



Improving Our Components



Strong typing & interfaces



Encapsulating styles



Lifecycle hooks



Custom pipes



Nested components



Module Overview



Defining an Interface

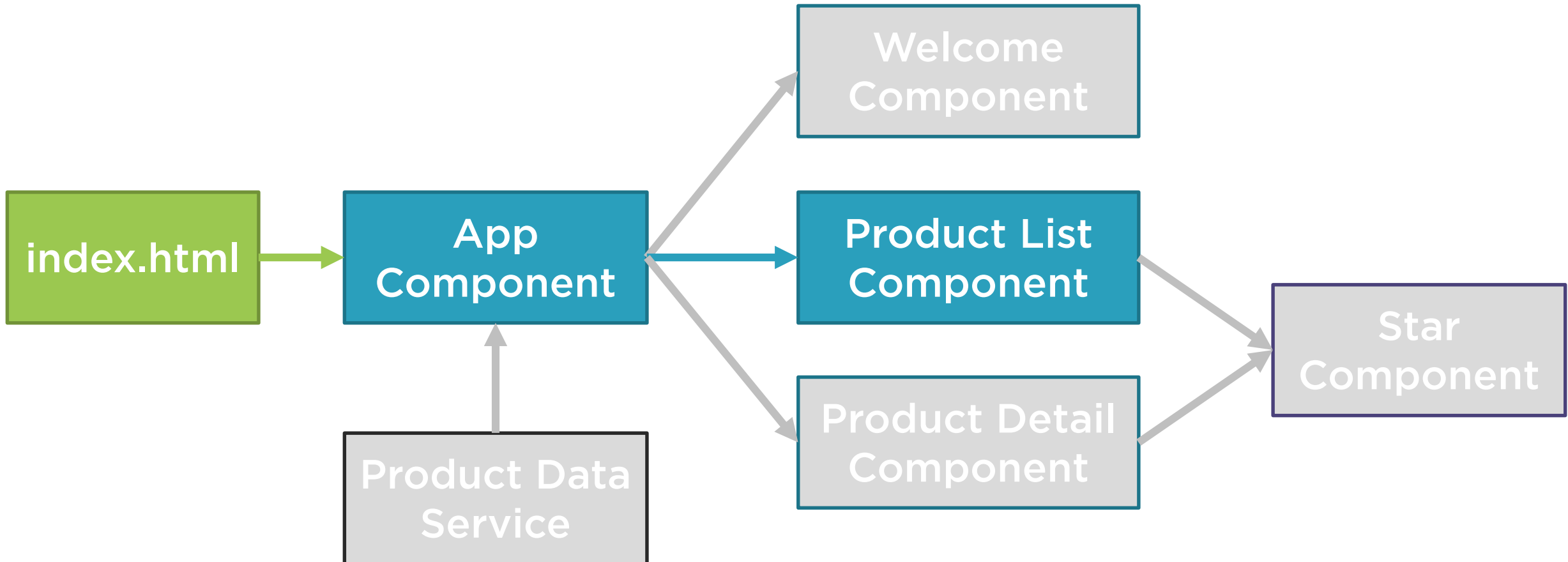
Encapsulating Component Styles

Using Lifecycle Hooks

Building a Custom Pipe



Application Architecture



Strong Typing

```
export class ProductListComponent {  
  pageTitle: string = 'Product List';  
  showImage: boolean = false;  
  listFilter: string = 'cart';  
  message: string;  
  
  products: any[] = [...];  
  
  toggleImage(): void {  
    this.showImage = !this.showImage;  
  }  
  
  onRatingClicked(message: string): void {  
    this.message = message;  
  }  
}
```



Interface

A **specification** identifying a related set of properties and methods.

A class commits to supporting the specification by **implementing** the interface.

Use the interface as a **data type**.

Development time only!



Interface Is a Specification

```
export interface IProduct {  
  productId: number;  
  productName: string;  
  productCode: string;  
  releaseDate: Date;  
  price: number;  
  description: string;  
  starRating: number;  
  imageUrl: string;  
  calculateDiscount(percent: number): number;  
}
```

export
keyword

Interface
Name

interface
keyword



Using an Interface as a Data Type

```
import { IProduct } from './product';

export class ProductListComponent {
  pageTitle: string = 'Product List';
  showImage: boolean = false;
  listFilter: string = 'cart';

  products: IProduct[] = [...];

  toggleImage(): void {
    this.showImage = !this.showImage;
  }
}
```



Handling Unique Component Styles



Templates sometimes require unique styles

We can inline the styles directly into the HTML

We can build an external stylesheet and link it in index.html

There is a better way!



Encapsulating Component Styles

styles

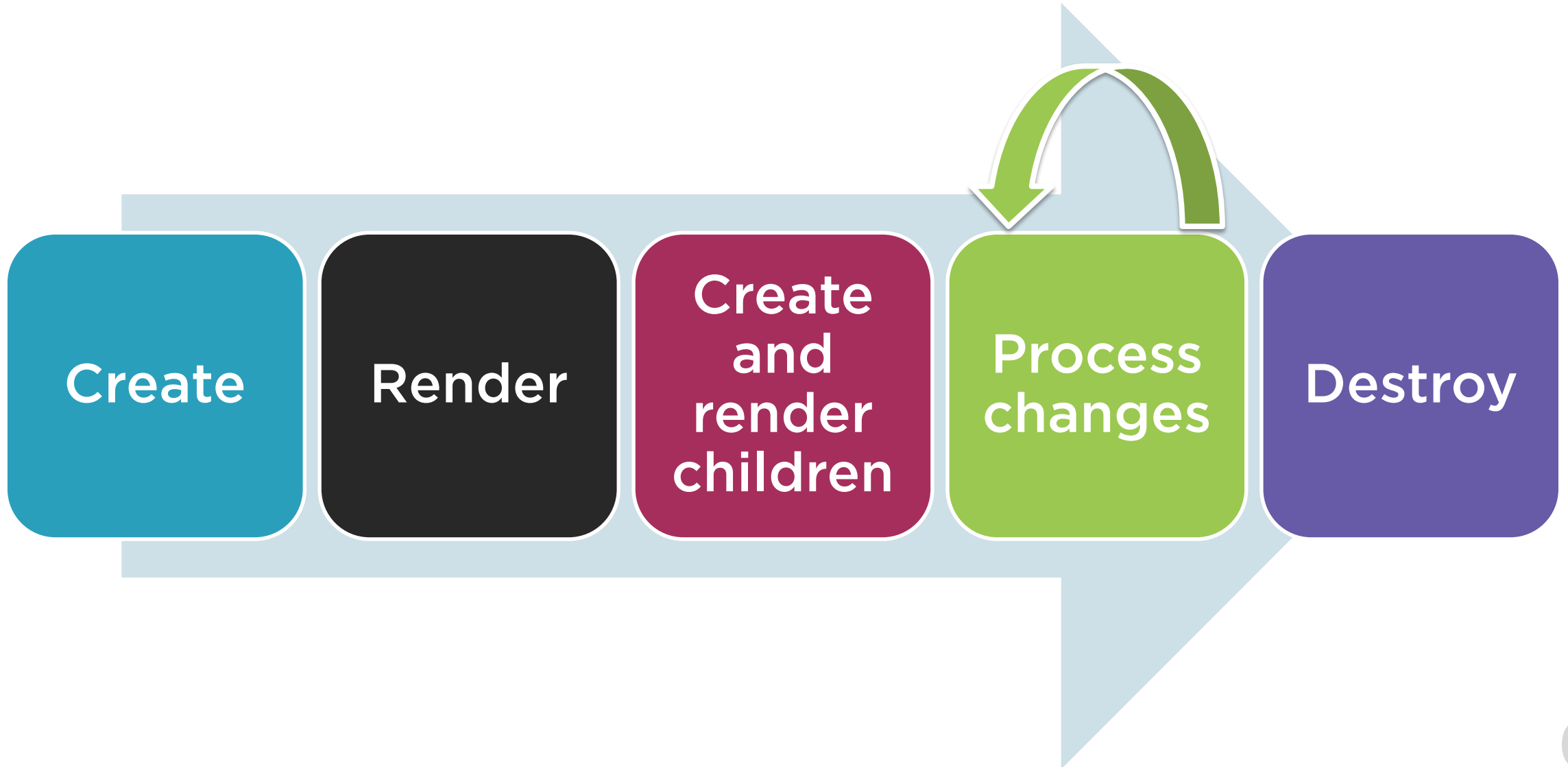
```
@Component({  
  selector: 'pm-products',  
  templateUrl: 'app/products/product-list.component.html',  
  styles: ['thead {color: #337AB7;}']})
```

styleUrls

```
@Component({  
  selector: 'pm-products',  
  templateUrl: 'app/products/product-list.component.html',  
  styleUrls: ['app/products/product-list.component.css']})
```



Component Lifecycle



Component Lifecycle Hooks



OnInit: Perform component initialization, retrieve data

OnChanges: Perform action after change to input properties

OnDestroy: Perform cleanup

Using a Lifecycle Hook

2

1

```
export class ProductListComponent
    implements OnInit {
    pageTitle: string = 'Product List';
    showImage: boolean = false;
    listFilter: string = 'cart';
    products: IProduct[] = [...];
```

3

```
}
```



Transforming Data with Pipes

**Transform
bound
properties
before
display**

Built-in pipes

- date
- number, decimal, percent, currency
- json, slice
- etc

**Custom
pipes**



Building a Custom Pipe

```
import { Pipe, PipeTransform } from 'angular2/core';

@Pipe({
  name: 'productFilter'
})
export class ProductFilterPipe
    implements PipeTransform {

  transform(value: IProduct[],
    args: string[]): IProduct[] {
  }
}
```



Using a Custom Pipe

Template

```
<tr *ngFor = '#product of products | productFilter: listFilter'>
```

Component

```
import { ProductFilterPipe } from './product-filter.pipe';  
@Component({  
  selector: 'pm-products',  
  templateUrl: 'app/products/product-list.component.html',  
  pipes: [ProductFilterPipe]  
})  
export class ProductListComponent { }
```



Checklist: Interfaces



Defines custom types

Creating interfaces:

- **interface** keyword
- export it

Implementing interfaces:

- **implements** keyword & interface name
- Write code for each property & method

Checklist: Encapsulating Styles



`styles` **property**

- Specify an array of style strings

`styleUrls` **property**

- Specify an array of stylesheet paths

Checklist: Using Lifecycle Hooks







Import the lifecycle hook interface

Implement the lifecycle hook interface

Write code for the hook method



Checklist: Building a Custom Pipe



Import Pipe and PipeTransform

Create a class that implements PipeTransform

- `export` the class

Write code for the Transform method

Decorate the class with the Pipe decorator



Checklist: Using a Custom Pipe







Use the Pipe in the template

- Pipe character
- Pipe name
- Pipe arguments (separated with colons)

Import the custom pipe

Add the pipes property to the component's metadata



Summary



Defining an Interface

Encapsulating Component Styles

Using Lifecycle Hooks

Building a Custom Pipe



Application Architecture

