



Angular 2.0

Einführung & Schnellstart

Johannes Hoppe / @JohannesHoppe

Danny Koppenhagen / @d_koppenhagen

Ferdinand Malcher / @fmalcher01

Gregor Woiwode / @GregOnNet



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

Was wir bauen wollen



Book rating

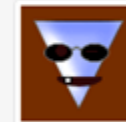
Title

Comment

Submit

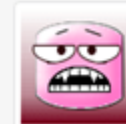
Angular 2 Stars 4

Eine praktische Einführung



Die Kunst des klugen Handelns Stars 2

52 Irrwege die Sie besser anderen überlassen.



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

```
<body class="container">

  <h1>
    
    Book rating
  </h1>

  <book-rating></book-rating>

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

</body>
```

BookRating

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

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

@Component({
  selector: 'book-ranking'
})
@View({
  directives: [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

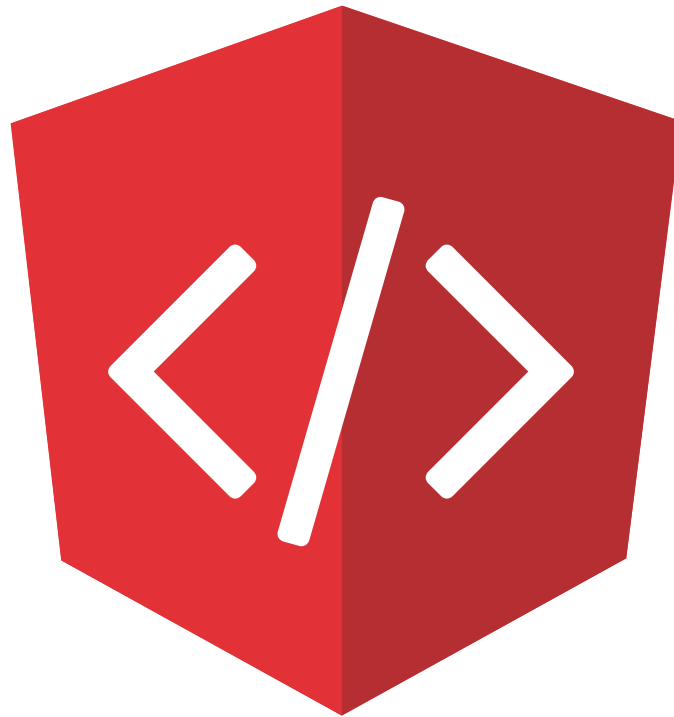
```
// app.ts
import { bootstrap } from 'angular2/angular2';
import BookRating from './components/book-rating';

bootstrap(BookRating);
```



It works!

On my machine! TM



Components & Views

Bücher-Klasse

TypeScript-Typen verwenden

```
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">
        
      </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 -->  
</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!