Feature modules

Feature modules are NgModules for the purpose of organizing code.

For the final sample app with a feature module that this page describes, see the live example / download example.

As your app grows, you can organize code relevant for a specific feature. This helps apply clear boundaries for features. With feature modules, you can keep code related to a specific functionality or feature separate from other code. Delineating areas of your app helps with collaboration between developers and teams, separating directives, and managing the size of the root module.

Feature modules vs. root modules

A feature module is an organizational best practice, as opposed to a concept of the core Angular API. A feature module delivers a cohesive set of functionality focused on a specific application need such as a user workflow, routing, or forms. While you can do everything within the root module, feature modules help you partition the app into focused areas. A feature module collaborates with the root module and with other modules through the services it provides and the components, directives, and pipes that it shares.

How to make a feature module

Assuming you already have an app that you created with the Angular CLI, create a feature module using the CLI by entering the following command in the root project directory. Replace `CustomerDashboard` with the name of your module. You can omit the "Module" suffix from the name because the CLI appends it:

```
ng generate module CustomerDashboard
```

This causes the CLI to create a folder called `customer-dashboard` with a file inside called `customer-dashboard.module.ts` with the following contents:

```
import { NgModule } from
'@angular/core';
import { CommonModule } from
'@angular/common';

@NgModule({
  imports: [
    CommonModule
  ],
  declarations: []
})
export class CustomerDashboardModule {
}
```

The structure of an NgModule is the same whether it is a root module or a feature module. In the CLI generated feature module, there are two JavaScript import statements at the top of the file: the first imports `NgModule`, which, like the root module, lets you use the `@NgModule` decorator; the second imports `CommonModule`, which contributes many common directives such as `ngIf` and `ngFor`. Feature modules import `CommonModule` instead of `BrowserModule`, which is only imported once in the root module. `CommonModule` only contains information for common directives such as `ngIf` and `ngFor` which are needed in most templates, whereas `BrowserModule` configures the Angular app for the browser which needs to be done only once.

The `declarations` array is available for you to add declarables, which are components, directives, and pipes that belong exclusively to this particular module. To add a component, enter the following command at the command line where `customer-dashboard` is the directory where the CLI generated the feature module and `CustomerDashboard` is the name of the component:

```
ng generate component customer-dashboard/CustomerDashboard
```

This generates a folder for the new component within the customer-dashboard folder and updates the feature module with the `CustomerDashboardComponent` info:

src/app/customer-dashboard/customer-dashboard.module.ts

```
// import the new component
import { CustomerDashboardComponent }
from './customer-dashboard/customer-
dashboard.component';
@NgModule({
  imports: [
    CommonModule
  ],
  declarations: [
    CustomerDashboardComponent
  ],
})
```

The `CustomerDashboardComponent` is now in the JavaScript import list at the top and added to the `declarations` array, which lets Angular know to associate this new component with this feature module.

Importing a feature module

To incorporate the feature module into your app, you have to let the root module, `app.module.ts`, know about it. Notice the `CustomerDashboardModule` export at the bottom of `customer-dashboard.module.ts`. This exposes it so that other modules can get to it. To import it into the `AppModule`, add it to the imports in `app.module.ts` and to the `imports` array:

src/app/app.module.ts

```
import { HttpClientModule } from
'@angular/common/http';
import { NgModule } from
'@angular/core';
import { FormsModule } from
'@angular/forms';
import { BrowserModule } from
'@angular/platform-browser';

import { AppComponent } from
'./app.component';
// import the feature module here so
you can add it to the imports array
below
import { CustomerDashboardModule } from
'./customer-dashboard/customer-
dashboard.module';

@NgModule({
  declarations: [
    AppComponent
  ],
  imports: [
    BrowserModule,
    FormsModule,
    HttpClientModule,
    CustomerDashboardModule // add the
feature module here
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

Now the `AppModule` knows about the feature module. If you were to add any service providers to the feature module, `AppModule` would know about those too, as would any other feature modules. However, NgModules don't expose their components.

Rendering a feature module's component template

When the CLI generated the `CustomerDashboardComponent` for the feature module, it included a template, `customer-dashboard.component.html`, with the following markup:

src/app/customer-dashboard/customer-dashboard/customer-dashboard.component.html

```
<p>
  customer-dashboard works!
</p>
```

To see this HTML in the `AppComponent`, you first have to export the `CustomerDashboardComponent` in the `CustomerDashboardModule`. In `customer-dashboard.module.ts`, just beneath the `declarations` array, add an `exports` array containing `CustomerDashboardComponent`:

src/app/customer-dashboard/customer-dashboard.module.ts

```
exports: [
  CustomerDashboardComponent
]
```

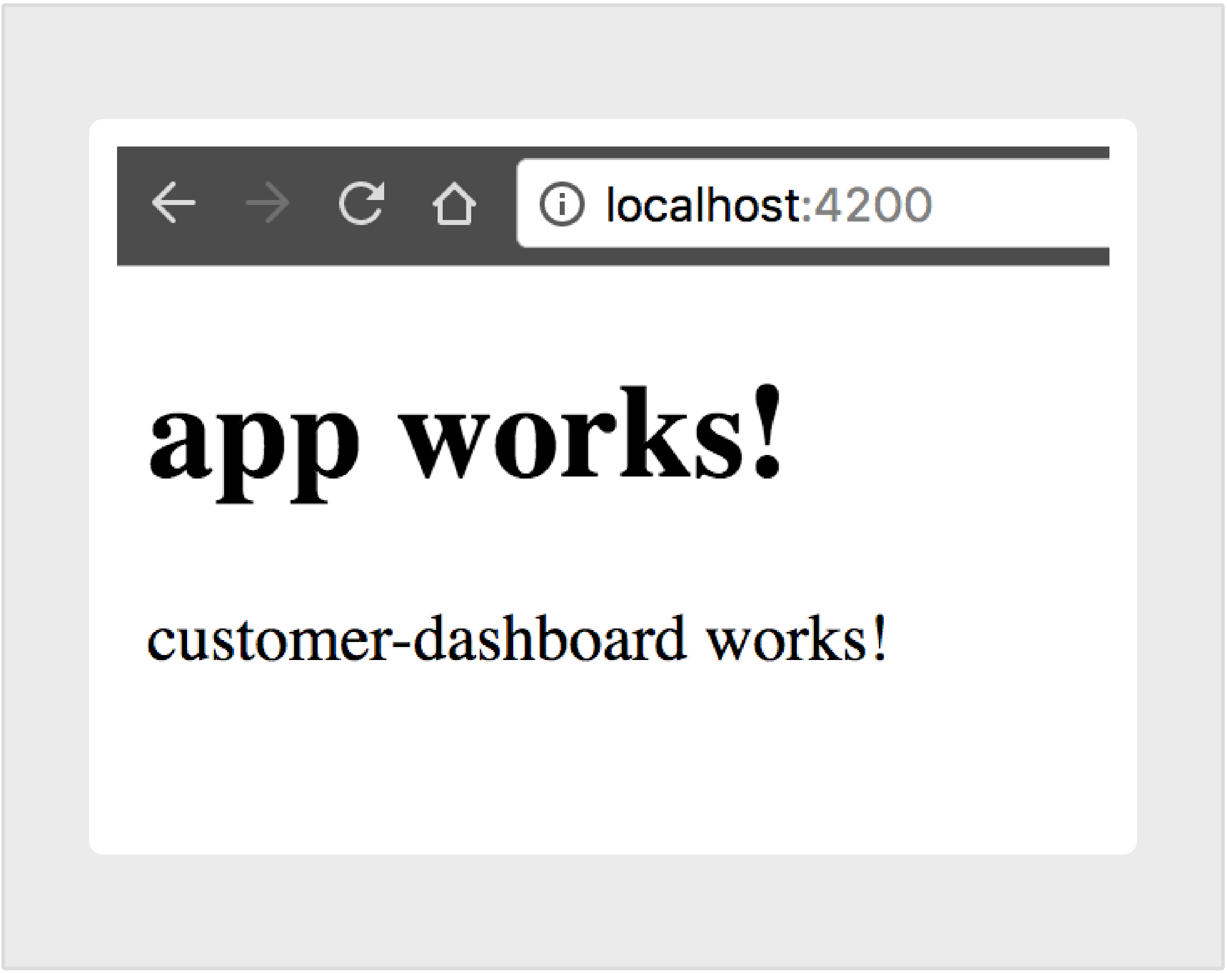
Next, in the `AppComponent`, `app.component.html`, add the tag `<app-customer-dashboard>`:

src/app/app.component.html

```
<h1>
  {{title}}
</h1>

<!-- add the selector from the
CustomerDashboardComponent -->
<app-customer-dashboard></app-customer-
dashboard>
```

Now, in addition to the title that renders by default, the `CustomerDashboardComponent` template renders too:



app works!

customer-dashboard works!

More on NgModules

You may also be interested in the following:

- Lazy Loading Modules with the Angular Router.
- Providers.
- Types of Feature Modules.