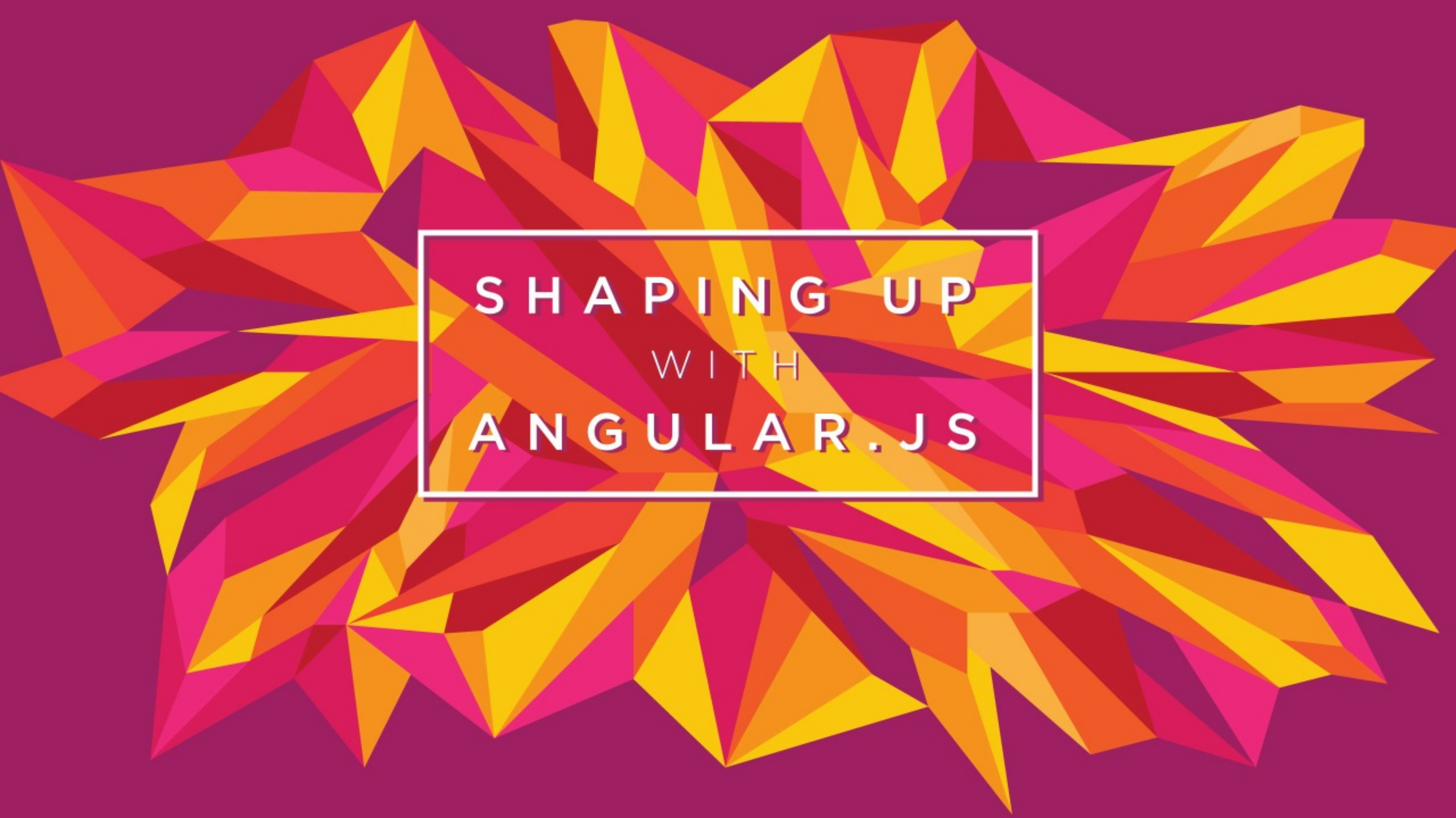
SHAPING UP
WITH
ANGULAR.JS

Shaping Up with Angular

Level 3: Forms, Models, and Validations

SHAPING UP
WITH
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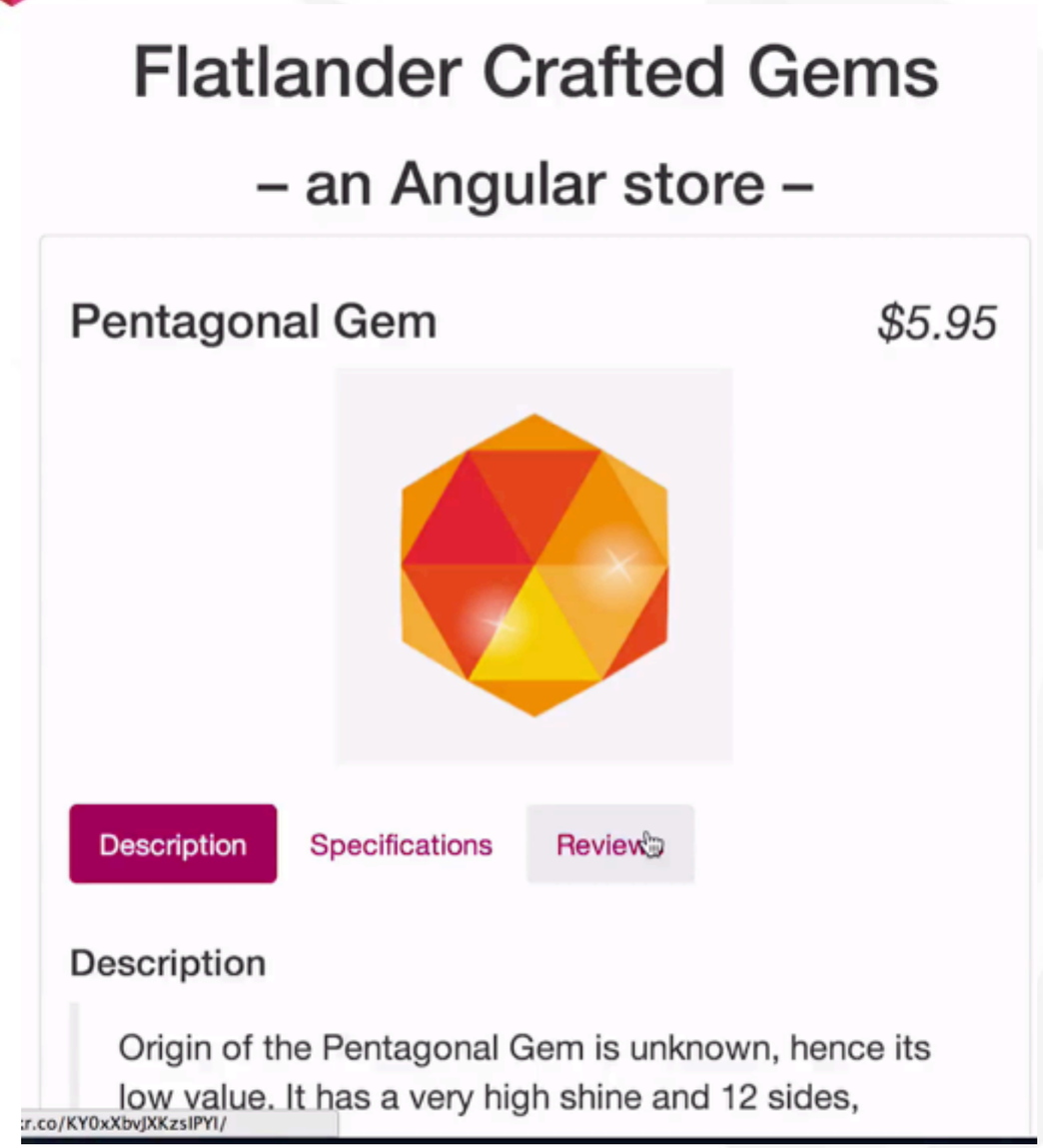
More Directives: Forms & Models



How can I let my users add content?

Adding reviews to our products

```
app.controller("StoreController", function(){
  this.products = [
    {
      name: 'Awesome Multi-touch Keyboard',
      price: 250.00,
      description: "...",
      images: [...],
      reviews: [
        {
          stars: 5,
          body: "I love this product!",
          author: "joe@thomas.com"
        },
        {
          stars: 1,
          body: "This product sucks",
          author: "tim@hater.com"
        }
        . . .
```

app.js

Looping Over Reviews in our Tab

```
<li class="list-group-item" ng-repeat="product in store.products">
  . . .
  <div class="panel" ng-show="panel.isSelected(3)">
    <h4> Reviews </h4>

    <blockquote ng-repeat="review in product.reviews">
      <b>Stars: {{review.stars}}</b>
      {{review.body}}
      <cite>by: {{review.author}}</cite>
    </blockquote>
  </div>
```

index.html

SHAPING UP WITH ANGULAR.JS

We're displaying Reviews!

Reviews

> **3 Stars** I think this gem was just OK, could honestly use more shine, IMO.
> —JimmyDean@sausage.com

> **4 Stars** Any gem with 12 faces is for me!
> —gemsRock@alyssaNicoll.com

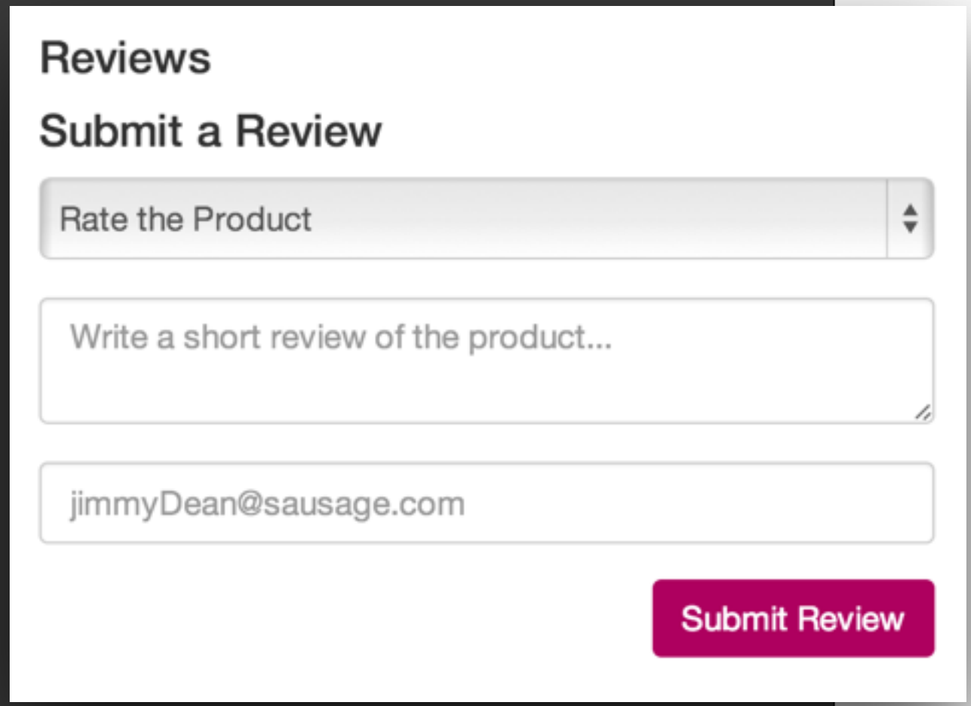
Nothing new here, but how do we start to implement forms?

Writing out our Review Form

```
<h4> Reviews </h4>

<blockquote ng-repeat="review in product.reviews">...</blockquote>
```

```
<form name="reviewForm">
  <select>
    <option value="1">1 star</option>
    <option value="2">2 stars</option>
    . . .
  </select>
  <textarea></textarea>
  <label>by:</label>
  <input type="email" />
  <input type="submit" value="Submit" />
</form>
```



index.html

With Live Preview

```
<form name="reviewForm">
  <blockquote>
    <b>Stars: {{review.stars}}</b>
    {{review.body}}
    <cite>by: {{review.author}}</cite>
  </blockquote>
  <select>
    <option value="1">1 star</option>
    <option value="2">2 stars</option>
    . . .
  </select>
  <textarea></textarea>
  <label>by:</label>
  <input type="email" />
  <input type="submit" value="Submit" />
</form>
```

How do we bind this review object to the form?

index.html

Introducing ng-model

```
<form name="reviewForm">
  <blockquote>
    <b>Stars: {{review.stars}}</b>
    {{review.body}}
    <cite>by: {{review.author}}</cite>
  </blockquote>
  <select ng-model="review.stars">
    <option value="1">1 star</option>
    <option value="2">2 stars</option>
    . . .
  </select>
  <textarea ng-model="review.body"></textarea>
  <label>by:</label>
  <input ng-model="review.author" type="email" />
  <input type="submit" value="Submit" />
</form>
```

ng-model binds the form element value to the property

index.html

Live Preview In Action

5 Stars This gem is SO

—

Submit a Review

5

This gem is SO

jimmyDean@sausage.com

Submit Review

But how do we actually add the new review?

Two More Binding Examples

With a Checkbox

```
<input ng-model="review.terms" type="checkbox" /> I agree to the terms
```

Sets value to true or false

With Radio Buttons

```
What color would you like?

<input ng-model="review.color" type="radio" value="red" /> Red
<input ng-model="review.color" type="radio" value="blue" /> Blue
<input ng-model="review.color" type="radio" value="green" /> Green
```

Sets the proper value based on which is selected

Challenges

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We need to Initialize the Review

```
<form name="reviewForm">
  <blockquote>
  <b>Stars: {{review.stars}}</b>
  {{review.body}}
  <cite>by: {{review.author}}</cite>
  </blockquote>

  <select ng-model="review.stars">
    <option value="1">1 star</option>
    <option value="2">2 stars</option>
    . . .
  </select>
  <textarea ng-model="review.body"></textarea>
  <label>by:</label>
  <input ng-model="review.author" type="email" />
  <input type="submit" value="Submit" />
</form>
```

index.html

We could do **ng-init**, but we're better off creating a controller.

Creating the Review Controller

```
app.controller("ReviewController", function(){
  this.review = {};
});
```

app.js

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl">
  <blockquote>
  <b>Stars: {{review.stars}}</b>
  {{review.body}}
  <cite>by: {{review.author}}</cite>
  </blockquote>

<select ng-model="review.stars">
  <option value="1">1 star</option>
  <option value="2">2 stars</option>
  . . .
</select>
<textarea ng-model="review.body"></textarea>
```

Now we need to update all the Expressions to use this controller alias.

index.html

Using the reviewCtrl.review

```
app.controller("ReviewController", function(){
  this.review = {};
});
```

app.js

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl">
  <blockquote>
  <b>Stars: {{reviewCtrl.review.stars}}</b>
  {{reviewCtrl.review.body}}
  <cite>by: {{reviewCtrl.review.author}}</cite>
  </blockquote>

<select ng-model="reviewCtrl.review.stars">
  <option value="1">1 star</option>
  <option value="2">2 stars</option>
  . . .
</select>
<textarea ng-model="reviewCtrl.review.body"></textarea>
```

index.html

Using ng-submit to make the Form Work

```
app.controller("ReviewController", function(){
  this.review = {};
});
```

app.js

`ng-submit` allows us to call a function when the form is submitted.

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl"
                        ng-submit="reviewCtrl.addReview(product)">
  <blockquote>
  <b>Stars: {{reviewCtrl.review.stars}}</b>
  {{reviewCtrl.review.body}}
  <cite>by: {{reviewCtrl.review.author}}</cite>
  </blockquote>
```

We need to define this function.

index.html

Using ng-submit to make the Form Work

```
app.controller("ReviewController", function(){
  this.review = {};

  this.addReview = function(product) {
    product.reviews.push(this.review);
  };
});
```

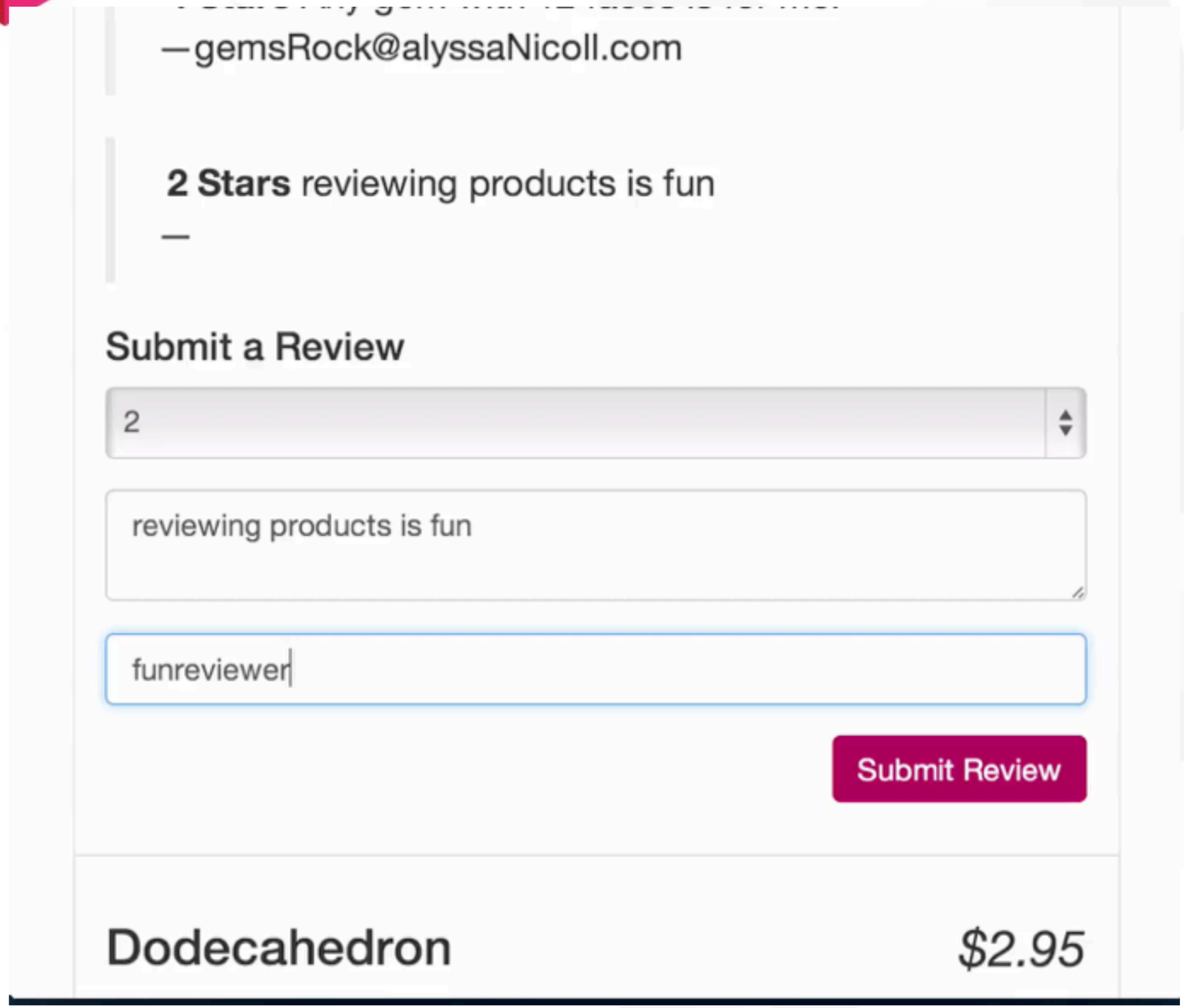
Push **review** onto this product's **reviews** array.

app.js

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl"
                        ng-submit="reviewCtrl.addReview(product)"
  <blockquote>
  <b>Stars: {{reviewCtrl.review.stars}}</b>
  {{reviewCtrl.review.body}}
  <cite>by: {{reviewCtrl.review.author}}</cite>
  </blockquote>
```

index.html

Now with Reviews!



Review gets added, but the form still has all previous values!

Resetting the Form on Submit

```
app.controller("ReviewController", function(){
  this.review = {};

  this.addReview = function(product) {
    product.reviews.push(this.review);
    this.review = {};
  };
});
```

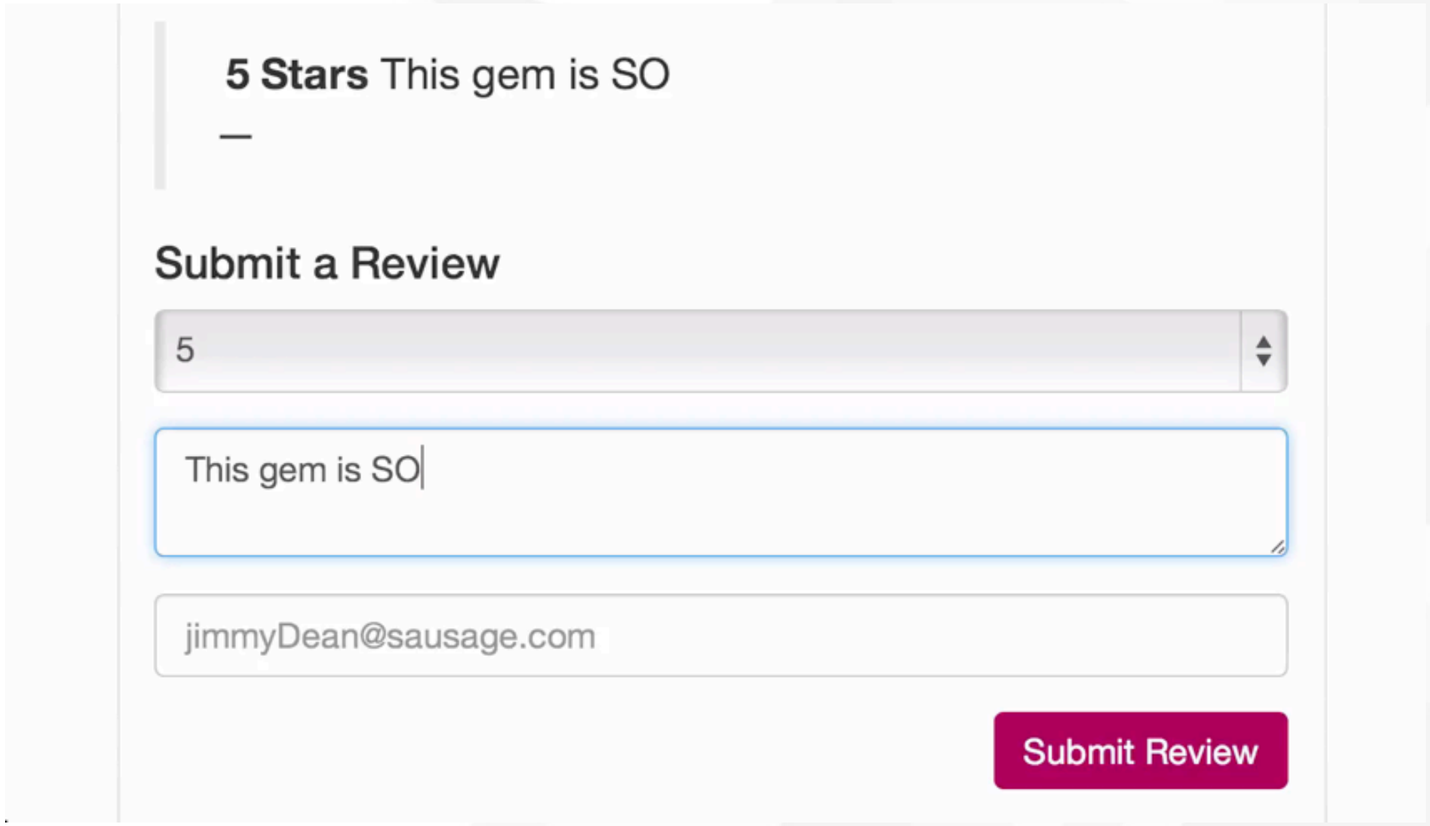
Clear out the review, so the form will reset.

app.js

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl"
                        ng-submit="reviewCtrl.addReview(product)">
  <blockquote>
  <b>Stars: {{reviewCtrl.review.stars}}</b>
  {{reviewCtrl.review.body}}
  <cite>by: {{reviewCtrl.review.author}}</cite>
</blockquote>
```

index.html

This Time the Form Resets



However, if we refresh, the reviews get reset!

We're not saving the reviews anywhere yet...

Challenges

SHAPING UP
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What about validations?

Turns out Angular has some great client side validations we can use with our directives.

Our Old Form Code

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl"
                        ng-submit="reviewCtrl.addReview(product)">
  <select ng-model="reviewCtrl.review.stars">
    <option value="1">1 star</option>
    ...
  </select>

  <textarea name="body" ng-model="reviewCtrl.review.body"></textarea>
  <label>by:</label>
  <input name="author" ng-model="reviewCtrl.review.author" type="email" />

  <input type="submit" value="Submit" />
</form>
```

index.html

Now with validation

Turn Off Default HTML Validation

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl"
                        ng-submit="reviewCtrl.addReview(product)" novalidate>
  <select ng-model="reviewCtrl.review.stars" required>
    <option value="1">1 star</option>
    ...
  </select>

  <textarea name="body" ng-model="reviewCtrl.review.body" required></textarea>
  <label>by:</label>
  <input name="author" ng-model="reviewCtrl.review.author" type="email" required/>

  <div> reviewForm is {{reviewForm.$valid}} </div>
  <input type="submit" value="Submit" />
</form>
```

Mark Required Fields

Print Forms Validity

index.html

With validations

5 Stars

—alyssa@codeschool.com

Submit a Review

5

Write a short review of the product...

alyssa@codeschool.com

Submit Review

reviewForm is false

We don't want the form to submit when it's invalid.

Preventing the Submit

```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl"
                        ng-submit="reviewCtrl.addReview(product)" novalidate>
```

index.html

We only want this method to be called if **reviewForm.$valid** is true.

SHAPING UP WITH ANGULAR.JS

Preventing the Submit

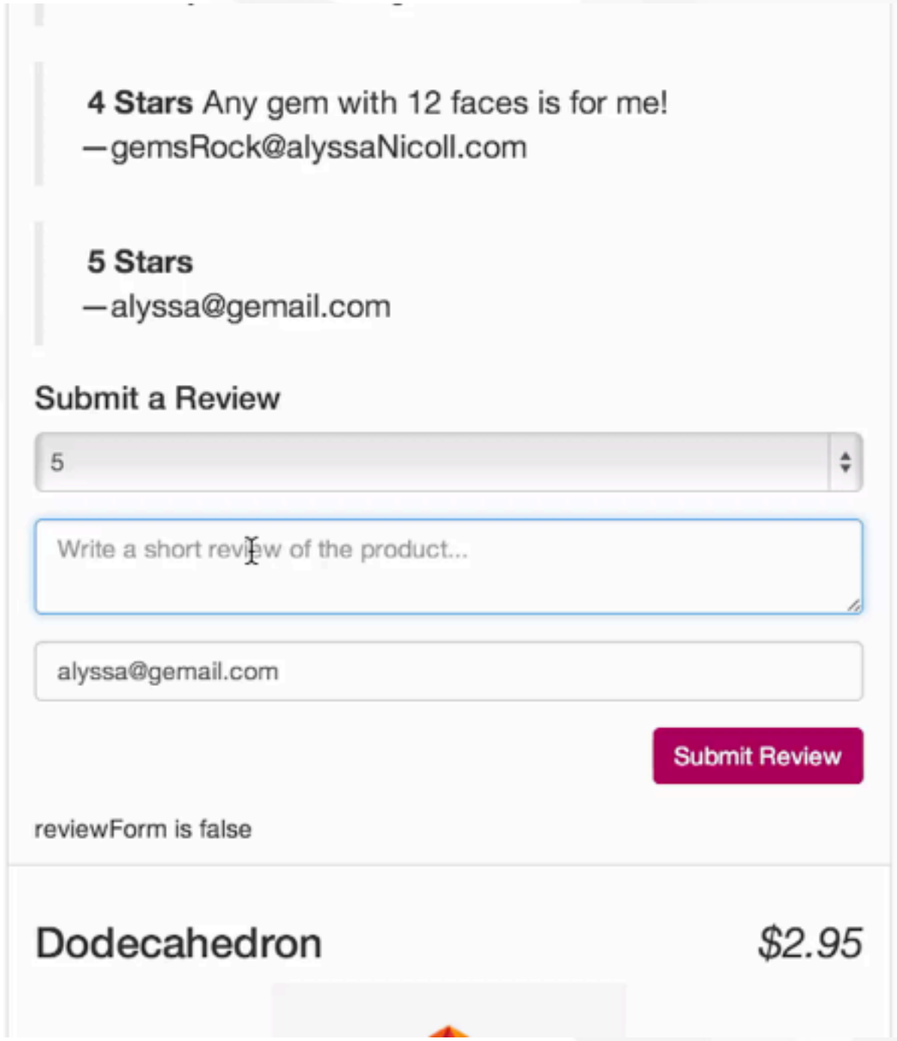
```
<form name="reviewForm" ng-controller="ReviewController as reviewCtrl"
    ng-submit="reviewForm.$valid && reviewCtrl.addReview(product)" novalidate>
```

index.html

If valid is **false**, then **addReview** is never called.

SHAPING UP WITH ANGULAR.JS

Doesn't Submit an Invalid Form



How might we give a hint to the user why their form is invalid?

The Input Classes

index.html

```
<input name="author" ng-model="reviewCtrl.review.author" type="email" required />
```

Source before typing email

```
<input name="author" . . . class="ng-pristine ng-invalid">
```

Source after typing, with invalid email

```
<input name="author". . . class="ng-dirty ng-invalid">
```

Source after typing, with valid email

```
<input name="author" . . . class="ng-dirty ng-valid">
```

So, let's highlight the form field using classes after we start typing, `ng-dirty` showing if a field is valid or invalid. `ng-valid` `ng-invalid`

The classes

```
<input name="author" ng-model="reviewCtrl.review.author" type="email" required />
```

index.html

```
.ng-invalid.ng-dirty {
  border-color: #FA787E;
}

.ng-valid.ng-dirty {
  border-color: #78FA89;
}
```

Red border for invalid

Green border for valid

style.css

SHAPING UP WITH ANGULAR.JS

Now with red and green borders!

4 Stars Any gem with 12 faces is for me!
—gemsRock@alyssaNicoll.com

Submit a Review

Rate the Product

Write a short review of the product...

jimmyDean@sausage.com

Submit Review

reviewForm is false

Dodecahedron $2.95

HTML5-based type validations

Web forms usually have rules around valid input:

- Angular JS has built-in validations for common input types:

```
<input type="email" name="email">
```

```
<input type="url" name="homepage">
```

```
<input type="number" name="quantity">
```

Can also define min & max with numbers

```
min=1 max=10
```

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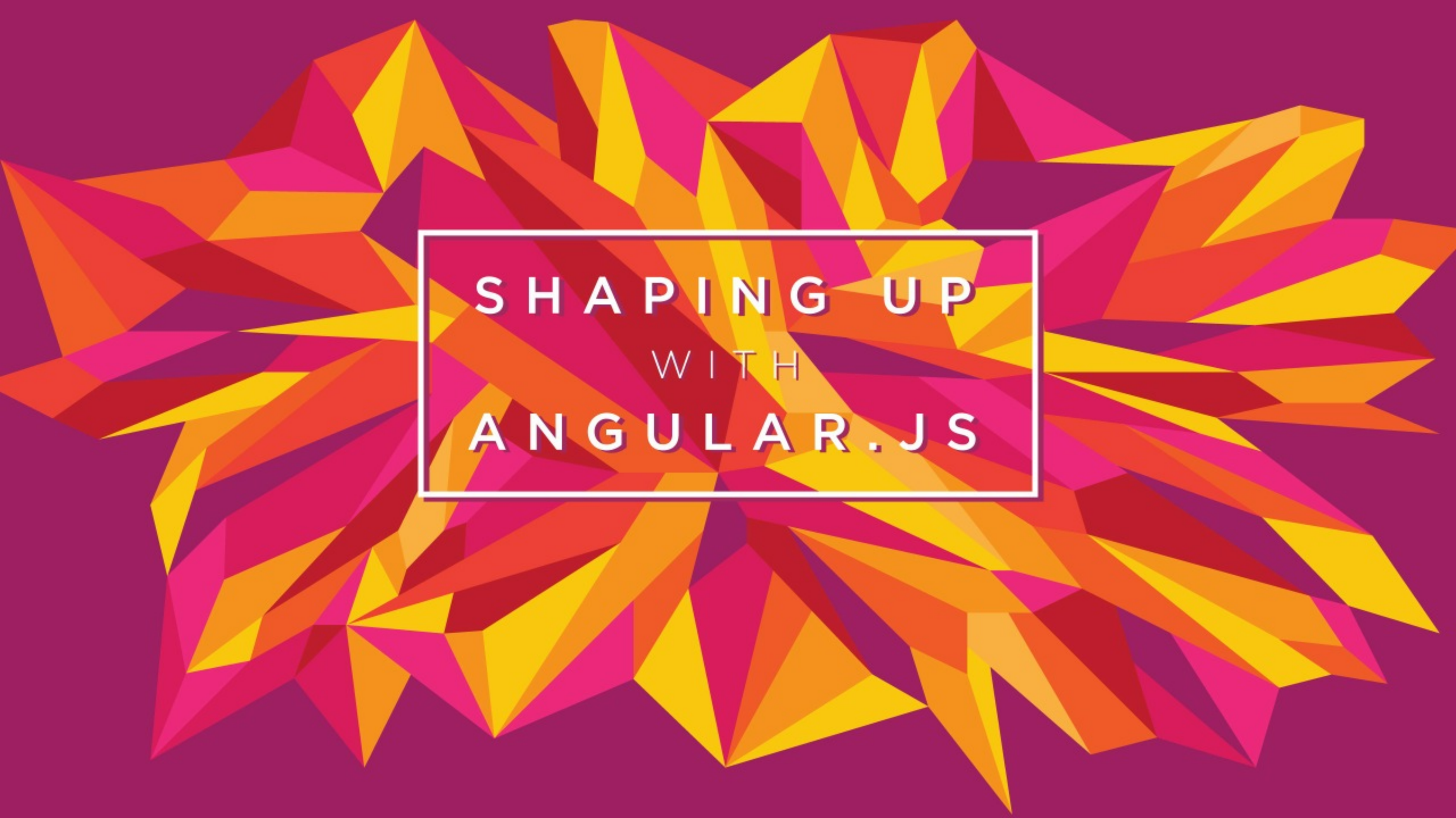
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