# Creating a custom directive

## [Directive decorator](https://codecraft.tv/courses/angular/custom-directives/creating-a-custom-directive/#_directive_decorator)

We’ll call our directive appCard and we’ll attach it to the card block like so:

<div class="card card-block" appCard>...</div>

We create directives by annotating a class with the @Directive decorator.

Lets create a class called CardHoverDirective and use the @Directive decorator to associate this class with our attribute appCard, like so:

import { Directive } from '@angular/core';

.

.

.

@Directive({

selector:"[appCard]"

})

class CardHoverDirective { }

## [Attribute selector](https://codecraft.tv/courses/angular/custom-directives/creating-a-custom-directive/#_attribute_selector)

The above code is very similar to what we would write if this was a component, the first striking difference is that *the selector is wrapped with `[]`*.

To understand why we do this we first need to understand that the selector attribute uses *CSS matching rules* to match a component/directive to a HTML element.

In CSS to match to a specific element we would just type in the name of the element, so input {…​}`or `p {…​}.

This is why previously when we defined the selector in the @Component directive we just wrote the *name*of the element, which matches onto an element of the same name.

If we wrote the selector as .appCard, like so:

import { Directive } from '@angular/core';

.

.

.

@Directive({

selector:".appCard"

})

class CardHoverDirective { }

Then this would associate the directive with any element that has a *class* of ccCardHover, like so:

<div class="card card-block appCard">...</div>

We want to associate the directive to an element which has a certain attribute.

To do that in CSS we wrap the name of the attribute with [], and this is why the selector is called [appCard].

## [Directive constructor](https://codecraft.tv/courses/angular/custom-directives/creating-a-custom-directive/#_directive_constructor)

The next thing we do is add a constructor to our directive, like so:

import { ElementRef } from '@angular/core';

.

.

.

class CardHoverDirective {

constructor(private el: ElementRef) {

}

}

When the directive gets created Angular can inject an instance of something called ElementRef into its constructor.

The ElementRef gives the directive *direct access* to the DOM element upon which it’s attached.

Let’s use it to change the background color of our card to gray.

ElementRef itself is a wrapper for the actual DOM element which we can access via the property nativeElement, like so:

el.nativeElement.style.backgroundColor = "gray";

This however assumes that our application will always be running in the environment of a browser.

Angular has been built from the ground up to work in a number of different environments, including server side via node and on a native mobile device. So the Angular team has provided a *platform independent* way of setting properties on our elements via something called a Renderer.

*Listing 1. script.ts*

import { Renderer } from '@angular/core';

.

.

.

class CardHoverDirective {

constructor(private elem: ElementRef,

private renderer: Renderer2) {

const el = this.elem.nativeElement;

el.style.background = 'blue';

//renderer.setStyle(el, 'background', 'gray');

}

}

|  |  |
| --- | --- |
| (1) | We use *Dependency Injection* (DI) to inject the renderer into our directives constructor. |
| (2) | Instead of setting the background color directly via the DOM element we do it by going through the renderer. |

Running the application now show this:

