Services and Dependency Injection

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Products
Logging

Service

A class with a focused purpose.

Used for features that:

- Are independent from any particular component
- Provide shared data or logic across components
- Encapsulate external interactions

Module Overview

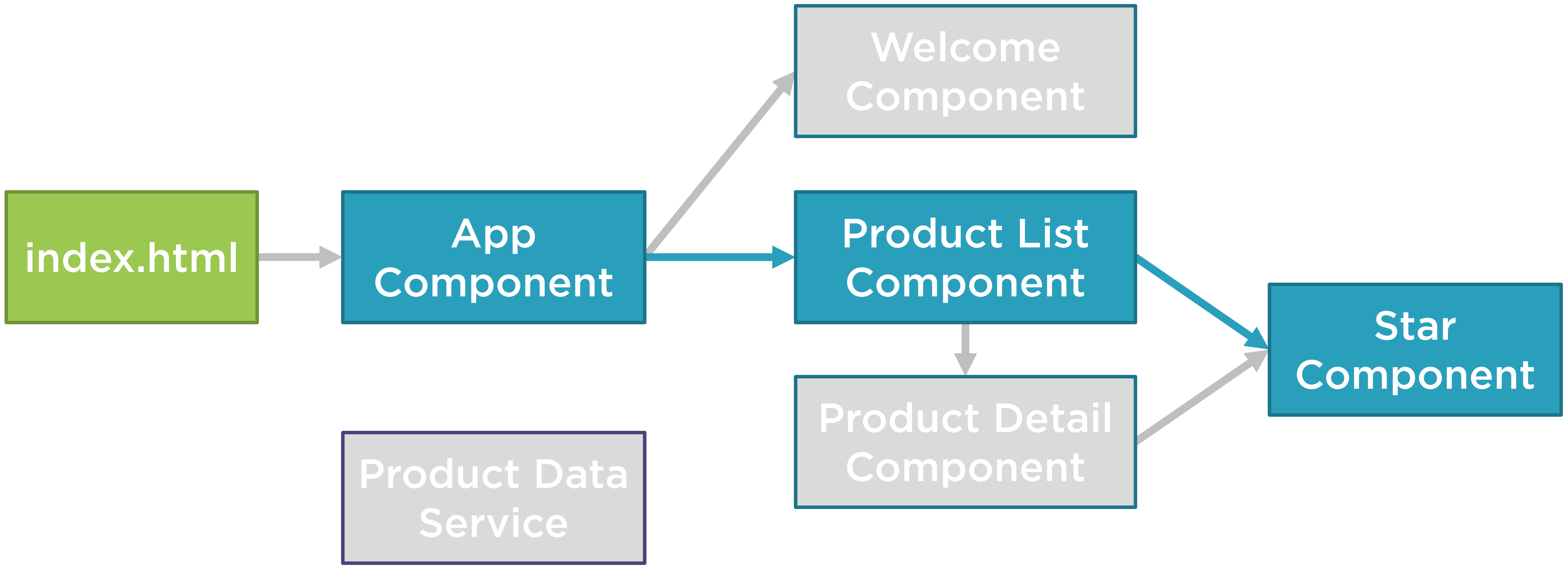
How Does It Work?

Building a Service

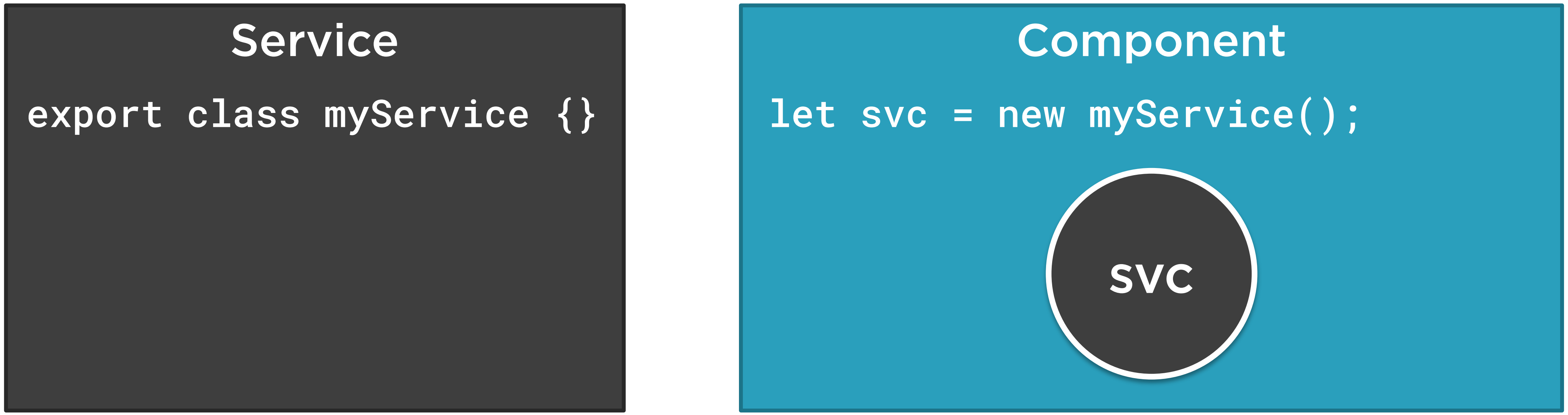
Registering the Service

Injecting the Service

Application Architecture



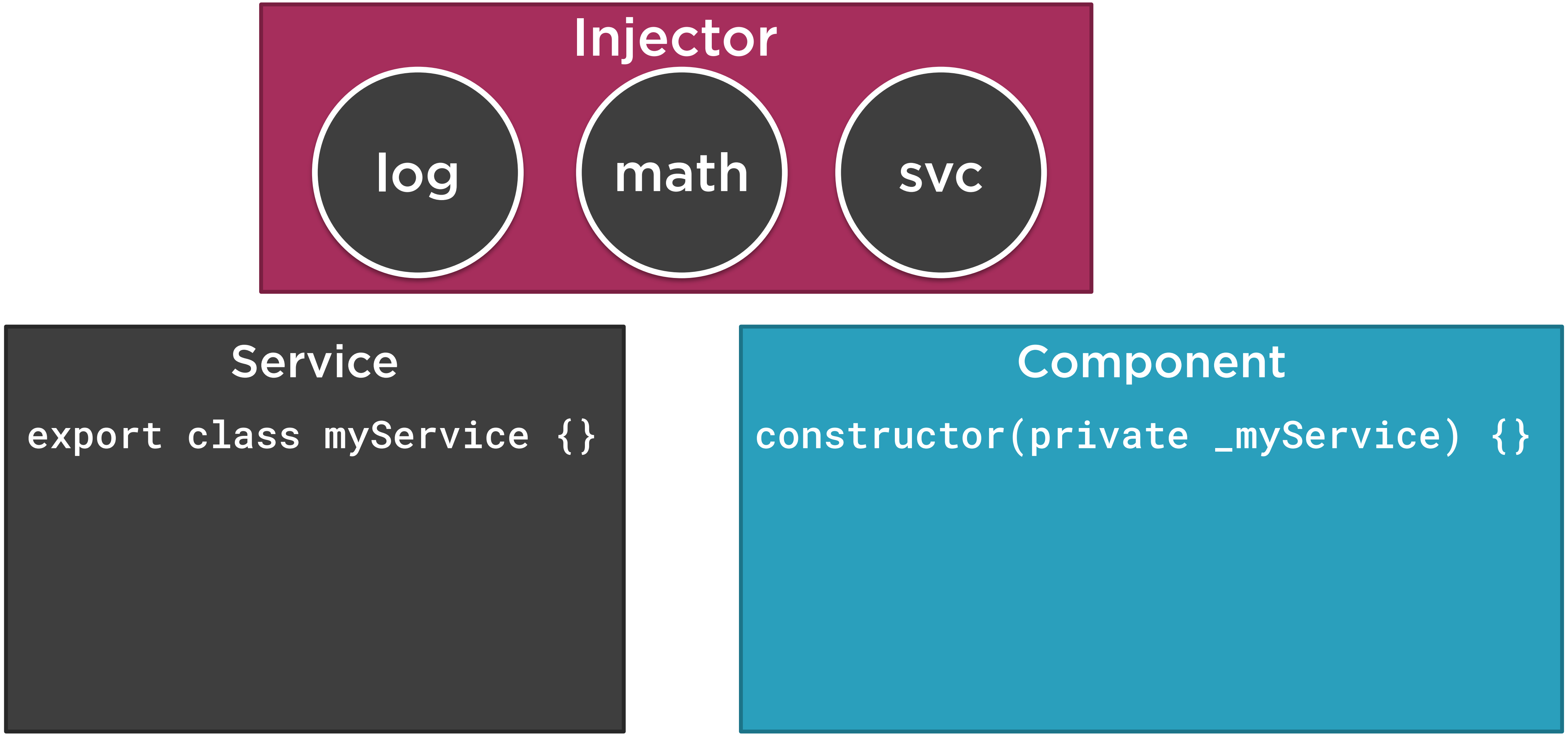
How Does It Work?



```
export class myService {}
```

```
let svc = new myService();
```

How Does It Work?



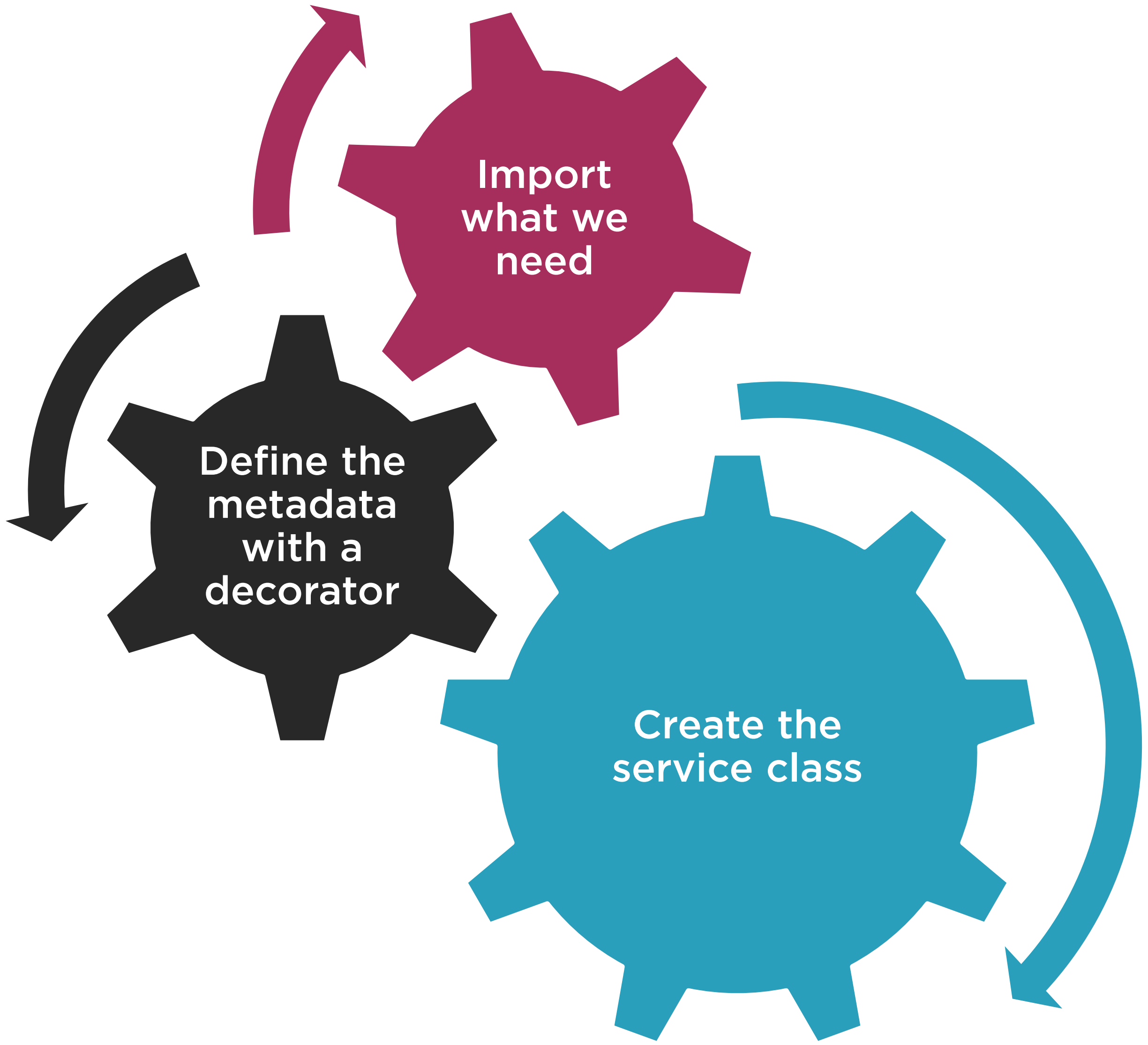
```
export class myService {}
```

```
constructor(private _myService) {}
```

Dependency Injection

A coding pattern in which a class receives the instances of objects it needs (called dependencies) from an external source rather than creating them itself.

Building a Service

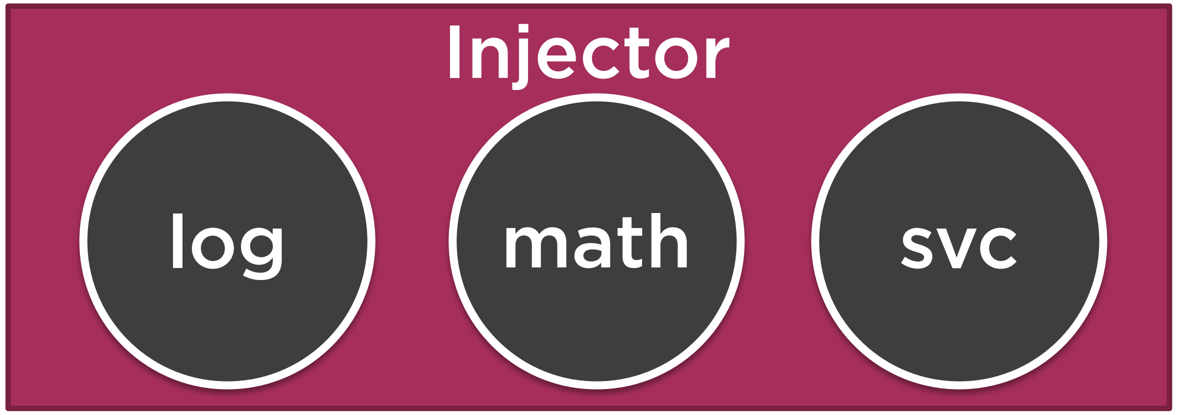


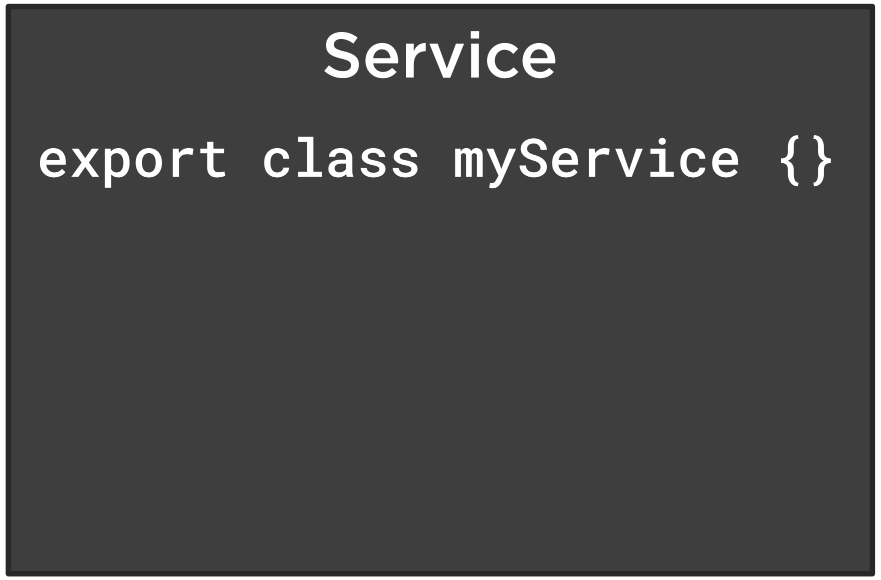
Building a Service

product.service.ts

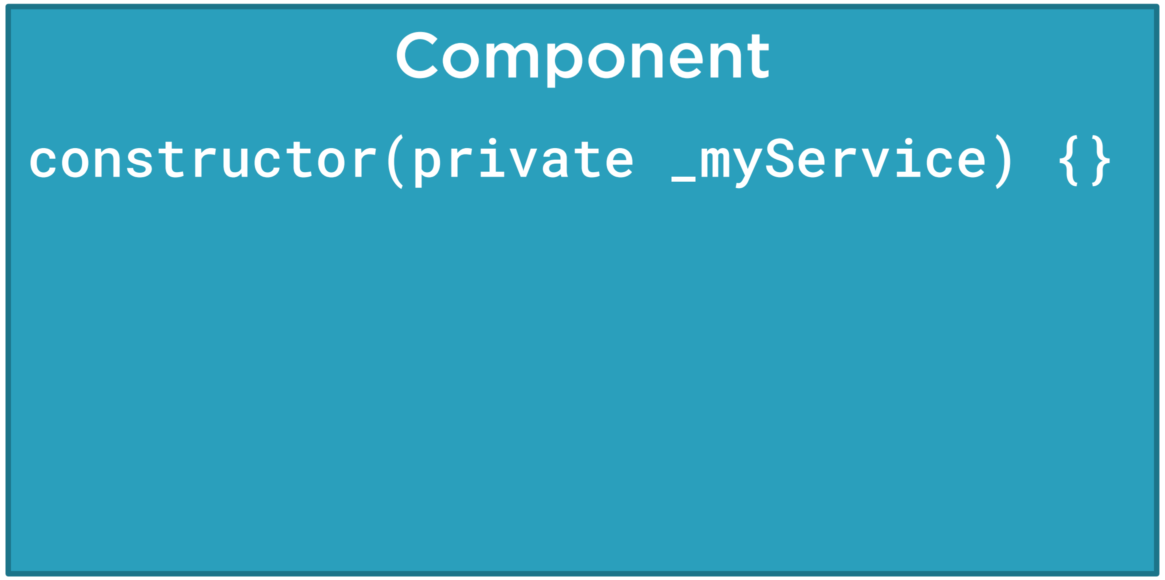
```
import { Injectable } from '@angular/core'

@Injectable()
export class ProductService {

  getProducts(): IProduct[] {
  }

}
```

Registering the Service



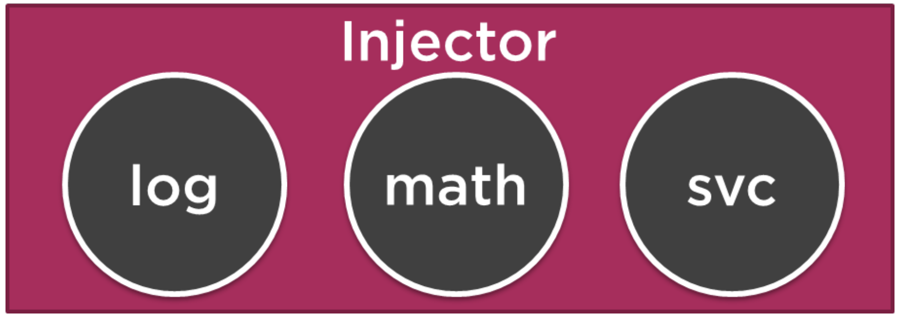

Service

```
export class myService {}
```


Component

```
constructor(private _myService) {}
```

Registering a Service



Register a provider

- Code that can create or return a service
- Typically the service class itself

Define in component OR Angular module metadata

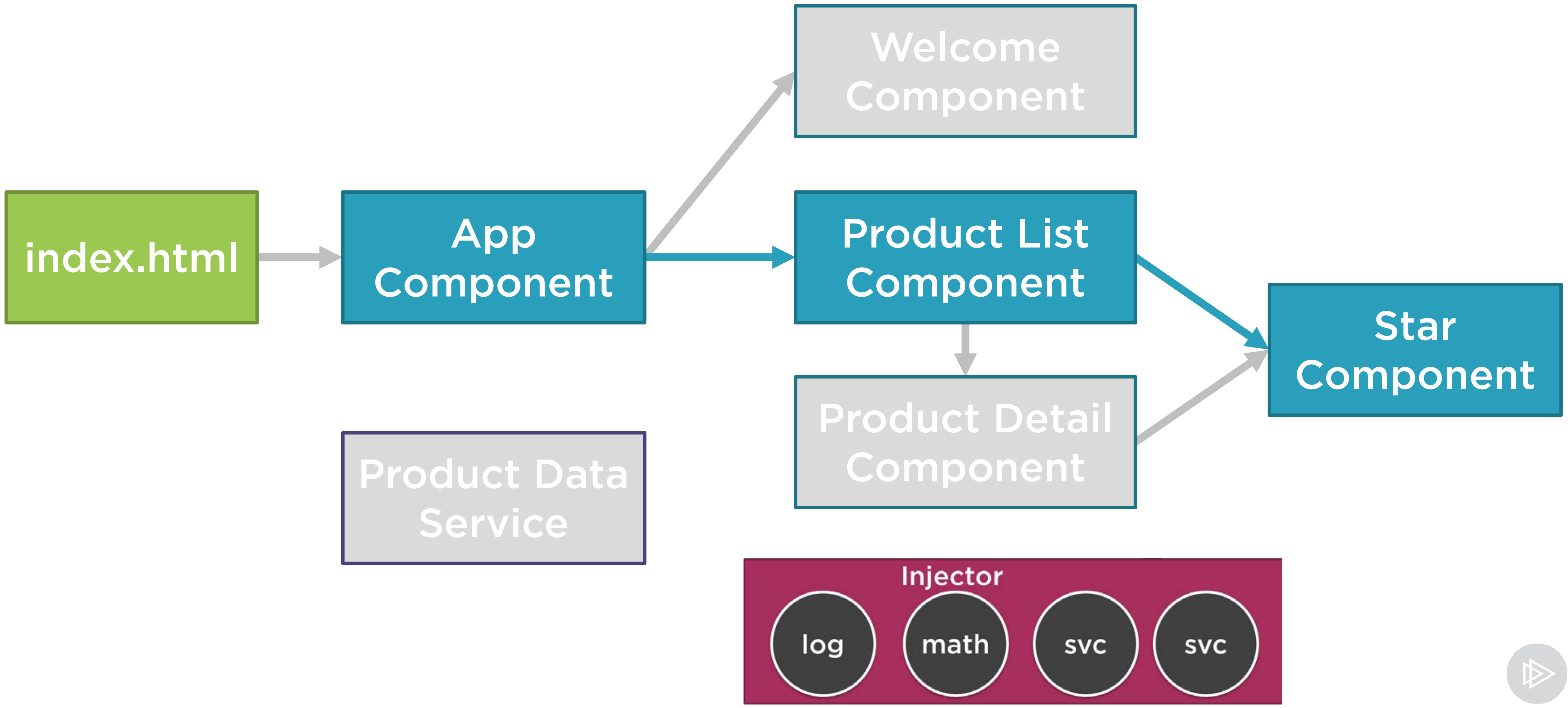
Registered in component:

- Injectable to component AND its children

Registered in Angular module:

- Injectable everywhere in the application

Application Architecture

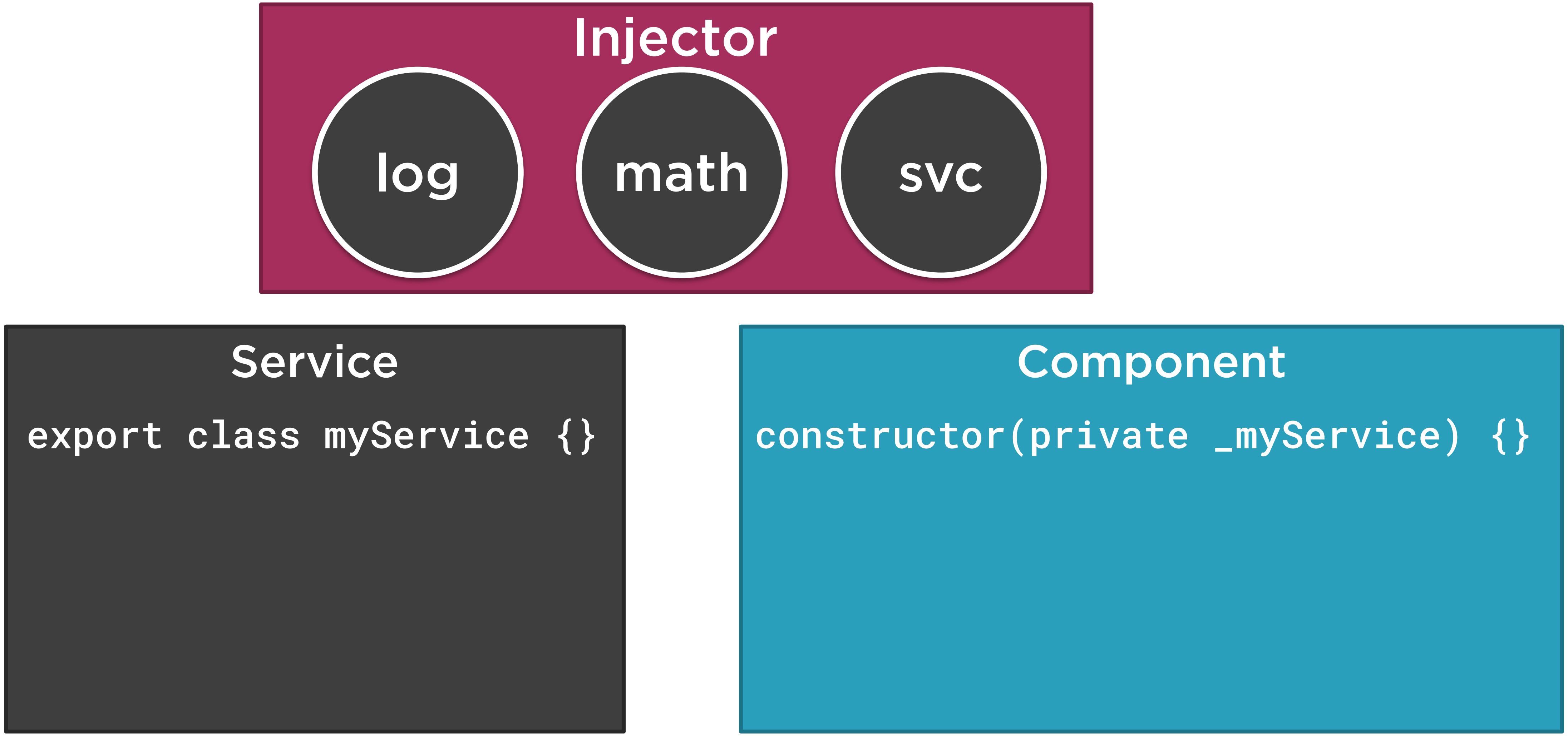


Registering a Provider

app.component.ts

```
...
import { ProductService } from './products/product.service';

@Component({
  selector: 'pm-app',
  template: `
    <div><h1>{{pageTitle}}</h1>
      <pm-products></pm-products>
    </div>
    `,
  providers: [ProductService]
})
export class AppComponent { }
```

Injecting the Service



```
export class myService {}
```

```
constructor(private _myService) {}
```

Injecting the Service

product-list.component.ts

```
...


@Component({
  selector: 'pm-products',
  templateUrl: 'product-list.component.html'
})
export class ProductListComponent {

 constructor() {
 }

}
```

Injecting the Service

product-list.component.ts

```
...
import { ProductService } from './products/product.service';

@Component({
  selector: 'pm-products',
  templateUrl: 'product-list.component.html'
})
export class ProductListComponent {
 private _productService;
 constructor(productService: ProductService) {
   _productService = productService;
 }

}
```

Injecting the Service

product-list.component.ts

```
...
import { ProductService } from './products/product.service';

@Component({
  selector: 'pm-products',
  templateUrl: 'product-list.component.html'
})
export class ProductListComponent {

 constructor(private _productService: ProductService) {
 }

}
```

Checklist: Creating a Service

Service class

- Clear name
- Use PascalCasing
- Append "Service" to the name
- `export` keyword

Service decorator

- Use Injectable
- Prefix with @; Suffix with ()

Import what we need

Checklist: Registering a Service in a Component

Select the appropriate level in the hierarchy

- Root component if service is used throughout the application
- Specific component if only that component uses the service
- Otherwise, common ancestor

Component metadata

- Set the providers property
- Pass in an array

Import what we need

Checklist: Dependency Injection

Specify the service as a dependency

Use a constructor parameter

Service is injected when component is instantiated

Summary

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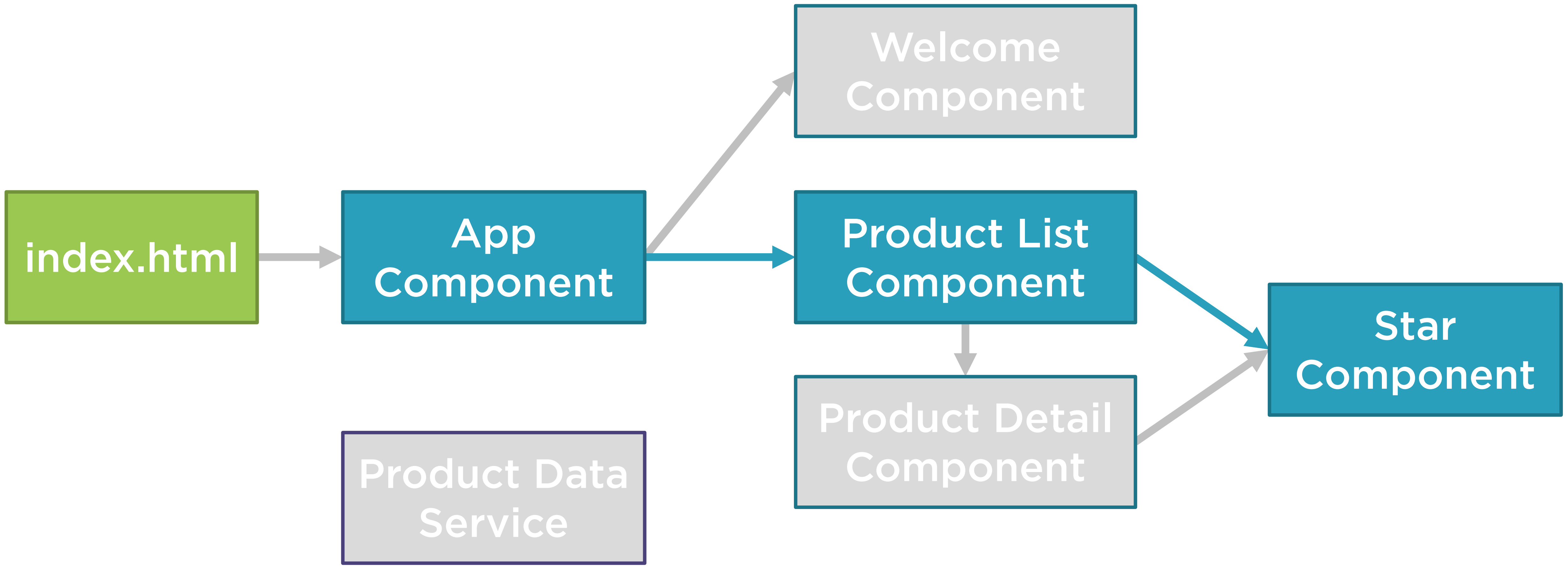
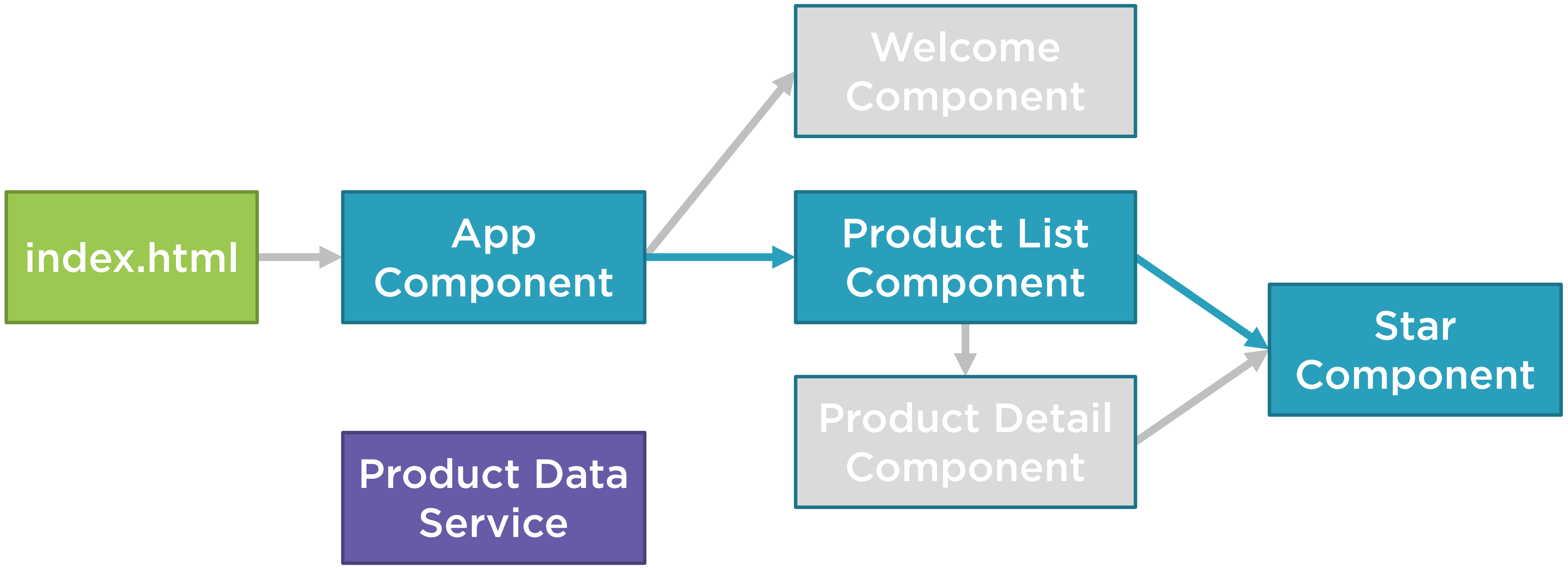


Application Architecture


index.html
App Component
Welcome Component
Product List Component
Product Detail Component
Star Component
Product Data Service