

## The hero editor

The application now has a basic title. Next you will create a new component to display hero information and place that component in the application shell.

For the sample application that this page describes, see the .

### Create the heroes component

Using the Angular CLI, generate a new component named **heroes**.

ng generate component heroes

The CLI creates a new folder, **src/app/heroes/**, and generates the three files of the **HeroesComponent** along with a test file.

The **HeroesComponent** class file is as follows:

You always import the **Component** symbol from the Angular core library and annotate the component class with **@Component**.

**@Component** is a decorator function that specifies the Angular metadata for the component.

The CLI generated three metadata properties:

1. **selector**— the component’s CSS element selector
2. **templateUrl**— the location of the component’s template file.
3. **styleUrls**— the location of the component’s private CSS styles.

```
{@a selector}
```

The CSS element selector, **'app-heroes'**, matches the name of the HTML element that identifies this component within a parent component’s template.

The **ngOnInit()** is a lifecycle hook. Angular calls **ngOnInit()** shortly after creating a component. It’s a good place to put initialization logic.

Always **export** the component class so you can **import** it elsewhere ... like in the **AppModule**.

### Add a hero property

Add a **hero** property to the **HeroesComponent** for a hero named “Windstorm.”

### Show the hero

Open the **heroes.component.html** template file. Delete the default text generated by the Angular CLI and replace it with a data binding to the new **hero** property.

## Show the HeroesComponent view

To display the `HeroesComponent`, you must add it to the template of the shell `AppComponent`.

Remember that `app-heroes` is the element selector for the `HeroesComponent`. So add an `<app-heroes>` element to the `AppComponent` template file, just below the title.

Assuming that the CLI `ng serve` command is still running, the browser should refresh and display both the application title and the hero name.

## Create a Hero interface

A real hero is more than a name.

Create a `Hero` interface in its own file in the `src/app` folder. Give it `id` and `name` properties.

Return to the `HeroesComponent` class and import the `Hero` interface.

Refactor the component's `hero` property to be of type `Hero`. Initialize it with an `id` of 1 and the name `Windstorm`.

The revised `HeroesComponent` class file should look like this:

The page no longer displays properly because you changed the hero from a string to an object.

## Show the hero object

Update the binding in the template to announce the hero's name and show both `id` and `name` in a details layout like this:

The browser refreshes and displays the hero's information.

## Format with the *UppercasePipe*

Modify the `hero.name` binding like this.

The browser refreshes and now the hero's name is displayed in capital letters.

The word `uppercase` in the interpolation binding, right after the pipe operator (`|`), activates the built-in `UppercasePipe`.

Pipes are a good way to format strings, currency amounts, dates and other display data. Angular ships with several built-in pipes and you can create your own.

## Edit the hero

Users should be able to edit the hero name in an `<input>` textbox.

The textbox should both *display* the hero's `name` property and *update* that property as the user types. That means data flows from the component class *out to the screen* and from the screen *back to the class*.

To automate that data flow, setup a two-way data binding between the `<input>` form element and the `hero.name` property.

## Two-way binding

Refactor the details area in the `HeroesComponent` template so it looks like this:

`[(ngModel)]` is Angular's two-way data binding syntax.

Here it binds the `hero.name` property to the HTML textbox so that data can flow *in both directions*: from the `hero.name` property to the textbox, and from the textbox back to the `hero.name`.

## The missing *FormsModule*

Notice that the application stopped working when you added `[(ngModel)]`.

To see the error, open the browser development tools and look in the console for a message like

Template parse errors: Can't bind to 'ngModel' since it isn't a known property of 'input'.

Although `ngModel` is a valid Angular directive, it isn't available by default.

It belongs to the optional `FormsModule` and you must *opt-in* to using it.

## *AppModule*

Angular needs to know how the pieces of your application fit together and what other files and libraries the application requires. This information is called *metadata*.

Some of the metadata is in the `@Component` decorators that you added to your component classes. Other critical metadata is in `@NgModule` decorators.

The most important `@NgModule` decorator annotates the top-level `AppModule` class.

The Angular CLI generated an `AppModule` class in `src/app/app.module.ts` when it created the project. This is where you *opt-in* to the `FormsModule`.

## Import *FormsModule*

Open `AppModule (app.module.ts)` and import the `FormsModule` symbol from the `@angular/forms` library.

Then add `FormsModule` to the `@NgModule` metadata's `imports` array, which contains a list of external modules that the application needs.

When the browser refreshes, the application should work again. You can edit the hero's name and see the changes reflected immediately in the `<h2>` above the textbox.

## Declare `HeroesComponent`

Every component must be declared in *exactly one* `NgModule`.

*You* didn't declare the `HeroesComponent`. So why did the application work?

It worked because the Angular CLI declared `HeroesComponent` in the `AppModule` when it generated that component.

Open `src/app/app.module.ts` and find `HeroesComponent` imported near the top.

The `HeroesComponent` is declared in the `@NgModule.declarations` array.

Note that `AppModule` declares both application components, `AppComponent` and `HeroesComponent`.

## Final code review

Here are the code files discussed on this page.

## Summary

- You used the CLI to create a second `HeroesComponent`.
- You displayed the `HeroesComponent` by adding it to the `AppComponent` shell.
- You applied the `UppercasePipe` to format the name.
- You used two-way data binding with the `ngModel` directive.
- You learned about the `AppModule`.
- You imported the `FormsModule` in the `AppModule` so that Angular would recognize and apply the `ngModel` directive.
- You learned the importance of declaring components in the `AppModule` and appreciated that the CLI declared it for you.