

# Navigation and Routing Basics

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# Module Overview



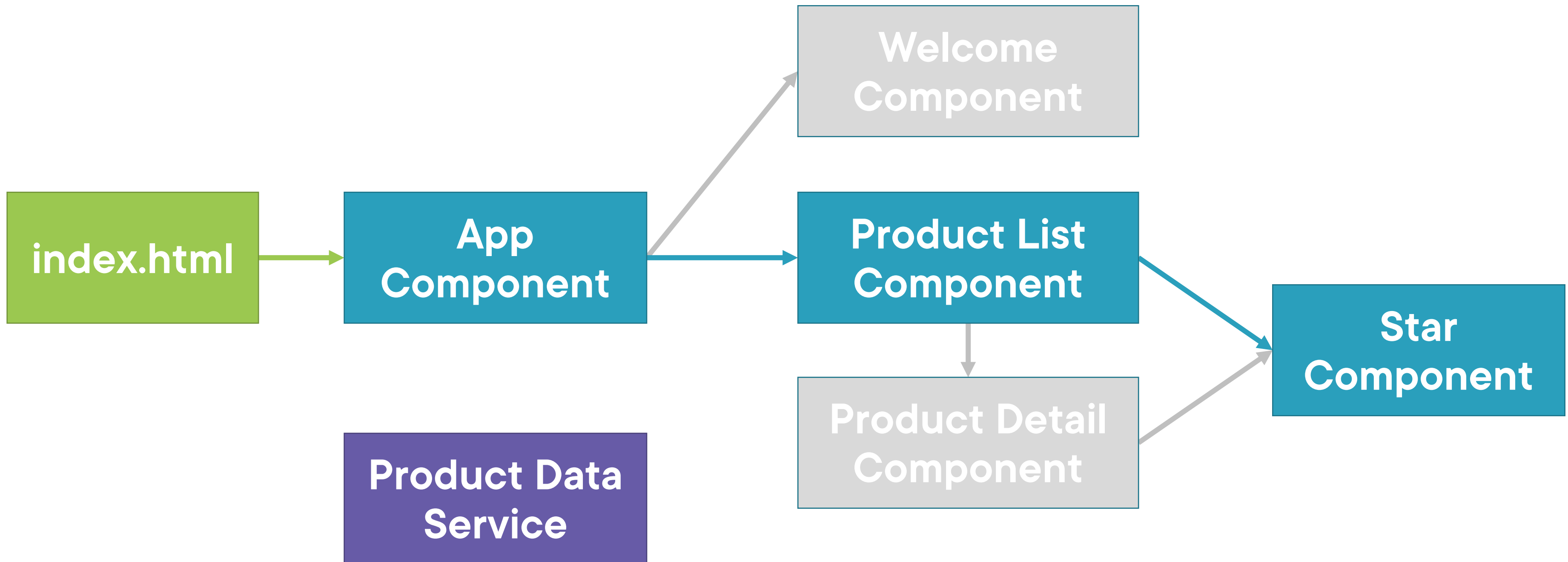
**How does routing work?**

**Configuring routes**

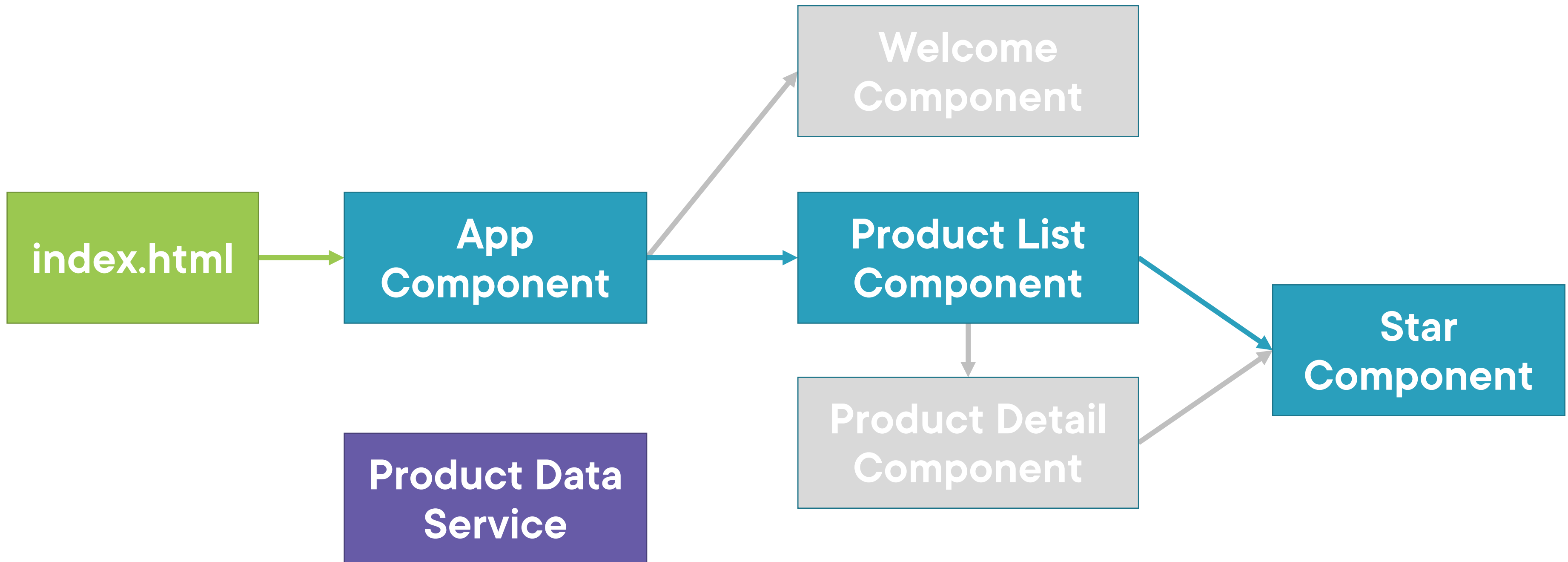
**Tying routes to actions**

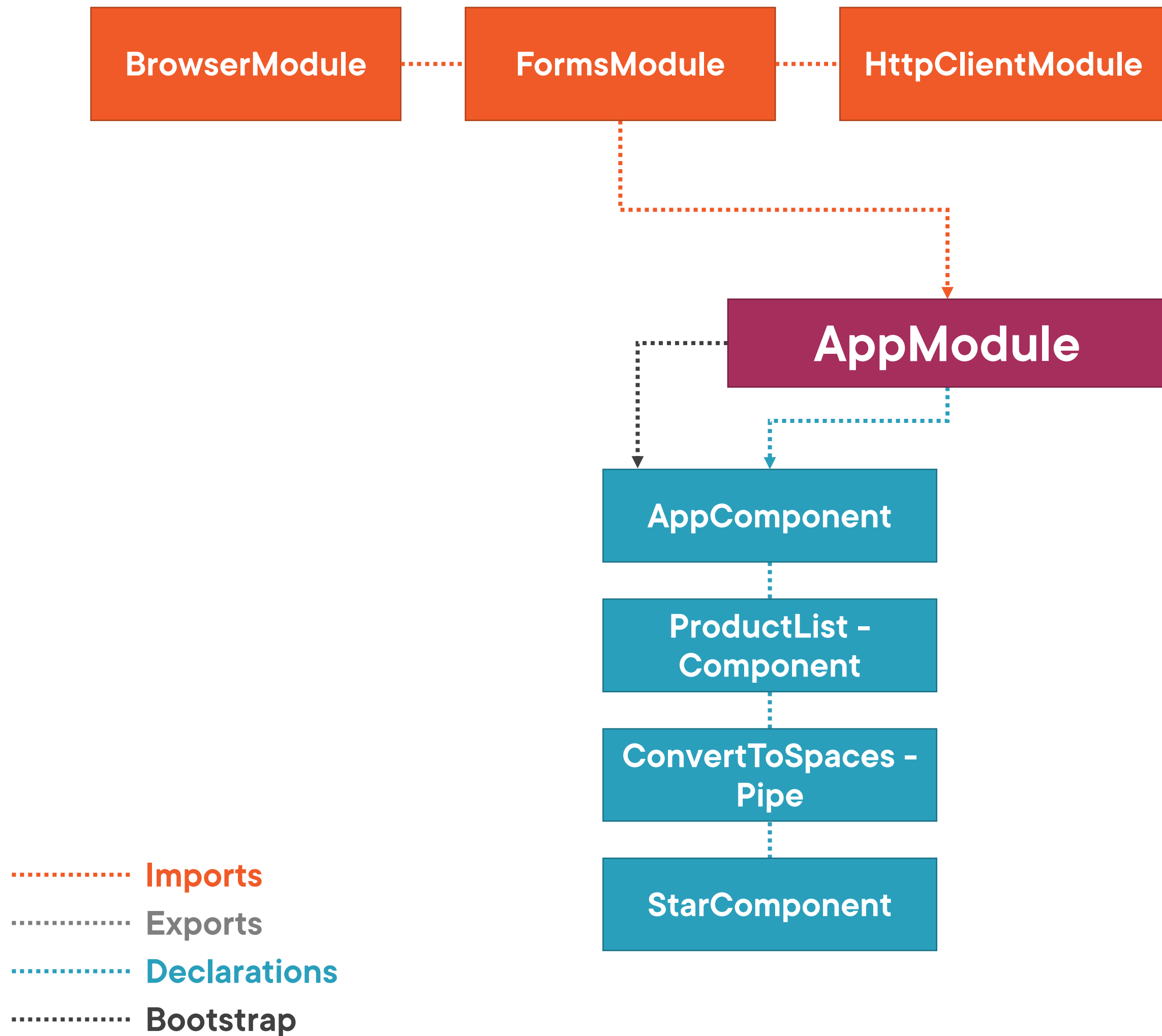
**Placing the views**

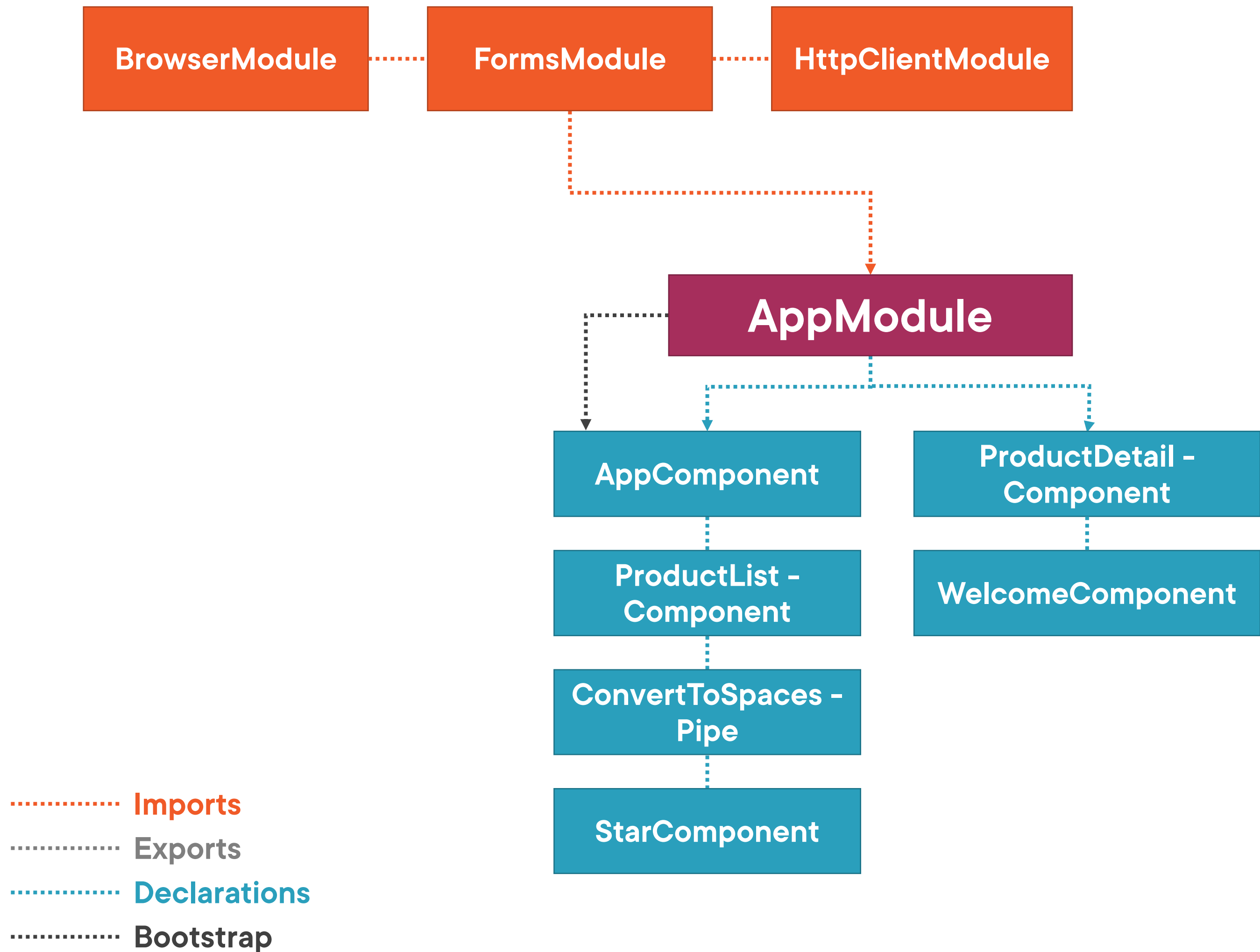
# Application Architecture



# Application Architecture







# How Routing Works

```
▼<pm-root ng-version="14.0.3">
  ▶<nav class="navbar navbar-expand navbar-light bg-light">...</nav>
  <router-outlet></router-outlet>
  ▼<ng-component _ngghost-jvs-c47>
    ▼<div _ngcontent-jvs-c47 class="card">
      <div _ngcontent-jvs-c47 class="card-header"> Product List </div>
      ▼<div _ngcontent-jvs-c47 class="card-body">
        ▶<div _ngcontent-jvs-c47 class="row">...</div>
        ▶<div _ngcontent-jvs-c47 class="row">...</div>
        ▶<div _ngcontent-jvs-c47 class="table-responsive">...</div>
      </div>
    </div>
  </ng-component>
  <!--container-->
</pm-root>
```

**Configure a route for each component**

**Define options/actions**

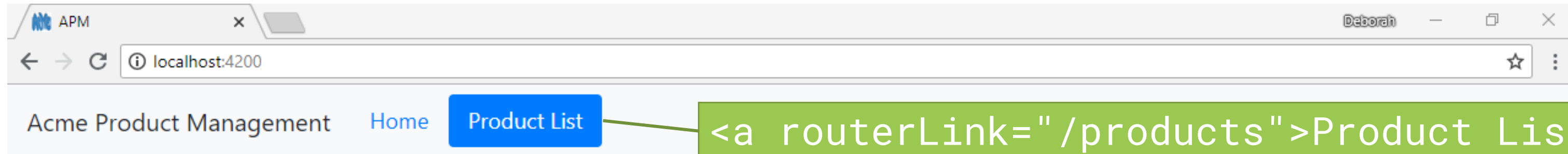
**Tie a route to each option/action**

**Activate the route based on user action**

**Activating a route displays the component's view**



# How Routing Works



```
{ path: 'products', component: ProductListComponent }
```

## product-list.component.ts

```
import { Component } from '@angular/core';

@Component({
  templateUrl: './product-list.component.html'
})
export class ProductListComponent { }
```

```
<router-outlet></router-outlet>
```





'products', ProductListComponent

'products/:id', ProductDetailComponent

'welcome', WelcomeComponent



# Configuring Routes

**app.module.ts**

```
...
import { RouterModule } from '@angular/router';

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

# Configuring Routes

**app.module.ts**

```
...
import { RouterModule } from '@angular/router';

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



# Configuring Routes

```
[
  { path: 'products', component: ProductListComponent },
  { path: 'products/:id', component: ProductDetailComponent },
  { path: 'welcome', component: WelcomeComponent },
  { path: '', redirectTo: 'welcome', pathMatch: 'full' },
  { path: '**', component: PageNotFoundComponent }
]
```

# Demo



## Configuring routes



# Navigating the Application Routes

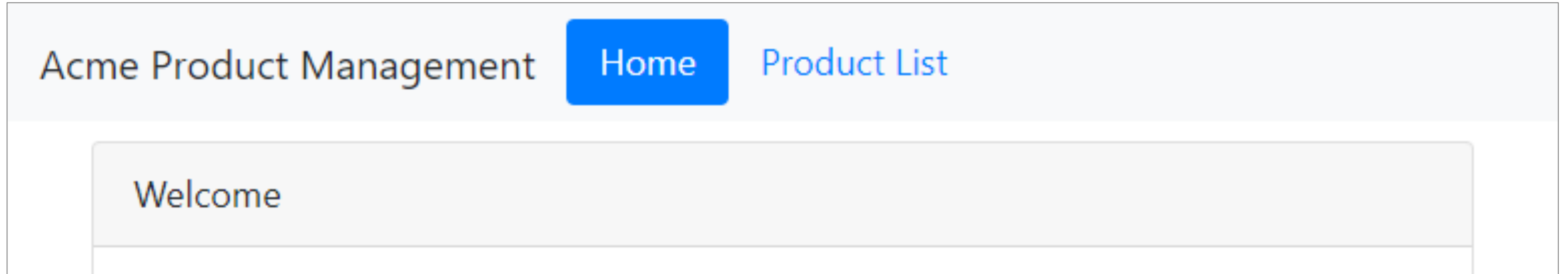


**Menu option, link, image or button that activates a route**

**Typing the Url in the address bar / bookmark**

**The browser's forward or back buttons**

# Tying Routes to Actions





# Tying Routes to Actions

app.component.ts

```
@Component({  
  selector: 'pm-root',  
  template: `  
    <ul class='nav navbar-nav'>  
      <li><a>Home</a></li>  
      <li><a>Product List</a></li>  
    </ul>  
  `,  
})
```

# Tying Routes to Actions

app.component.ts

```
@Component({  
  selector: 'pm-root',  
  template: `  
    <ul class='nav navbar-nav'>  
      <li><a [routerLink]="['/welcome']">Home</a></li>  
      <li><a [routerLink]="['/products']">Product List</a></li>  
    </ul>  
  `,  
})
```

```
<li><a routerLink="/welcome">Home</a></li>  
<li><a routerLink="/products">Product List</a></li>
```

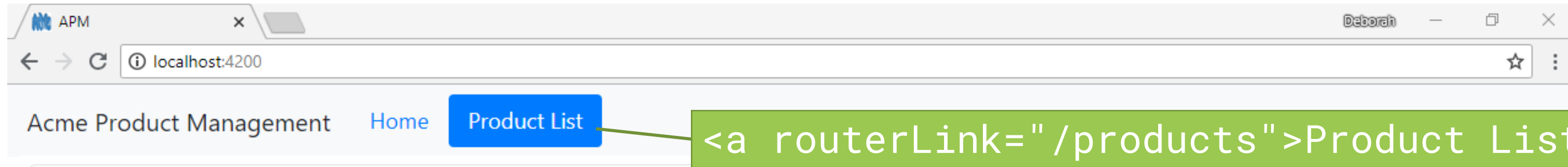
# Placing the Views

app.component.ts

```
@Component({  
  selector: 'pm-root',  
  template: `  
    <ul class='nav navbar-nav'>  
      <li><a [routerLink]="['/welcome']">Home</a></li>  
      <li><a [routerLink]="['/products']">Product List</a></li>  
    </ul>  
    <router-outlet></router-outlet>  
  `,  
})
```



# How Routing Works



```
{ path: 'products', component: ProductListComponent }
```

```
<router-outlet></router-outlet>
```

## product-list.component.ts

```
import { Component } from '@angular/core';

@Component({
  templateUrl: './product-list.component.html'
})
export class ProductListComponent { }
```

# Routing Checklist: Displaying Components



## Nest-able components

- Define a selector

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

- Nest in another component

```
<div><h1>{{pageTitle}}</h1>  
  <pm-products></pm-products>  
</div>
```

- No route

## Routed components

- No selector or nesting

- Configure routes

```
[  
  { path: 'products', component: ProductListComponent }  
]
```

- Tie routes to actions

# Routing Checklist: Doing Routing



**Configure routes**

**Tie routes to actions**

**Place the view**



# Routing Checklist:

## Configuring Routes



### Define the base element

```
<head>  
  ...  
  <base href="/" />  
</head>
```

### Add RouterModule

```
@NgModule( {  
  imports: [ ...,  
    RouterModule.forRoot([ ])  
  ],  
  declarations: [...],  
  bootstrap: [ AppComponent ]  
})  
export class AppModule { }
```

# Routing Checklist: Configuring Routes



Add each route to forRoot array

- Order matters

path: Url segment for the route

- No leading slash
- "" for default route
- '\*\*' for wildcard route

component

- Not string name; not enclosed in quotes

```
RouterModule.forRoot([
  { path: 'products', component: ProductListComponent }, ...
  { path: '', redirectTo: 'welcome', pathMatch: 'full' },
  { path: '**', redirectTo: 'welcome', pathMatch: 'full' }
])
```

## Routing Checklist:

### Tying Routes to Actions



#### Add the RouterLink directive as an attribute

- Clickable element
- Enclose in square brackets

#### Bind to a link parameters array

- First element is the path
- All other elements are route parameters

```
<ul>
  <li><a [routerLink]="[' /welcome' ]">Home</a></li>
  <li><a [routerLink]="[' /products' ]">Product List</a><
/ul>
```



# Routing Checklist:

## Placing the View

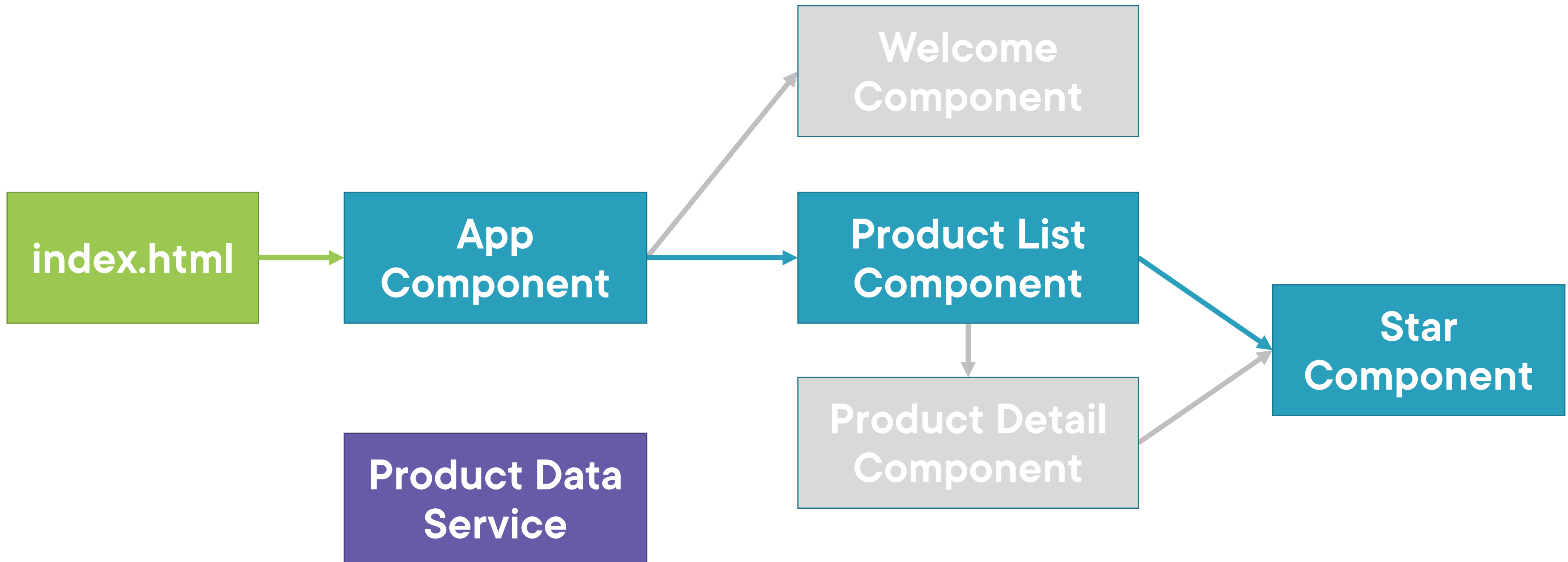


### Add the RouterOutlet directive

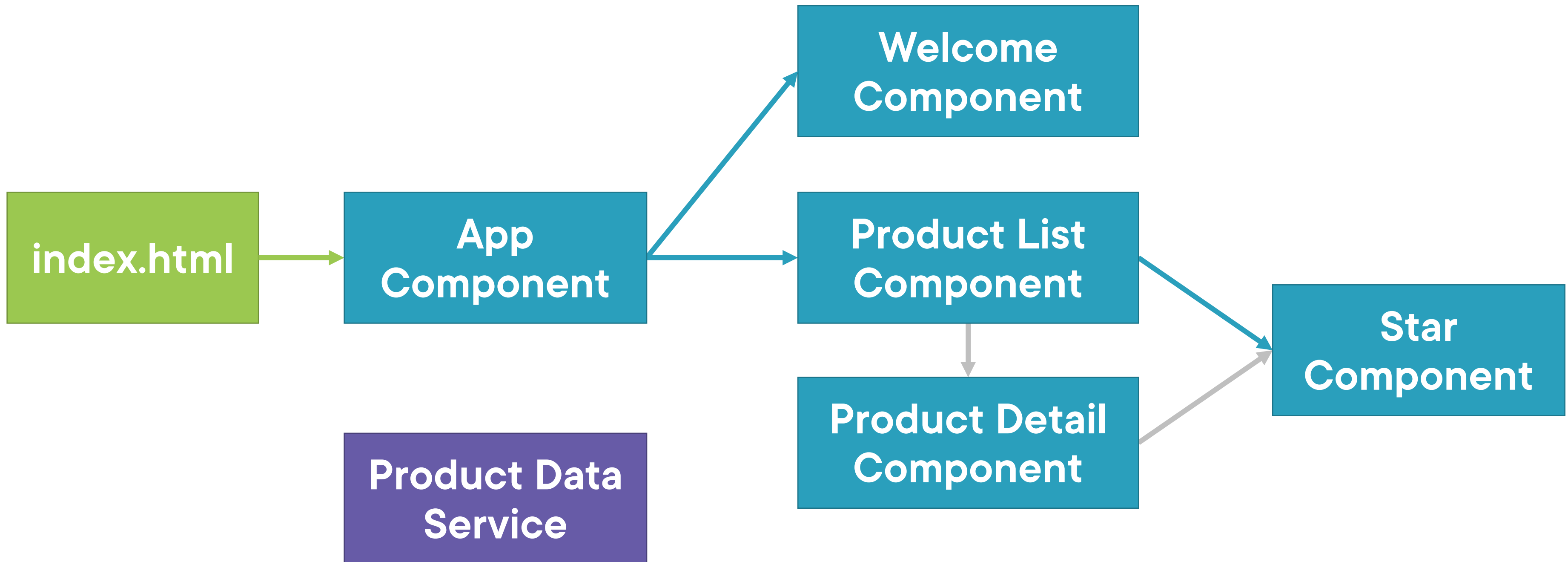
- Identifies where to display the routed component's view
- Specified in the host component's template

```
<ul>
  <li><a [routerLink]="[' /welcome' ]">Home</a></li>
  <li><a [routerLink]="[' /products' ]">Product List</a><
/ul>
</ul>
<router-outlet></router-outlet>
```

# Application Architecture



# Application Architecture







Coming up next ...

## Navigation and Routing Additional Techniques