

Data Binding & Pipes



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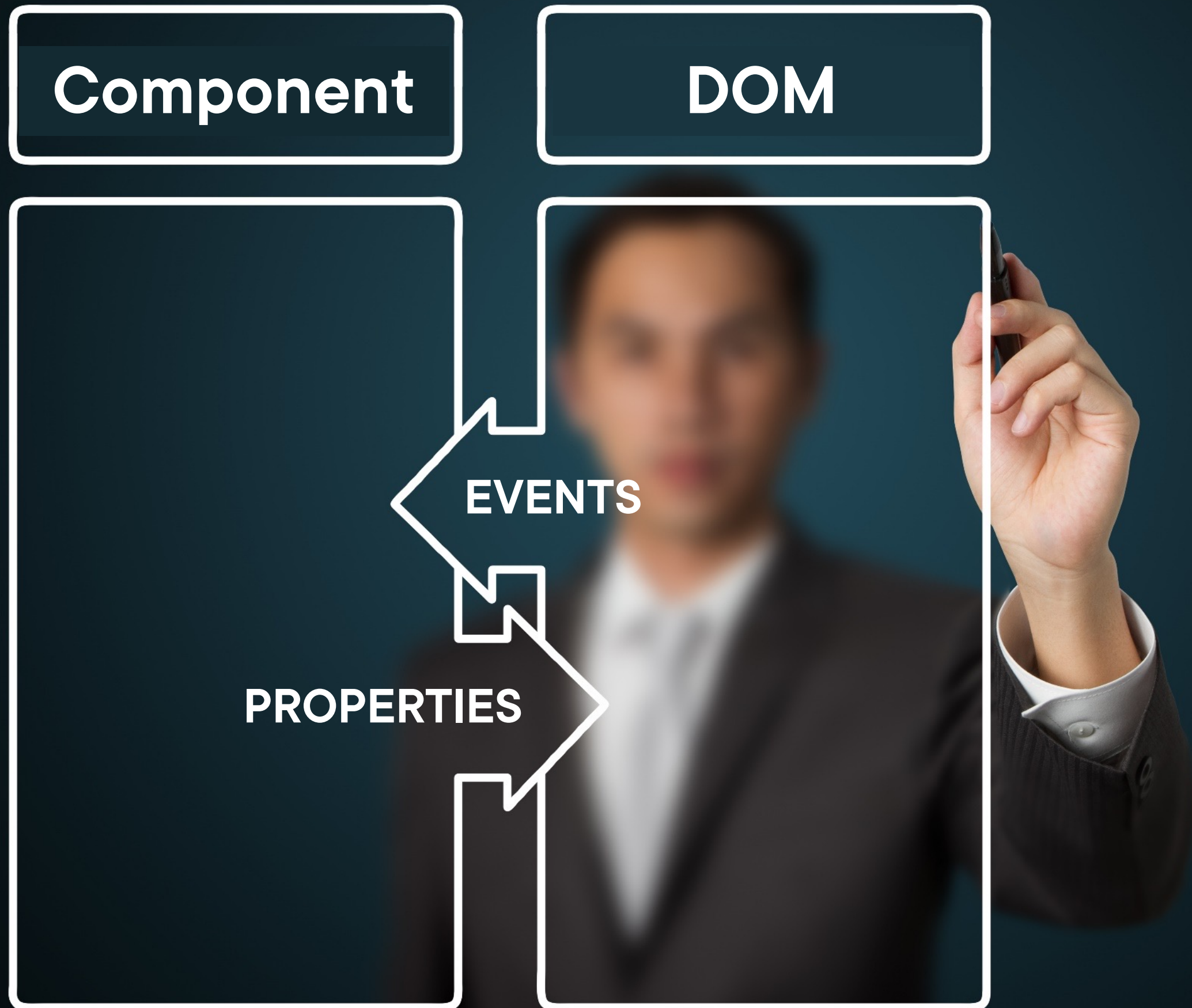
@deborahkurata

Component

DOM

EVENTS

PROPERTIES



Module Overview



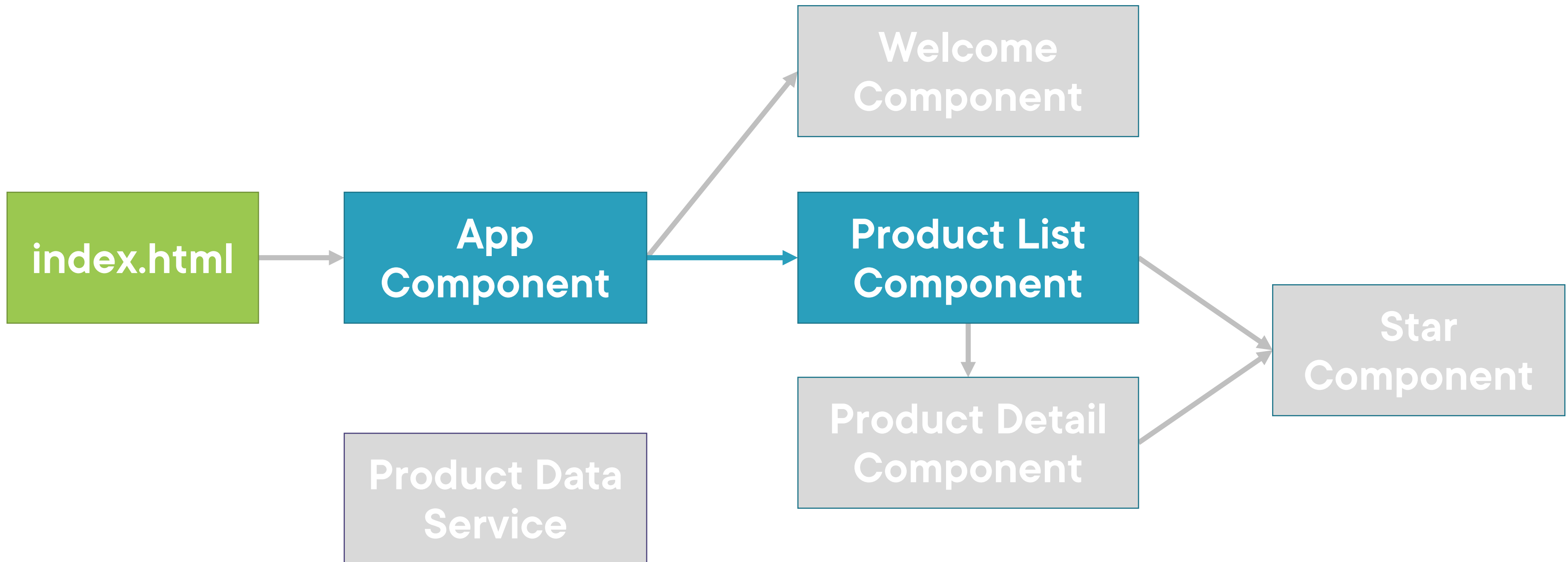
Property binding

Handling events with event binding

Handling input with two-way binding

Transforming data with pipes

Application Architecture



Property Binding

Element Property

Template Expression

```
<img [src]='product.imageUrl'>
```

```
<img src={{product.imageUrl}}>
```

```
<input type='text' [disabled]='isDisabled' />
```

```
<img src='http://myImages.org/{{product.imageUrl}}'>
```

Property Binding

Template

```
<h1>{{pageTitle}}</h1>  
<img [src]='product.imageUrl'>
```

Component

```
export class ListComponent {  
  pageTitle: string = 'Product List';  
  products: any[] = [  
    {  
      productId: 2,  
      productName: "Garden Cart",  
      productCode: "GDN-0023",  
      releaseDate: "March 18, 2021",  
      description: "Rolling garden cart",  
      price: 32.99,  
      starRating: 4.2,  
      imageUrl: "assets/images/cart.png"  
    }, ...  
  ];  
}
```

Event Binding

Template

```
<h1>{{pageTitle}}</h1>  
<img [src]='product.imageUrl'>  
<button (click)='toggleImage()'>
```

Event


Method

Component

```
export class ListComponent {  
  pageTitle: string = 'Product List';  
  products: any[] = [...];  
}
```


Change Detection

Show Image	Product
	Garden Cart

Hide Image	Product
	Garden Cart

```
<button class='btn btn-primary'  
  (click)='toggleImage()'  
  {{showImage ? 'Hide' : 'Show'}} Image  
</button>
```

```
export class ProductListComponent {  
  pageTitle = 'Product List';  
  showImage = false;  
  
  toggleImage(): void {  
    this.showImage = !this.showImage;  
  }  
}
```

```
<img *ngIf='showImage'  
  [src]='product.imageUrl'  
  [title]='product.productName'>
```


Two-way Binding

Template

```
<div class='col-md-2'>Filter by:</div>  
<div class='col-md-4'>  
  <input type='text' />  
</div>
```

Filter by:

Component

```
export class ListComponent {  
  listFilter: string = 'cart';  
}
```

```
10 export class ProductListComponent  
11   "rake" title = 'Product List';  
12  
13   listFilter = 'cart'  
14
```

Two-way Binding

Template

```
<div class='col-md-2'>Filter by:</div>
<div class='col-md-4'>
  <input type='text'
    [(ngModel)]='listFilter' />
</div>
```

Filter by:

Component

```
export class ListComponent {
  listFilter: string = 'cart';
}
```

```
10 export class ProductListComponent
11   "rake" title = 'Product List';
12
13   listFilter = 'cart'
14
```

Two-way Binding

Template

```
<div class='col-md-2'>Filter by:</div>
<div class='col-md-4'>
  <input type='text'
    [(ngModel)]='listFilter' />
</div>
```

Component

```
export class ListComponent {
  listFilter: string = 'cart';
}
```

Two-way Binding

Template

```
<div class='col-md-2'>Filter by:</div>
<div class='col-md-4'>
  <input type='text'
    [(ngModel)]='listFilter' />
</div>
```

Component

```
export class ListComponent {
  listFilter: string = 'cart';
}
```

Two-way Binding

Template

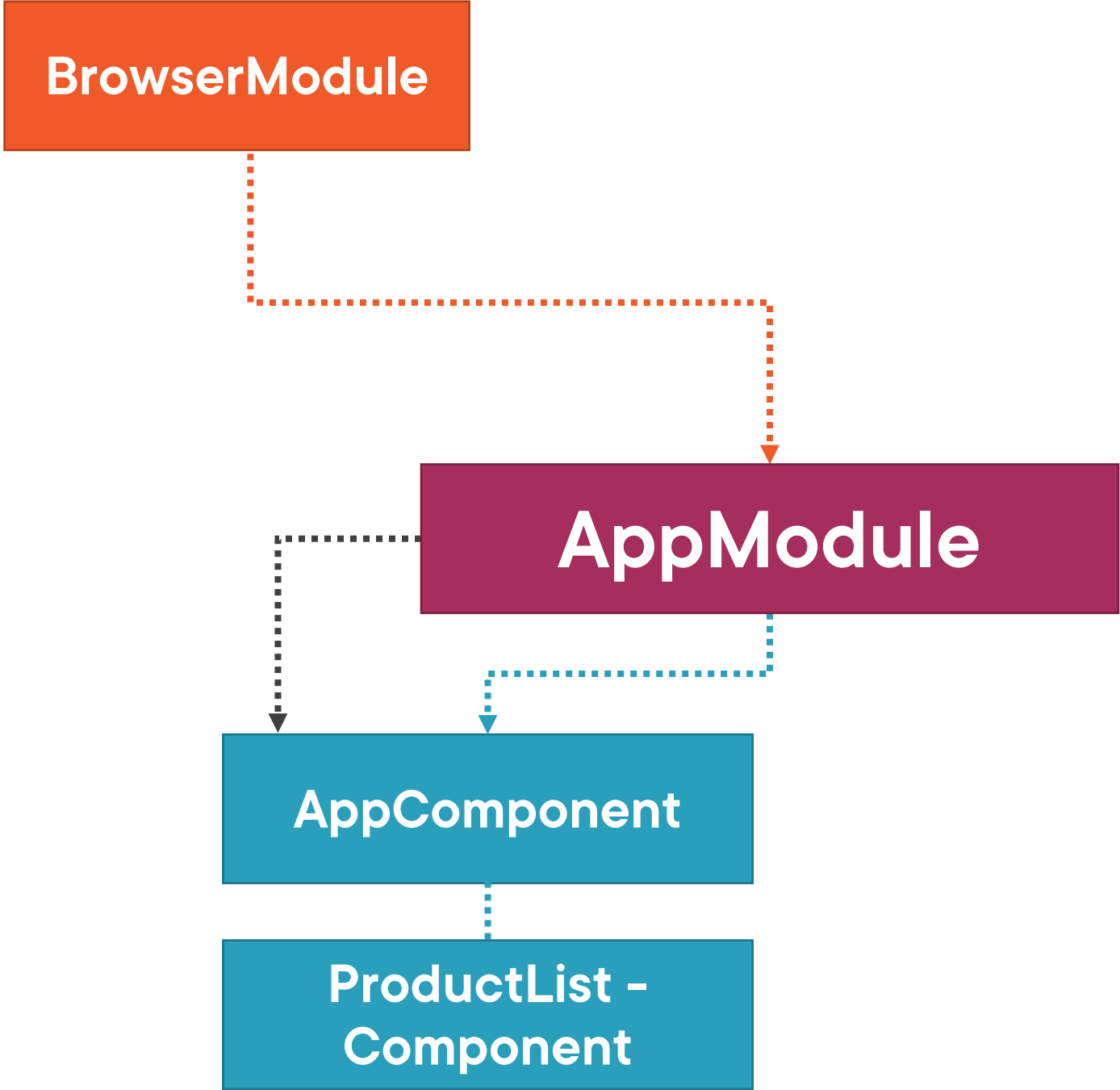
```
<div class='col-md-2'>Filter by:</div>  
<div class='col-md-4'>  
  <input type='text'  
    [(ngModel)]='listFilter' />  
</div>
```

[()]

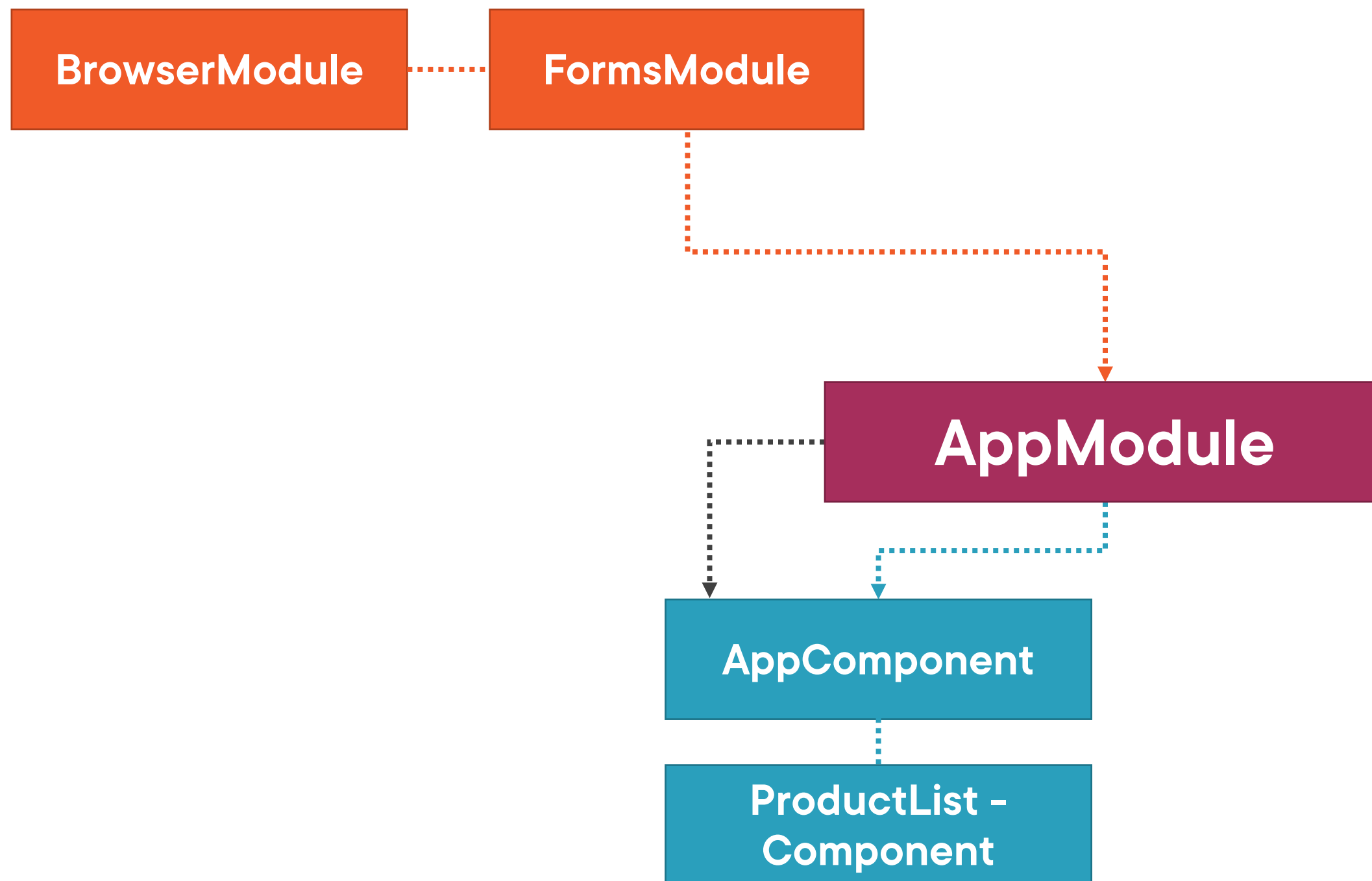
Banana in a Box

Component

```
export class ListComponent {  
  listFilter: string = 'cart';  
}
```



- Imports
- Exports
- Declarations
- Bootstrap



- Imports
- Exports
- Declarations
- Bootstrap

Displaying Data with Binding

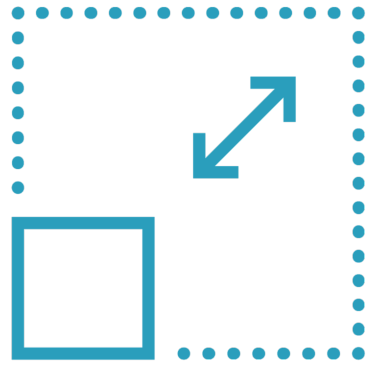
Template

```
<tbody>
  <tr *ngFor='let product of products'>
    <td>
      <img *ngIf='showImage'
        [src]='product.imageUrl'
        [title]='product.productName'
        [style.width.px]='imageWidth'
        [style.margin.px]='imageMargin'>
    </td>
    <td>{{ product.productName }}</td>
    <td>{{ product.productCode }}</td>
    <td>{{ product.releaseDate }}</td>
    <td>{{ product.price }}</td>
    <td>{{ product.starRating }}</td>
  </tr>
</tbody>
```

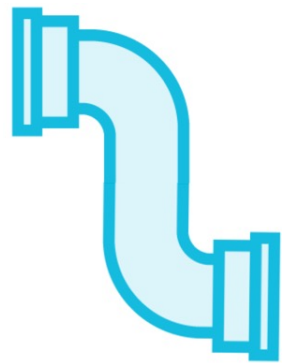
Component

```
export class ListComponent {
  pageTitle: string = 'Product List';
  imageWidth: number = 50;
  imageMargin: number = 2;
  showImage: boolean = false;
  products: any[] = [
    {
      productId: 2,
      productName: "Garden Cart",
      productCode: "GDN-0023",
      releaseDate: "March 18, 2021",
      description: "Rolling garden cart",
      price: 32.99,
      starRating: 4.2,
      imageUrl: "assets/images/cart.png"
    }, ...
  ];
}
```

Transforming Data with Pipes



Transform bound properties before display



Built-in pipes: date, number, decimal, percent, currency, json, etc.



Custom pipes

Pipe Examples

```
{{ product.productCode | lowercase }}
```

```
<img [src]='product.imageUrl'  
      [title]='product.productName | uppercase'>
```

```
{{ product.price | currency | lowercase }}
```

```
{{ product.price | currency:'USD' : 'symbol' : '1.2-2' }}
```

Data Binding

Template

```
<div class='card-header'>
  {{pageTitle}}
</div>
```

```
<img *ngIf='showImage'
      src={{product.imageUrl}}
      [title]='product.productName'
      [style.width.px]='imageWidth'
      [style.margin.px]='imageMargin'>
```

```
<button class='btn btn-primary'
         (click)='toggleImage()'>
  {{showImage ? 'Hide' : 'Show'}} Image
</button>
```

```
<div class='col-md-2'>Filter by:</div>
<div class='col-md-4'>
  <input type='text'
        [(ngModel)]='listFilter' />
</div>
```

Component

```
@Component({
  selector: 'pm-products',
  templateUrl: './product-list.component.html'
})
export class ProductListComponent {
  pageTitle: string = 'Product List';
  imageWidth = 50;
  imageMargin = 2;
  showImage = false;

  listFilter: string = 'cart';
  products: any[] = [...];

  toggleImage(): void {...}
}
```

Data Binding

DOM

Interpolation: `{{pageTitle}}`

Property Binding: ``

Event Binding: `<button (click)='toggleImage()'>`

Two-Way Binding: `<input [(ngModel)]='listFilter' />`

Component

Data Binding Checklist: ngModel



product-list.component.html

```
<div class='col-md-4'>
  <input type='text'
    [(ngModel)]='listFilter' />
</div>
```

app.module.ts

```
@NgModule( {
  imports: [
    BrowserModule,
    FormsModule ],
  declarations: [
    AppComponent,
    ProductListComponent ],
  bootstrap: [ AppComponent ]
})
export class AppModule { }
```

Data Binding Checklist:

Pipes



Pipe character |

Pipe name

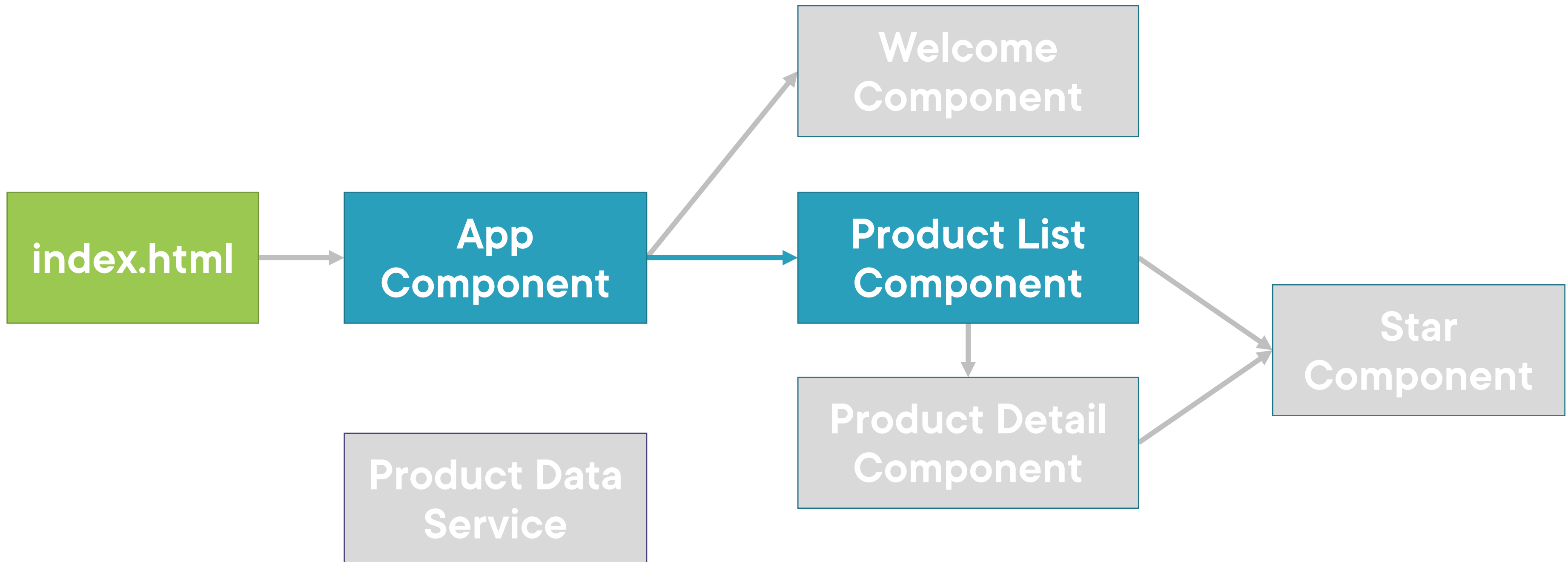
Pipe parameters

– Separated with colons

Example

```
{{ product.price | currency:'USD' : 'symbol' : '1.2-2' }}
```


Application Architecture





Coming up next ...

More on Components