Before we begin ... Let's say "Hello!"

- Where are you from?
- Have you used the Webform module?
- What do you want to learn about today?
- Review the slides before the presentation

Prefix your questions with a "Q:"

WEBFORM:

CHOOSE YOUR OWN ADVENTURE

HELLO!

Hi, my name is Jacob Rockowitz.

- I am known as jrockowitz on the web.
- I am a Drupal developer and software architect.
- I built and maintain the Webform module for Drupal 8/9.

My Past Webform ~~Presentations~~ Adventures

- YAML, What is it good for? – 2016
- YAML Form. The Other Form Builder – 2016
- Webform 8.x-5.x – 2017
- Designing & theming Webforms – 2017
- Webform for Designers – 2017
- Webform: There is this for that – 2018
- Webform Accessiblity – 2018
- Webforms for Government – 2019
- Advanced Webforms Part I – 2019
- Advanced Webforms Part II – 2017
- Webforms for Everyone – 2020
- Webform Greatest Hits – 2020

YAML, What is it good for?

...absolutely something!!!

Part III

Answering the Why, What, & How Questions

1. Why use the Webform module? ★
2. Why did I build the Webform module?
3. What are some of the features? ★
4. What are some good examples? ★
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22. How to stop SPAM?
23. How to test webforms?
24. How to get help? ★

MY GOAL IS TO ANSWER YOUR QUESTIONS...

...AND LET YOU CHOOSE YOUR OWN ADVENTURE

1.

Why use the webform module?

THE WEBFORM MODULE IS
POWERFUL AND FLEXIBLE
FORM BUILDER &
SUBMISSION MANAGER
FOR DRUPAL 8/9

THE USE CASE FOR THE WEBFORM MODULE

<demo>

Answering the Why, What, & How Questions

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2.

Why did I build the Webform module?

Why did I build the webform module?

- I want to contribute something.
- I like to focus my energy on one project.
- I enjoy working on long term projects.

- Drupal 8/9 needed a form builder.
- Open Source needs a form builder.

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3.

WHAT ARE SOME OF THE FEATURES INCLUDED WITH THE WEBFORM MODULE?

WEBFORM FORM FEATURES

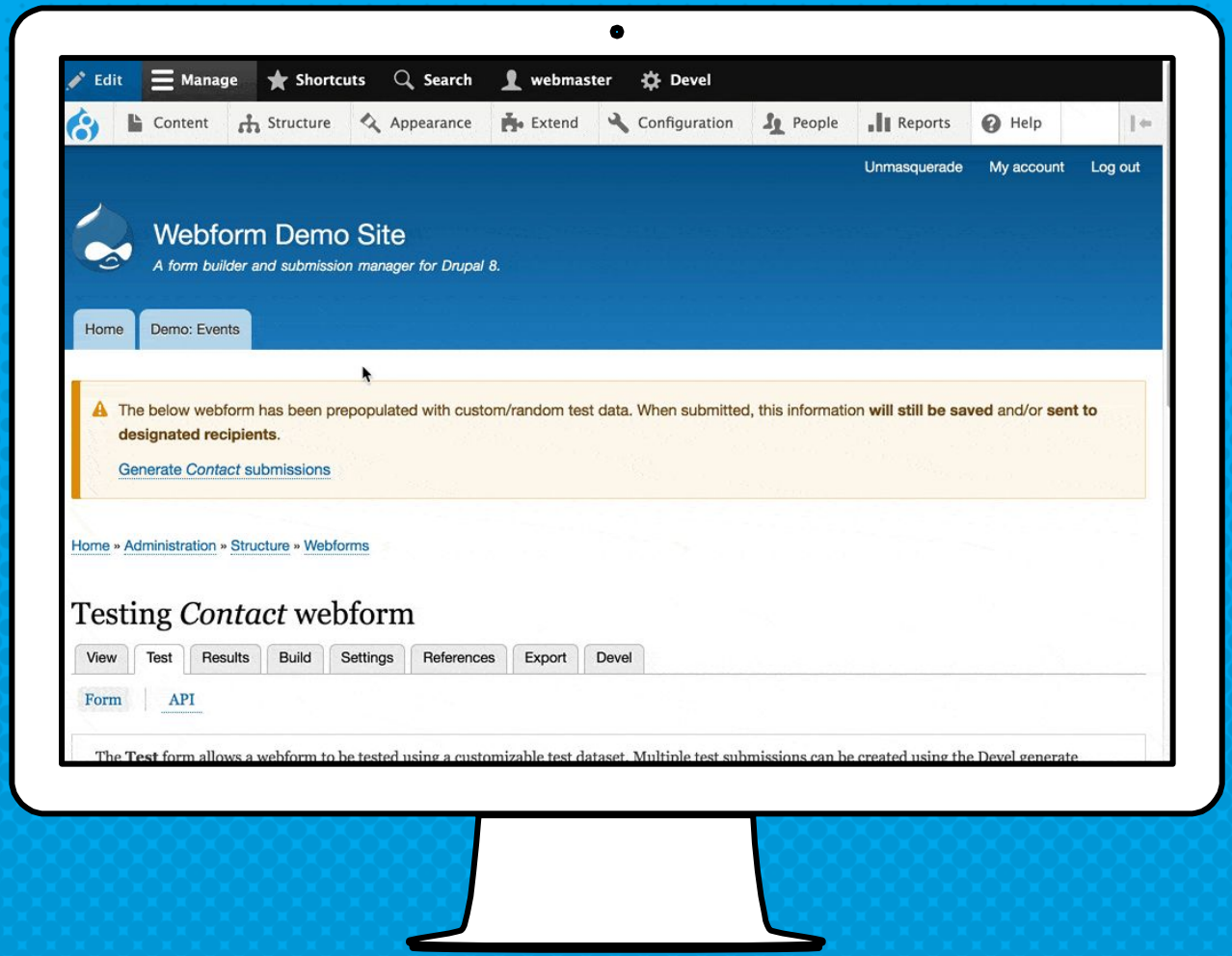
- Drag-n-drop form builder
- Multi-column layout
- Modal dialogs
- Conditional logic
- Open/close scheduling
- Prepopulate
- Email handling
- Remote post
- Custom options
- Submission limits
- Submission preview
- Autofill
- Save draft
- Auto purge
- Access controls
- Confirmation message
- Confirmation redirects
- Sharing

WEBFORM ELEMENT FEATURES

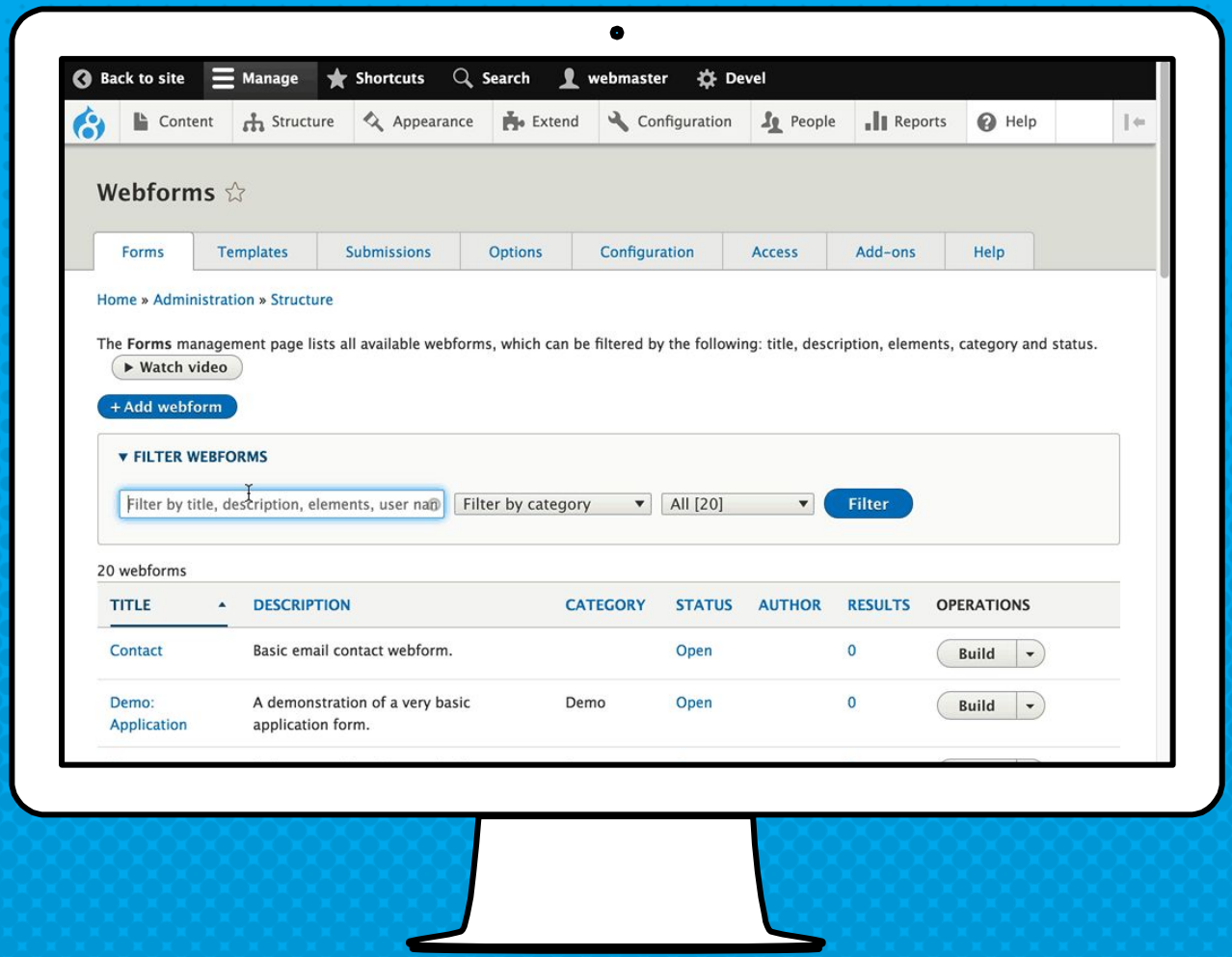
- Standard HTML inputs
- Advanced HTML inputs
- File uploads
- Signatures
- Buttons
- Rating
- Image selection
- Addresses
- Entity references
- Select menu enhancement
- Computed values
- Tooltips
- Slideouts
- Input masks
- Word/character counter
- Regex validation
- Access controls
- Unique values

THE WEBFORM MODULE SHIPS WITH REASONABLE DEFAULT SETTINGS, BUT EVERYTHING IS CUSTOMIZABLE

THERE ARE A LOT OF CONFIGURATION SETTINGS



THERE IS A STYLE-GUIDE WHICH SHOWS EVERY AVAILABLE WEBFORM ELEMENT



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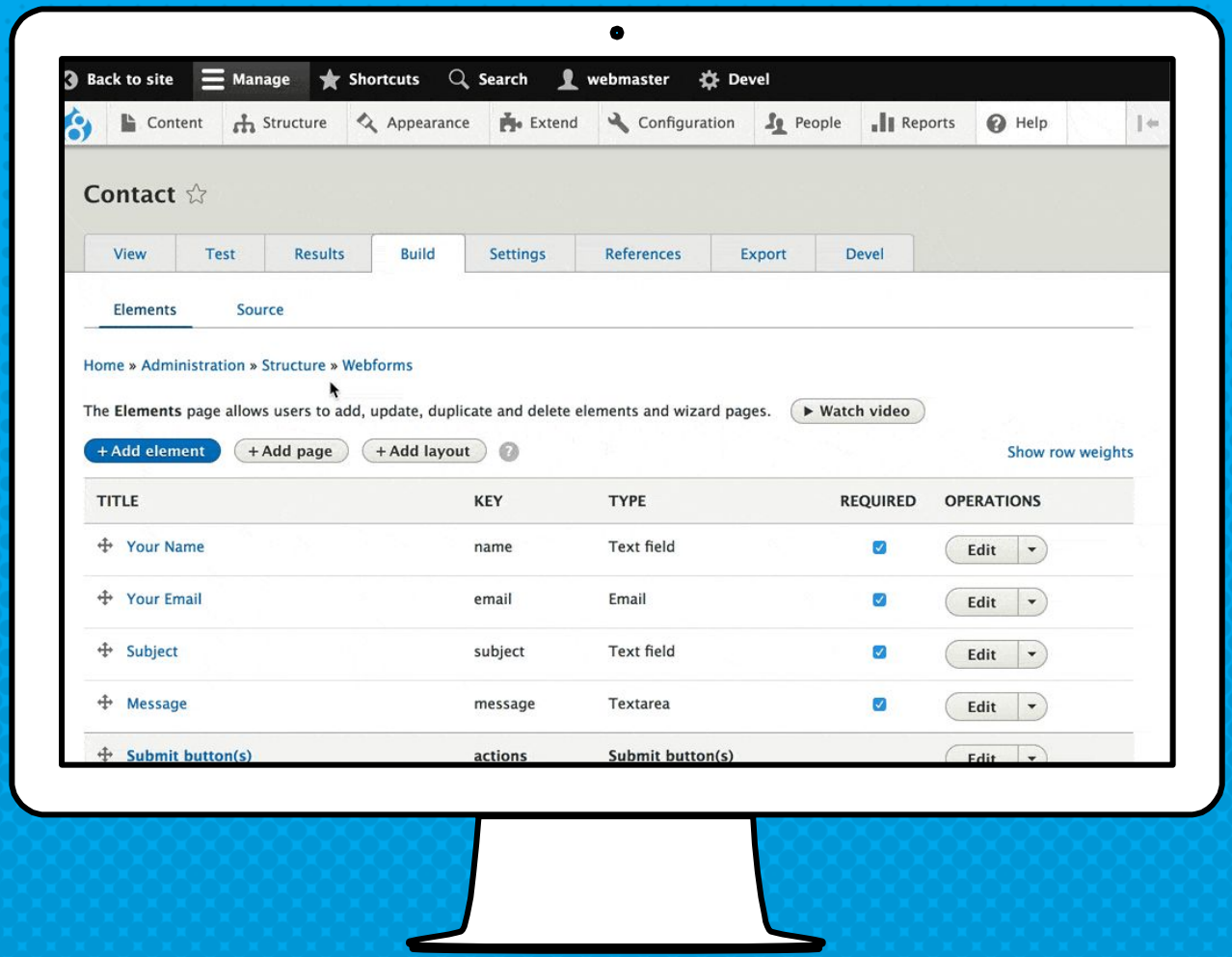
4.

Are there good examples of webforms?

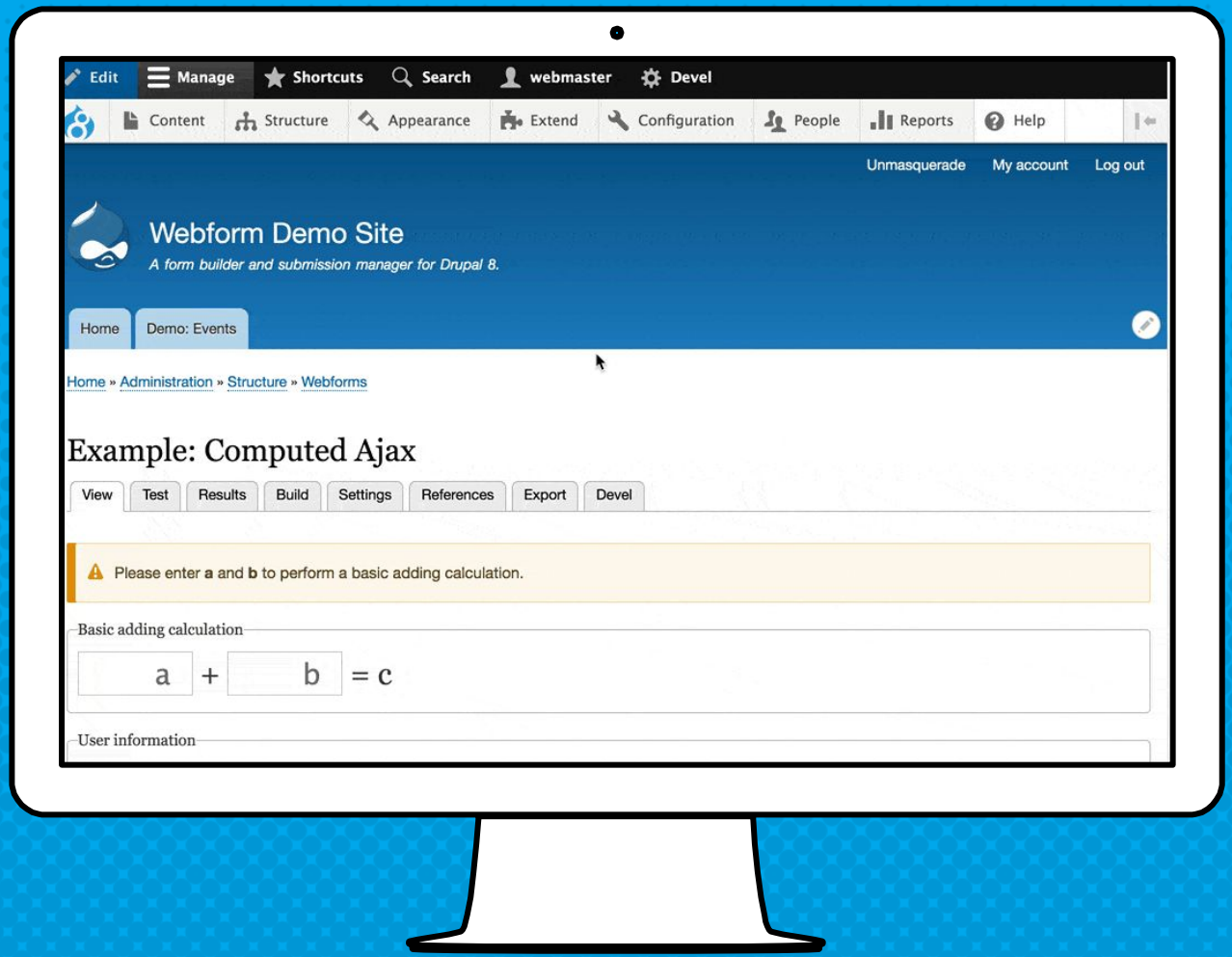
Learn from the examples & templates

- Elements & Composites (75+ Elements)
- Computed Elements (Twig & Tokens)
- Multi-step Wizard (Pager with Progress Tracker)
- Multicolumn Layouts (Flexbox)
- Conditional Logic (#States API)
- Reusable Templates (Forms & Elements)

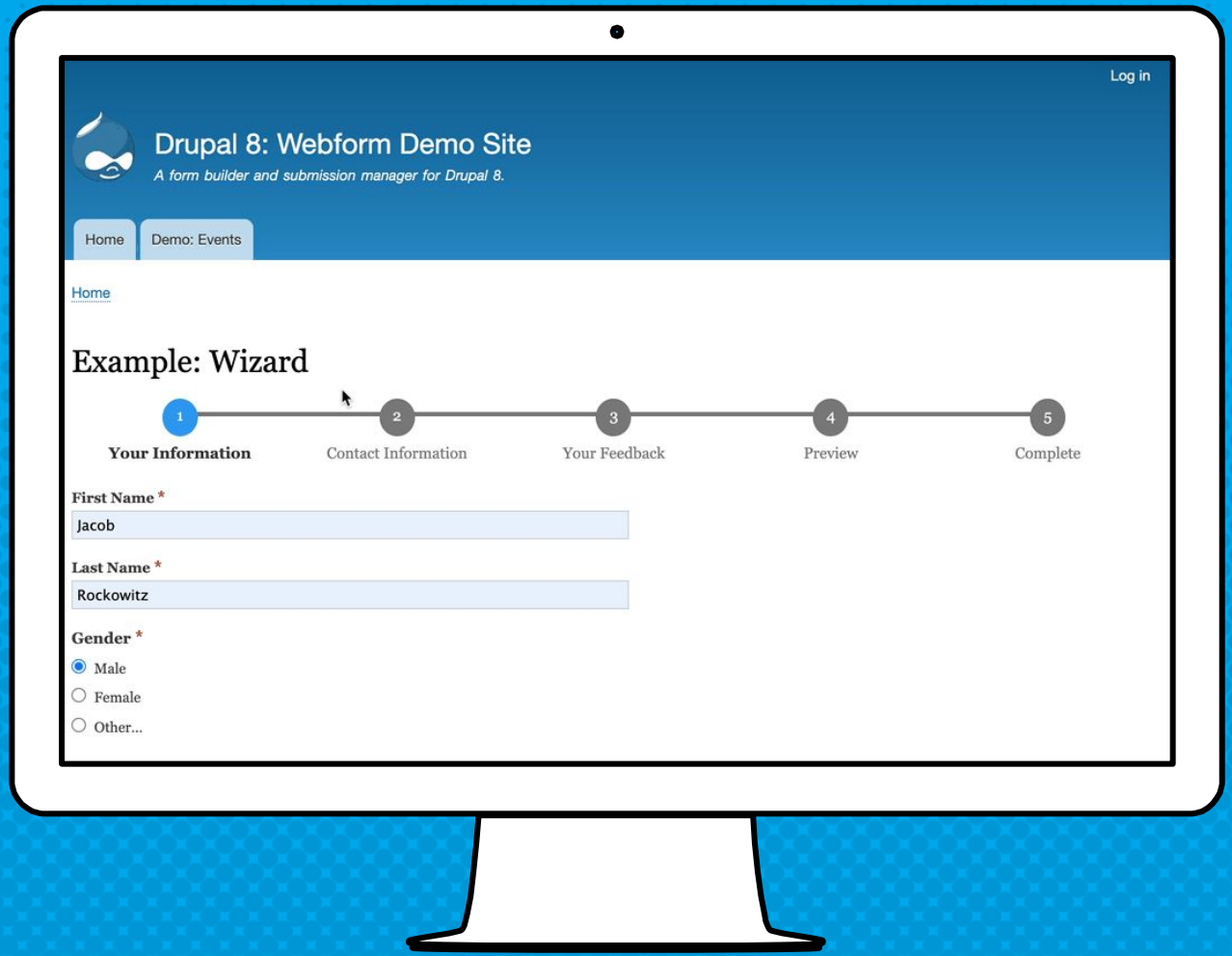
FINDING & CHOOSING ELEMENTS & COMPOSITES



PERFORMING CALCULATIONS USING COMPUTED ELEMENTS



BREAKING DOWN LONG FORMS INTO MULTIPLE-STEPS



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5.

What are the alternatives to the Webform module?

PROPRIETARY

OPEN SOURCE

DRUPAL CORE

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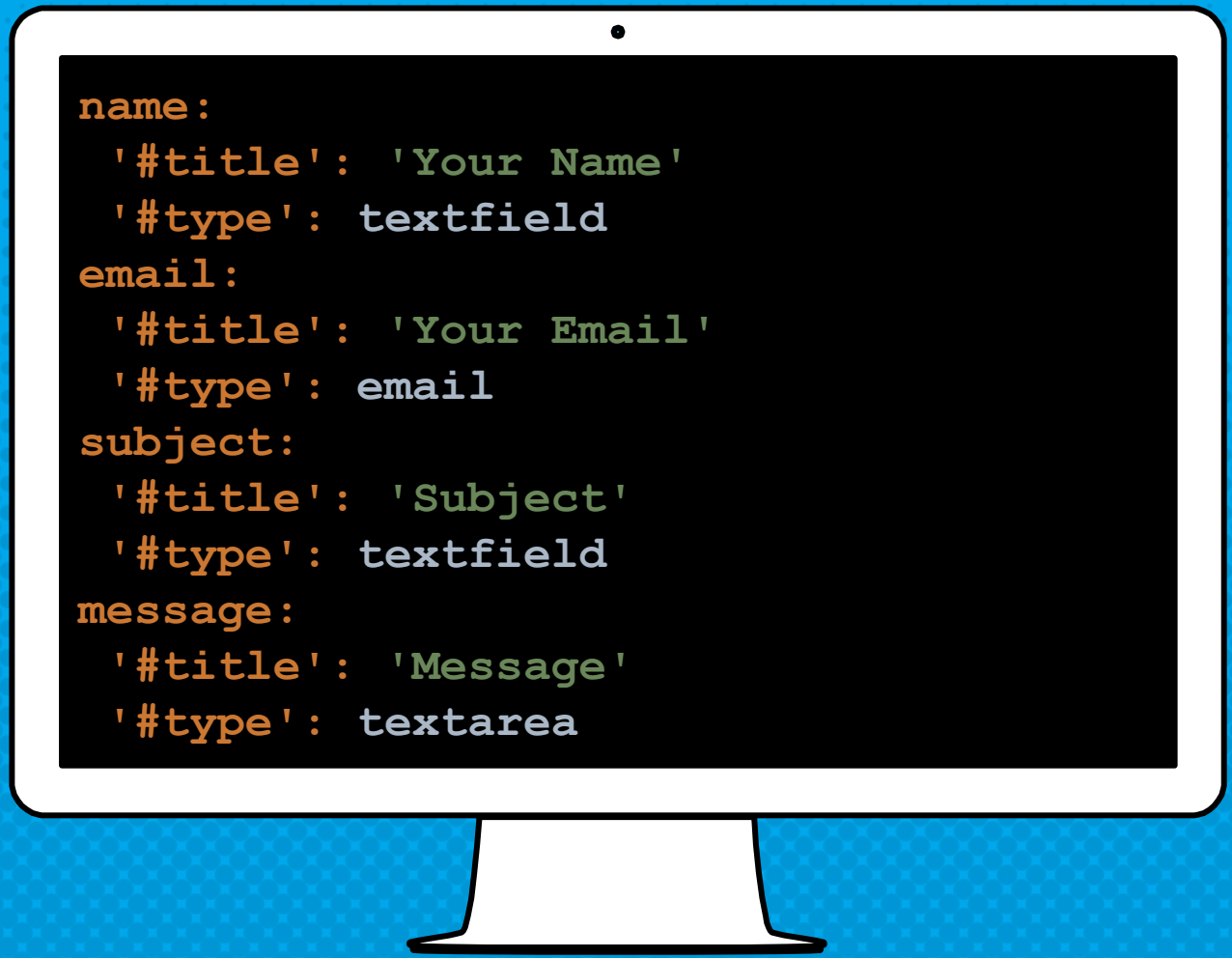
6.

WHAT IS THE YAML SOURCE MODE?

YAML PROVIDES A SIMPLE & EASY TO LEARN **MARKUP LANGUAGE FOR BUILDING & BULK EDITING A WEBFORM'S ELEMENTS**

THIS IS AN EXAMPLE OF THE YAML SOURCE BEHIND A WEBFORM'S ELEMENTS



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1.

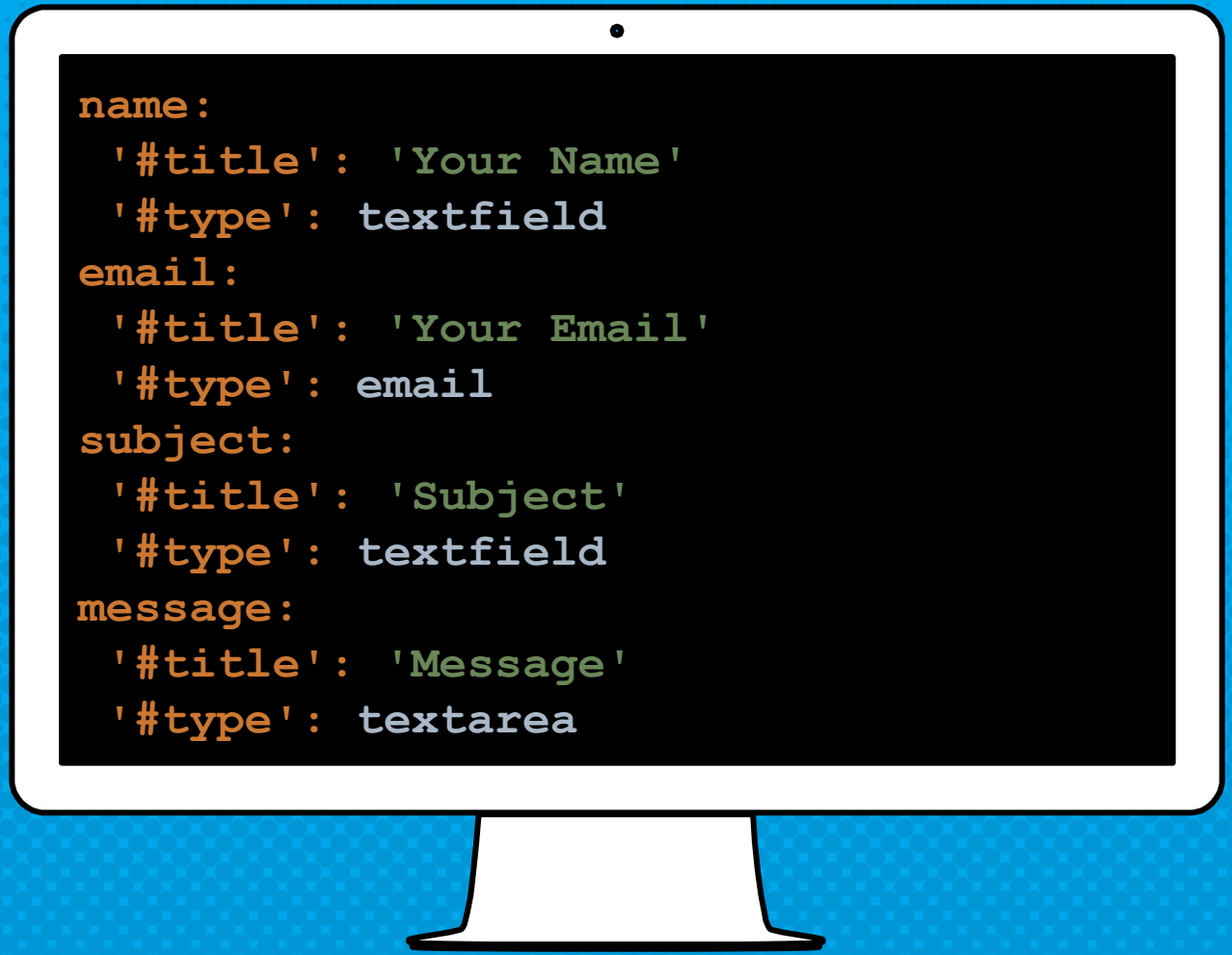
What is a Form API (FAPI) render array?

Form API (FAPI) render arrays

- Define renderable (displayed) elements.
- Described using properties.

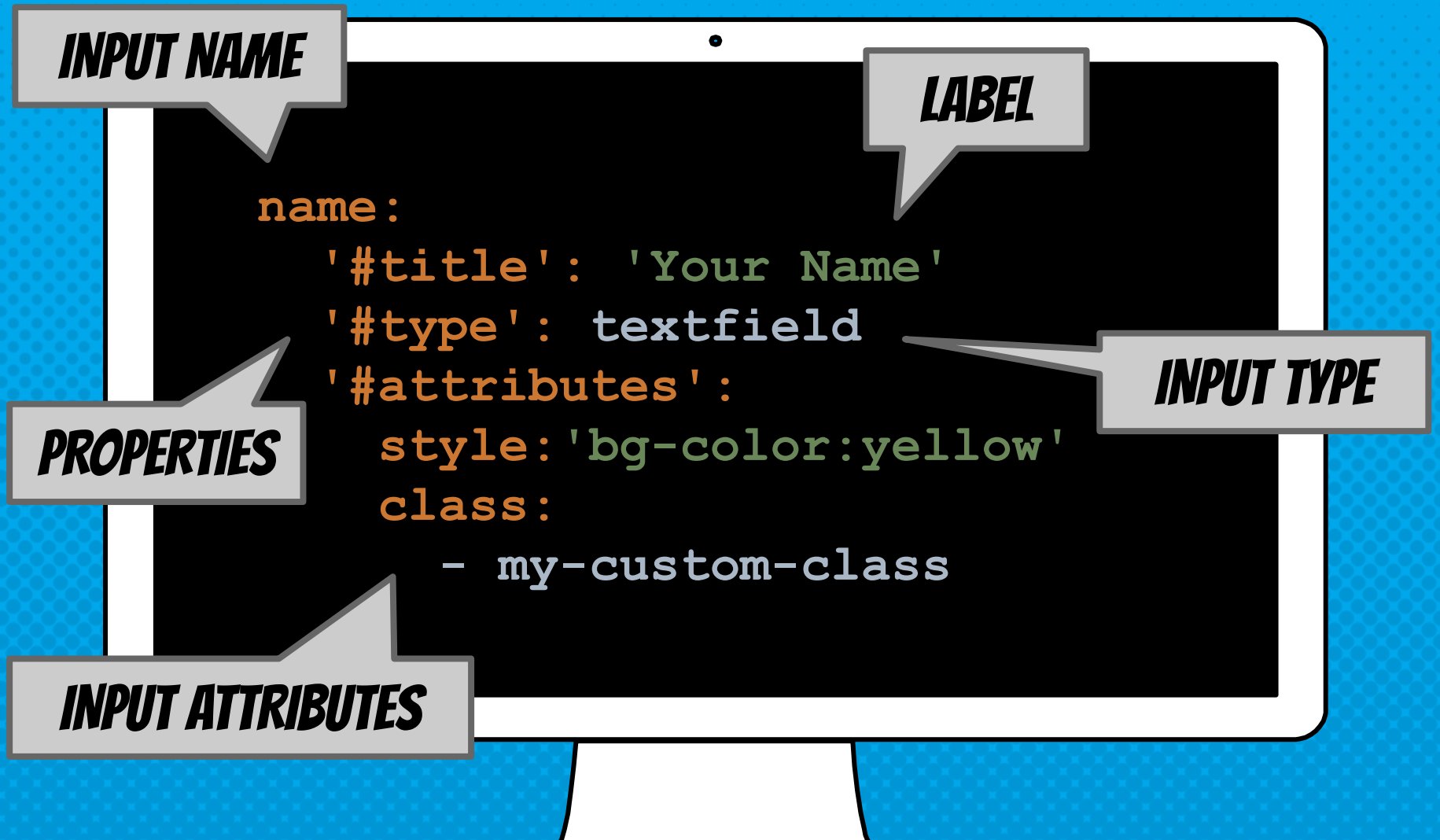
- Properties begin with a hash (#).
- Elements have keys.

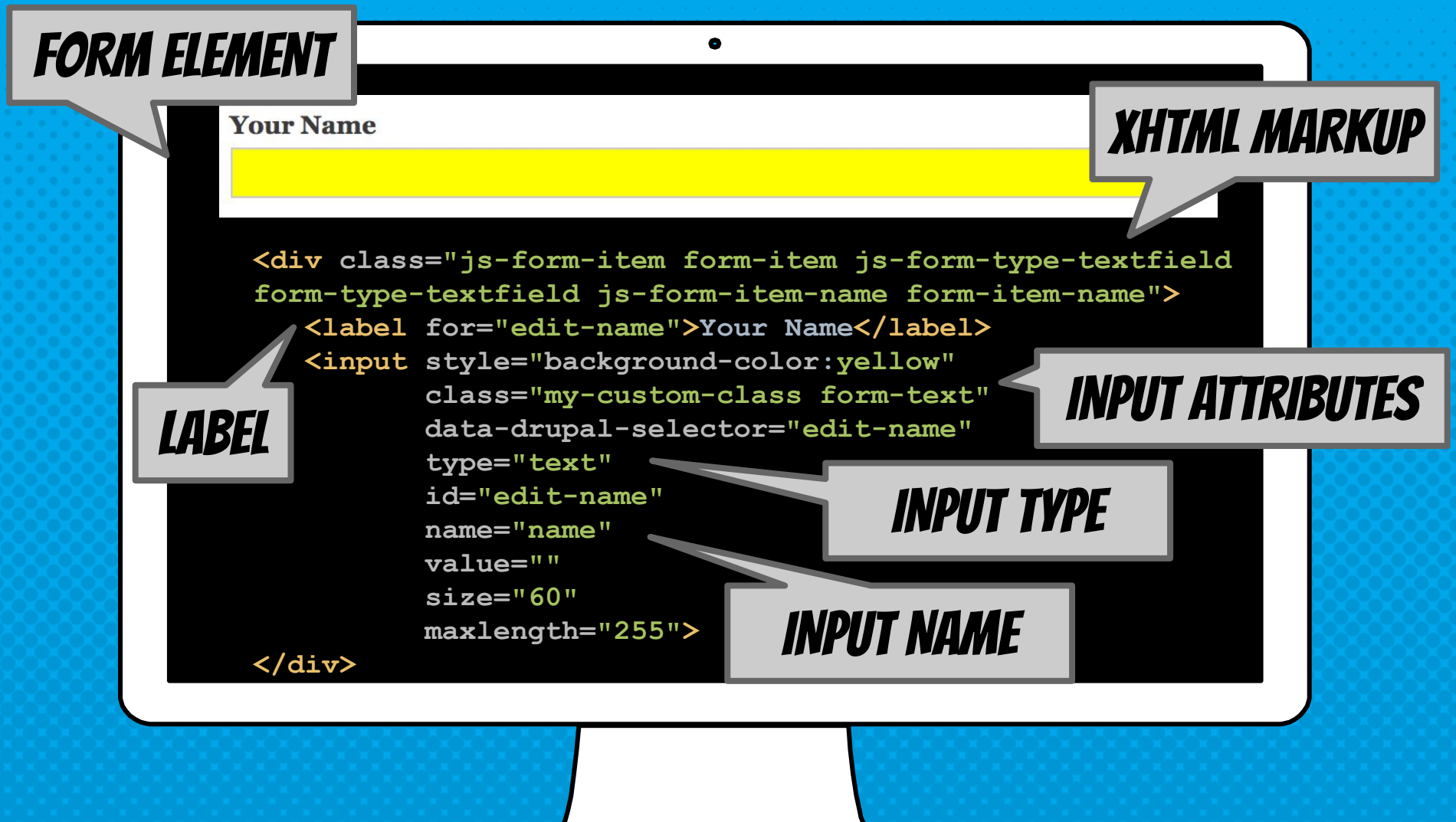
THIS IS A RENDER ARRAY AS YAML



THIS IS A RENDER ARRAY AS PHP

```php
$form['name'] = [
 '#title' => $this->t('Your Name'),
 '#type' => 'textfield',
];
$form['email'] = [
 '#title' => $this->t('Your Email'),
 '#type' => 'email',
];
$form['subject'] = [
 '#title' => $this->t('Subject'),
 '#type' => 'textfield',
];
$form['message'] = [
 '#title' => $this->t('Message'),
 '#type' => 'textfield',
];
```


INPUT NAME
LABEL
name:
'#title': 'Your Name'
'#type': textfield
'#attributes':
style:'bg-color:yellow'
class:
- my-custom-class
INPUT TYPE
PROPERTIES
INPUT ATTRIBUTES


FORM ELEMENT
Your Name
XHTML MARKUP
<div class="js-form-item form-item js-form-type-textfield
form-type-textfield js-form-item-name form-item-name">
<label for="edit-name">Your Name</label>
<input style="background-color:yellow"
class="my-custom-class form-text"
data-drupal-selector="edit-name"
type="text"
id="edit-name"
name="name"
value=""
size="60"
maxlength="255">

LABEL
INPUT ATTRIBUTES
INPUT TYPE
INPUT NAME

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8.

HOW DO YOU ALTER FORMS & ELEMENTS?

EVERYTHING & ANYTHING CAN BE ALTERED IN DRUPAL

Altering Forms & Elements

- Form & element alter hooks (aka functions)
  http://dgo.to/a/hook_form_alter
- Preprocessing functions
  https://www.thirdandgrove.com/theming-form-elements-drupal-8
- Themes & Twig templates
  http://dgo.to/2792967
  http://drupal-bootstrap.org
- Asset libraries (CSS/JS)
  http://dgo.to/27929672216195

Form hooks

`hook_webform_submission_form_alter`

Element hooks

`hook_webform_element_alter`

Option hooks

`hook_webform_options_alter`

Handler hooks

`hook_webform_handler_invoke_alter`

Entity hooks

`hook_webform_submission_insert`
`hook_webform_submission_load`
`hook_webform_submission_save`
`hook_webform_submission_delete`
`etc...`

More hooks...

`hook_webform_libraries_info_alter`
`hook_webform_access_rules_alter`

`@see webform.api.php`

```
@see webform.api.php

/**
 * Act on a webform handler when a method is invoked.
 *
 * @param \Drupal\webform\Plugin\WebformHandlerInterface $handler
 *   A webform handler attached to a webform.
 * @param string $method_name
 *   The invoked method name converted to snake case.
 * @param array $args
 *   Argument being passed to the handler's method.
 */
function hook_webform_handler_invoke_alter($handler, $method_name, array &$args) {
  $webform_id = $handler->getWebform()->id();
  $handler_id = $handler->getHandlerId();
  // If contact webform email confirmation has been saved.
  if ($webform_id === 'contact'
    && $handler_id === 'email_confirmation'
    && $method_name === 'post_save') {
    $webform_submission = $handler->getWebformSubmission();
    // Do something with the webform submission.
  }
}
```

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9.

How to publish a webform?

Placing Webforms on your website

Node

Webforms can be attached to a node with the node's form submissions collected in a dedicated 'Results' tabs.

Block

Webforms can be placed on your site as a block. The URL and source entity for each submission is automatically tracked.

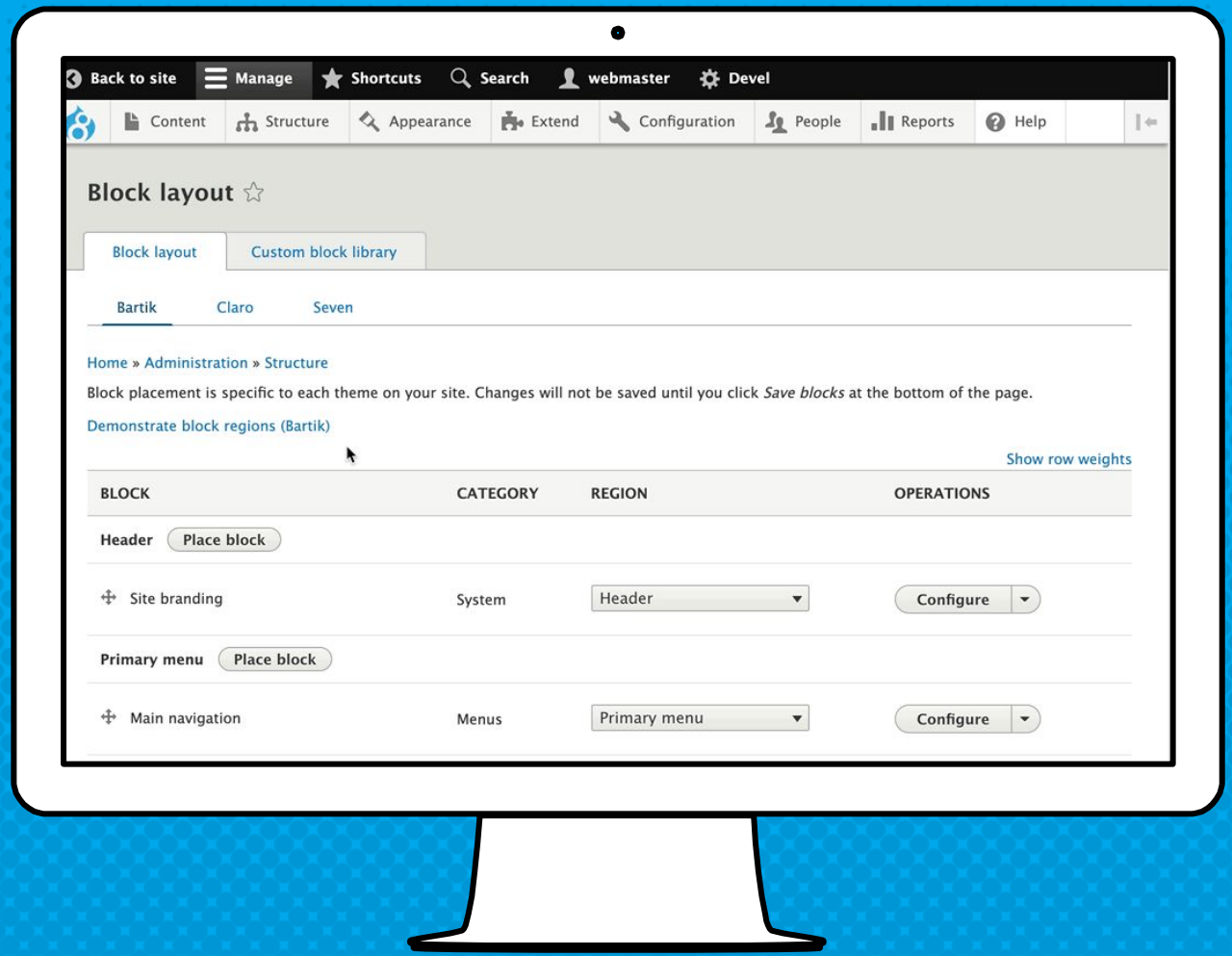
Custom

Webforms can be added to a render array, which can be easily altered using custom hooks and/or plugins.

WEBFORM BLOCKS

- Make it easy to include a webform within layouts and panels
- Allow a webform to be placed anywhere on the page
- Allow a webform to be attached to any page on a website

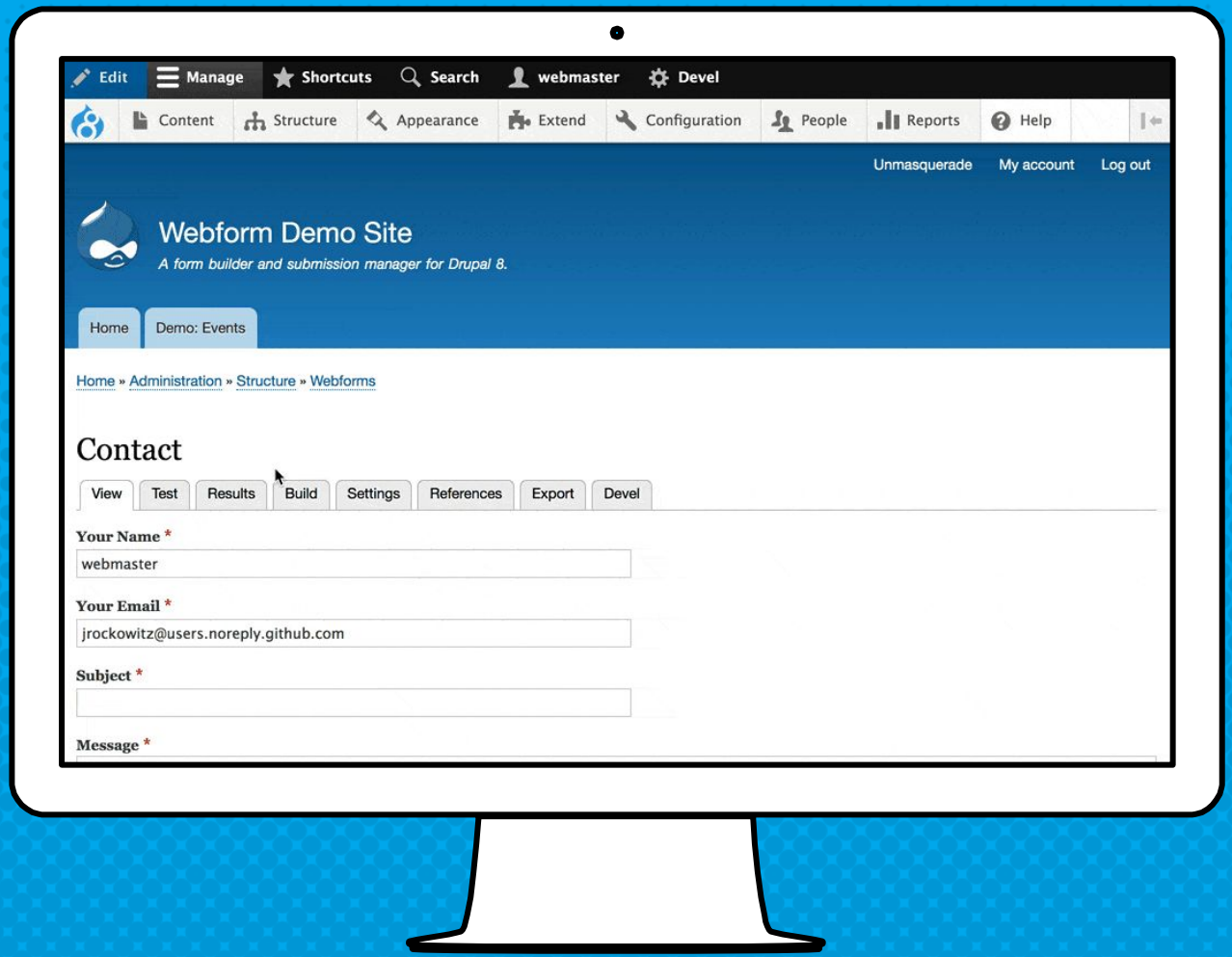
PLACING WEBFORM BLOCKS



The Webform Node Module

- Provides a webform content type
  Any content type can have a webform
- Tracks node specific submissions
  Adds 'Test' and 'Results' to node edit tasks (a.k.a. Tabs)
- Adds 'References' to the webform edit tab
  References tab track all webform node instances

CREATING WEBFORM NODES



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10.

WHAT IS A SOURCE ENTITY?

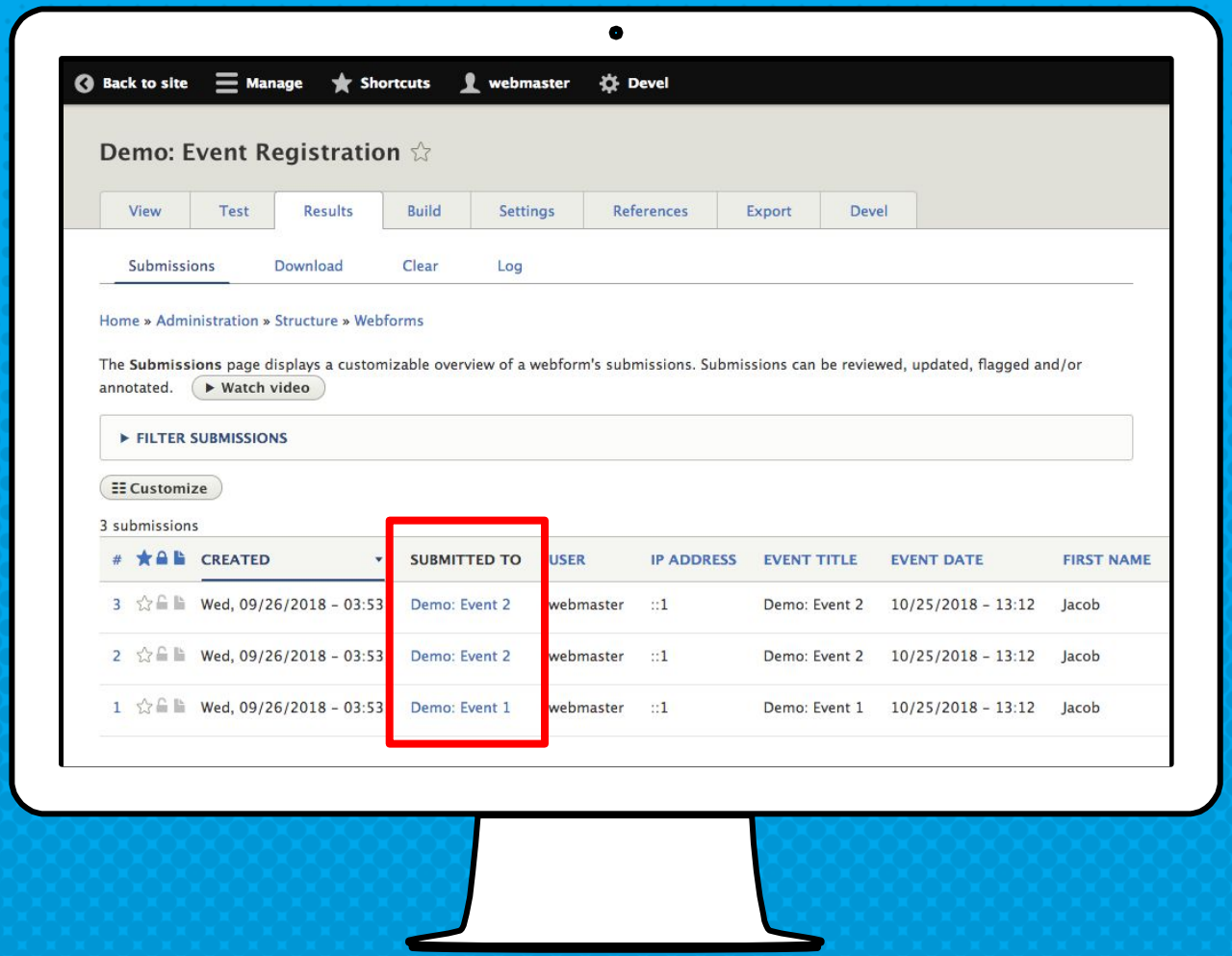
A SOURCE ENTITY
TRACKS & CREATES
A RELATIONSHIP TO
THE DRUPAL ENTITY
FROM WHICH A WEBFORM
WAS SUBMITTED

Source entity overview

- Allows a webform to be reused multiple times
- Determined via the current route or query string

- Webform nodes use source entities
- Webform blocks use source entities
- Even paragraphs use source entities

THESE ARE SOURCE ENTITIES



The source entity can be used to track...

- **Site Feedback**
  A form that tracks which page the comments are related to.
- **Event Registration**
  A registration form that tracks which event a user has registered for.
- **Application Evaluation**
  An evaluation form attached to applications.

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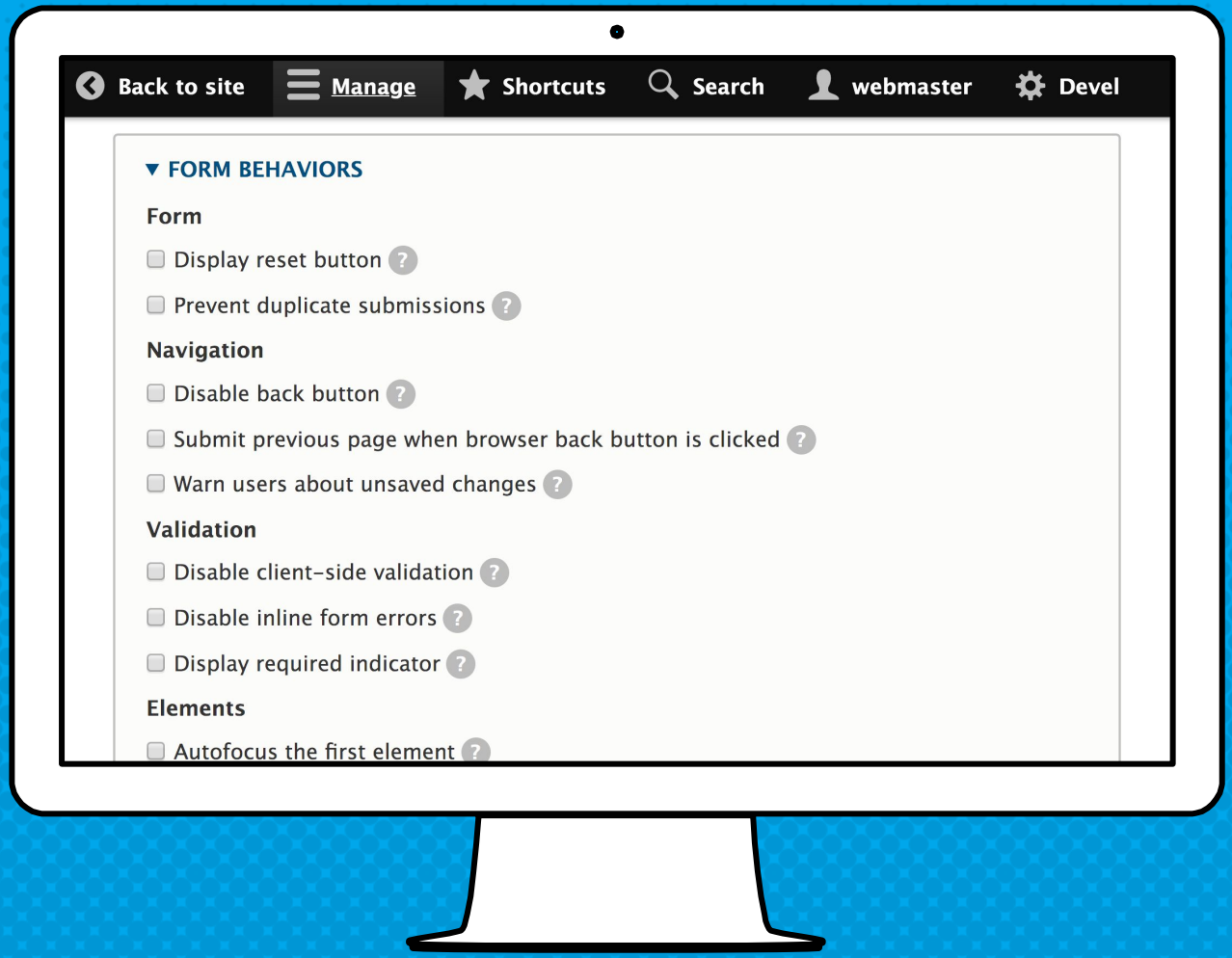
11.

How to improve a form's user experience?

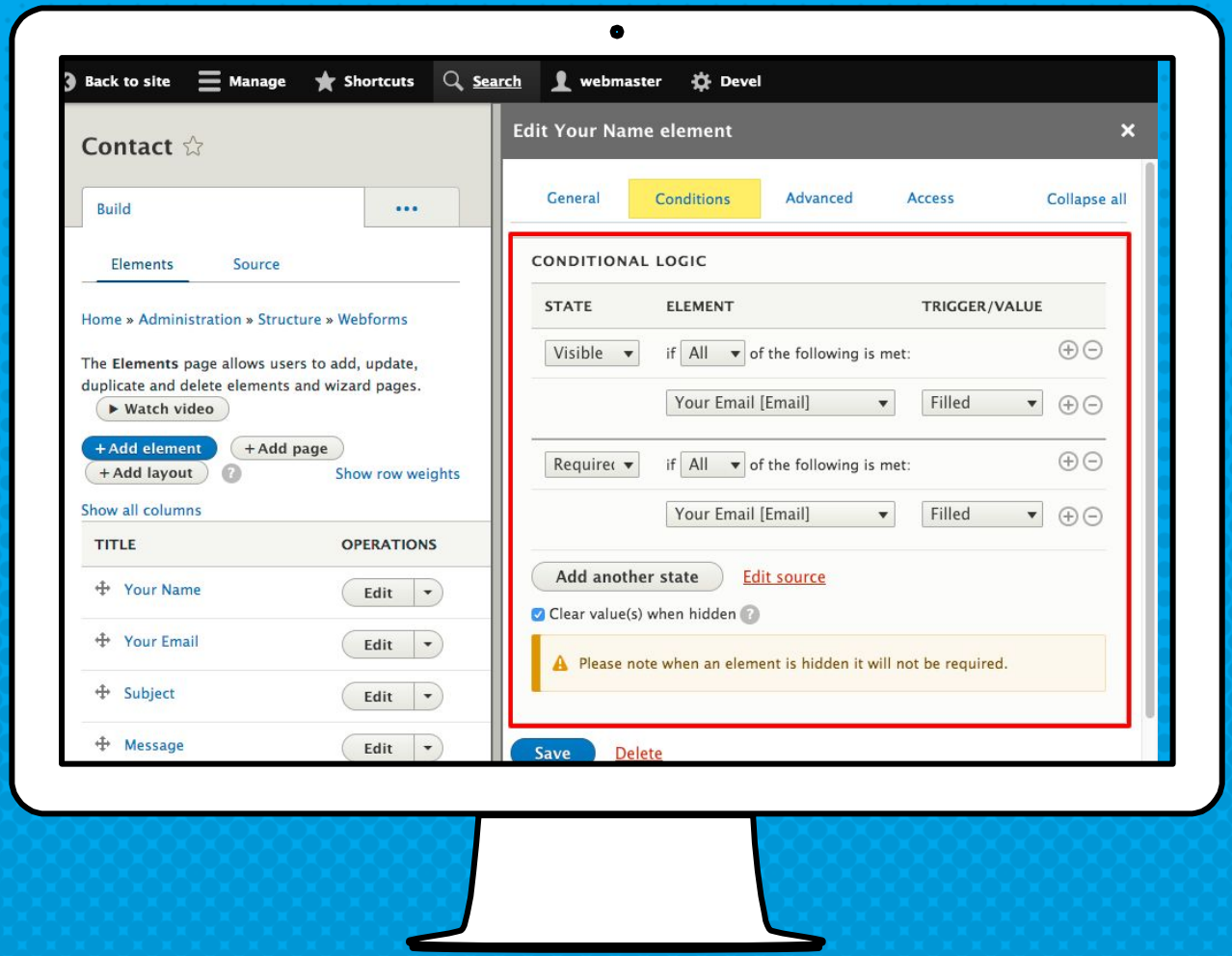
IMPROVE A FORM'S USER EXPERIENCE BY ADJUSTING FORM BEHAVIORS



Recommended form behaviors

- Prepopulate using query string parameters
- Warn users about unsaved changes
- Prevent duplicate submissions
- Display required indicator
- Autofocus the first element

RESPOND TO USER INTERACTION BY LEVERAGING CONDITIONAL LOGIC



Conditional Logic Tips & Tricks

- Can be applied to containers, pages, and cards
- Hidden elements can trigger conditions
- Prepopulated elements can trigger conditions
- Use the pattern trigger for multiple values

Answering the Why, What, & How Questions

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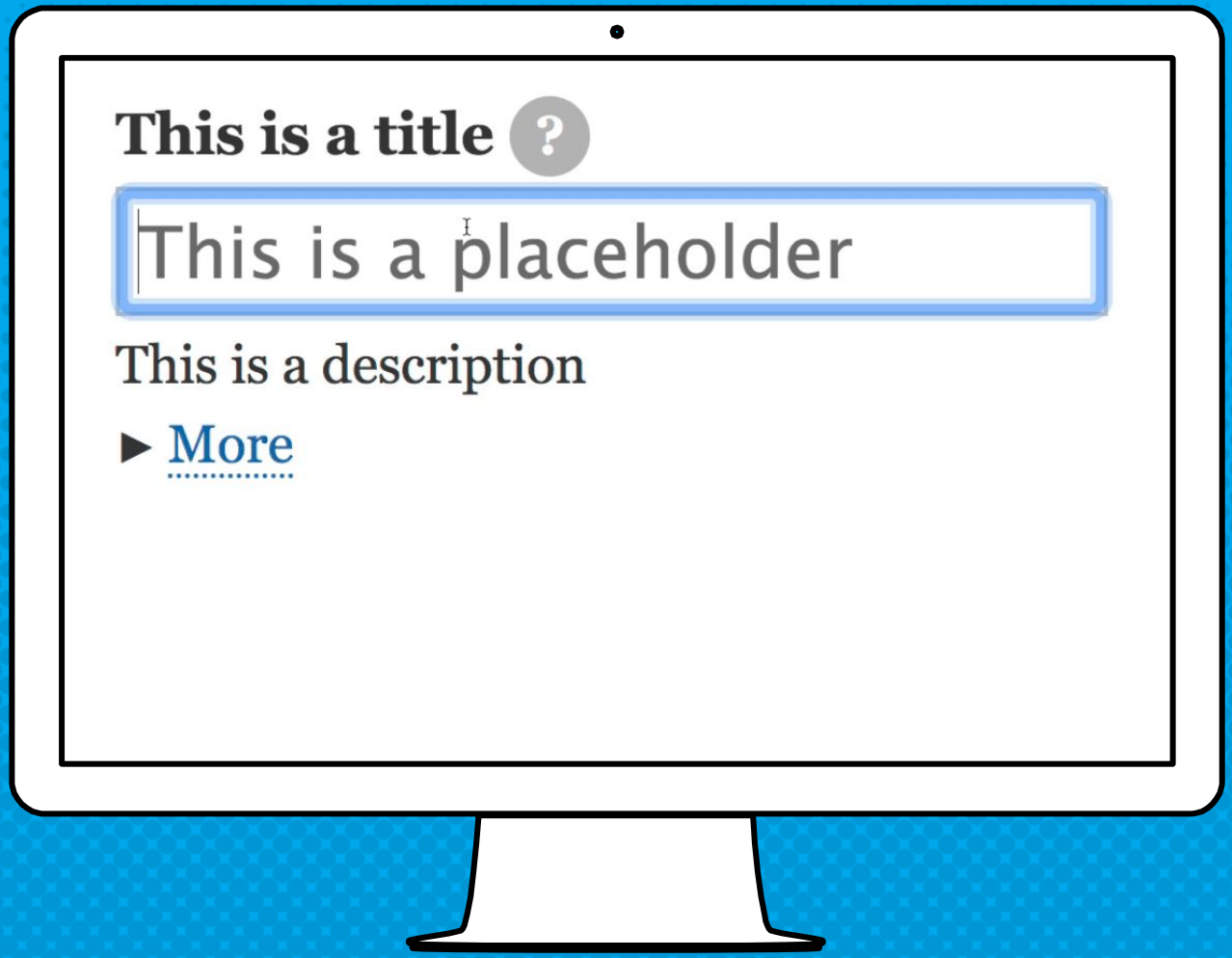
12.

How to improve an element's user experience?

PROVIDE EXPLANATIONS USING TITLES, PLACEHOLDERS, DESCRIPTIONS, MORE, & HELP

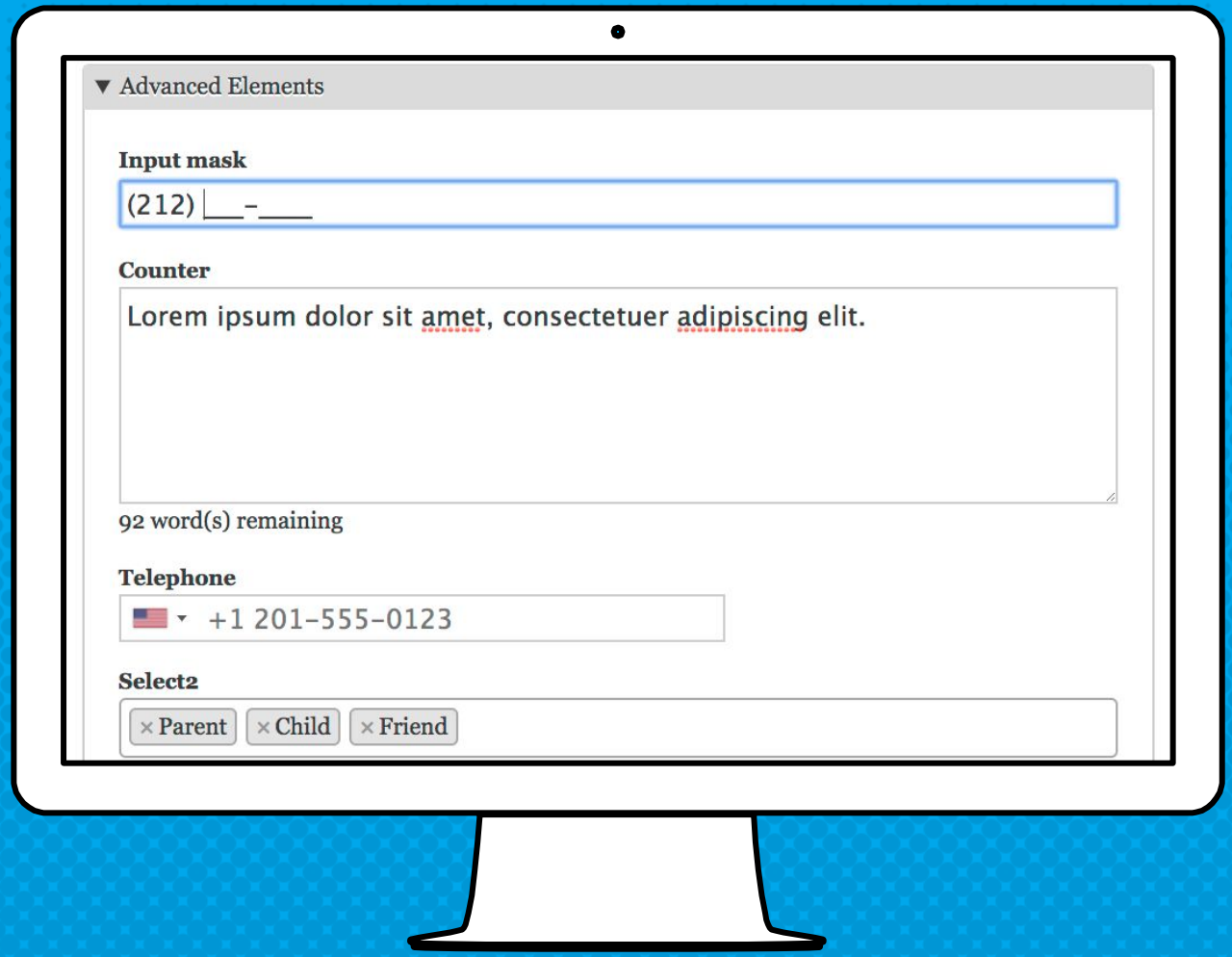


Labeling tips

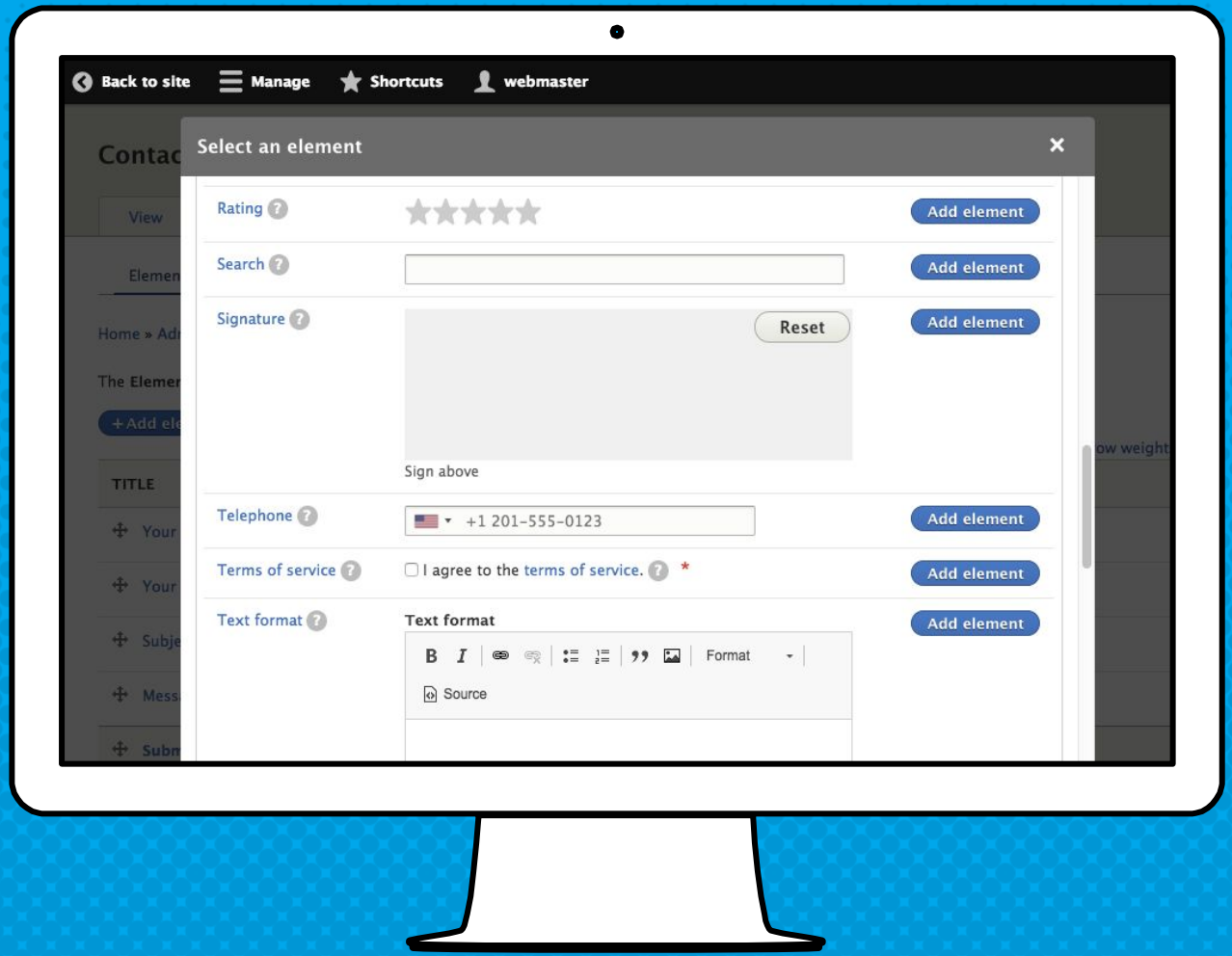
- Placeholders provide guidance
- Description (text) provides extra information
- More (link) provides a lot of extra information
- Help (tooltip) provides information in tight spaces

- Placeholders should not replace labels
- Use more (link) and help (tooltip) cautiously

SET EXPECTATIONS USING INPUT MASKS, COUNTERS, TELEPHONE, & SELECT MENUS



DON'T FORGET THAT YOU CAN PREVIEW ALL AVAILABLE ELEMENTS



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HOW TO USE WEBFORM TEMPLATES?

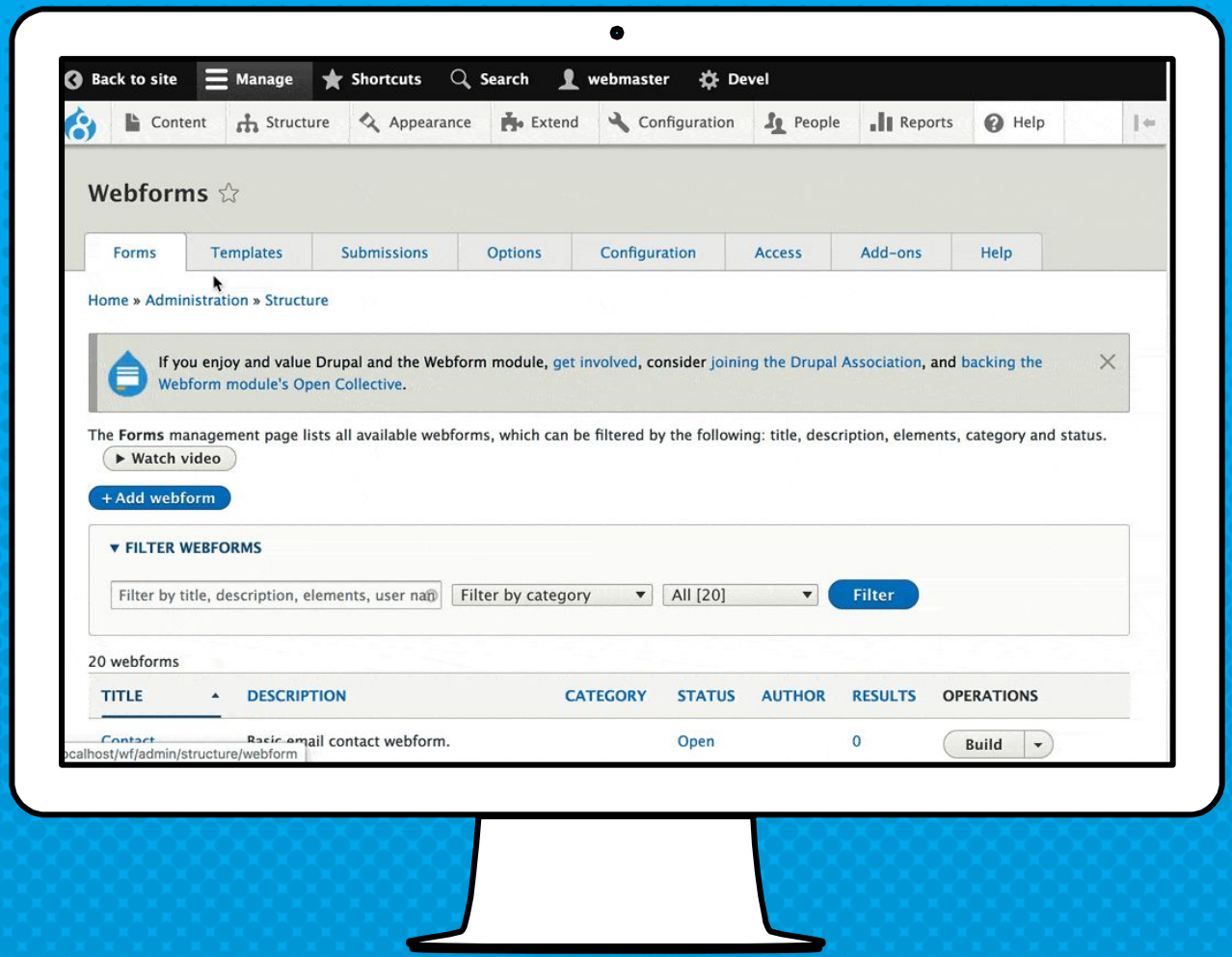
TEMPLATES ARE FORMS
THAT CAN BE
COPIED TO
CREATE NEW FORMS

WEBFORM TEMPLATES

- Templates are reusable forms
- A form created from a template is a copy (a.k.a duplicate)
- Changing or deleting a template does not change any existing forms

WEBFORM TEMPLATES

CAN BE USED AN EXAMPLE OR A STARTING POINT



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14.

WHAT IS THE ANATOMY OF A FORM & ITS ELEMENTS?

The Anatomy of a Form

- **Elements**
  Anything that is displayed on a form
- **Inputs**
  An element that collects a value
- **Composites**
  A collection of inputs used to collect a group of values
- **Containers**
  An element that holds sub-elements
- **Pages/Cards**
  A container that is displayed as a page within a multi-step wizard/cards

THE ANATOMY OF A FORM ELEMENT

Definition	Name, cardinality, and default value
Labels	Title, description, “help” text & more
Display	Prefix, suffix, size, input masks, etc.
Validation	Required, unique, pattern, etc.
Conditions	Hide, show, required, and disabled
Access	Roles, user or permission
Advanced	Custom attributes and settings

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How do you change the look-n-feel of a webform?

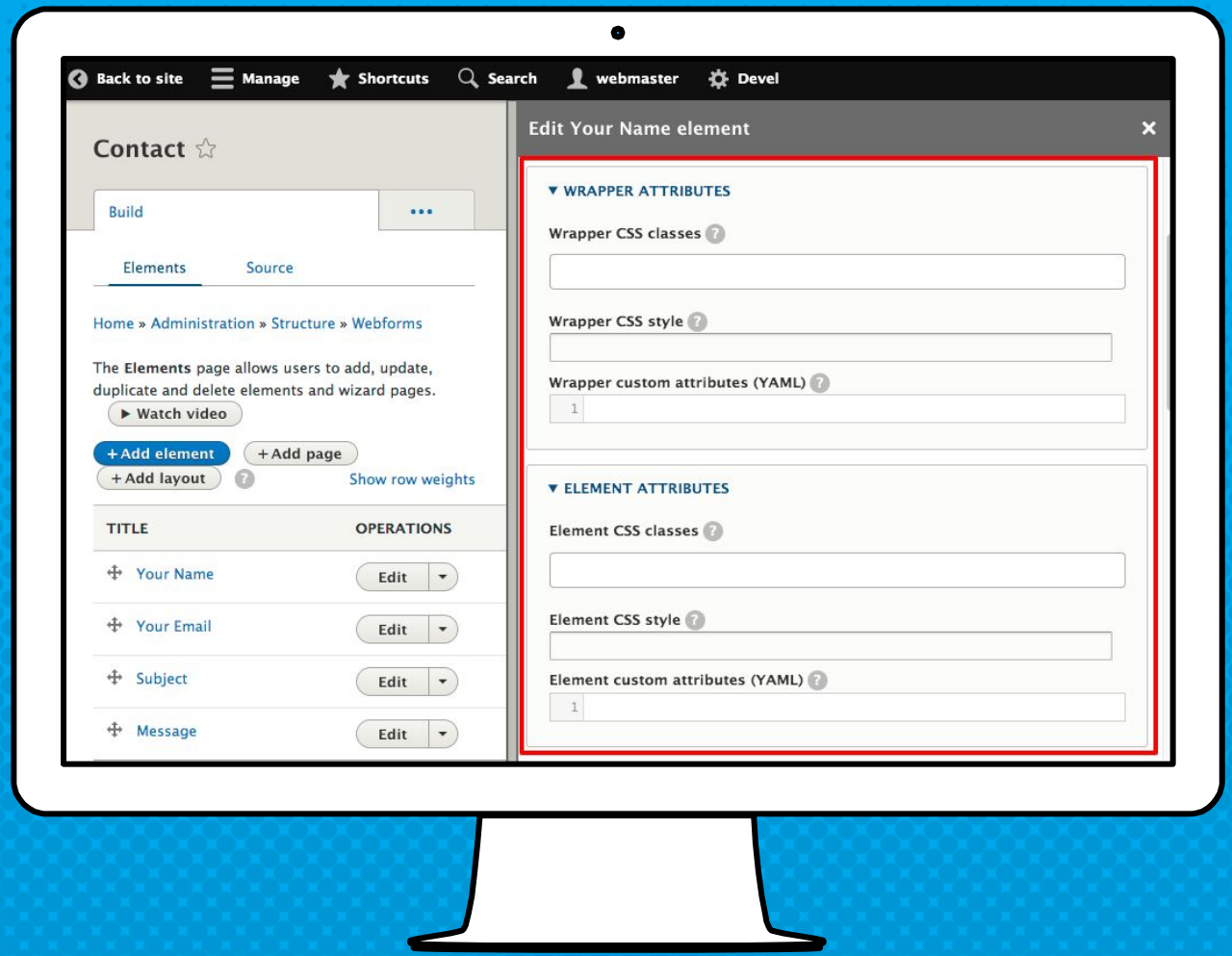
Custom Classes, Styles, & Attributes

- **Classes**
  Apply reusable theme specific design

- **Style**
  Tweak layout and look-n-feel

- **Attributes**
  Advanced attributes and tracking codes

DEFINE CUSTOM CLASSES, STYLES, & ATTRIBUTES

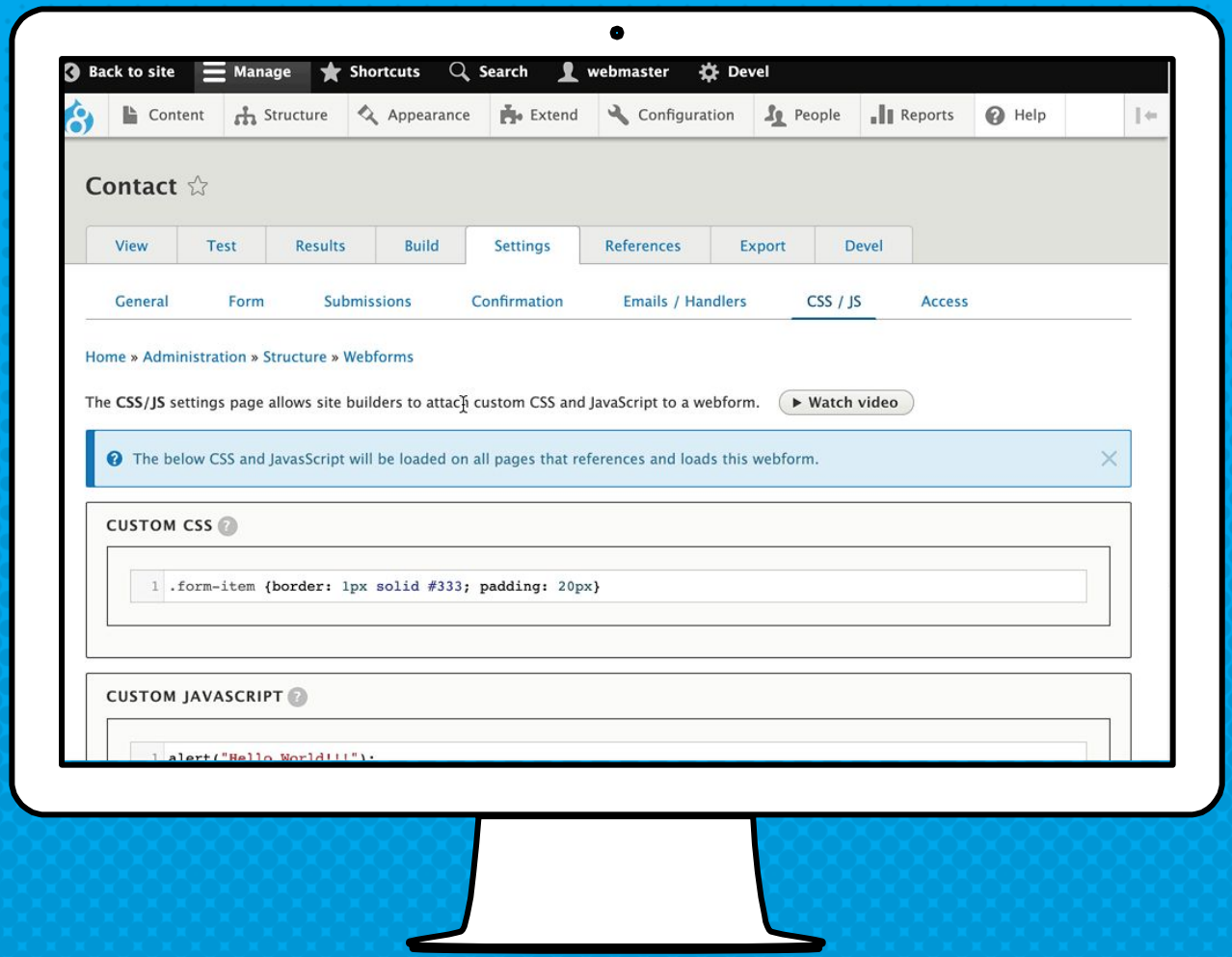


Custom CSS & JavaScript

Site builders and front end developers can inject custom CSS & JavaScript to tweak a webform's look-n-feel and client-side behaviors.

- Tweaks font types and sizes
- Adjusts margins, padding, and layout
- Client-side validation and/or hide/show logic

ADDING CUSTOM CSS & JAVASCRIPT



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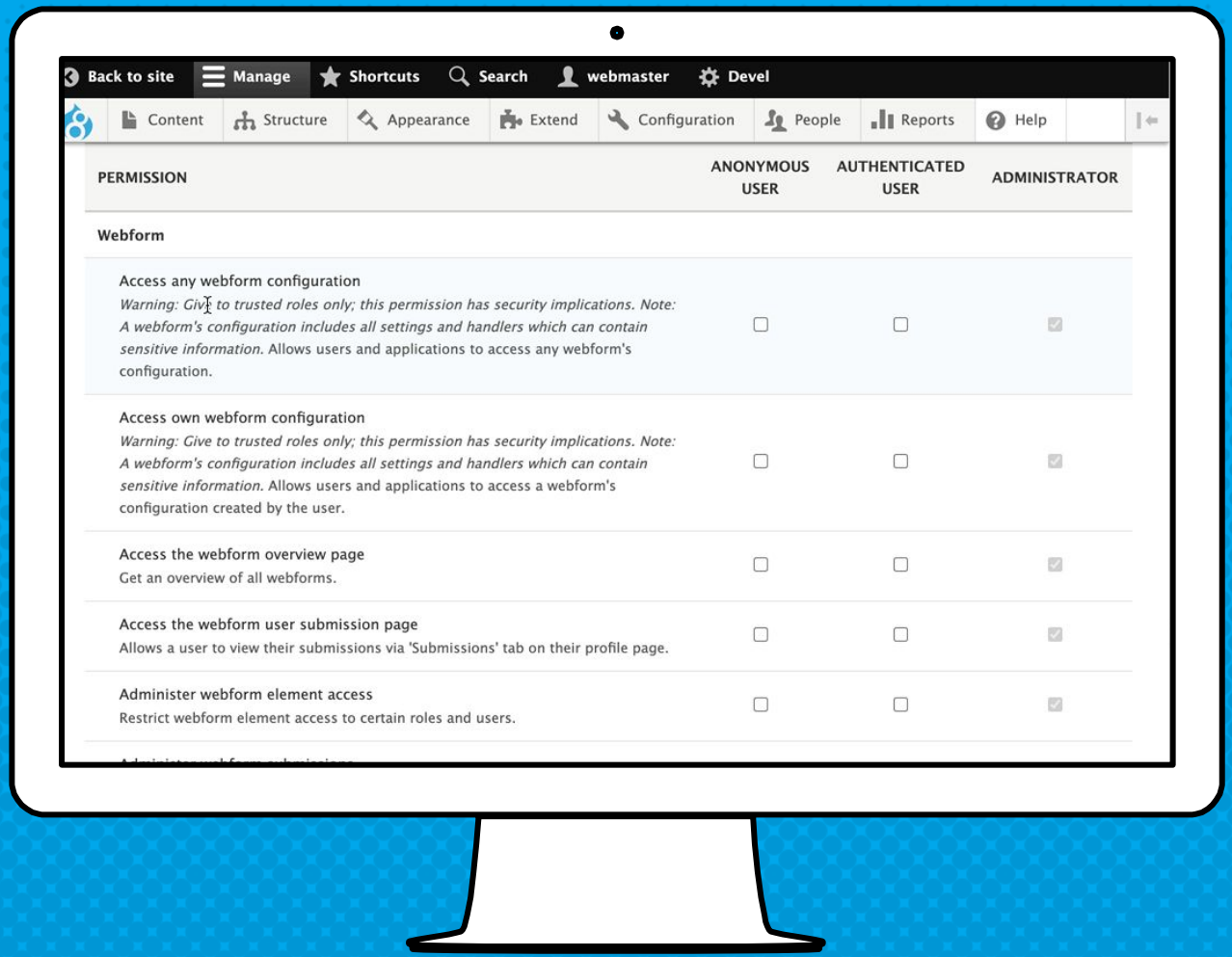
How do limit access to a webform?

Levels of Access Controls

- Permissions
  Access to all webforms, submissions, and advanced editing
- Form access controls
  Access to a specific webform
- Element access controls
  Access to a specific webform element
- Webform access module
  Access to a webform nodes

DEFINING WEBFORM PERMISSIONS



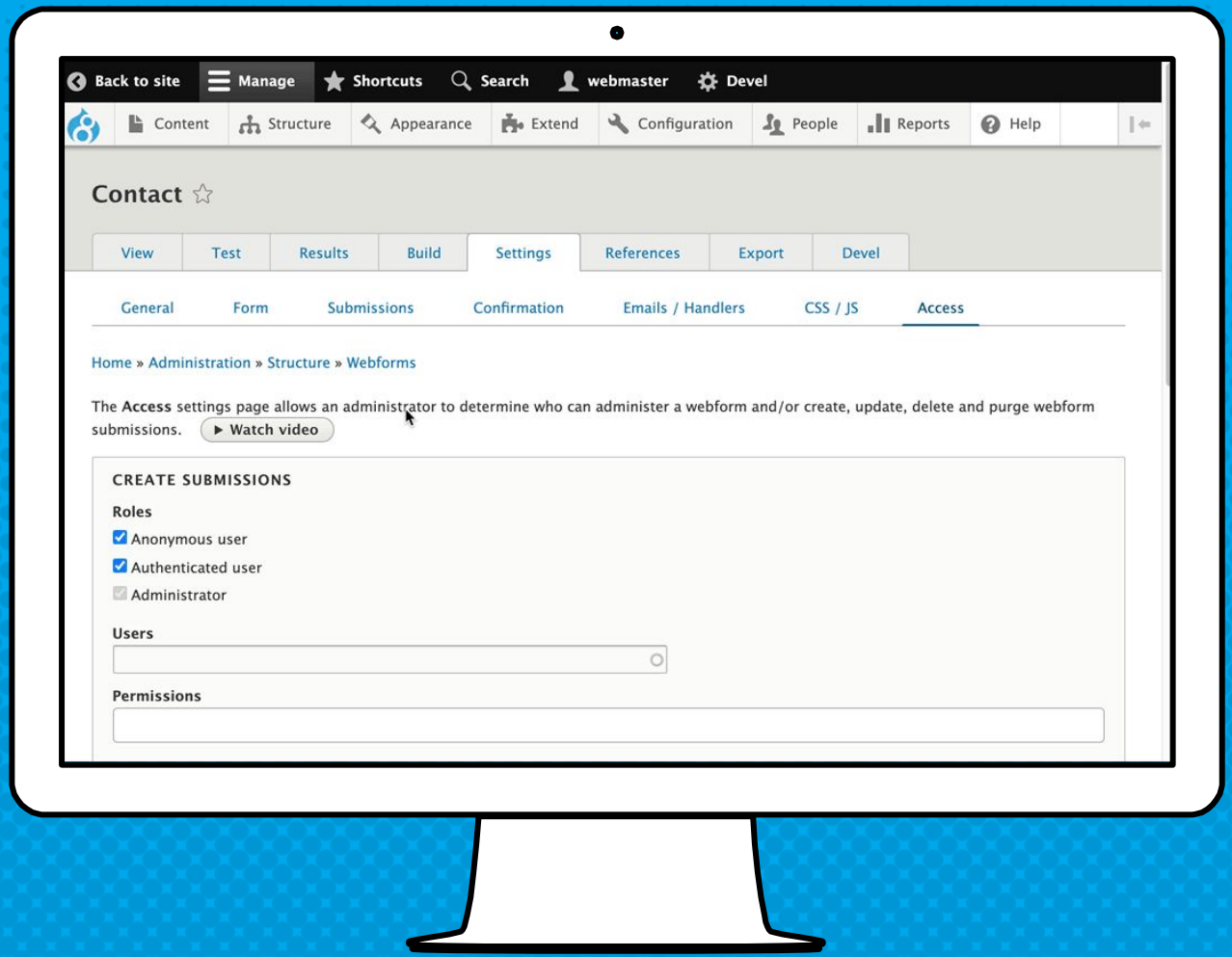
Access Controls

Set access rules by role, user, and/or permission

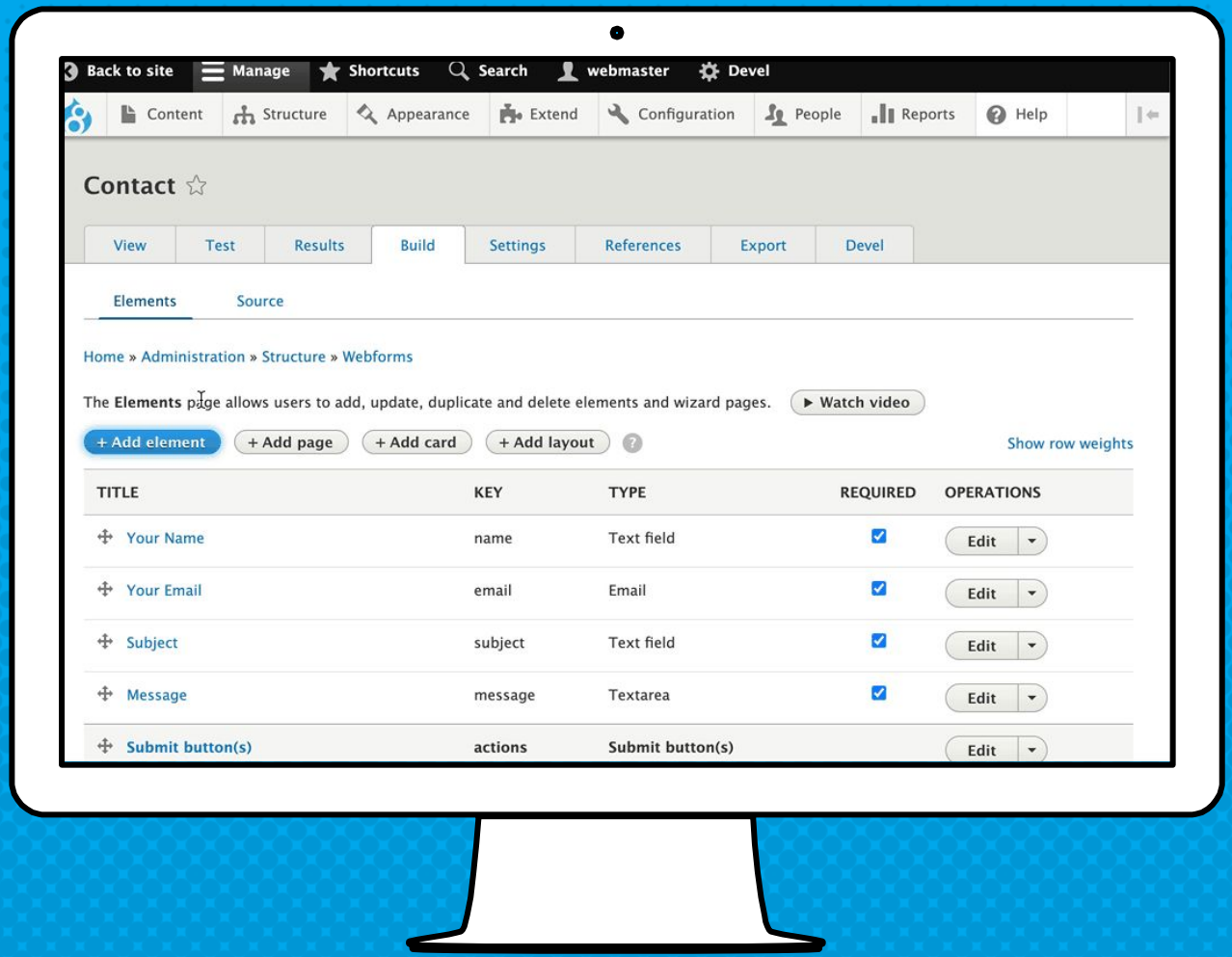
Rules include:

- Create, view, update, delete, and purge all submissions or own submissions
- Administer a webform and submissions

SETTING FORM & SUBMISSION LEVEL ACCESS CONTROLS



ALLOWING ELEMENT LEVEL ACCESS CONTROLS



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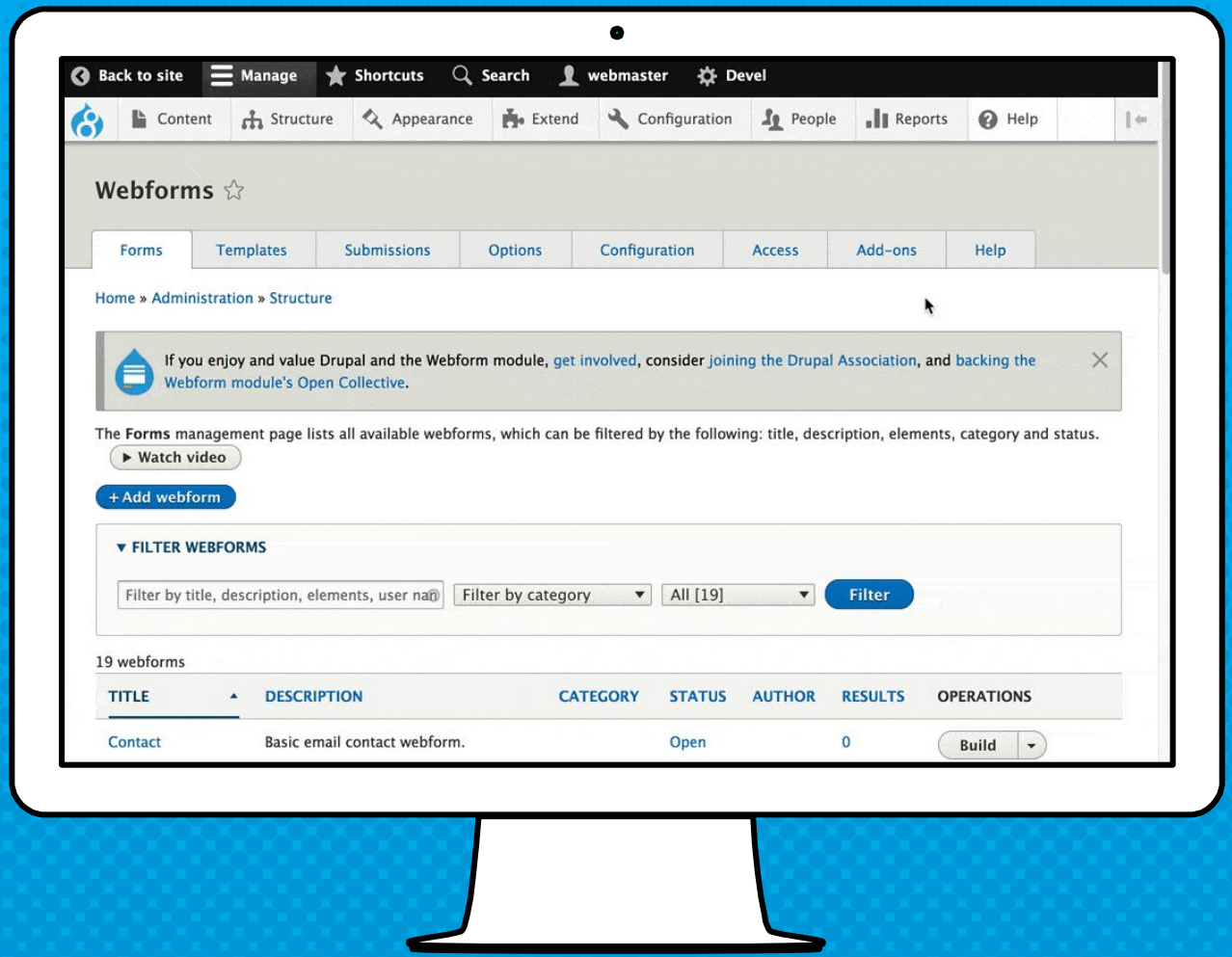
How to share a webform?

SHARING WEBFORMS



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How to secure webform submissions?

SECURING SUBMISSION DATA

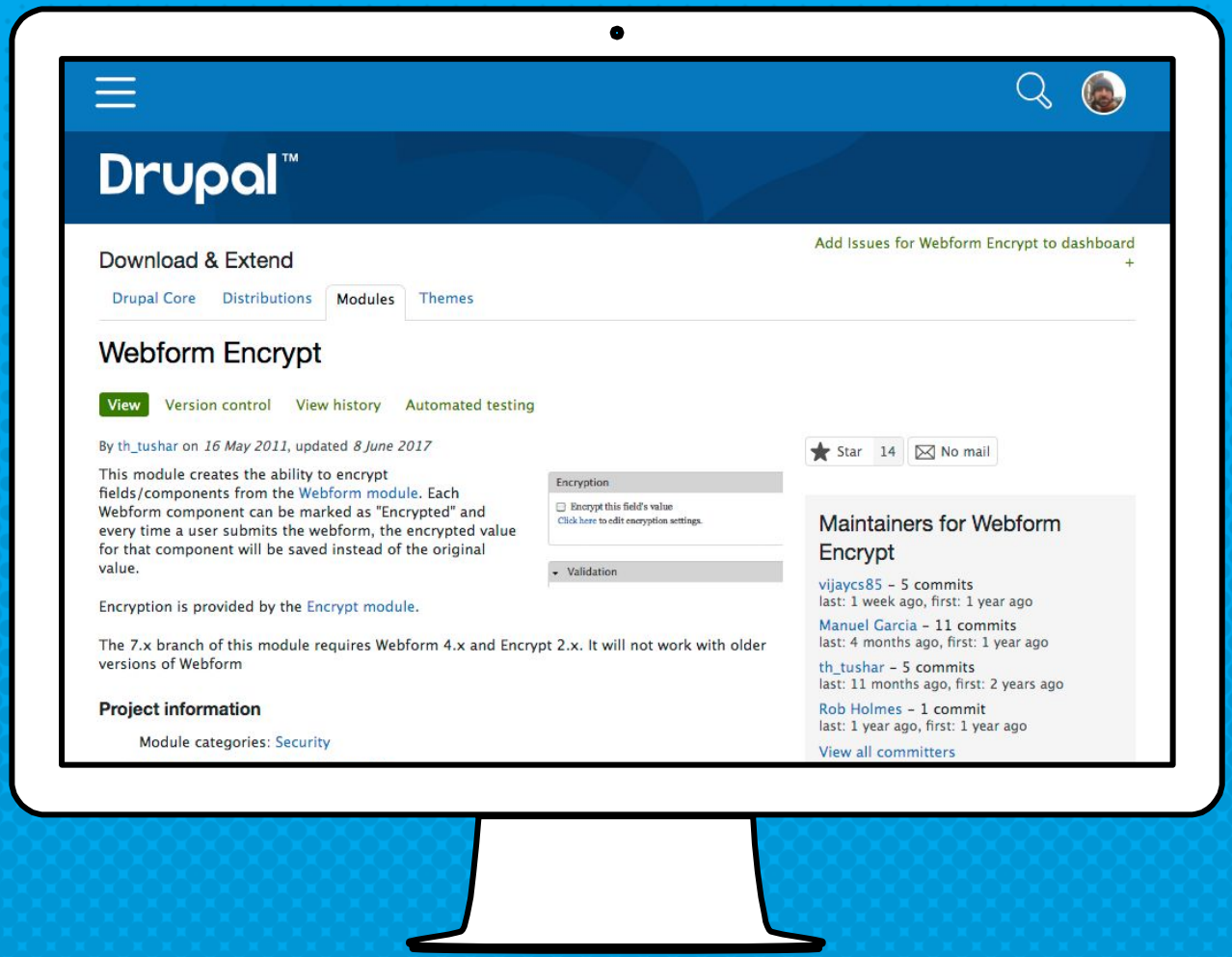
Webform Encrypt module

Provides the ability to encrypt fields/components.
https://www.drupal.org/project/webform_encrypt

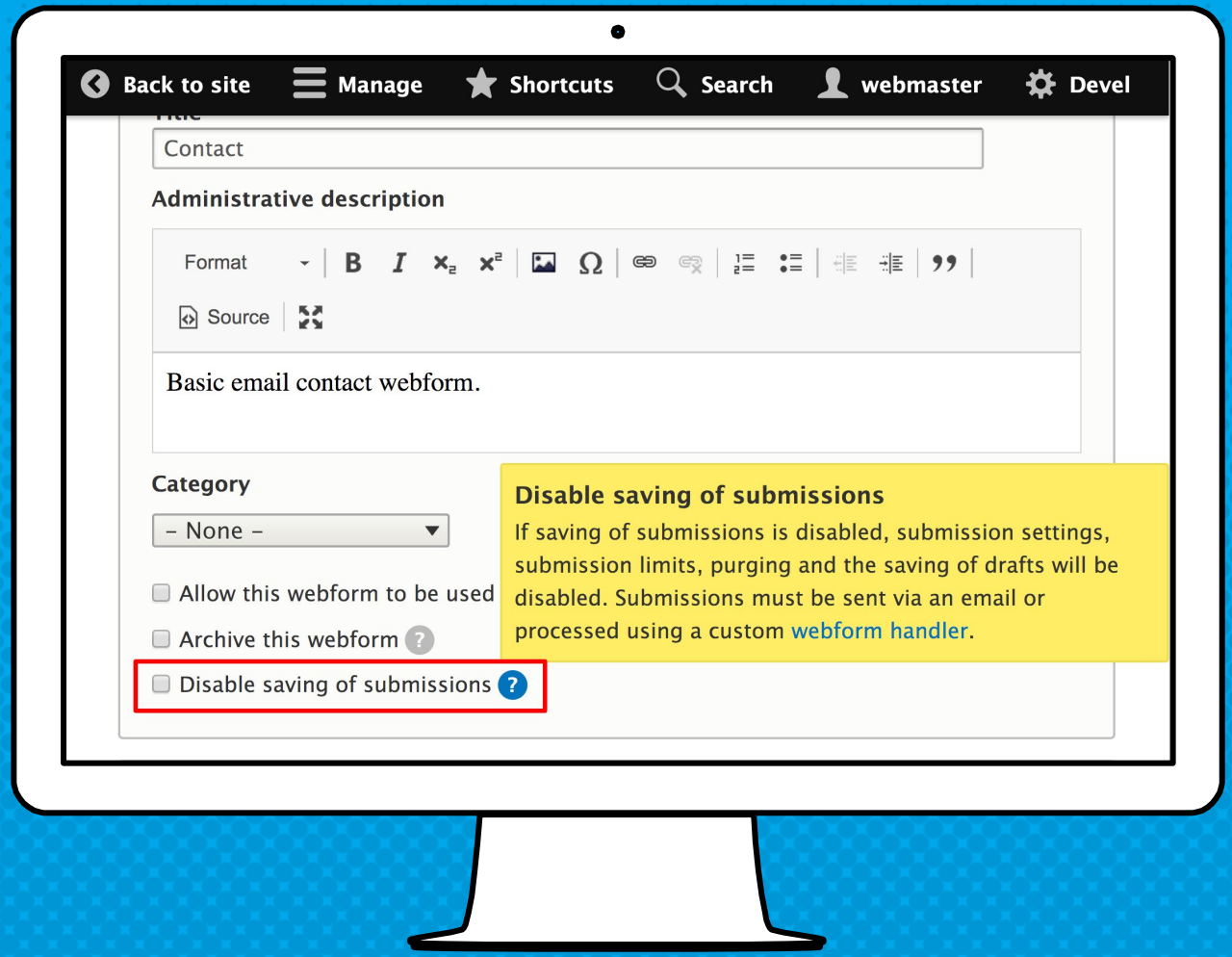
Disable the saving results

Completely prevents submission data from reaching the database. Submissions must be sent via an email or processed using a webform handler.

WEBFORM ENCRYPT MODULE



DISABLE THE SAVING OF SUBMISSIONS



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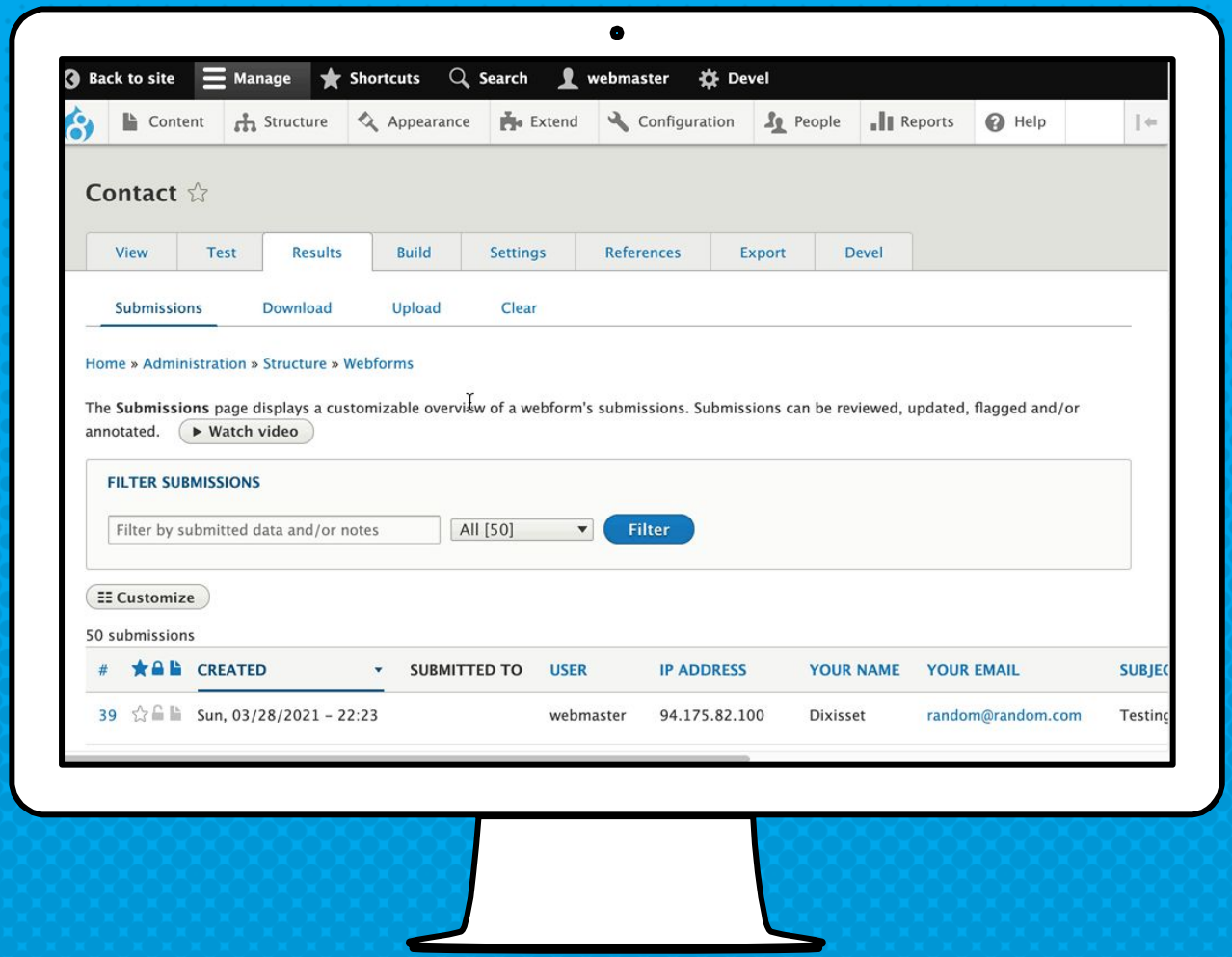
How to manage submissions?

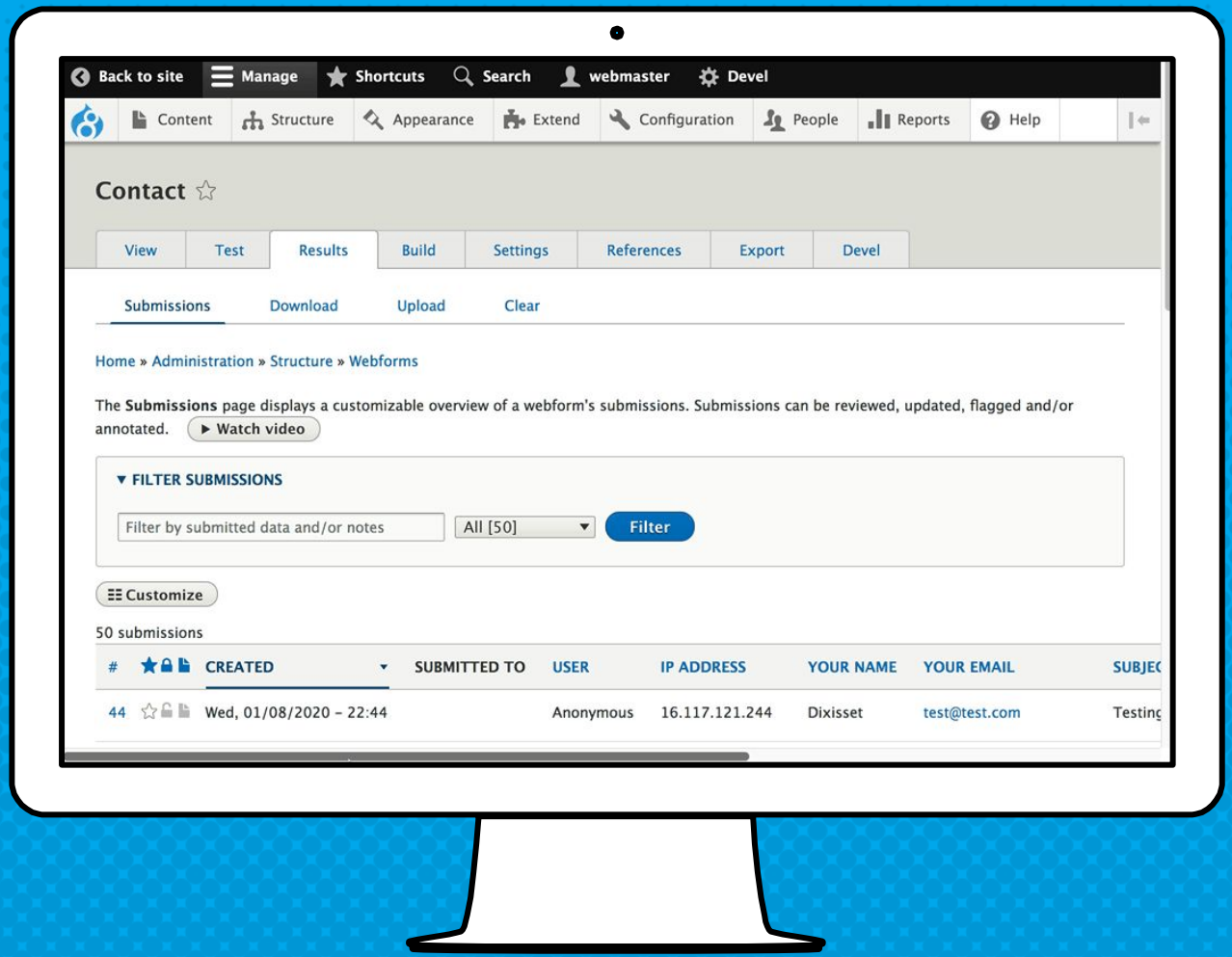
DOWNLOAD (OR UPLOAD) SUBMISSIONS



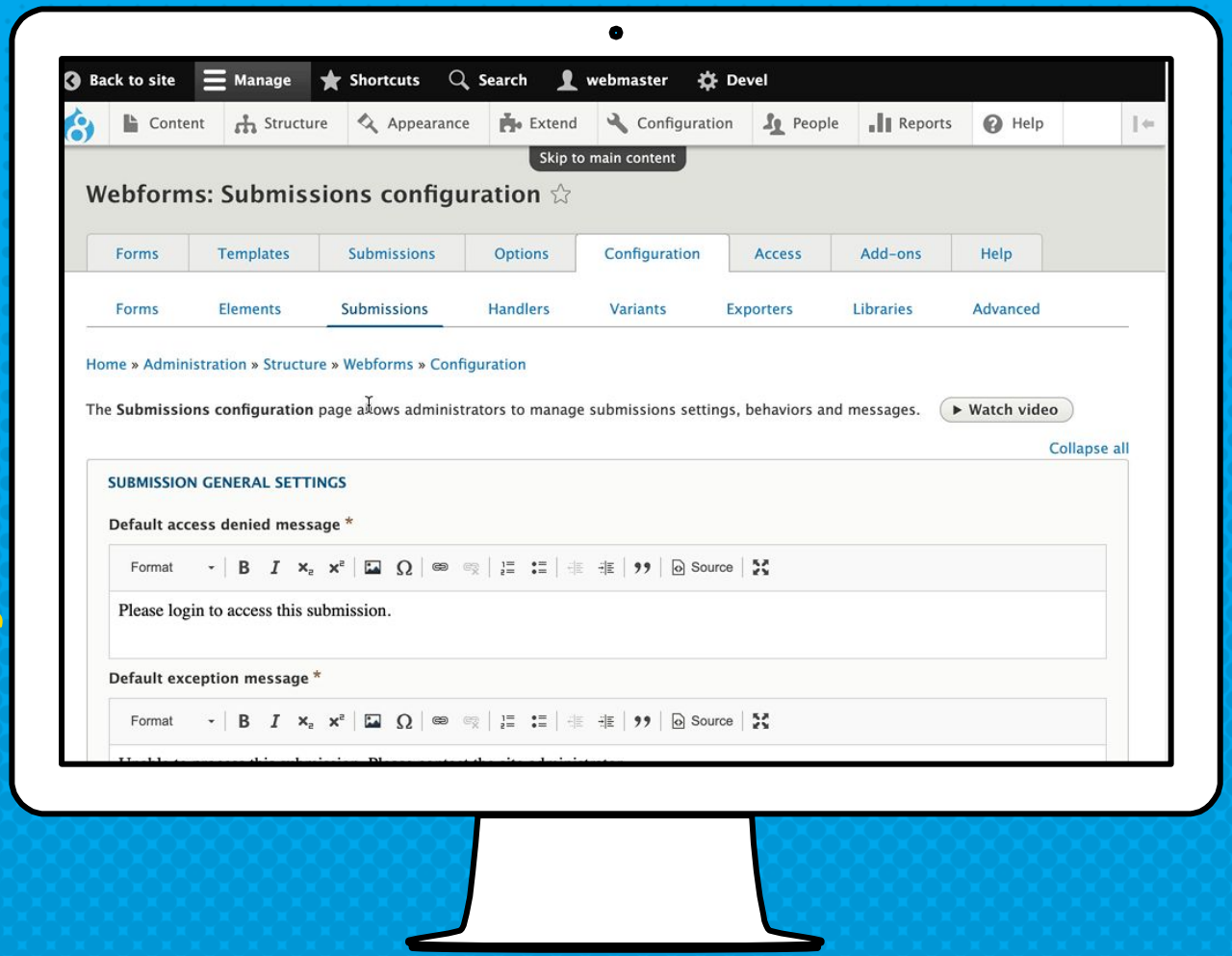
Viewing & Managing Submissions

- Global submissions
- Webform results
- Webform node results
- Webform user submissions
- User submissions

CUSTOMIZABLE RESULTS TABLE WITH OR WITHOUT VIEWS



REPLACE THE DEFAULT RESULTS TABLE WITH CUSTOM WEBFORM VIEWS



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How do you distribute a webform submission?

WEBFORM HANDLER USE CASES

- Email notification and confirmation
- Push data to CRM
- Subscribe to mailing lists
- Flag a submission based on submitted values
- Conditionally change confirmation message

WEBFORM HANDLERS

Email

Sends a webform submission via an email

Remote Post

Posts webform submissions to a URL

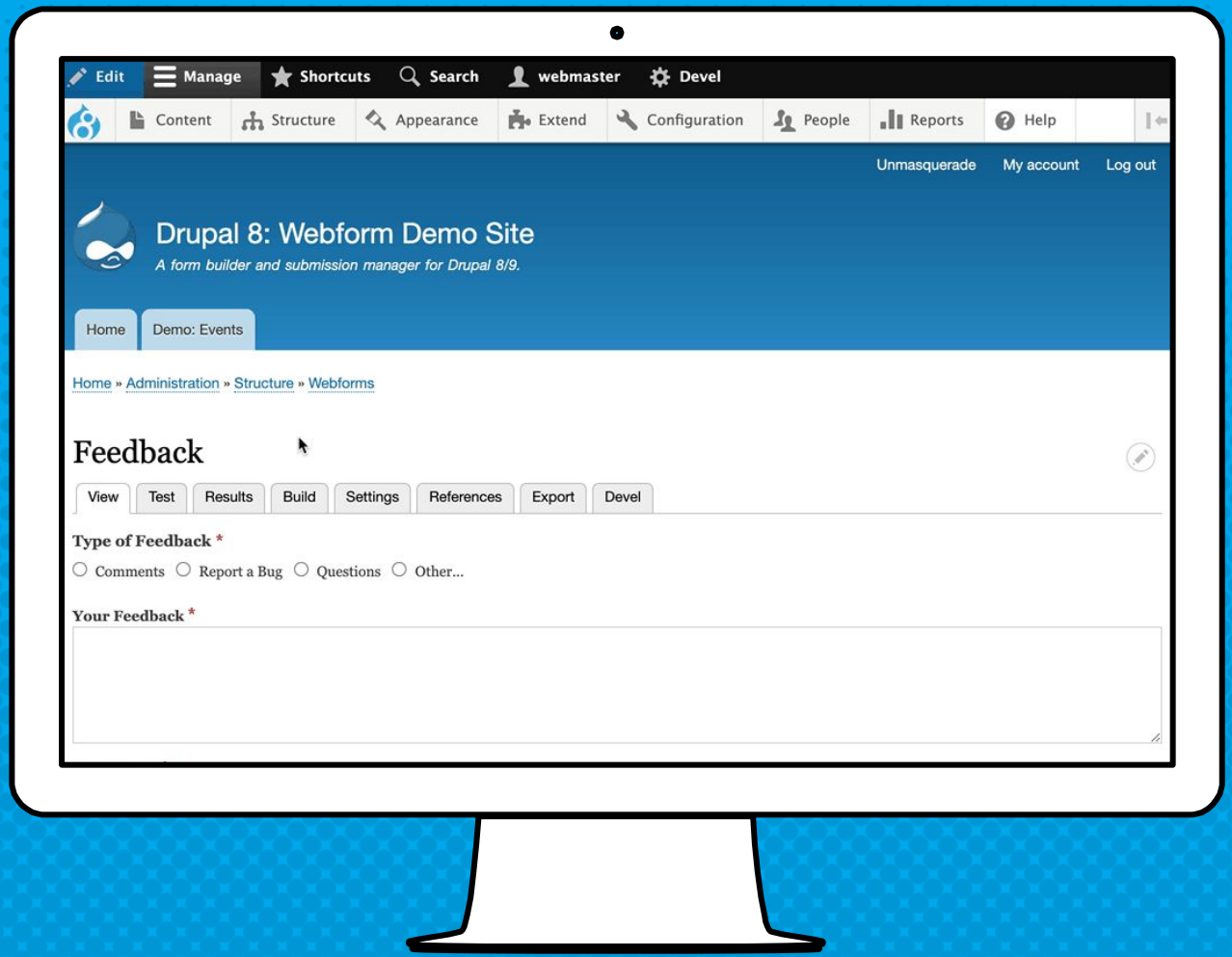
Action & Settings

Trigger a conditional action or setting on a submission

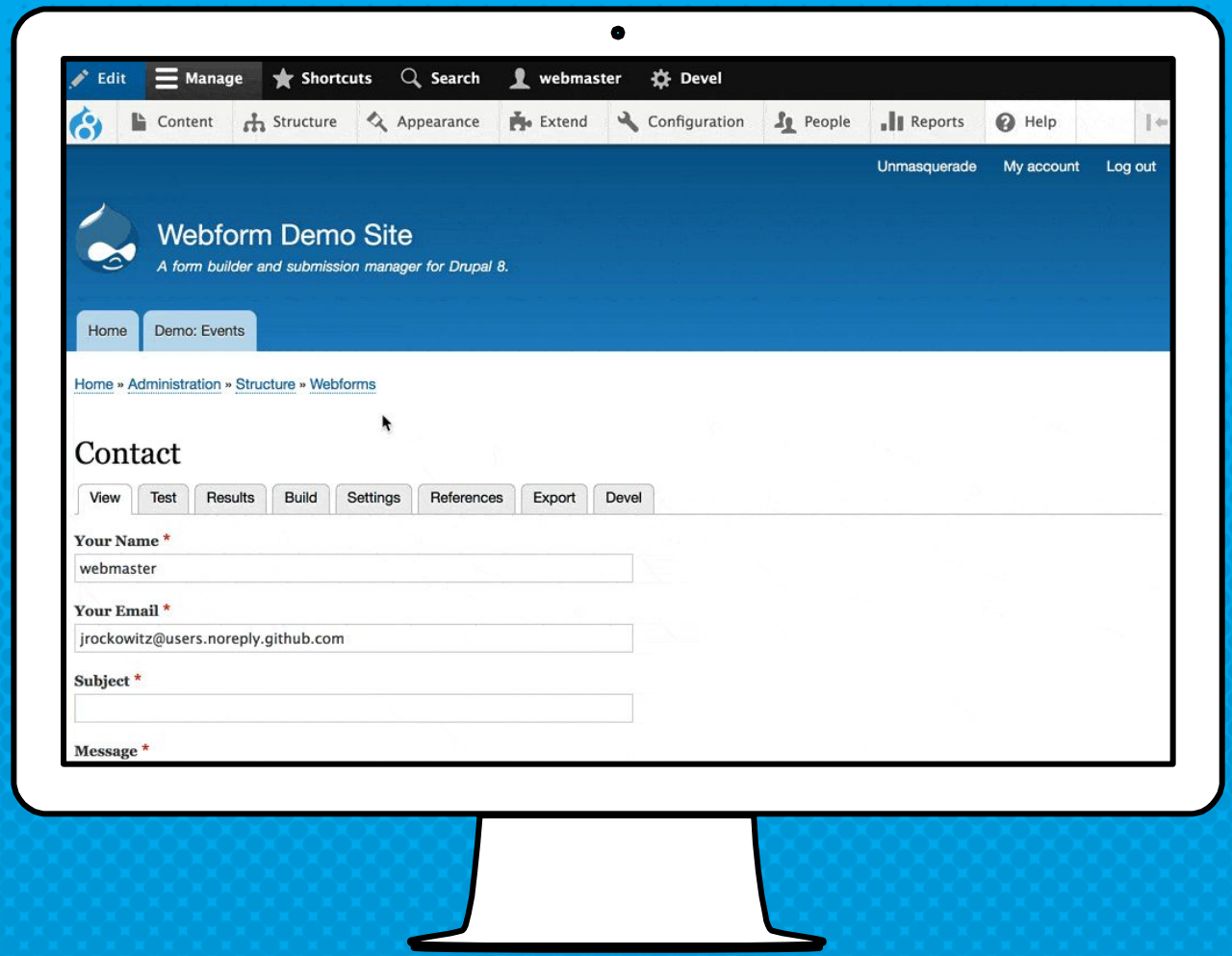
Debug

Debug webform submission

SEND & ROUTE EMAILS USING AN EMAIL HANDLER



SEND SUBMISSION DATA OUT OF DRUPAL USING A REMOTE POST HANDLER



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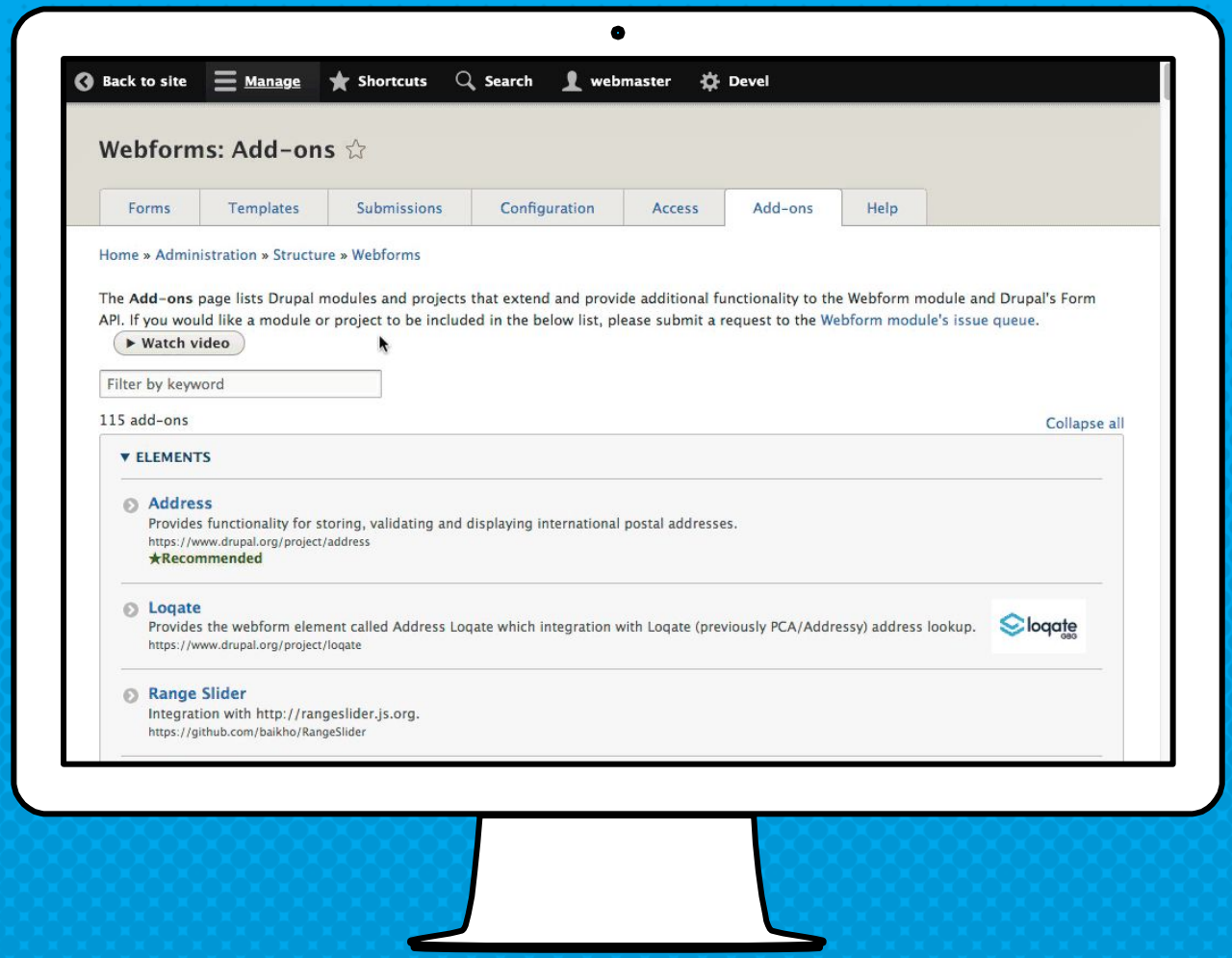
How to extend the webform module?

ADD-ONS ARE
DRUPAL MODULES
& PROJECTS THAT
EXTEND & PROVIDE
ADDITIONAL FUNCTIONALITY
TO THE WEBFORM MODULE &
DRUPAL'S FORM API

INSTALL WEBFORM ADD-ONS



Types of Webform Add-ons

- SPAM Protection
- Validation
- Elements
- Integration
- Submissions
- Mail
- REST
- Configuration
- Migrate
- Multilingual
- Workflow
- Development

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How do to stop spam?

Spam protection: add-ons

Honeypot

Mitigates spam form submissions using the honeypot method.
https://www.drupal.org/project/honeypot

Antibot

Prevent forms from being submitted without JavaScript enabled.
https://www.drupal.org/project/antibot

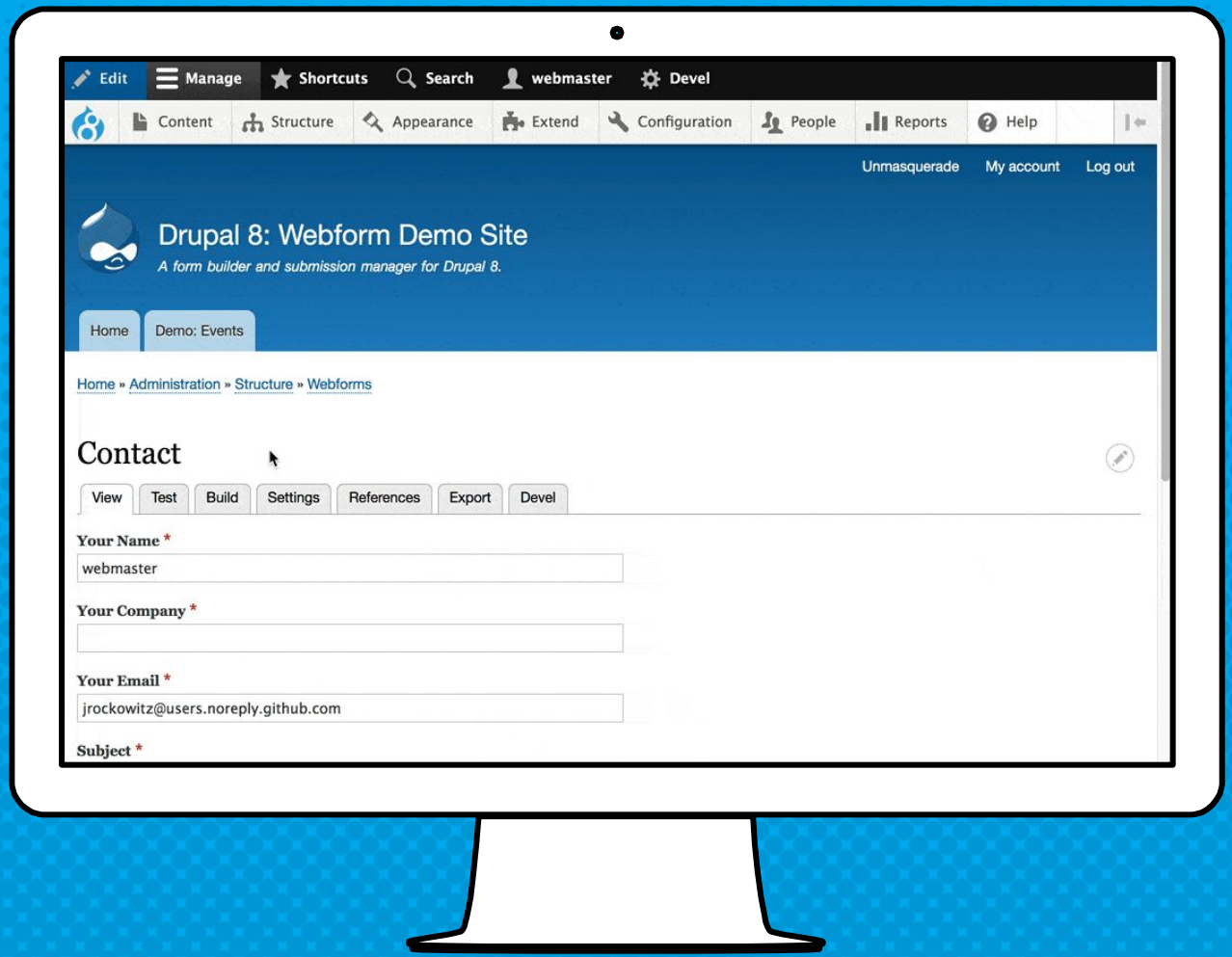
CAPTCHA

Provides CAPTCHA for adding challenges to arbitrary forms.
https://www.drupal.org/project/captcha

SPAM PROTECTION: TIPS & TRICKS

- CAPTCHA works the best but it is the most annoying
- Honeypot can be good enough without annoying users
- SPAM protection modules may disable page caching

A GOOD SPAM PROTECTION RECIPE IS HONEYPOT & ANTIBOT



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14. What is the anatomy of a form?
15. How to change a form's look-n-feel?
16. How to limit access to a webform?
17. How to share a webform? ★
18. How to secure a webform? ★
19. How to manage submissions? ★
20. How to distribute submissions? ★
21. How to extend the Webform module? ★
22. How to stop SPAM?
23. How to test webforms?
24. How to get help? ★

23.

How to test WebForms?

TESTS CONFIRM

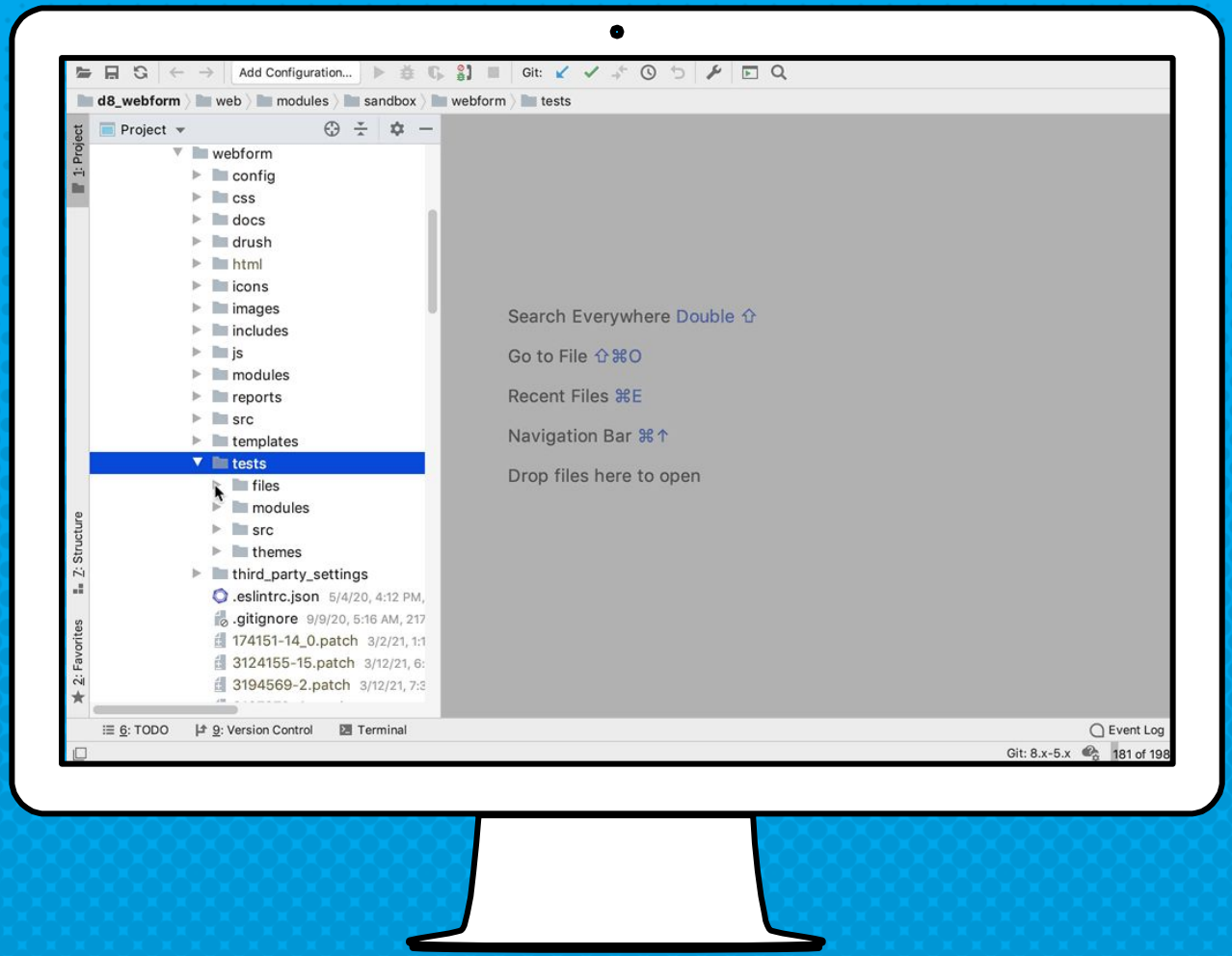
EXPECTATIONS

WebForm tests confirm

- Rendering: Check an element's markup
- Processing: Check an input's default value
- Validation: Check required error messages
- Settings: Check labels and layout
- Access: Check user access controls

THE WEBFORM MODULE HAS A LOT OF TESTS

WHICH YOU CAN LEVERAGE IN YOUR CUSTOM PROJECTS.



Testing Best Practices

- × Create a test module with exported webforms
- × Write tests for every element and setting
- × Establish repeatable testing patterns
- × Organize tests into groups/subdirectories

- × Having easy-to-repeat manual tests is okay
- × Some tests are better than no tests

Answering the Why, What, & How Questions

1. Why use the Webform module? ★
2. Why did I build the Webform module?
3. What are some of the features? ★
4. What are some good examples? ★
5. What are the alternatives?
6. What is the YAML source mode?
7. What is a FAPI render array?
8. How do you alter forms & elements?
9. How to publish a webform? ★
10. What is a source entity?
11. How to improve a form's UX? ★
12. How to improve an element's UX? ★
13. How to use templates?
14. What is the anatomy of a form?
15. How to change a form's look-n-feel?
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19. How to manage submissions? ★
20. How to distribute submissions? ★
21. How to extend the Webform module? ★
22. How to stop SPAM?
23. How to test webforms?
24. How to get help? ★

24.

How to get help with the webform module?

Getting Help

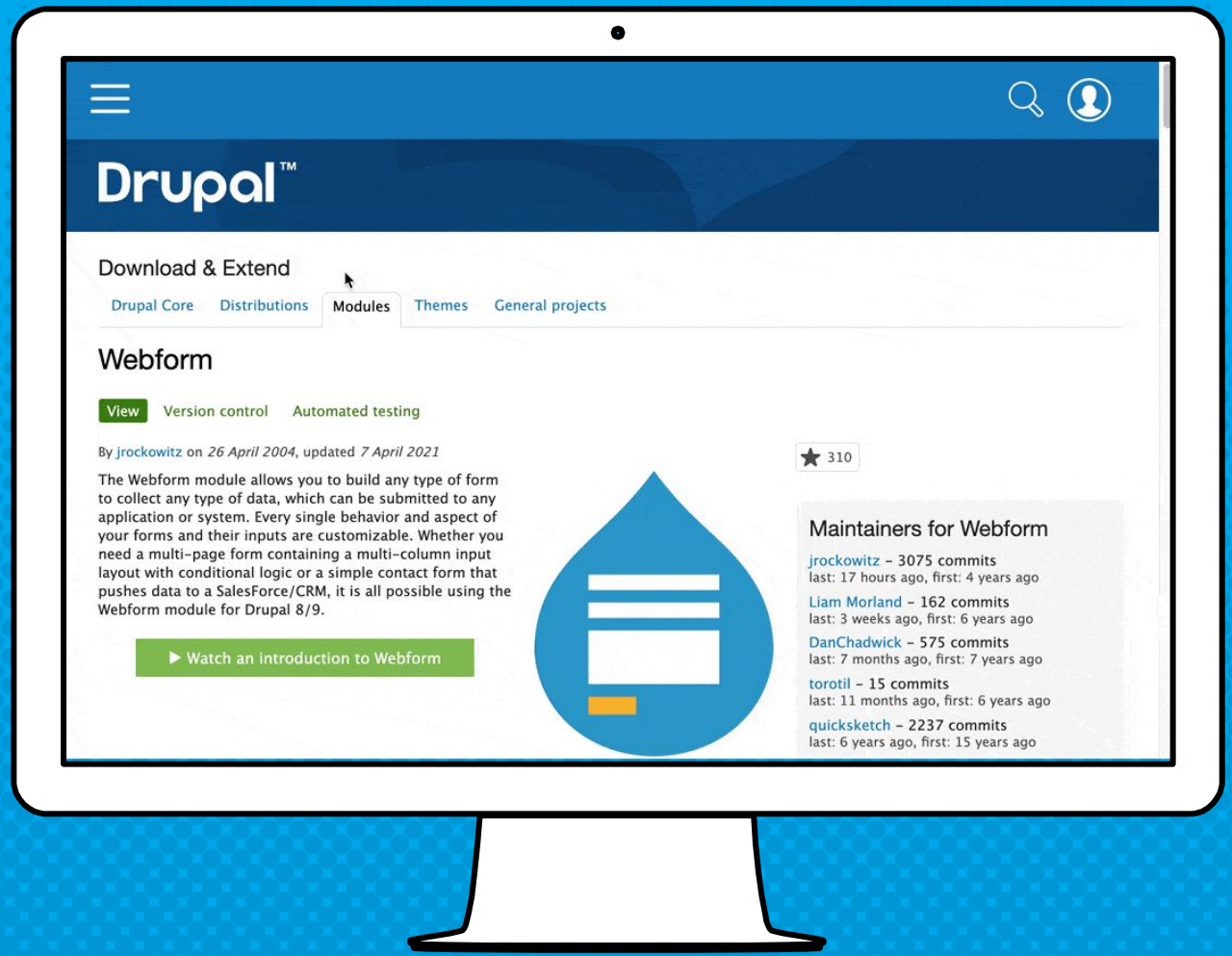
- Documentation, Cookbook, & Screencasts
  https://www.drupal.org/docs/8/modules/webform

- Drupal Answers
  http://drupal.stackexchange.com

- Webform Issue Queue
  https://www.drupal.org/project/issues/webform?version=8.x

TO DRUPAL OR NOT TO DRUPAL...

GET INVOLVED, FUND DEVELOPMENT, OR HIRE ME PROFESSIONAL SUPPORT



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