Angular 2.0

Einführung & Schnellstart

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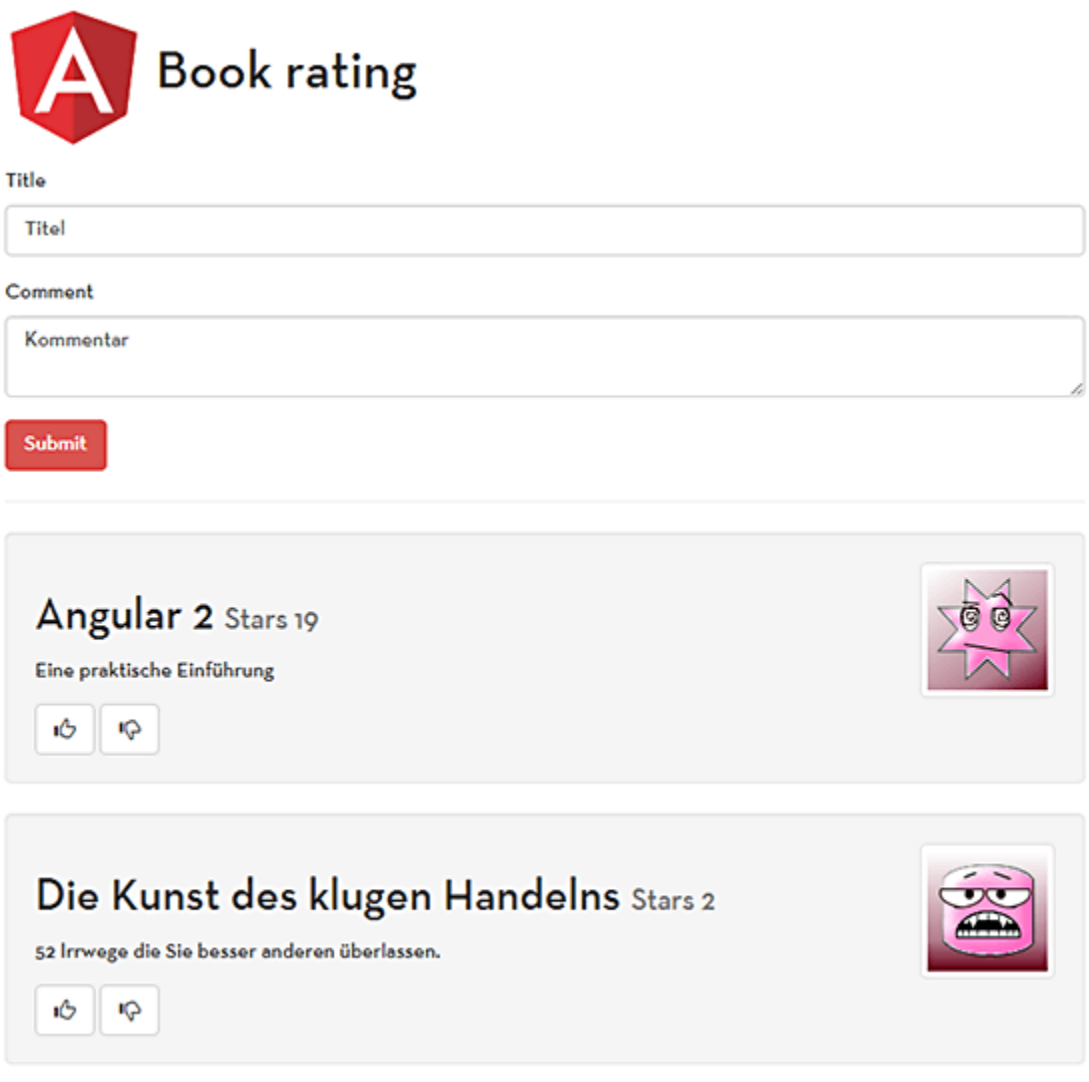
Alle gezeigten Beispiele basieren auf einer Alpha-Version von Angular 2.0. Vieles davon kann sich noch ändern.

Was wir bauen wollen




TypeScript

Setup

```
$ npm install -g typescript tsd
$ tsd install angular2/ es6-shim
$ tsc --watch

_
```

Klassen

```
class Book {
  title: string;
  comment: string;
  rating: number = 0;

  constructor(title, comment) {
    this.title = title;
    this.comment = comment;
  }

  rateUp() {
      this.rating++;
  }
}
```

Module

```
import { Book } from 'book'

var book = new Book('Angular 2', 'Bald ist es soweit!');
book.rateUp();
```

Bootstrapping

index.html

SystemJS lädt app

```
<h1>
  <img src="img/angular2-logo.svg"> Book rating
</h1>

<book-rating></book-rating>

<script>
  System.import('./app')
</script>
```

BookRating

Komponente soll zunächst nur ein `Array<string>` darstellen

```
// book-rating.ts
import {Component, View} from 'angular2/angular2';

@Component({
  selector: 'book-rating'
})
@View({
  directives: [], // later: BookComponent, NgFor
  template: `
    <h1>Bücher</h1>
    <p>{{ books }}</p>
  `
})
export default class BookRating {
  books: Array<string>;

  constructor() {
    this.books = ['Angular 2', 'Aurelia'];
  }
}
```

Neu: Dekoratoren

Laden der App

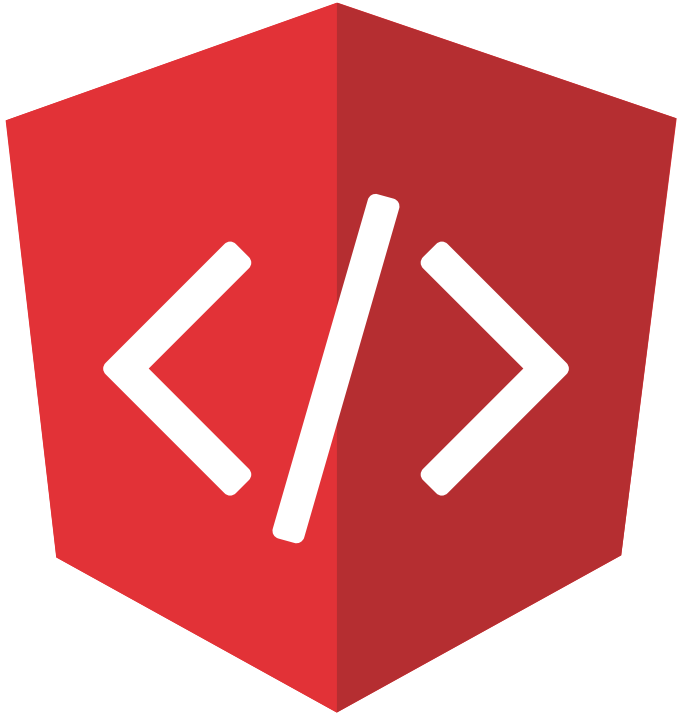
bootstrap der ersten Start-Komponente

```
// app.ts
import { bootstrap } from 'angular2/angular2';
import BookRating from './components/book-rating';

bootstrap(BookRating);
```

It works!

On my machine! ™



Components & Views

Bücher-Klasse

TypeScript-Typen verwenden

```
// book.ts
export default class Book {
  title: string;
  comment: string;
  rating: number = 0;

  constructor(title, comment) {
    this.title = title;
    this.comment = comment;
  }
}
```

BookComponent

Komponente soll ein einzelnes Buch anzeigen

```
// book-component.ts
import { Component, View } from 'angular2/angular2';
import Book from '../models/book';

@Component({
  selector: 'book',
  inputs: ['book'] // <-- input!
})
@View({
  template: `
    <div class="well">
      <div class="thumbnail pull-right">
        <img src="//gravatar.com/avatar/__BEWERTUNG__?s=80&default=wavatar"/>
      </div>
      <h2>__TITEL__ <small>Stars __BEWERTUNG__</small></h2>
      <p>__KOMMENTAR__</p>

    </div>
  `
})
export default class BookComponent {
  book: Book;
}
```

Template Binding

Interpolation: Daten können via **{{ }}** gebunden werden

```
<!-- book-component.ts -->
<img src="//gravatar.com/avatar/{{ book.rating }}?s=80&default=wavata
<h2>{{ book.title }} <small>Stars {{ book.rating }}</small></h2>
<p>{{ book.comment }}</p>
```

BookRating

Komponente soll zunächst nur ein einziges Buch anzeigen

```
// book-rating.ts
import {Component, View, NgFor} from 'angular2/angular2';
import Book from '../models/book';
import BookComponent from './book-component';

@Component({
  selector: 'book-rating'
})
@View({
  directives: [BookComponent, NgFor],
  template: `
     <h1>Buch</h1>
     <book [book]="book"></book>
   `
})
export default class BookRating {
  //books: Array<Book>;
  book: Book;

  constructor() {
    this.book = new Book('Angular 2', 'Eine praktische Einführung');
  }
}
```

BookRating importiert **BookComponent**

[Property bindings]

Ziel: **inputs** der gebundenen Komponente
Property bindings sind durch **[ ]** gekennzeichnet

```
<book [book]="book" *ng-for="#book of books"></book>
```

Forms

Formular

BookRating erhält zusätzliche Interaktionselemente

```
// book-rating.ts
@View({
  directives: [BookComponent, NgFor],
  template: `
     <div class="form">
       <div class="form-group">
         <div><label for="title">Title</label></div>
         <div><input class="form-control" name="title" #title></div>
       </div>
       <div class="form-group">
         <div><label for="link">Comment</label></div>
         <div><textarea class="form-control" name="comment" #comment></textarea></div>
       </div>
       <div class="form-group">
        <button (click)="add(title, comment)" class="btn btn-danger">Submit</button>
       </div>
     </div>

     <hr>
     <book *ng-for="#book of books" [book]="book" (rated)="reorderBooks(book)"></book>
   `
})
```

Referenzvariablen

Mit einer **#** kann man eine Referenz initialisieren

```
<div><input name="title" #title></div>
```

Vergleichbar mit `ng-model` aus AngularJS 1.x

(Event Binding)

Event bindings sind durch **()** gekennzeichnet

```
<button (click)="add(title, link)">Submit</button>
```

Interaktion

Klassen sind die neuen Controller

```
// book-rating.ts
export default class BookRating {
  books: Array<Book>;

  constructor() {
    this.books = [
      new Book('Angular 2', 'Eine praktische Einführung')
    ];
  }

  add(title, comment) {
    var newBook = new Book(title.value, comment.value);
    this.books.push(newBook);

    title.value = '';
    comment.value = '';
  }
```

Data Flow

Interne Ereignisse

Bücher bewerten

```
// book-component.ts
import { Component, View } from 'angular2/angular2';
import Book from '../models/book';

@Component({ /* ... */ })
@View({
  template: `
    <div class="well">
      <!-- ... -->

      <button (click)="rateUp()" class="btn btn-default glyphicon glyphicon-thumbs-up"></button>
      <button (click)="rateDown()" class="btn btn-default glyphicon glyphicon-thumbs-down"></button>
    </div>
  `
})
export default class BookComponent {
  book: Book;

  rateUp() {
    this.book.rating++;
  }

  rateDown() {
    this.book.rating--;
  }
}
```

Externe Ereignisse

Sender: **outputs** senden Event aus Komponente heraus

```
// book-component.ts
import { Component, View, EventEmitter } from 'angular2/angular2';
import Book from '../models/book';

@Component({
  /* ... */
  outputs: ['rated'] // <-- output!
})
@View({
  /* ... */
})
export default class BookComponent {
  book: Book;
  rated: EventEmitter = new EventEmitter();;

  rateUp() {
    this.book.rating++;
    this.rated.next(this.book);
  }

  rateDown() {
    this.book.rating--;
    this.rated.next(this.book);
  }
}
```

Auf Event reagieren

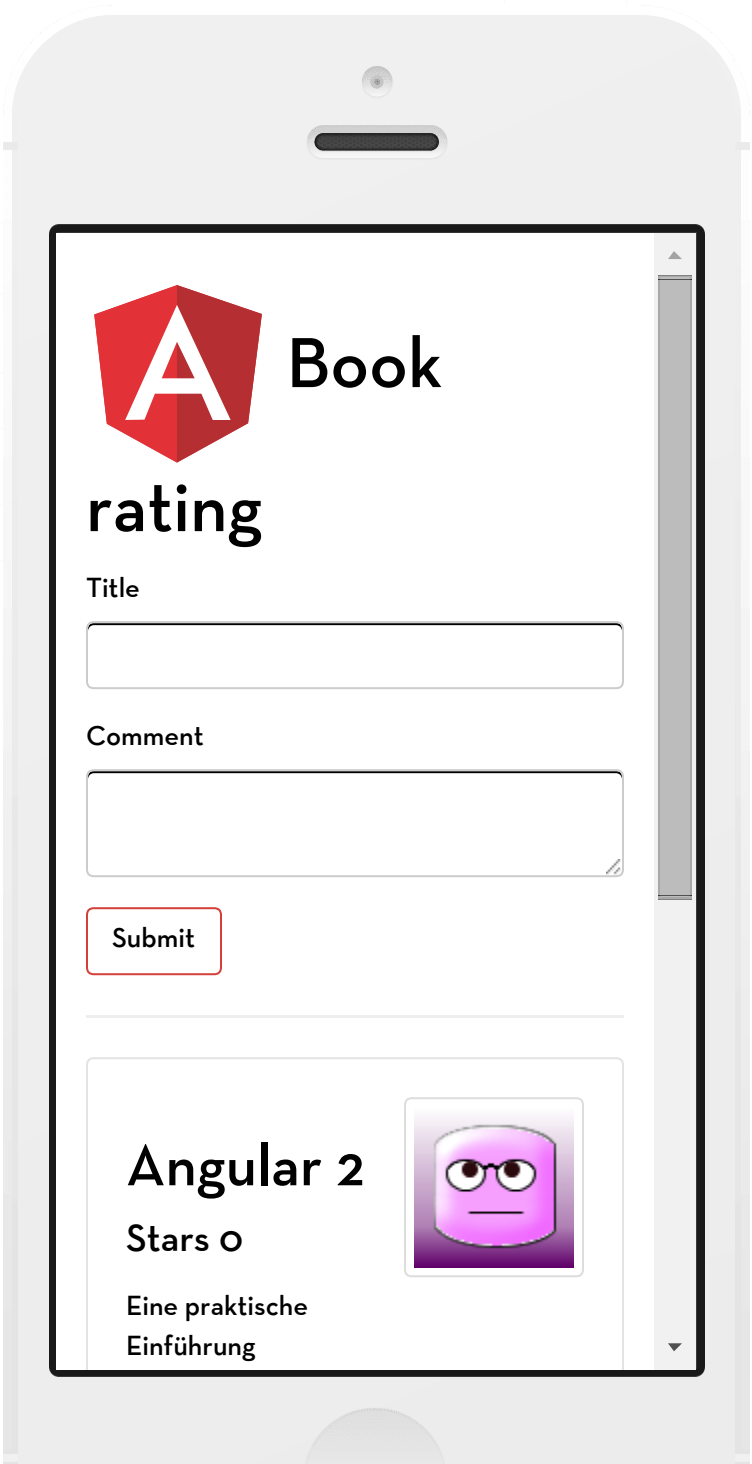
Empfänger: **(event binding)**

```
// book-rating.ts
import {Component, View, NgFor} from 'angular2/angular2';
import Book from '../models/book';
import BookComponent from './book-component';

@Component({
  selector: 'book-rating'
})
@View({
  directives: [BookComponent, NgFor],
  template: `
     <!-- ... -->
     <book ... (rated)="reorderBooks(book)"></book>
   `
})
export default class BookRating {
  books: Array<Book>;

  /* ... */

  reorderBooks(book: Book) {
    this.books.sort((a, b) => b.rating - a.rating);
  }
}
```


Book
rating
Title
Comment
Submit
Angular 2
Stars 0
Eine praktische
Einführung

Wir sind happy

Danke, wir freuen uns auf eure Anregungen!