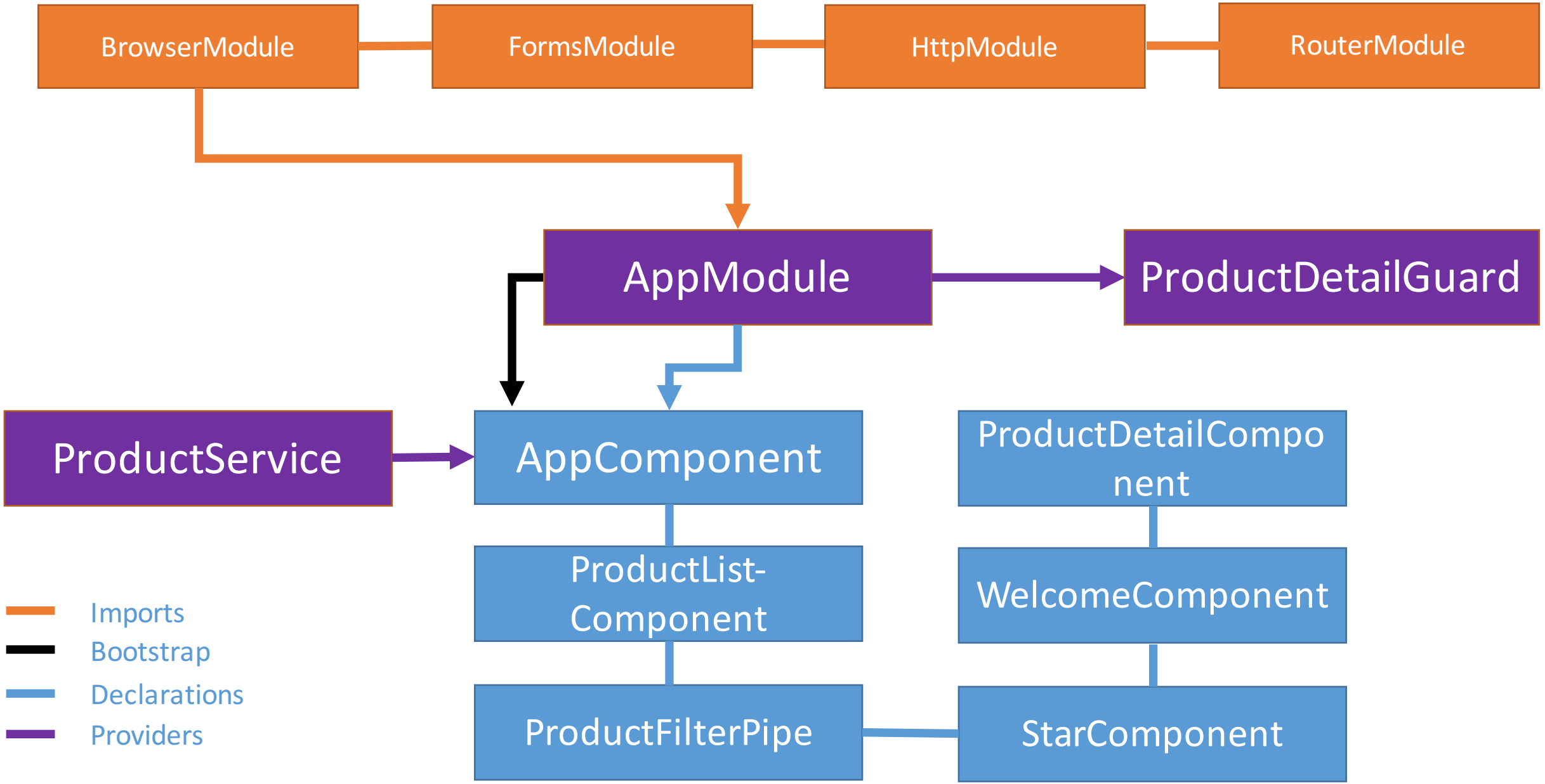
Angular 2

Angular Modules


BrowserModule
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RouterModule
AppModule
ProductDetailGuard
ProductService
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ProductList-
Component
WelcomeComponent
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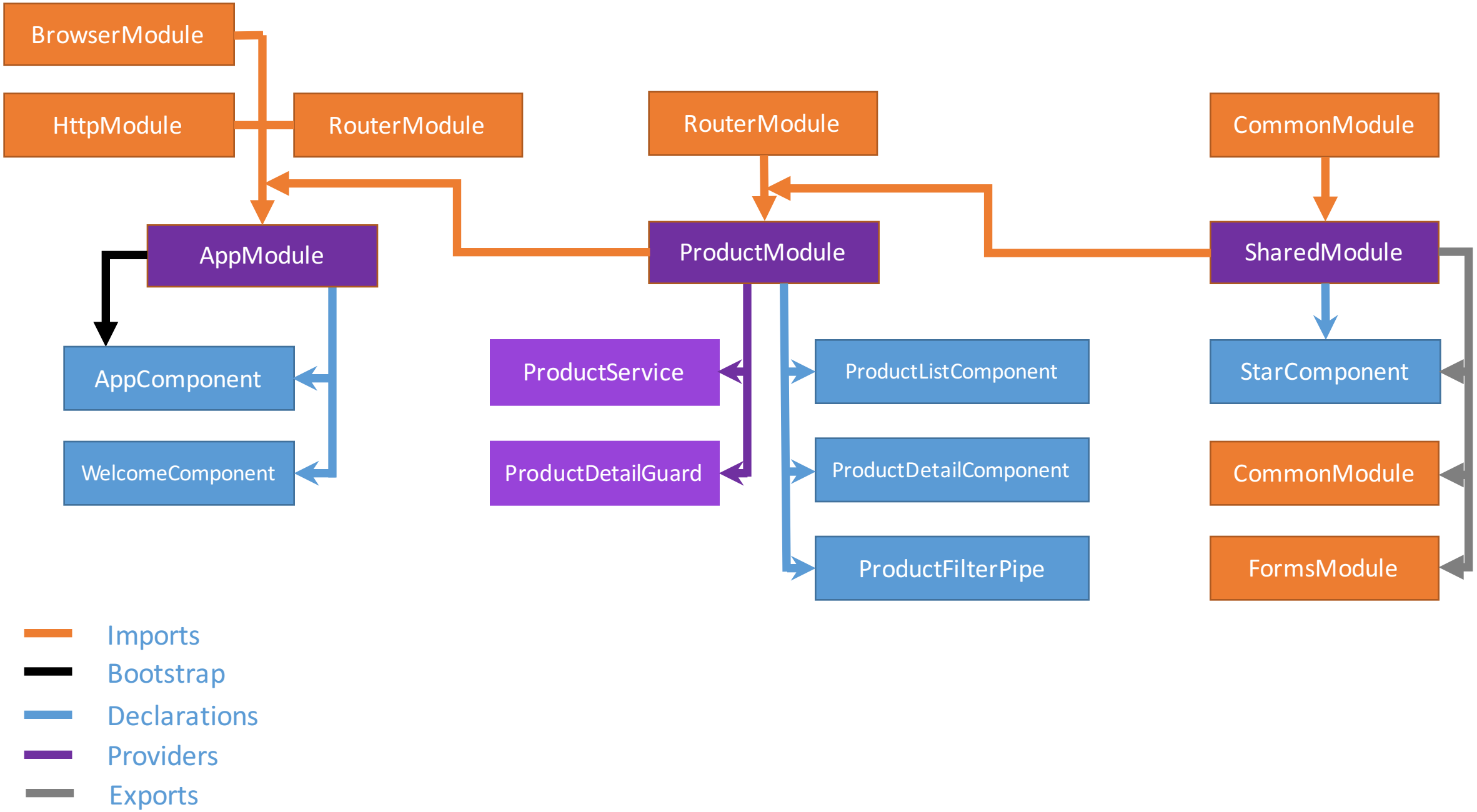
StarComponent
Imports
Bootstrap
Declarations
Providers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Exports

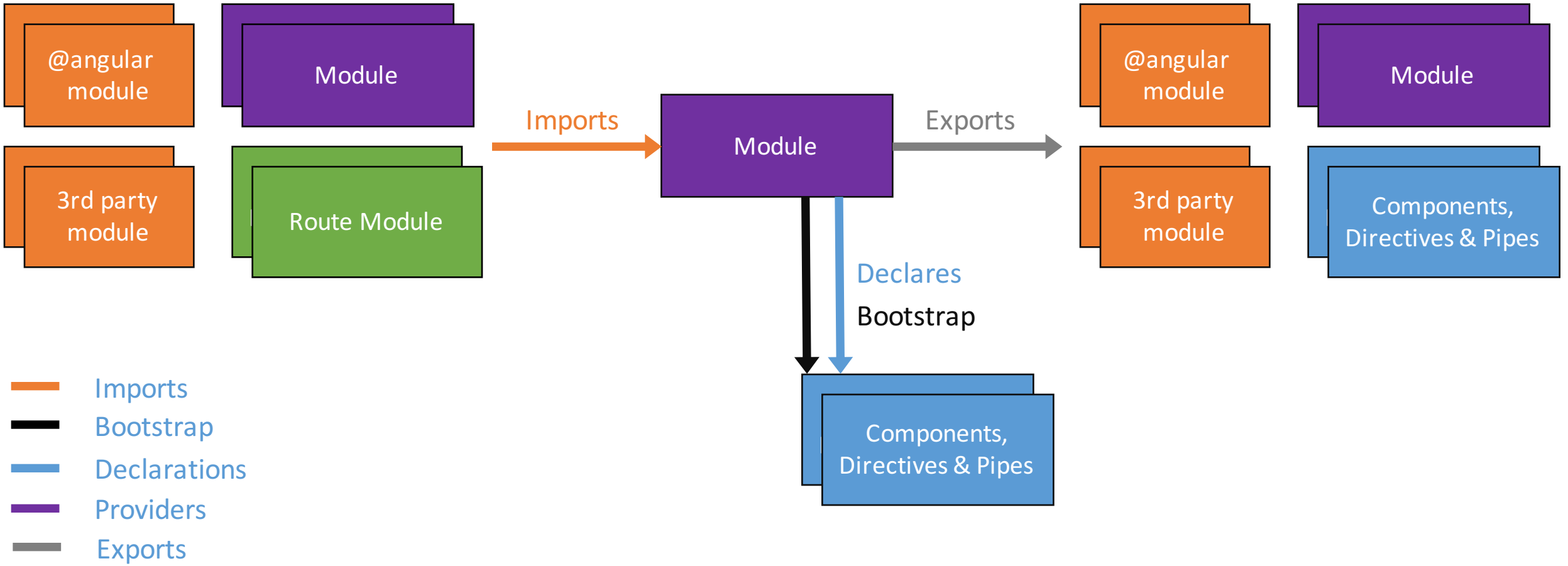
Module Overview

- What is an Angular Module?
- Angular Module Metadata
- Creating a Feature Module
- Defining a Shared Module
- Revisiting AppModule!

What is an Angular Module?

- A class with an NgModules decorator
- Its purpose:
  - Organize the pieces of our application
  - Arrange them int blocks
  - Extend our application with capabilities from external libraries
  - Provide a template resolution environment
  - Aggregate and re-export

Angular Module



Angular Module … is a box!

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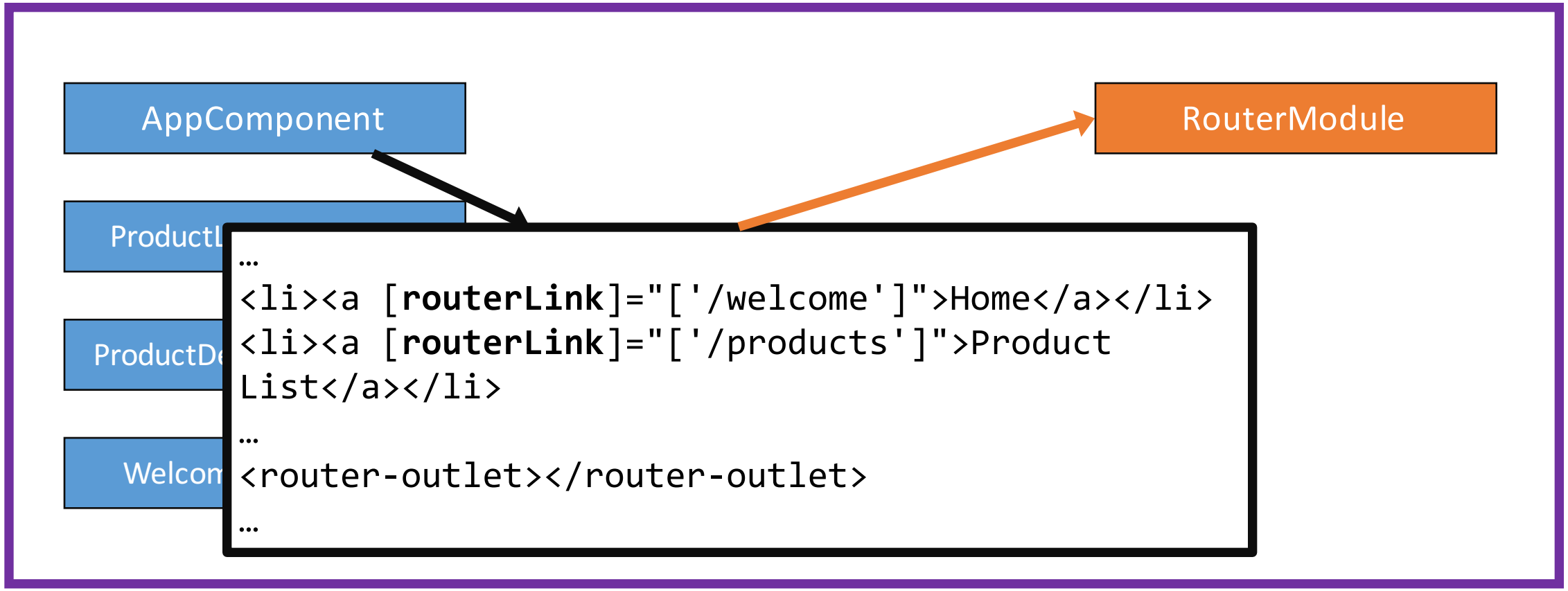

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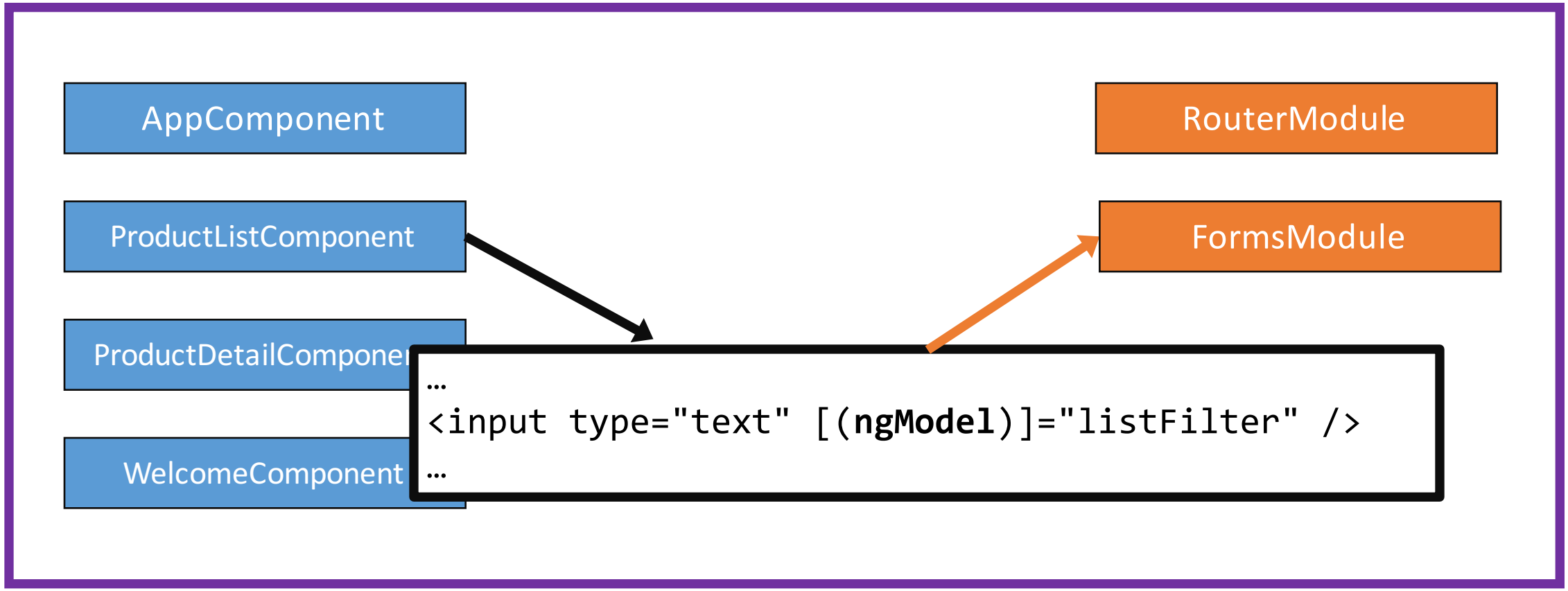

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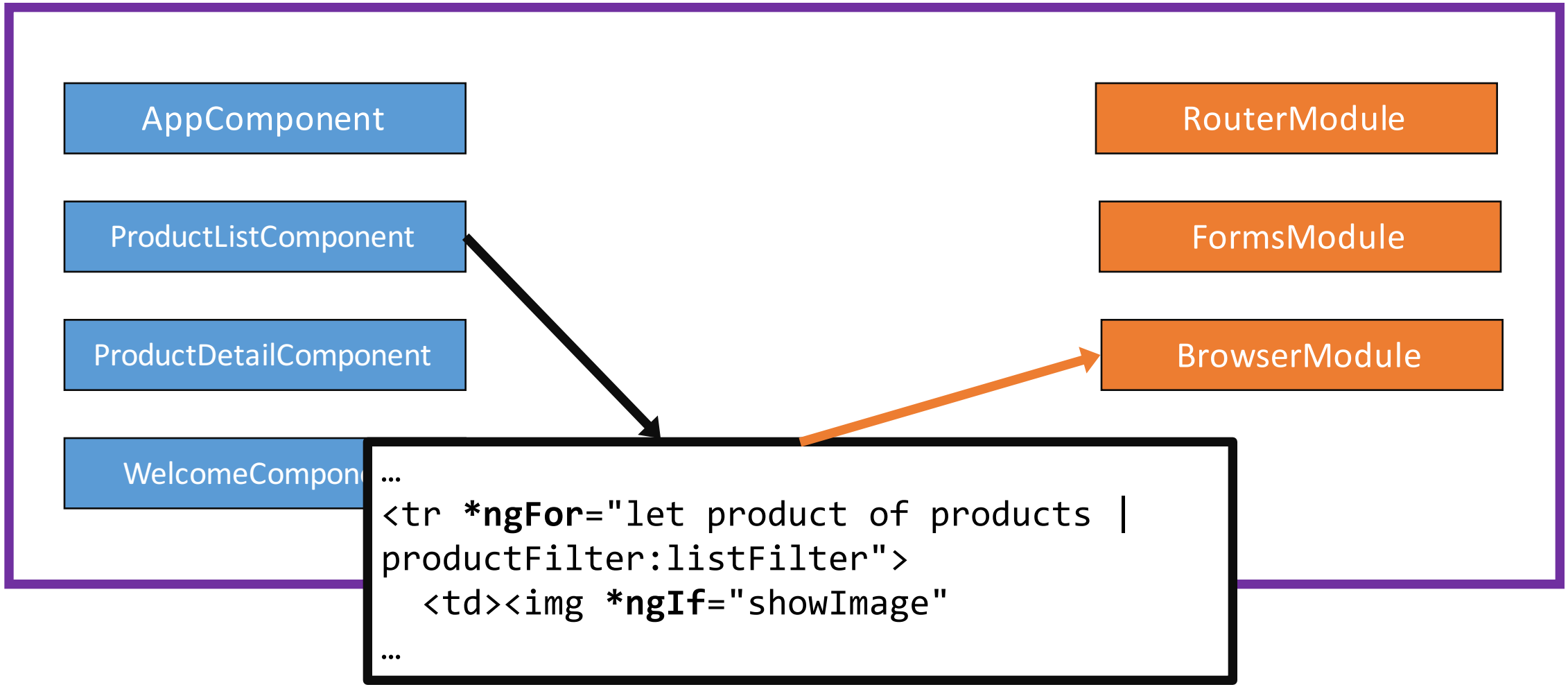

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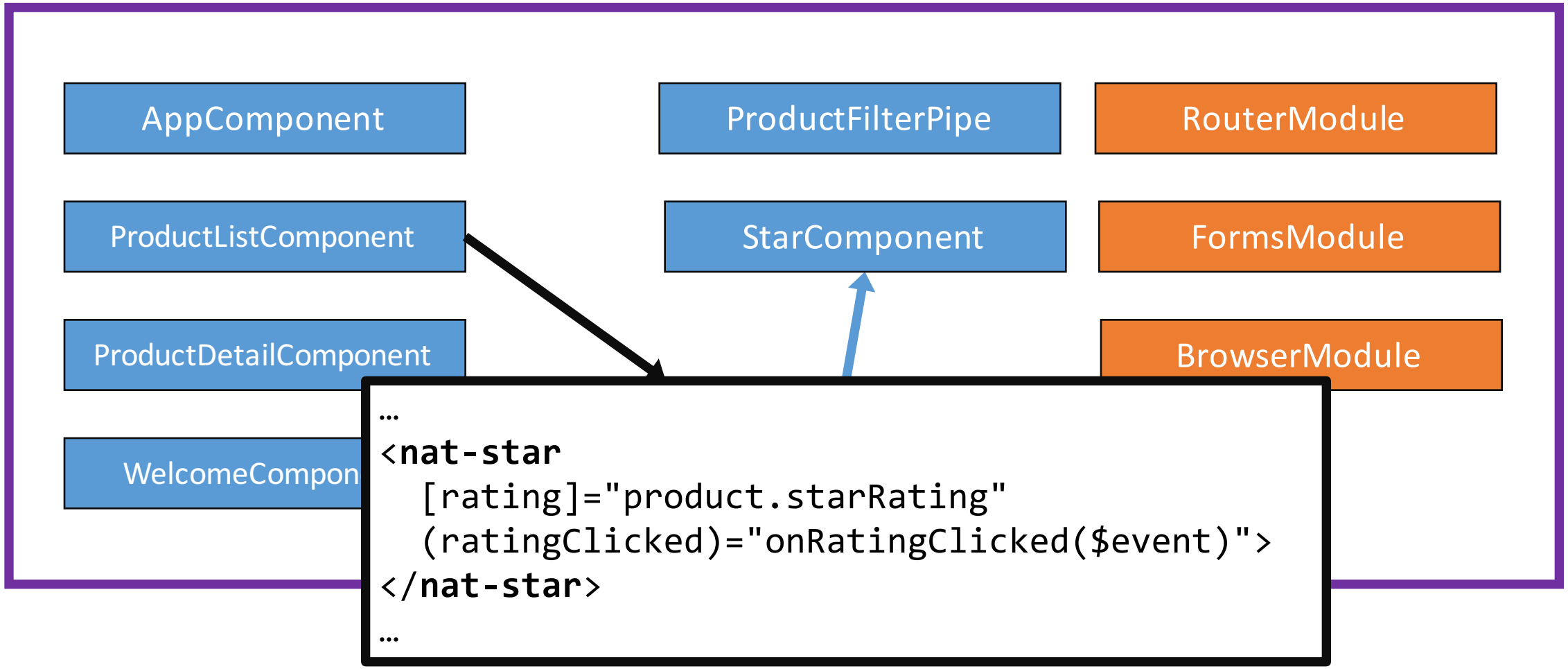

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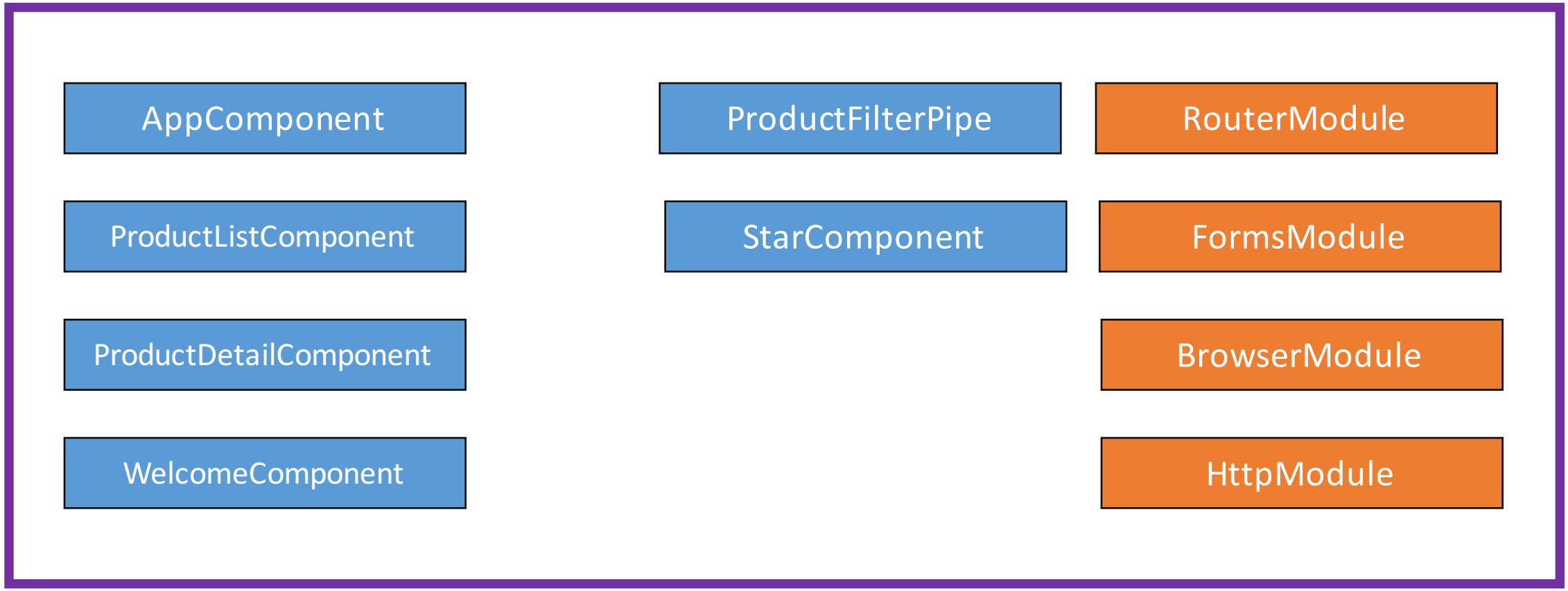
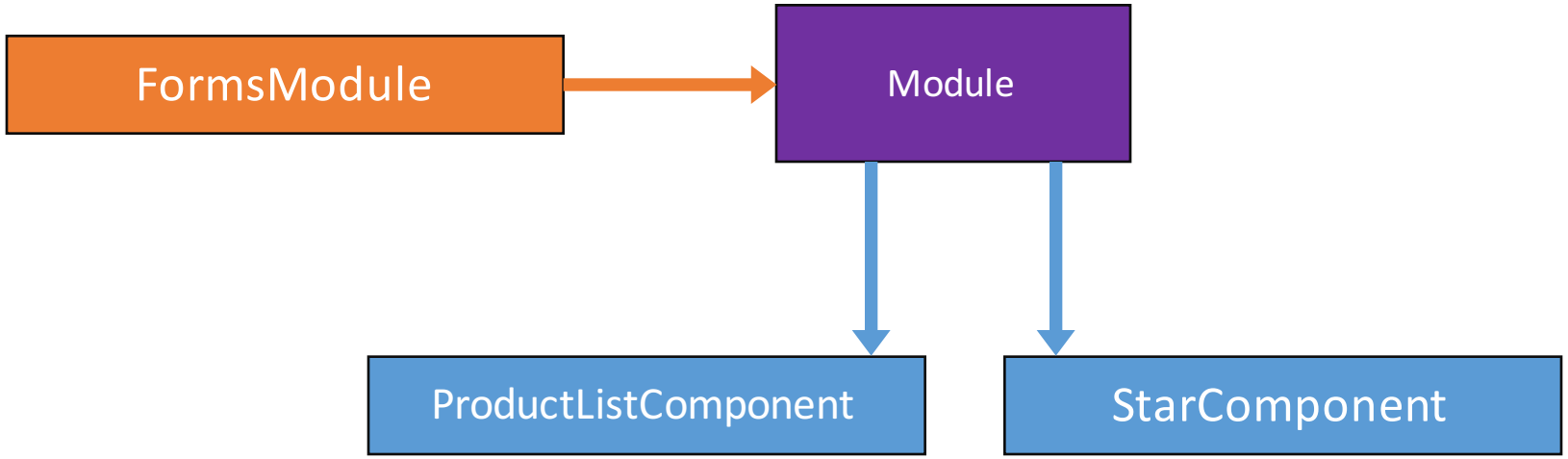


Template resolution environment



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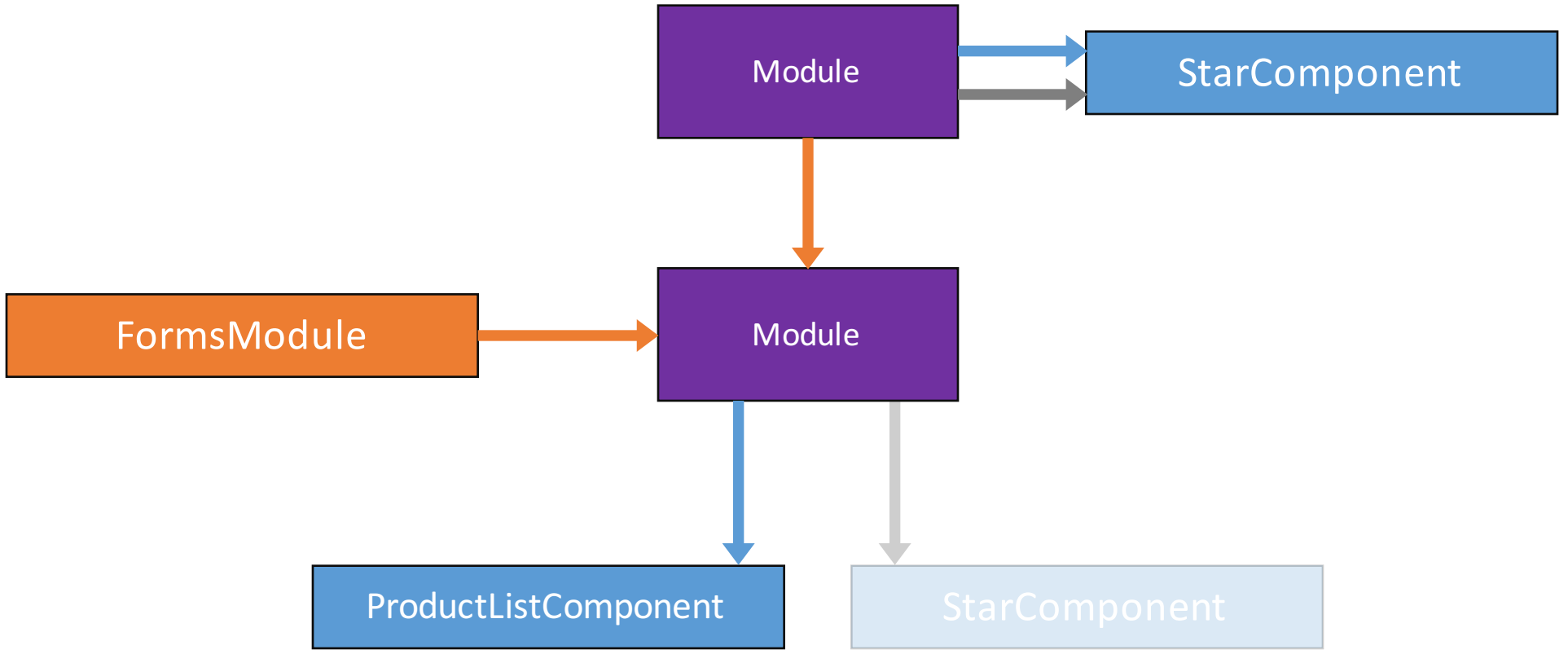
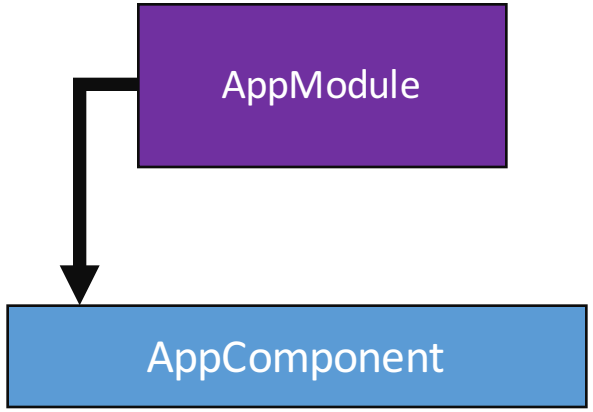


Bootstrap Array

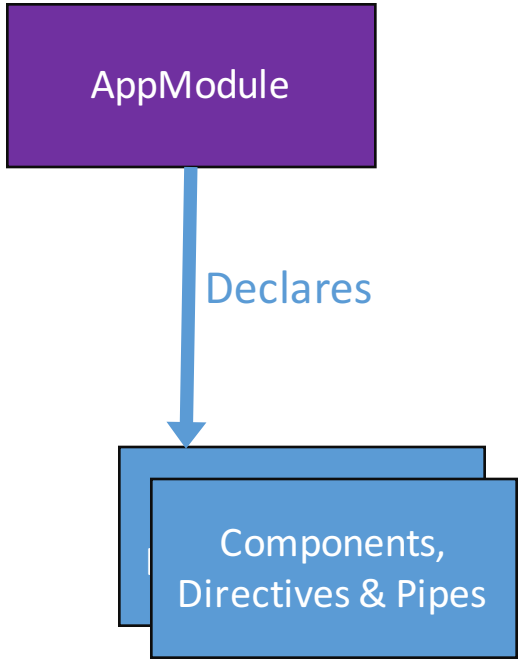



```
...
bootstrap: [AppComponent],
...
```

Bootstrap Array

- ✓ Every application must bootstrap at least one component, the root application component
- ✓ The bootstrap array must be only use in the RootModule

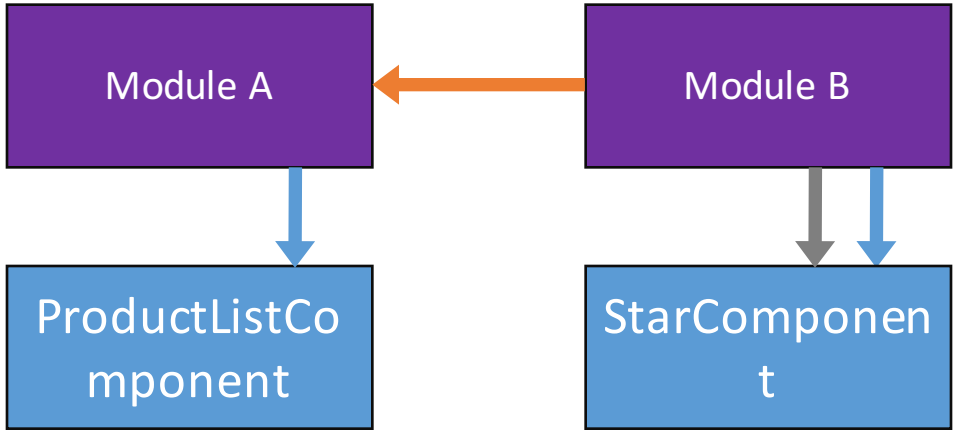
Declarations Array




```
...
declarations: [
  AppComponent,
  WelcomeComponent,
  ProductListComponent,
  ProductDetailComponent,
  ProductFilterPiper,
  StarComponent
],
...
```

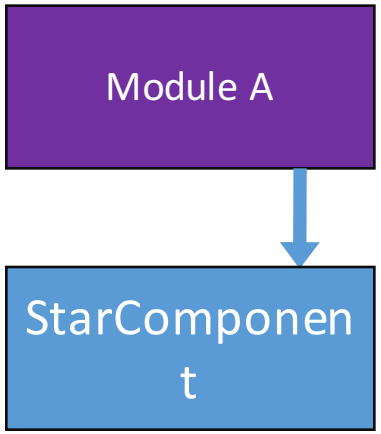
Declarations Array

- ✓ Every component, directive and pipe we creat must belong to **one and only one** Angular Module
- ✓ Only declare components, directive and pipe
- ✓ Never re-declare components, directives and pipes that belong to another modules (cf #1)



Declarations Array

- ✓ All declared components, directives and pipes are private by default
- ✓ They are only accessible to other components, directives, and pipes declared in the same module.

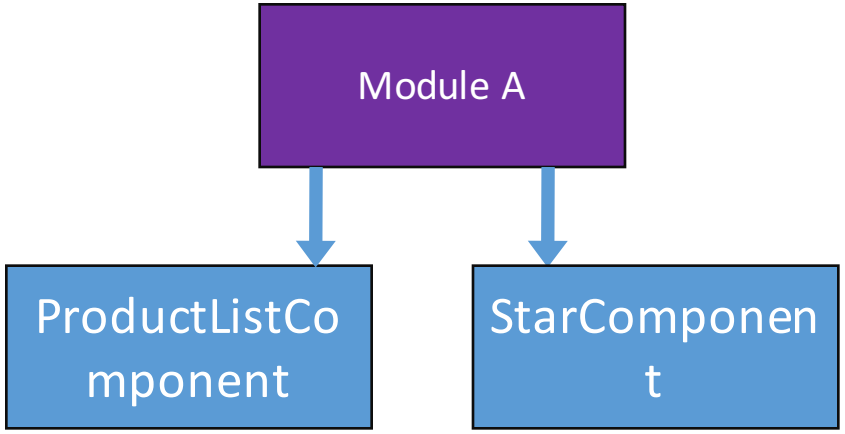


Declarations Array

- ✓ The Angular Module provides the template resolution environment for its component templates.

```
// product-list.component.html
<td>
  <nat-star ...>
  </nat-star>
</td>
```

```
// star.component.ts
...
@Component({
  selector: 'nat-star',
  templateUrl: 'app/shared/star.component.html'
})
```



Declarations Array

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  <nat-star ...>
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</td>
```

```
// star.component.ts
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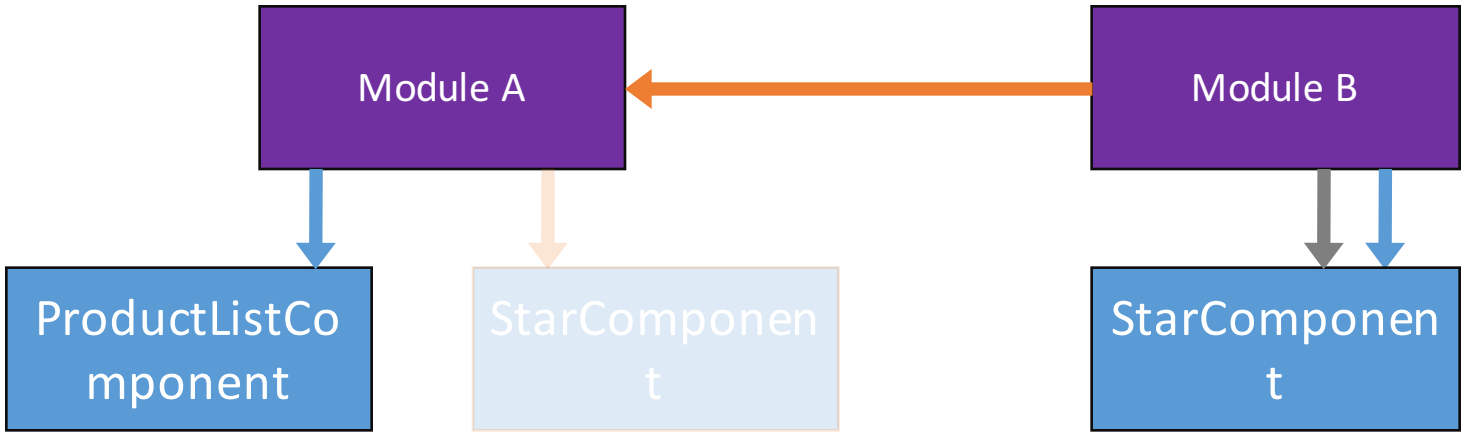
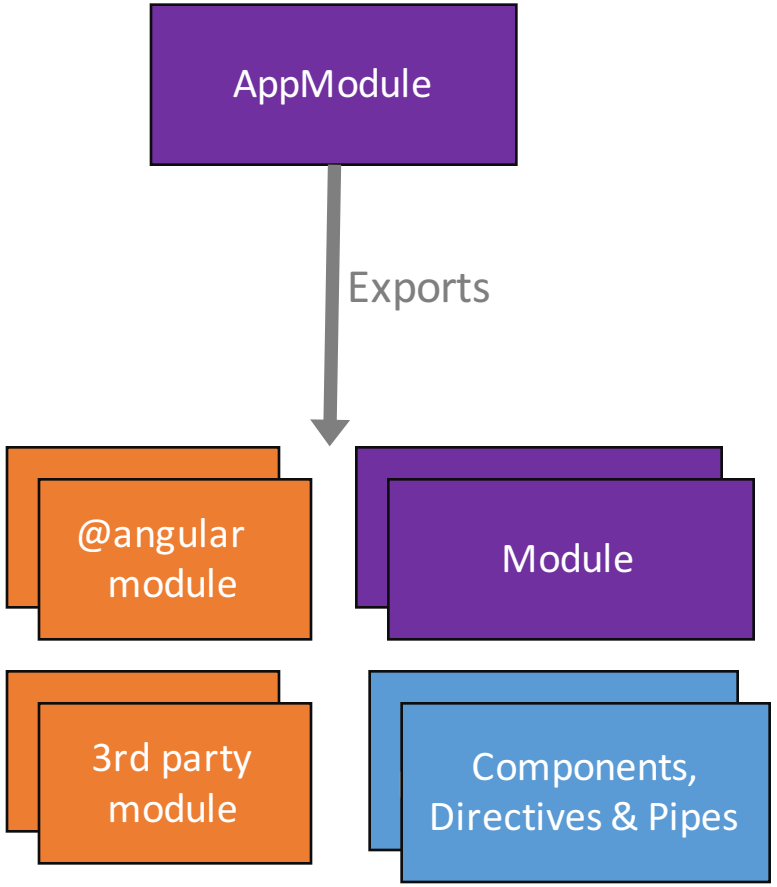
@Component({
  selector: 'nat-star',
  templateUrl: 'app/shared/star.component.html'
})
```

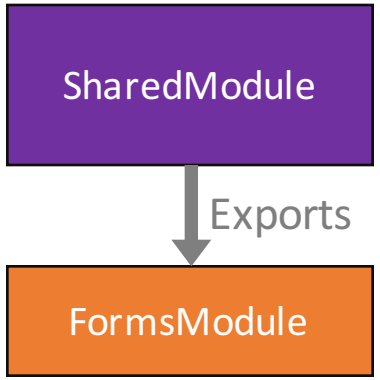


Exports Array

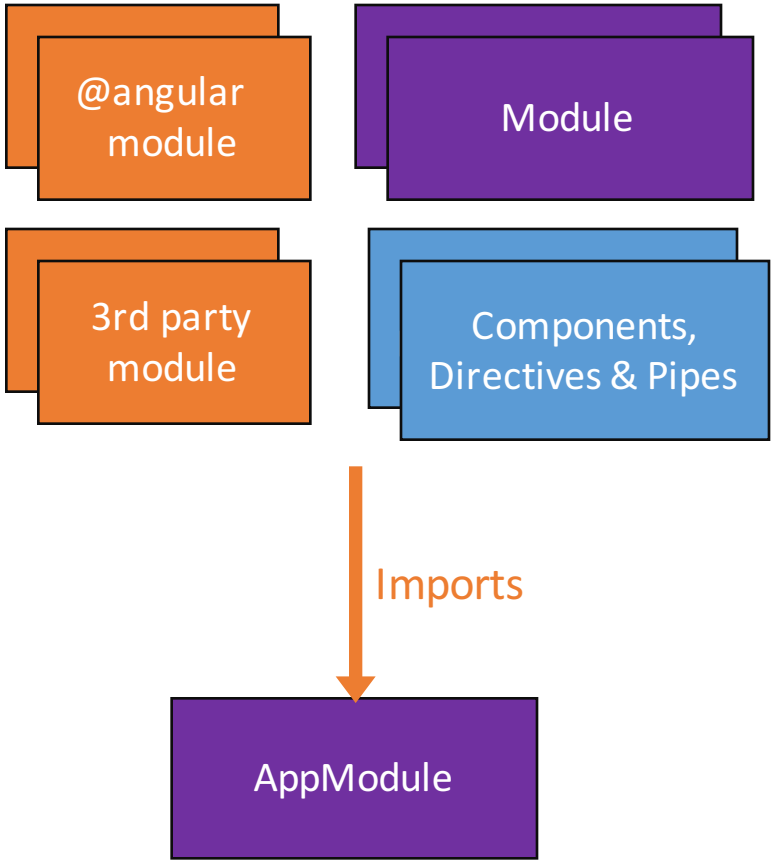


Exports Array

- ✓ Export any components, directives, or pipes if another component needs it.
- ✓ Re-export modules to re-exports their components, directives, and pipes.
- ✓ We can re-export something without importing it first.
- ✓ Never export a service



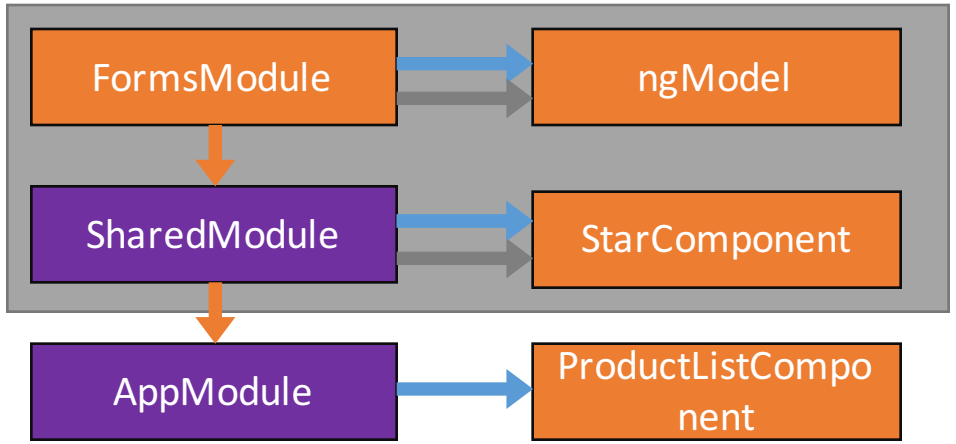
Imports Array




```
...
imports: [
  BrowserModule,
  HttpModules,
  FormsModules,
  RouterModule.forRoot([...])
],
...
```

Imports Array

- ✓ Importing a module makes available **any exported** components, directives, and pipes from that module.
- ✓ Only import what this module needs.
- ✓ Importing a module does NOT provide access to its imported modules (if not exported).



Imports Array

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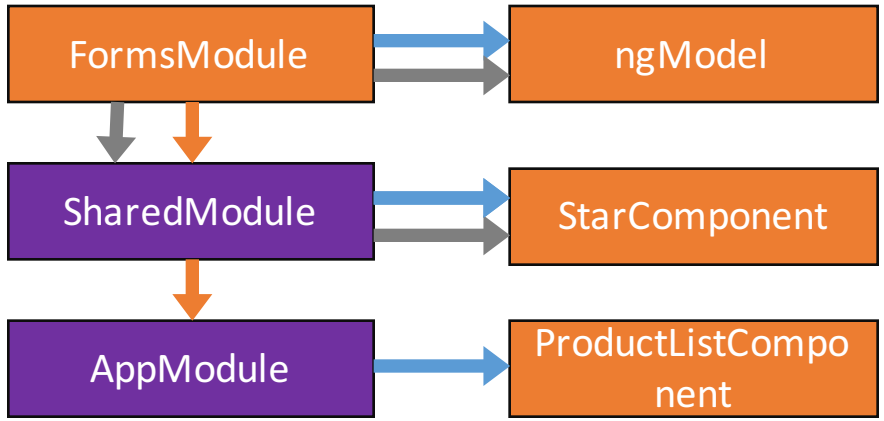
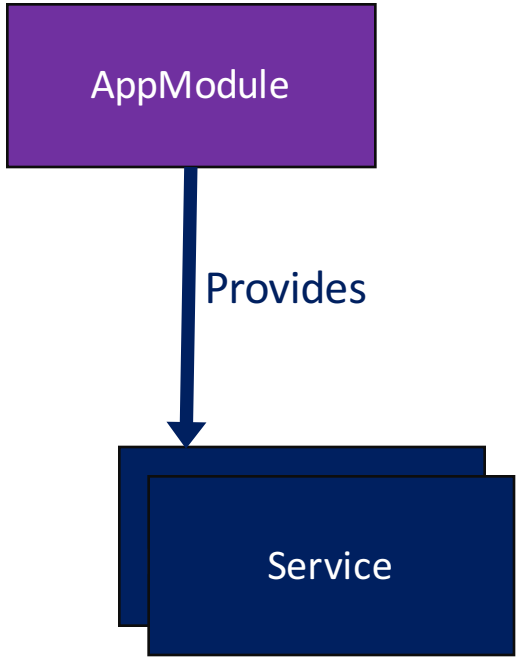


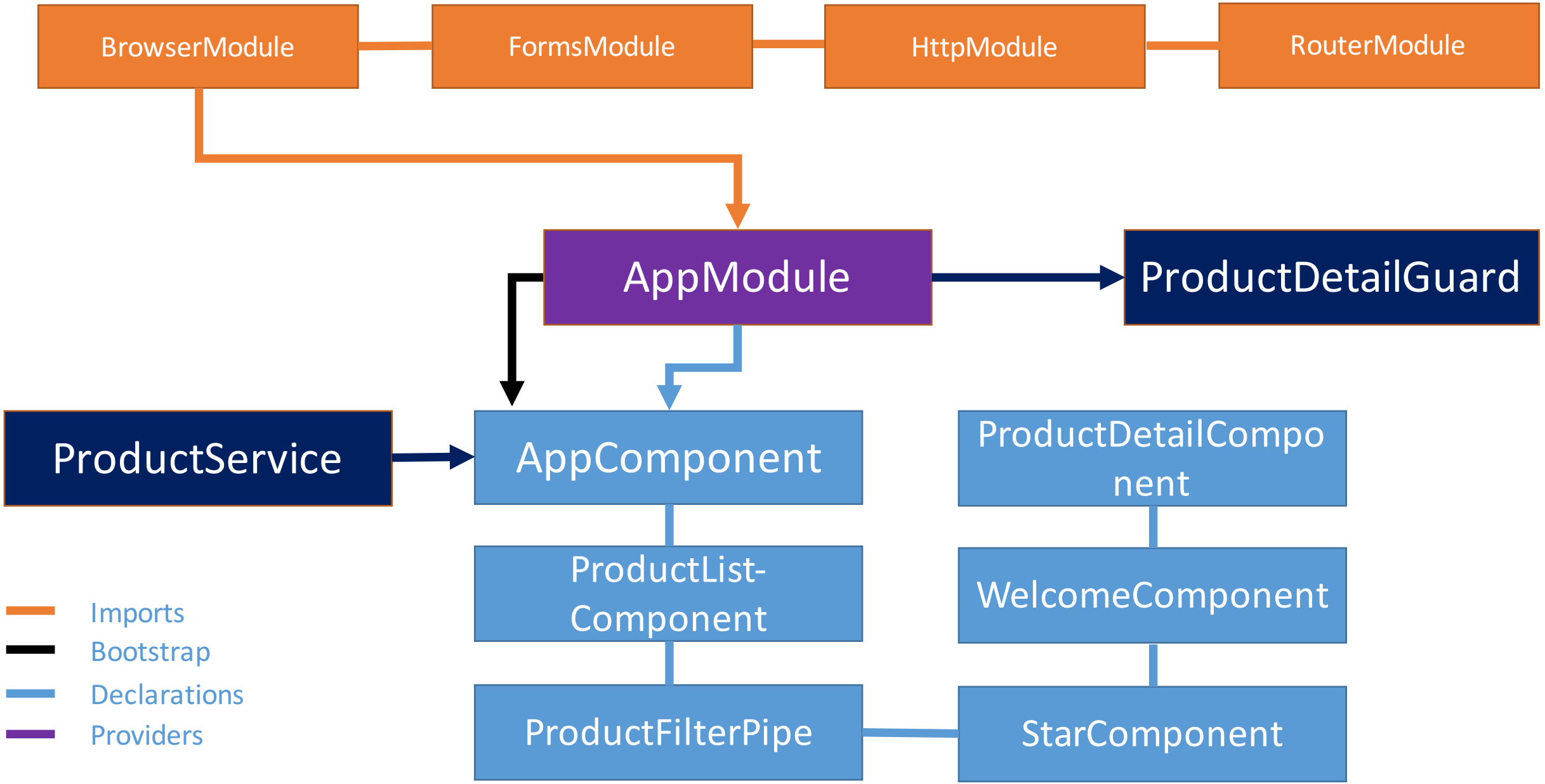
Providers Array




```
...
providers: [
  ProductDetailGuard
],
...
```

Providers Array

- ✓ Any service provider added to the providers array is registered at the **root** level of the application.
- ✓ Don’t add services to the providers array of a shared module (think about a CoreModule)
- ✓ Guard services must be defined on an Angular Module Level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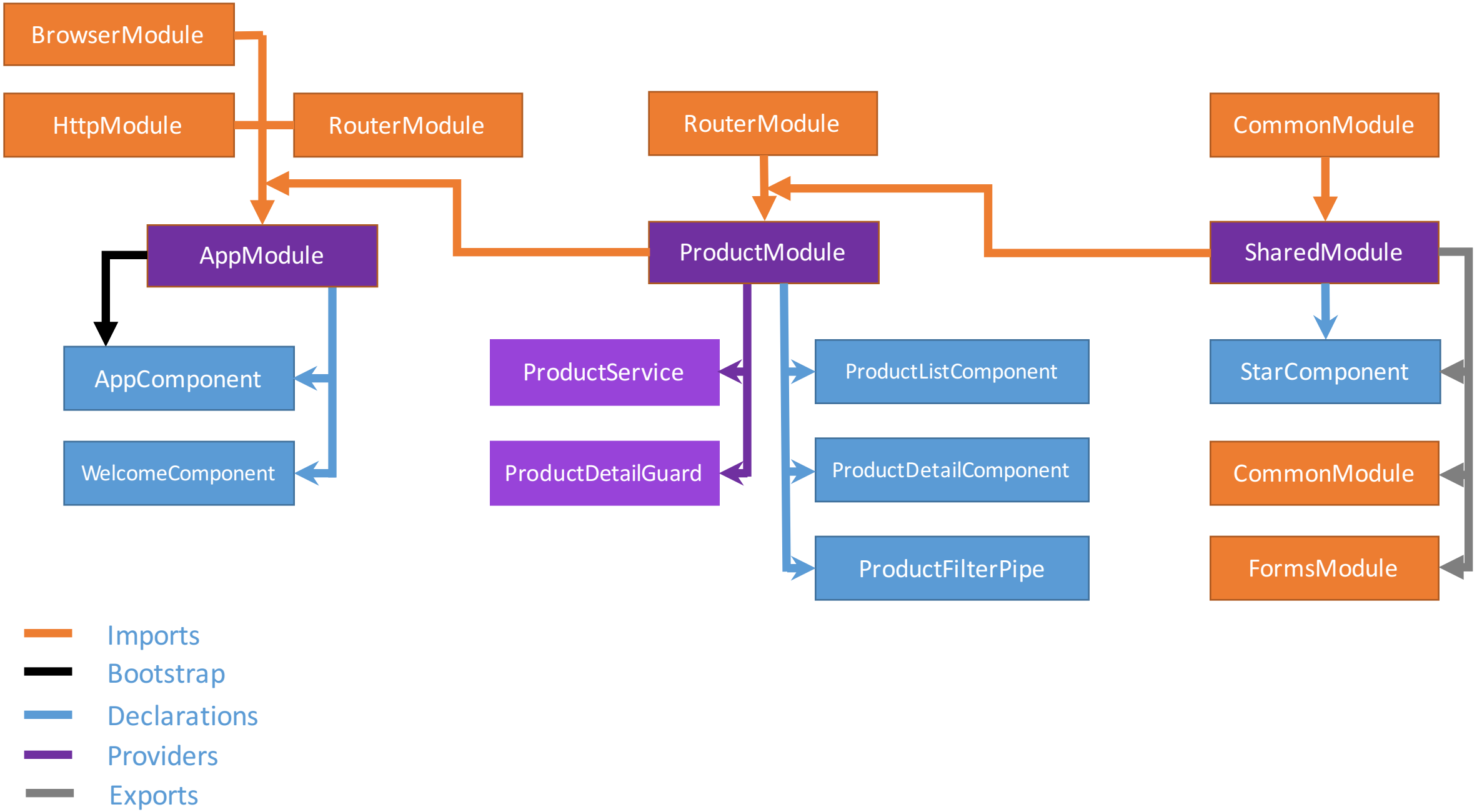
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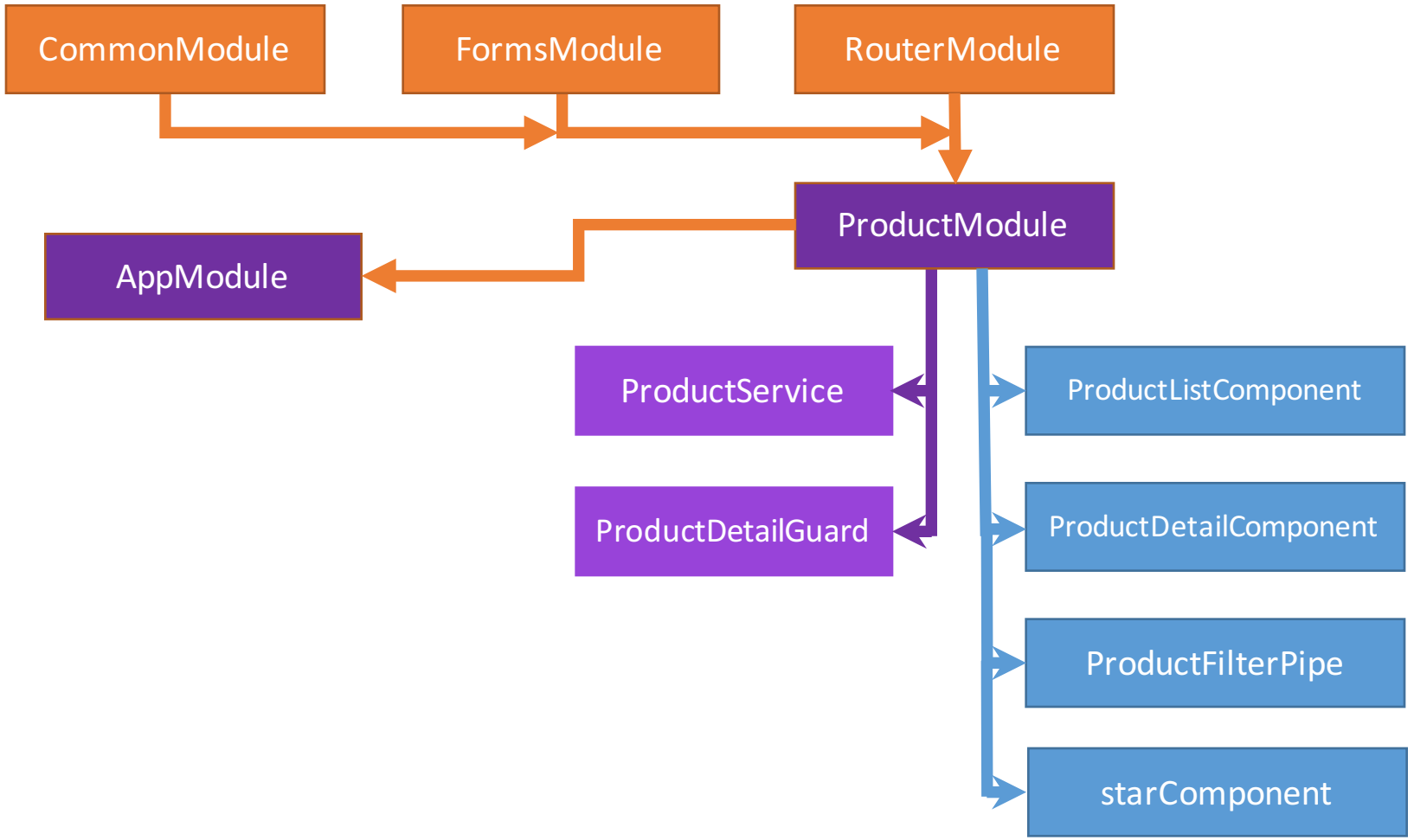
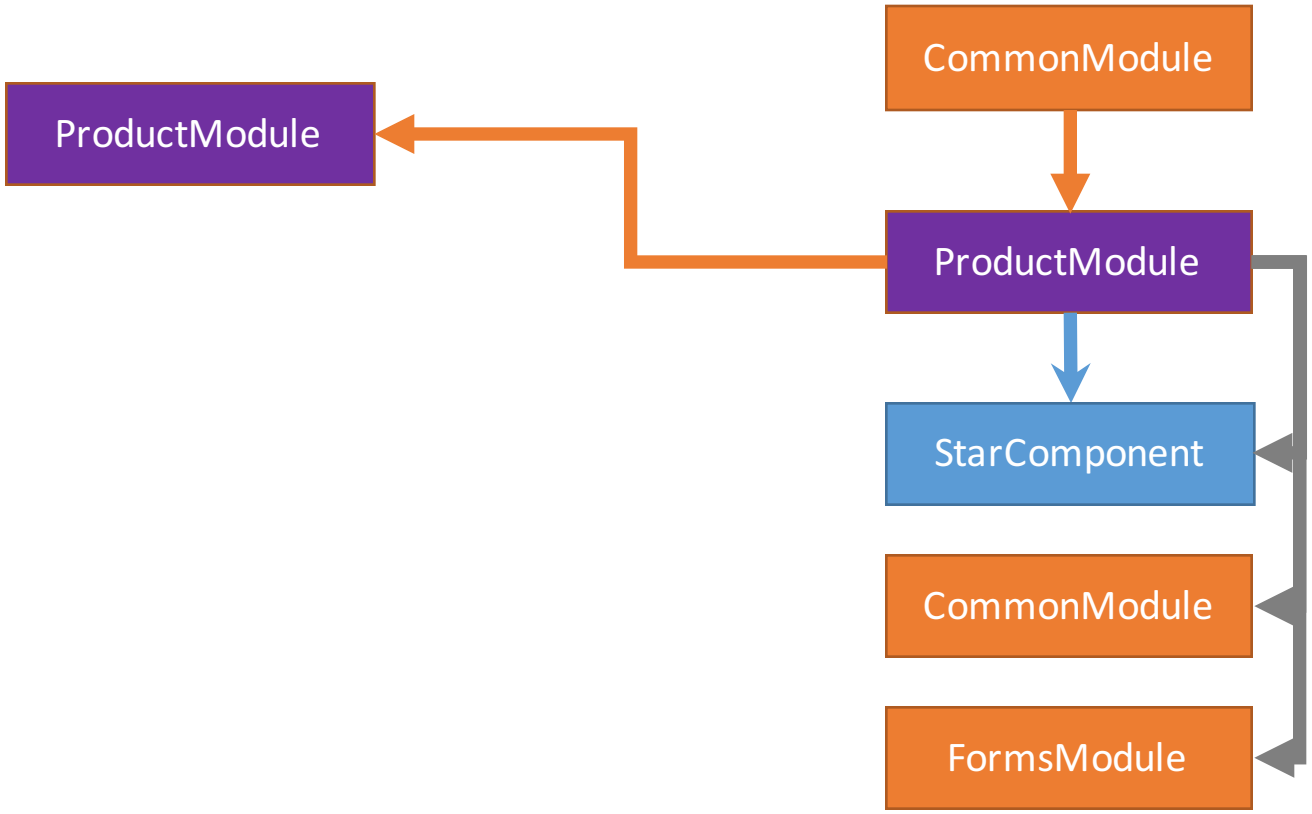
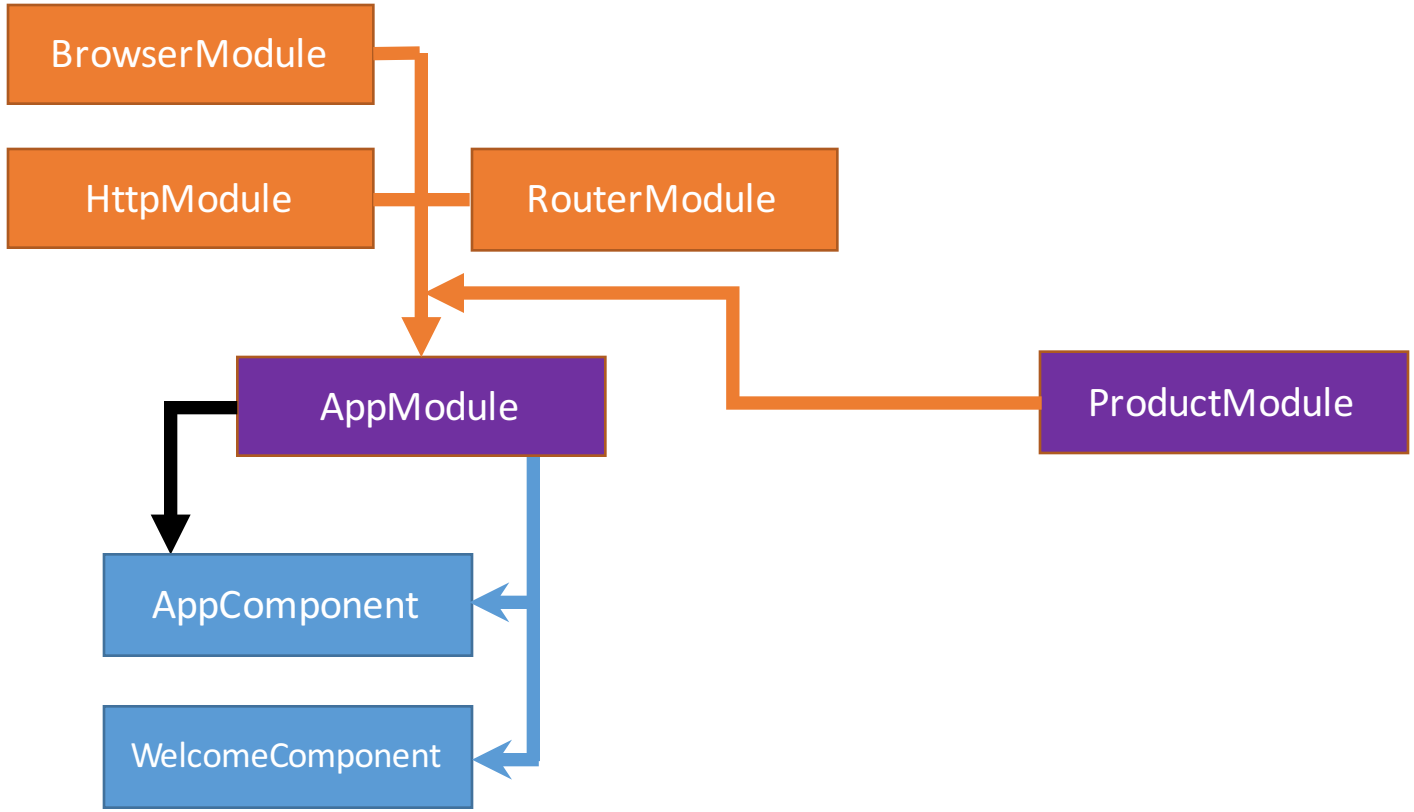
Defining a Feature Module



Defining a Shared Module



Revisiting AppModule



Application Routing Module

```
// app.routing.module.ts
import { NgModule } from '@angular/core';
import { RouterModule } from '@angular/router';

import { WelcomeComponent } from './home/welcome.component';

@NgModule({
  imports: [
    RouterModule.forRoot([
      { path: 'welcome', component: WelcomeComponent },
      { path: '', redirectTo: 'welcome', pathMatch: 'full'},
      { path: '**', redirectTo: 'welcome', pathMatch: 'full'},
    ])
  ],
  exports: [ RouterModule]
})
export class AppRoutingModule()
```

Application Routing Module

```
// products/product.routing.module.ts
import { NgModule } from '@angular/core';
import { RouterModule } from '@angular/router';
import { ProductListComponent } from './product-list.component';
import { ProductDetailComponent } from './product-detail.component';
import { ProductDetailGuard } from './product-guard.server';

@NgModule({
  imports: [
    RouterModule.forRoot([
      { path: 'products', component: ProductListComponent },
      { path: 'product/:id', component: ProductDetailComponent,
        canActivate: [ ProductDetailGuard ] },
    ])
  ],
  exports: [ RouterModule]
})
export class ProductRoutingModule()
```

Angular Module Checklist: Module Structure

- Root application module (AppModule)
- Feature modules
- Shared modules (SharedModule)
- Core module (CoreModule)
- Routing modules

Angular Module Checklist: NgModule Metadata

- Bootstrap: Startup component(s)
- Declarations: What belongs to this module
- Exports: What an importing module can use
- Imports: Supporting modules
- Providers: Service providers

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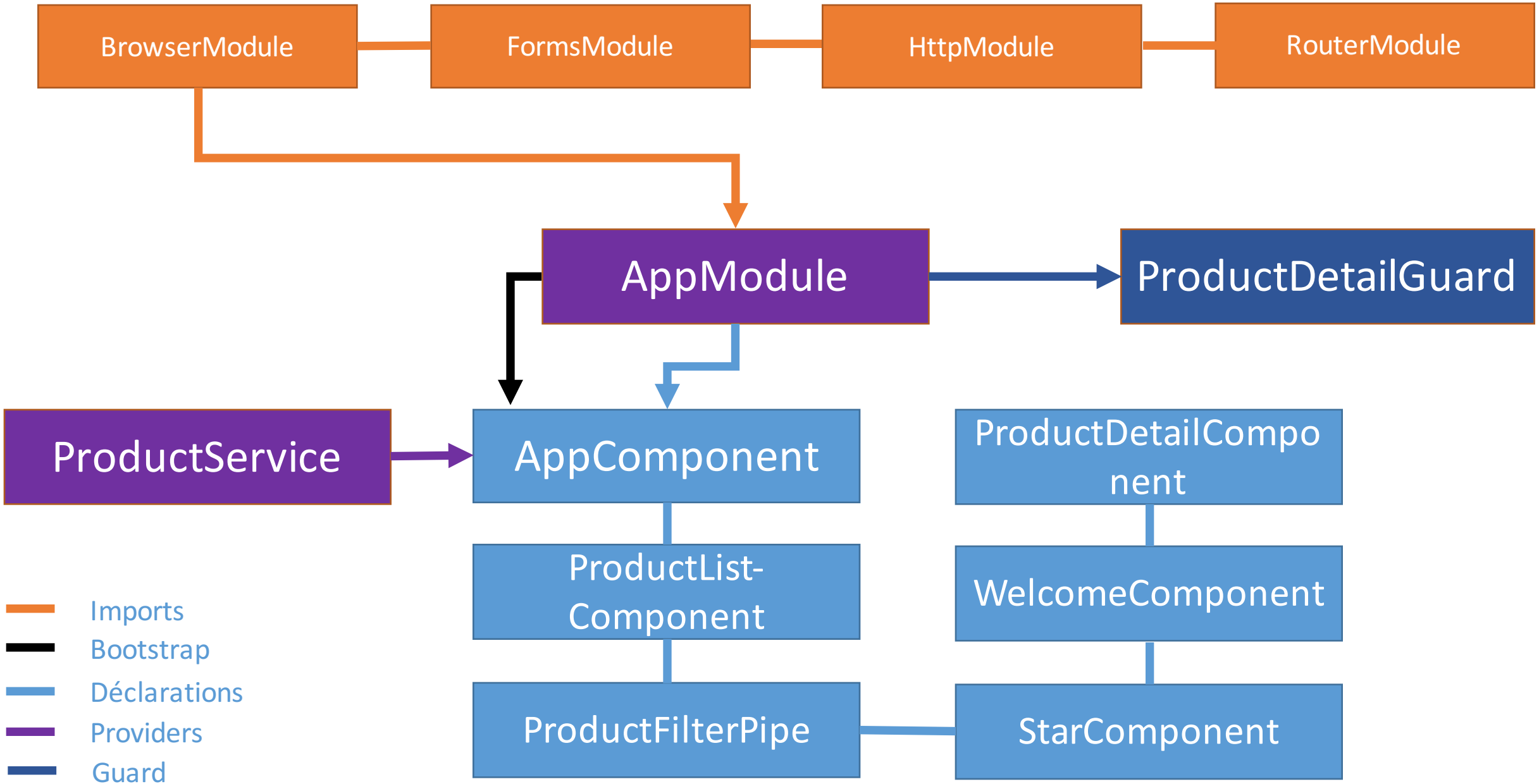
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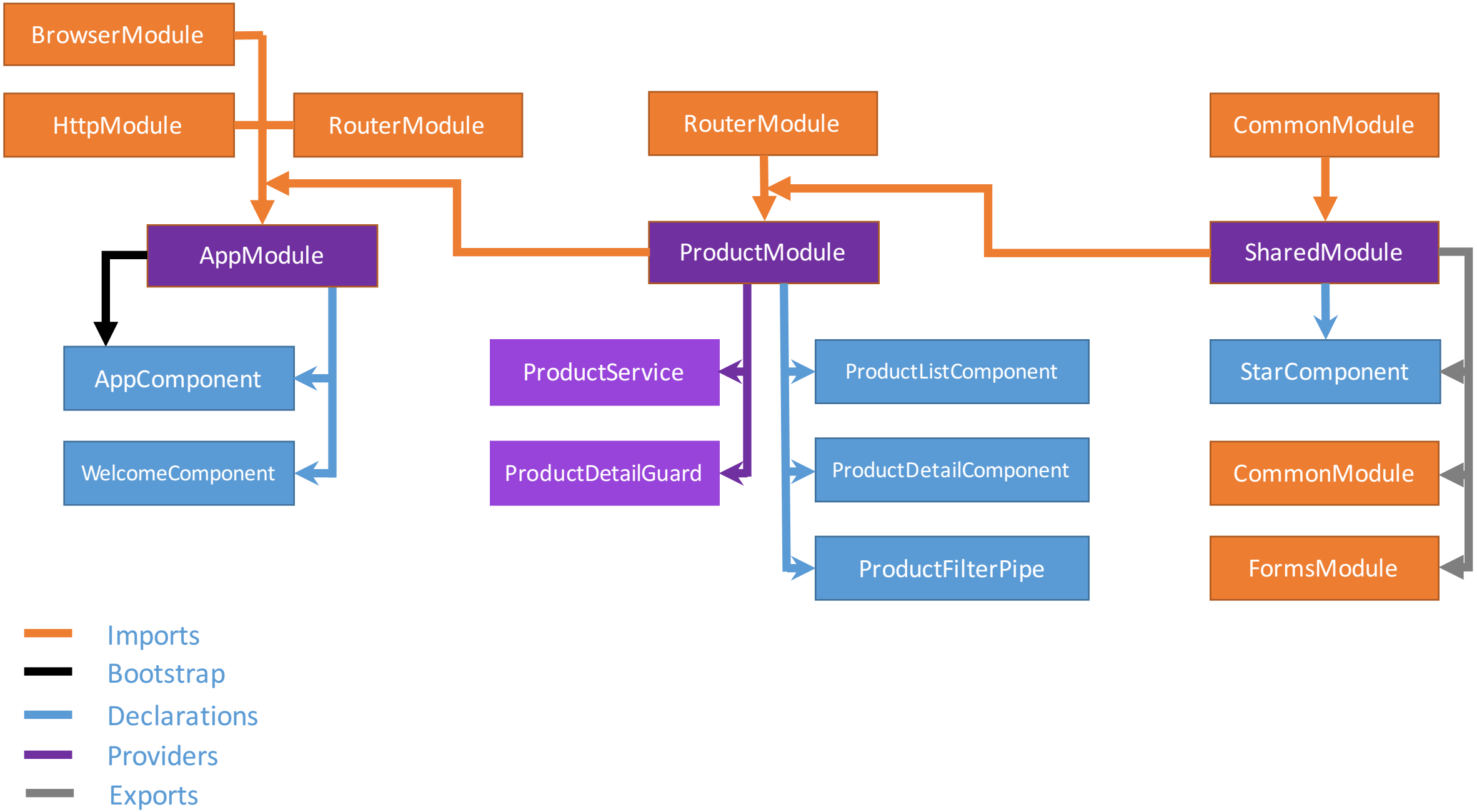
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