Angular

Component basics

and templates

Angular module

Angular apps are modular and Angular has its own modularity system called Angular modules or **NgModules**.

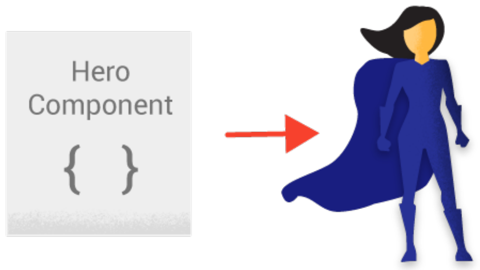
Every Angular app has at least one module, the root module, conventionally named **AppModule**.

An Angular module, whether a root or feature, is a class with an **@NgModule** decorator.

```
import { NgModule }      from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';
@NgModule({
  imports:      [ BrowserModule ],
  declarations: [ AppComponent ],
  exports:      [ AppComponent ],
  bootstrap:    [ AppComponent ]
})
export class AppModule { }
```

app/app.module.ts

Component



app/hero-list.component.ts

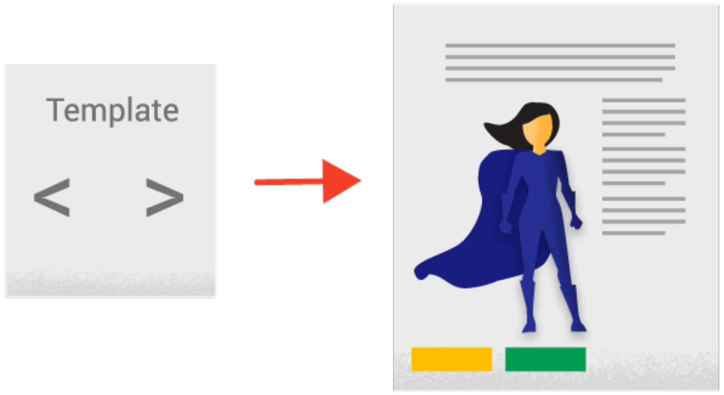
```
export class HeroListComponent implements OnInit {
  heroes: Hero[];
  selectedHero: Hero;

  constructor(private service: HeroService) { }

  ngOnInit() {
    this.heroes = this.service.getHeroes();
  }

  selectHero(hero: Hero) { this.selectedHero = hero; }
}
```

Template



app/hero-list.component.html

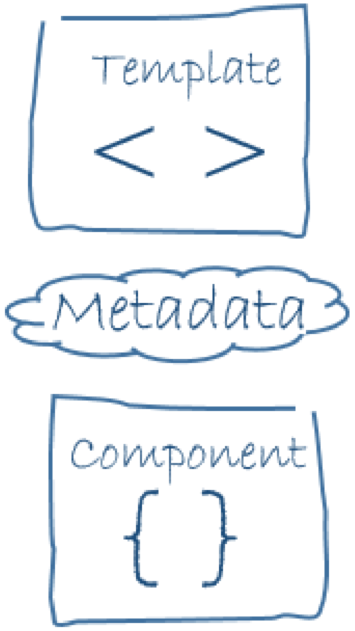
```
<h2>Hero List</h2>

<p><i>Pick a hero from the list</i></p>
<div *ngFor="let hero of heroes" (click)="selectHero(hero)”>
   {{hero.name}}
</div>

<p>Selected hero: “{{selectedHero.name}}"</p>
```

@Component decorator

```
@Component({
        selector:   'hero-list',
        templateUrl: 'app/hero-list.component.html'
})
export class HeroListComponent { ... }
```



- **selector** - a css selector that tells Angular to create and insert an instance of this component where it finds a `<hero-list>` tag in *parent* HTML: `<hero-list></hero-list>`

  Angular inserts an instance of the `HeroListComponent` view between tags.
- **templateUrl** - the address of this component's template

Example: component

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

@Component({
  selector: 'my-app',
  template: `
   <h1>{{title}}</h1>
   <h2>My favorite hero is: {{myHero}}</h2>
   `
})
export class AppComponent {
  title = 'Tour of Heroes';
  myHero = 'Windstorm';
}
```

index.html:

```
<body>
  <my-app>Loading...</my-app>
</body>
```

Example: create class for data and fill it

hero.ts:

```
 export class Hero {
   constructor(public id:number, public name:string) { }
 }
```

app.component.ts:

```
 @Component({ selector: 'my-app’,
     templateUrl: 'app.component.html' })
export class AppComponent {
   title = 'Tour of Heroes';
   heroes = [
       new Hero(1, 'Windstorm'),  new Hero(13, 'Bombasto'),
       new Hero(15, 'Magneta'),  new Hero(20, 'Tornado')
   ];
   myHero = this.heroes[0];
 }
```

Example: show the list of heroes

Template **app.component.html**:

```
<h1>{{title}}</h1>
<h2>My favorite hero is: {{myHero.name}}</h2>
<p>Heroes:</p>
<ul>
  <li *ngFor="let hero of heroes">
    {{ hero.name }}
  </li>
</ul>
<p *ngIf="heroes.length > 3">There are many heroes!</p>
```

Example: work with the events

```
@Component({
    selector: 'click-me',
    template: `
        <button (click)="onClickMe()">Click me!</button>
        {{clickMessage}}`
})
export class ClickMeComponent {
    clickMessage = '';
    onClickMe() {
        this.clickMessage ='You are my hero!';
    }
}
```

Example: adding hero form

```
@Component({
  selector: ‘add-hero',
  template: `
    <input #newHero (keyup.enter)="addHero(newHero.value)"
         (blur)="addHero(newHero.value); newHero.value='' ">
    <button (click)=addHero(newHero.value)>Add</button>

    <ul> <li *ngFor="let hero of heroes">{{hero}}</li> </ul>
`})
export class AddHeroComponent {
  heroes=['Windstorm', 'Bombasto', 'Magneta', 'Tornado'];

  addHero(newHero:string) {
    if (newHero) {
      this.heroes.push(newHero);
    }
  }
}
```

Example: execute

main.ts

```
import {platformBrowserDynamic}    from ' @angular/platform-browser-dynamic '
import {AppModule} from './app.component'

const platform = platformBrowserDynamic();
platform.bootstrapModule(AppModule);
```

package.json

- scripts
  - **start**: concurrently start TSC transpiler and server
- necessary libraries: name, version
  - **dependencies** (SystemJS is used as module system)
  - **devDependencies**

tsconfig.json

- TypeScript configuration

npm start

Thank you
and have a great Angular
experience!

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