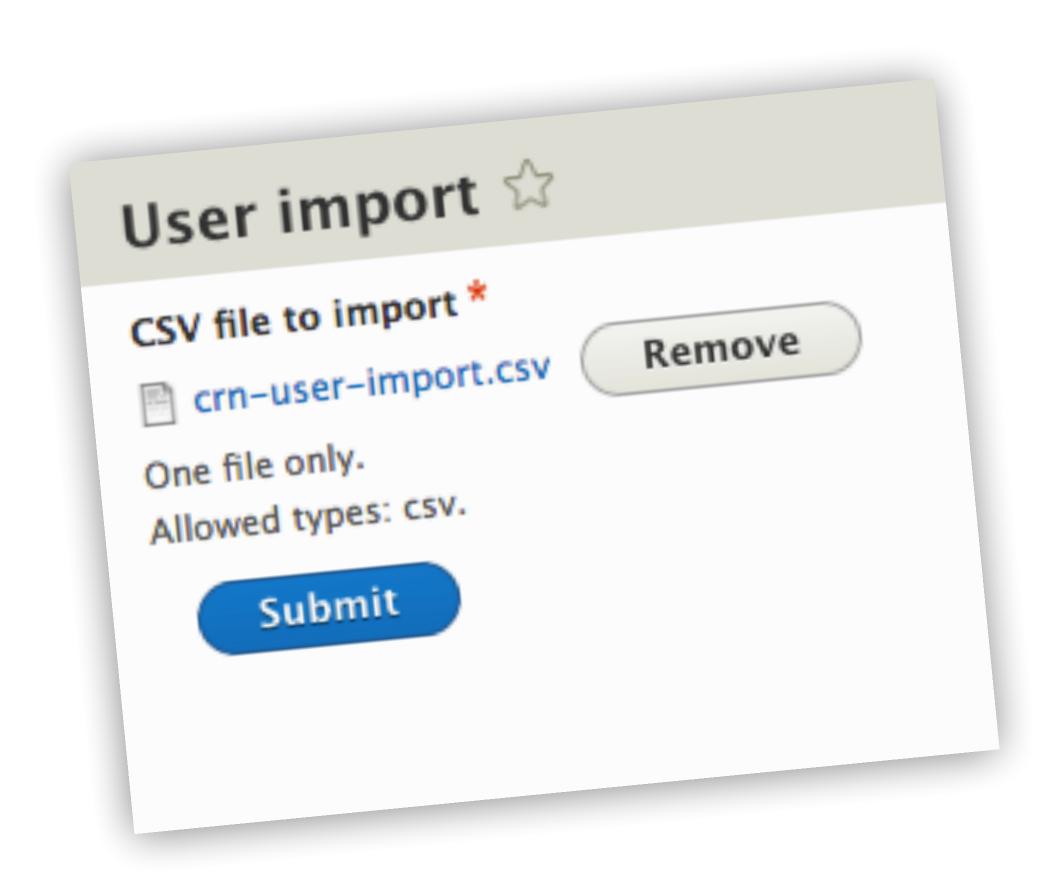
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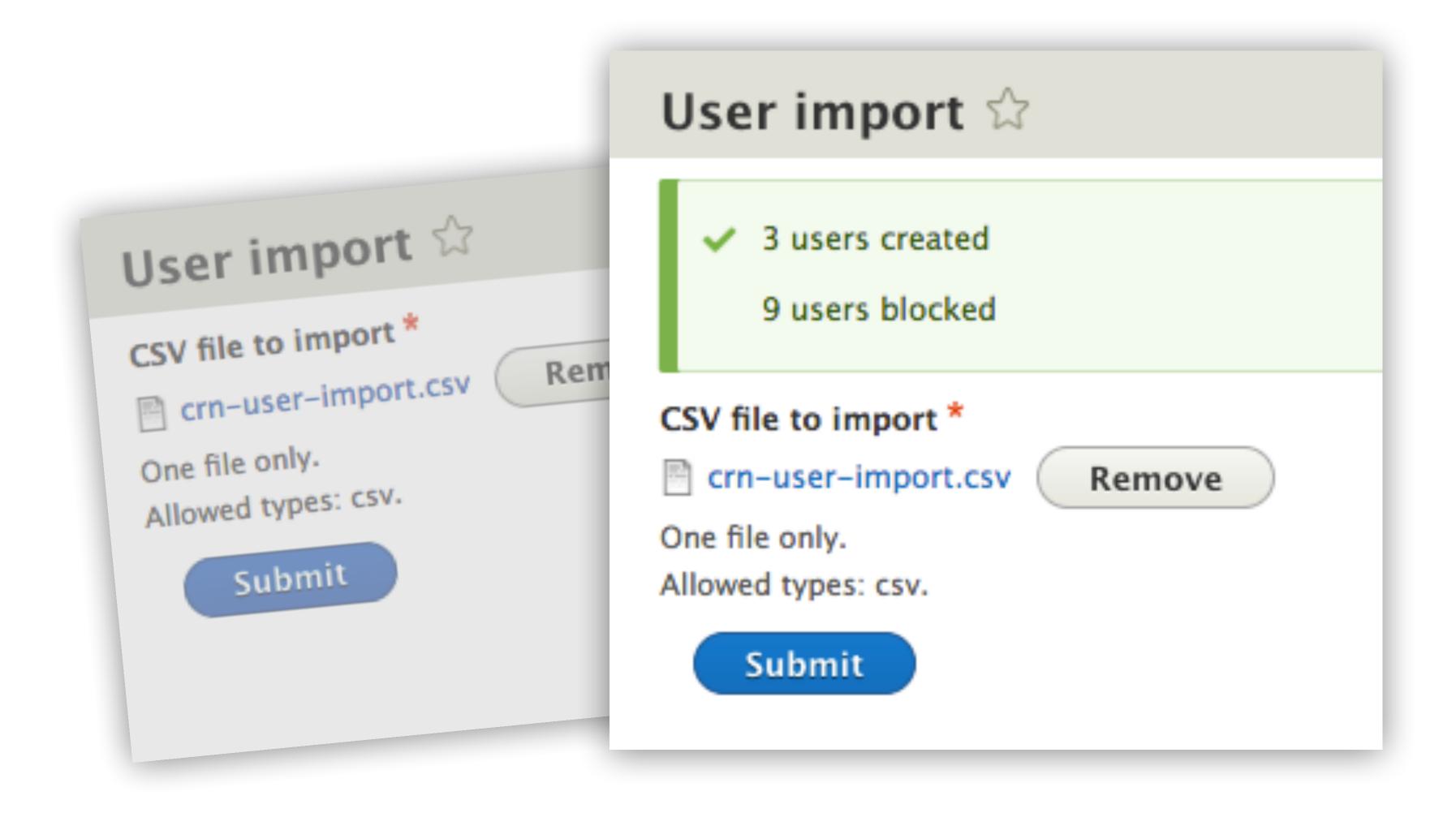
Footless Drupal?



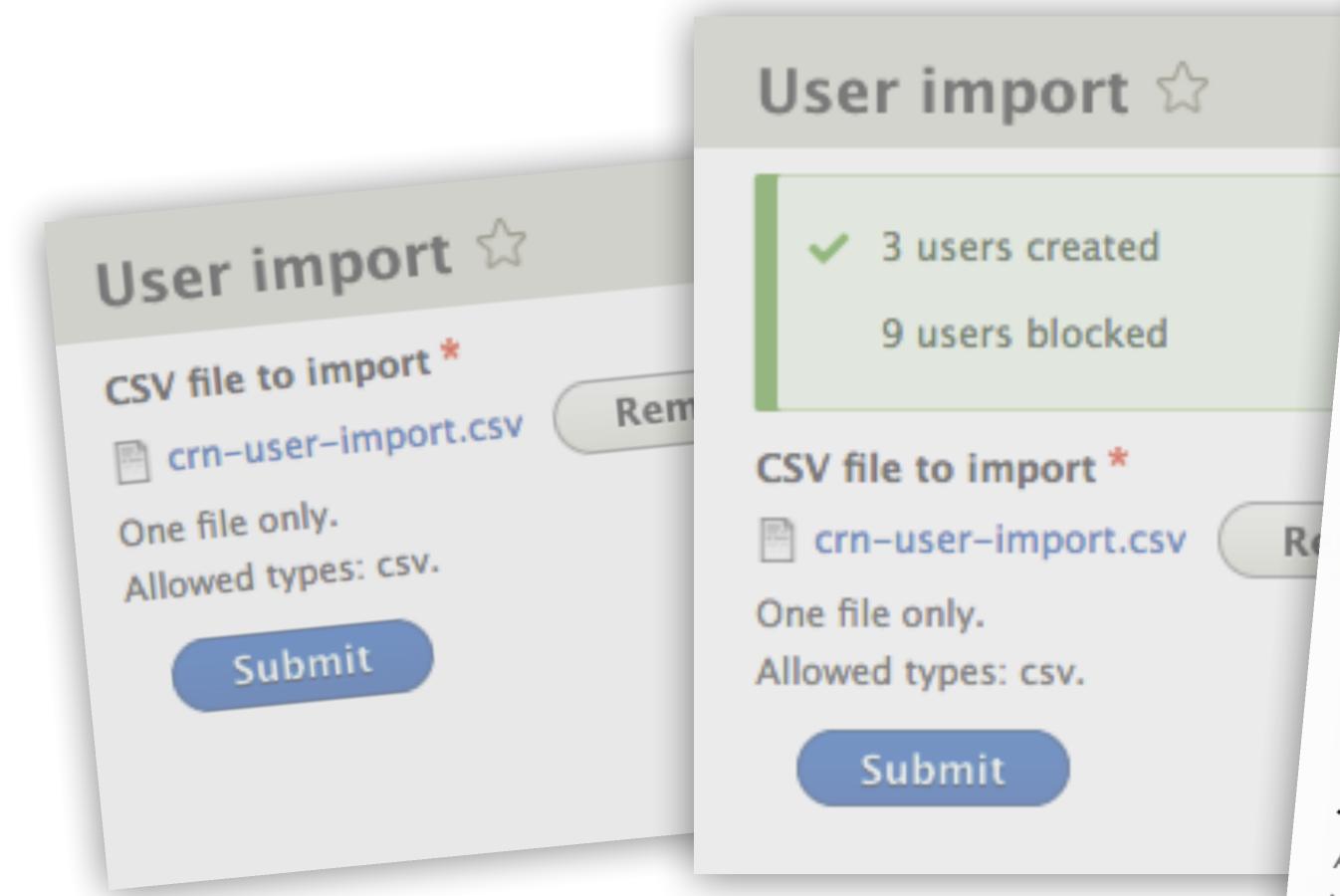
### EX: COUNCIL FOR RESPONSIBLE NUTRITION



### EX: COUNCIL FOR RESPONSIBLE NUTRITION



# EX: COUNCIL FOR RESPONSIBLE NUTRITION



### Members Directory

#### **Bob Aardvark**

Vice President

Aardvark Institue

#### bob@aardvark.com

Communications and Media Outreach Committee, Executive Contacts, International Regulatory Affairs Committee

#### Xander Aaron

Sales Manager

Reading Frankfurt PLC

#### xander@rdgfk.org

Regulatory Affairs Committee

#### Julie Abacus

Associate

Very Serious People Group

#### julie@vsp3.org

International Trade and Market Development

#### Recurring migrations

- · Update what's changed, and only what's changed
- · Delete entities that are no longer in source
- Trigger without drush
- · Make it hard to make mistakes



· Only update what's changed: incremental migration

source:

track\_changes: true



#### Triggering migrations without drush

· Trigger on cron, or via UI

```
$migration_manager = \Drupal::service('plugin.manager.config_entity_migration');
$migration = $migration_manager->createInstance('my_migration');
$executable = new MigrateExecutable($migration, new MigrateMessage());
$executable->import();
```



#### Dynamic source

 If users are uploading data files, we need to tell migrate about them.

```
$path = $form_state->getValue(['source', 0])->getFileUri();

$source = $migration->getSourceConfiguration();
$source['path'] = $path;
$migration->set('source', $source);
```



- Users want to know what's about to happen, check if it's expected
- We can look at the Migrate source object, and check what's new/updated/deleted: <a href="http://tiny.cc/migrateDryRun">http://tiny.cc/migrateDryRun</a>

```
term$ drush scr dry_run.php
UPDATED: 2
UPDATED: 4
NEW: 5
DELETED: 3
```



#### Delete

- In core, migrate will never delete items that have been removed from source.
- But now we know what needs deletion, so we can add a hook to do that too.
  - BE CAREFUL! Validate your data



#### Debugging

- migrate\_devel module will print every row before migrating it
- Look at migrate\_map\_foo and migrate\_message\_foo DB tables
- Use XDebug and step through!



#### What we gain

- Use the right tool for the right job: Data can live in external tool if it's better for the job
- Don't need to write any weird integrations (eg: external\_entities)



#### A DANGER !

- · Validate your data!
- Data will be overwritten
- · Never do bidirectional sync. It will break.

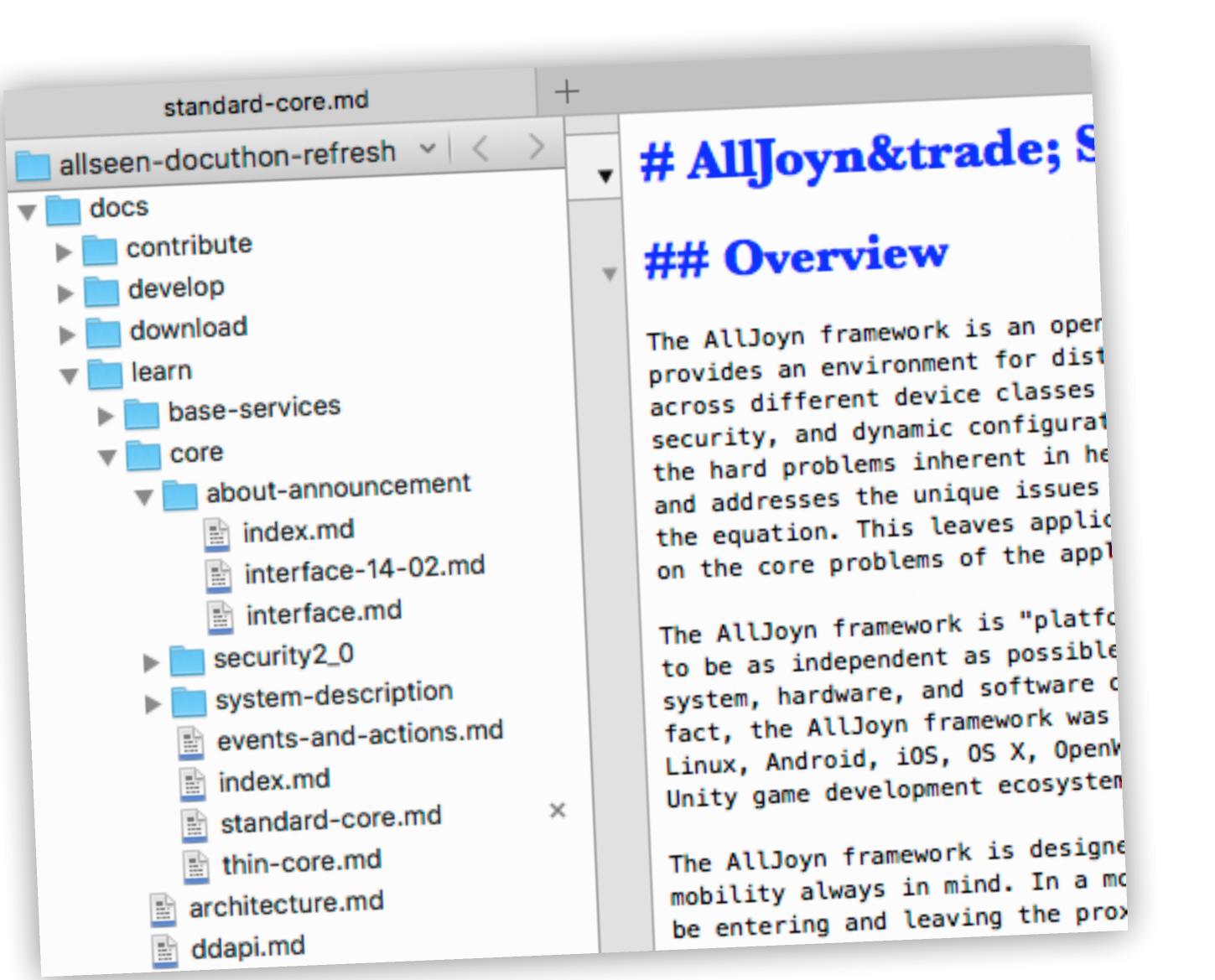


## WORKFLOW: CONTENTINGIT

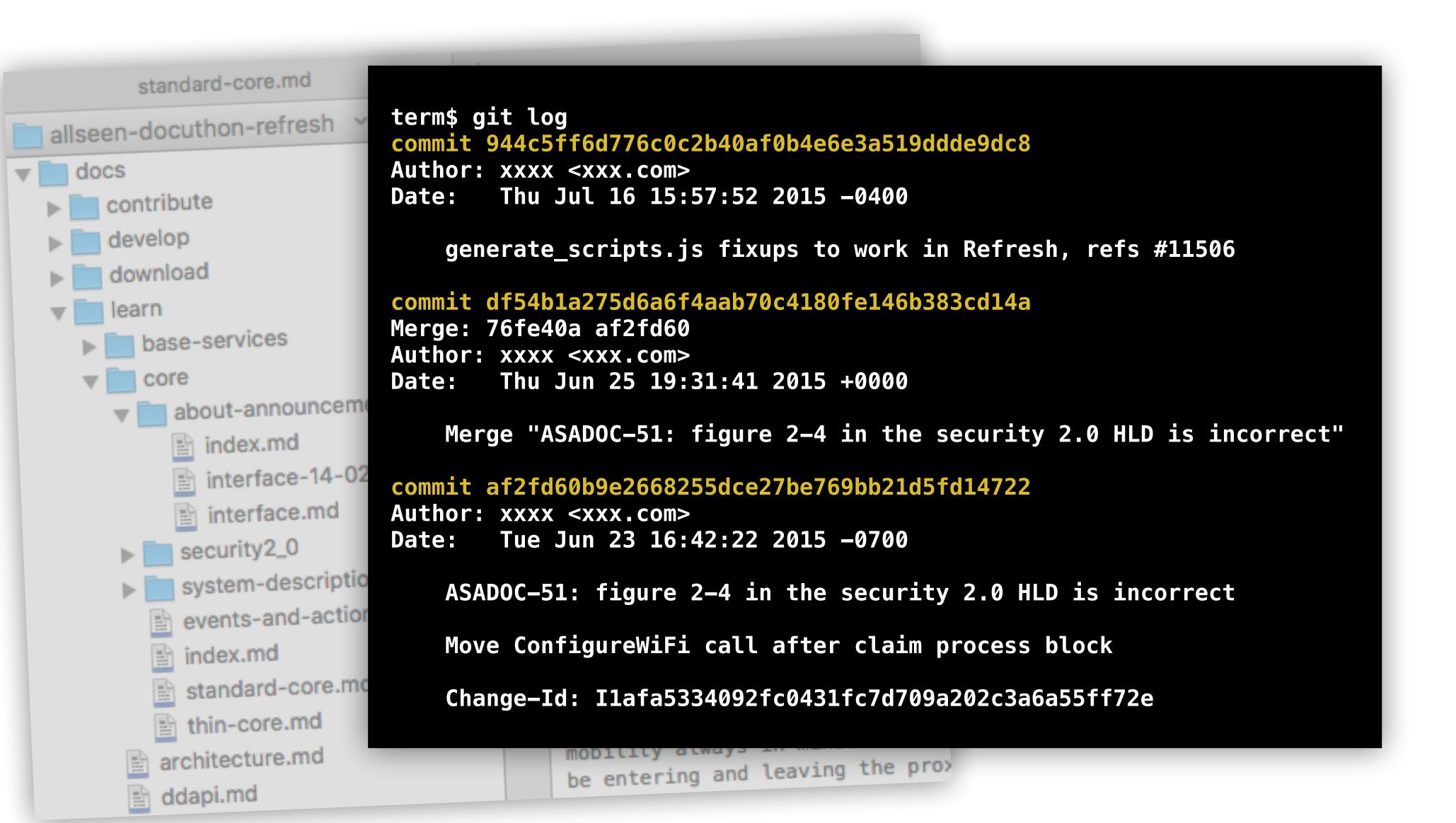
· Example of an external system: Markdown files in a git repo



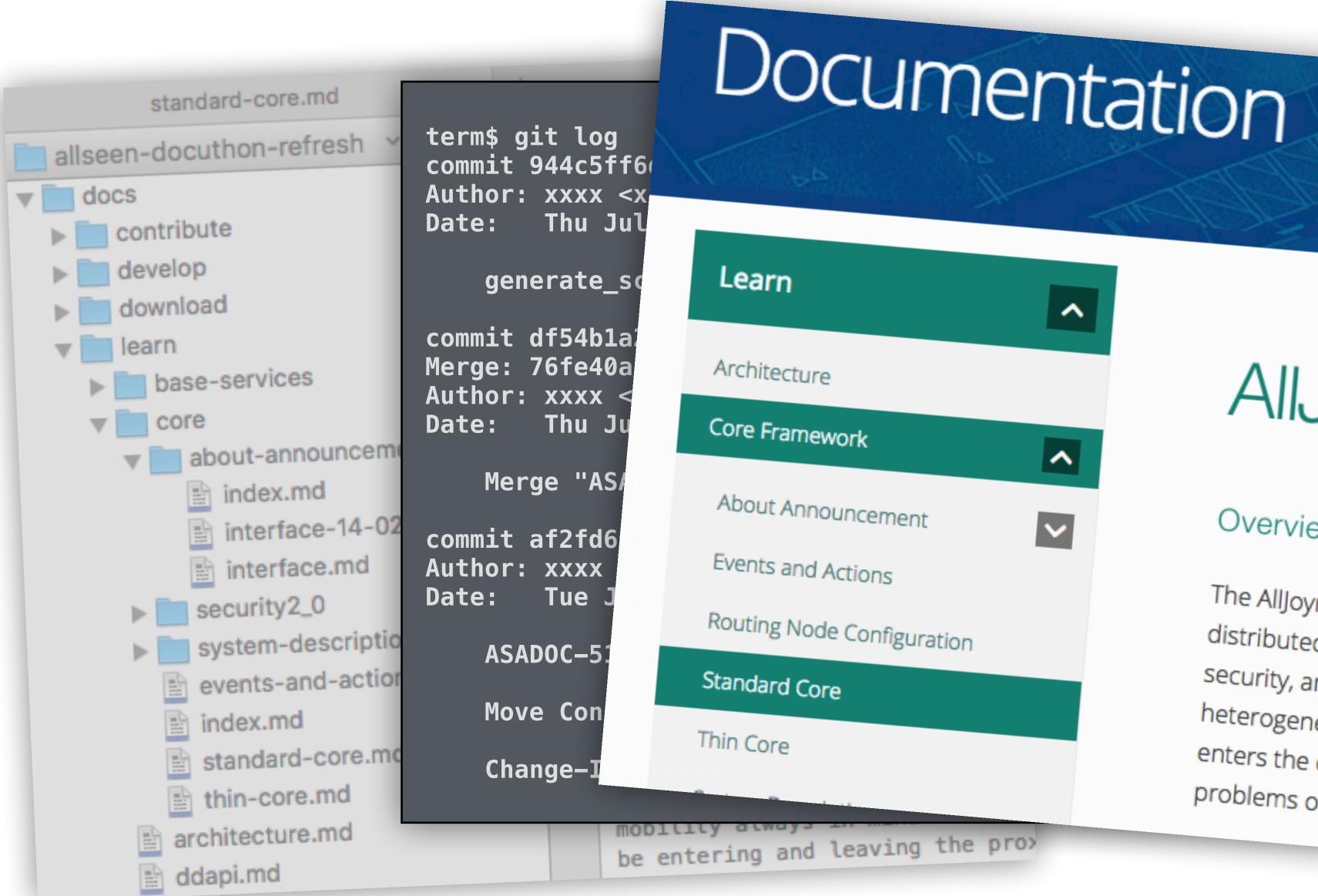
# EX: ALLSEEN DEV DOCS



# EX: ALLSEEN DEV DOCS



# FX: ALLSEEN DEV DOC



# AllJoyn<sup>TM</sup> Standard Core

#### Overview

The AllJoyn framework is an open-source software system that provide distributed applications running across different device classes with ar security, and dynamic configuration. The AllJoyn system handles the ha heterogeneous distributed systems and addresses the unique issues the enters the equation. This leaves application developers free to concent problems of the application they are building.

### WORKELOW: CONTENTINGIT

#### Getting all the files

- · In Drupal 8, almost everything is just a plugin
- · That goes for Migrate sources and process plugins too
  - · They're pretty well-designed, don't be afraid to write one



```
/**
* @MigrateSource(
    id = "markdown"
 *
*/
class Markdown extends SourcePluginBase {
  public function initializeIterator() {
    $found = file_scan_directory($this->configuration['path'], '/.md$/');
    foreach ($found as $item) {
     yield (array) $item;
  public function ___toString() {
    return $this->configuration['path'];
  public function fields() {
    return ['uri' => $this->t('URI')];
  public function getIds() {
    return ['uri' => ['type' => 'string']];
                                                             • • evolvingweb
```

## WORKELOW: CONTENTINGIT

#### Source data can be weird

- · Our client kept a hierarchical YAML file, to turn into a menu
- · But migrate wants a list of rows, not a tree!
- RecursiveIteratorIterator makes this simple: <a href="http://tiny.cc/RecIterIter">http://tiny.cc/RecIterIter</a>



## WORKELOW: CONTENTINGIT

#### Validation

- Catch problems early: Check the resulting entities, see if they make sense
  - Are there broken links? Orphan nodes, without a menu item?
- Compare generated test site with Drupal: <a href="https://github.com/evolvingweb/sitediff">https://github.com/evolvingweb/sitediff</a>



# WORKFLOW: CONTENTINGIT

### What we gain

- · Best tools for the job
  - · Git comes with: branches, merging, global ID, blame...
  - · Can use whichever Markdown editor they like
- · Can revert to earlier version of site!



- A D6/7 to D8 upgrade by default includes complete config/ content
  - · This leaves cruft, eg; obsolete fields
  - Things have changed in ten years! You probably want new content
- Building the new site from scratch means rewriting all your content



- · Build upgraded site from scratch, using new best-practices
- · But keep some content. Only what you need!



#### There's a shortcut!

```
term$ drush migrate-upgrade --configure-only -legacy-db-url=mysql://localhost/test
Exporting d7_dblog_settings as upgrade_d7_dblog_settings
Exporting d7_filter_format as upgrade_d7_filter_format
Exporting d7_filter_settings as upgrade_d7_filter_settings
Exporting d7_global_theme_settings as upgrade_d7_global_theme_settings
Exporting d7_image_settings as upgrade_d7_image_settings
Exporting d7_image_styles as upgrade_d7_image_styles
Exporting d7_language_types as upgrade_d7_language_types
Exporting d7_node_settings as upgrade_d7_node_settings
...
```



- · Export config, delete almost all the migrations.
- · Only keep what you want to save, eg:
  - · Some content types: upgrade\_d7\_node\_page
  - · Tags: upgrade\_d7\_taxonomy\_term\_tags
- · These contain everything you need to migrate those types, even the hard parts of the migration
- · Modify as needed.
  - · Eg: If you don't migrate users, don't keep the uid in the migrations



### Filtering files

- The D6/7 to D8 migrations include every file on the site. Could be many GBs!
- It can be worth only keeping the ones referred to by content you're keeping:
  - · http://tiny.cc/migrateFilterFiles



#### Broken links

- · URLs that break hurt SEO a lot
  - · Keep the URL alias migration. Migrate redirects as well.
- · Since you're throwing out some content, some links will die
  - · Have a plan for adding redirects
- · Check your site afterwards for broken links
  - · Proactive: Sitediff <a href="https://github.com/evolvingweb/sitediff">https://github.com/evolvingweb/sitediff</a>
  - · Reactive: Google Webmaster Tools





#### Blog

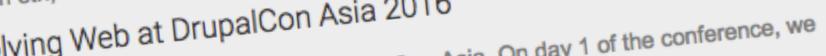
Drupal 8 Theming Foundations: Using Stable vs. Classy as a Base

For themers, there are lots of exciting new features in Drupal 8: the Twig tempting system,

libraries for loading assets, and the replacement of theme functions with templates. There are also a new set of core themes that come with Drupal 8.



Evolving Web at DrupalCon Asia 2016





id: d7\_blog label: 'Nodes (Story)' process: uid: plugin: migration migration: d7\_user source: node\_uid revision\_timestamp: timestamp body/0/value: Blog March 14th, 2016 source: body/0/value Drupal 8 Theming Foundation plugin: regex Theme pattern: 'http://evolvingweb\.ca/sites/ For themers, there are lots of exciting default/files/([^"]\*)' libraries for loading assets, and the replacement of theme replace: '/sites/default/files/d7/\3"' core themes that come with Drupal 8.



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Blog

March 14th, 2016 Drupal 8 Theming Foundation Theme

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source: body/0/val plugin: regex pattern: 'http:// default/files/([^"]\*)' replace: '/sites/

evolvingweb

TRAINING - PROJECTS



March 14, 2016 • by Suzanne Kennedy Dergacheva

### Drupal 8 Theming Foundations: Using Stable vs. Classy as a Base Theme

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March 8, 2016 • by Suzanne Kennedy Dergacheva

Evolving Web at Drupale



March 8th, 2016 Evolving Web at DrupalCon Asia 2016

On day 1 of the conference, we

### What we gain

- Keep the content that's worth keeping
  - Keep URLs working
- · Throw out the junk, build a beautiful new site
- · Can merge data, as long as there are no shared references



# WHAT YOU JUST SAW

- · Intro to migrate
- Workflows
  - Content first
  - · Content first, in Drupal
  - Mirror
  - · Content in git
  - Partial upgrades



# WHAT YOU JUST SAW

Migrate can improve your content workflow!



# 

- · Find me on Twitter @djvasi
- · Learn more about migrate
- Try out these content workflows



# 

### Evolving Web training

- Public: Chicago, Montreal, Toronto, NJ, NYC
- Private: Health Canada, McGill University, remote
- For new content editors, new developers, teams starting on D8...



### JOIN US FOR CONTRIBUTION SPRINTS

Friday, April 28, 2017

First-Time Sprinter Workshop 9:00am-12:00pm

Room: 307-308

Mentored Core Sprint 9:00am-12:00pm

Room:301-303

**General Sprints** 

9:00am-6:00pm

Room:309-310

#drupalsprints



# WHAT DID YOU THINK?

- · Anything I got wrong?
- Any new ideas I should look into?
- How should migrate evolve?

- Slides: <a href="https://events.drupal.org/">https://events.drupal.org/</a>
   baltimore2017/sessions/
   migrate-all-things
- Survey: <a href="https://www.surveymonkey.com/r/">https://www.surveymonkey.com/r/</a>
   drupalconbaltimore

