



全栈开发 & 系统设计串讲

小王子，韩立，Lance 等FLAG老师



课程介绍

课程主要分为三个章节和部分。

了解全栈开发以及基础知识准备

实现一个项目来帮助理解全栈开发

系统设计以及云服务实践和思考

课前申明



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课前须知



我假设你们已经知道了...

html

CSS

布局

课前准备



IDE, IntelliJ, Ultimate

使用mac的同学已经安装Homebrew

已经安装Node.js

带上了一颗工程师的心

知道什么是 git 并会简单操作

已经阅读Angular 环境配置

已经安装最新的java JDK

上节课git clone了我的repo



Angular

Component, NgFor, NgIf ...

PART 1



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复用



可维护



可测试



Angular 的定位

土鳖

React.js

土豪

原生html

JS /
Squery

Angular 6

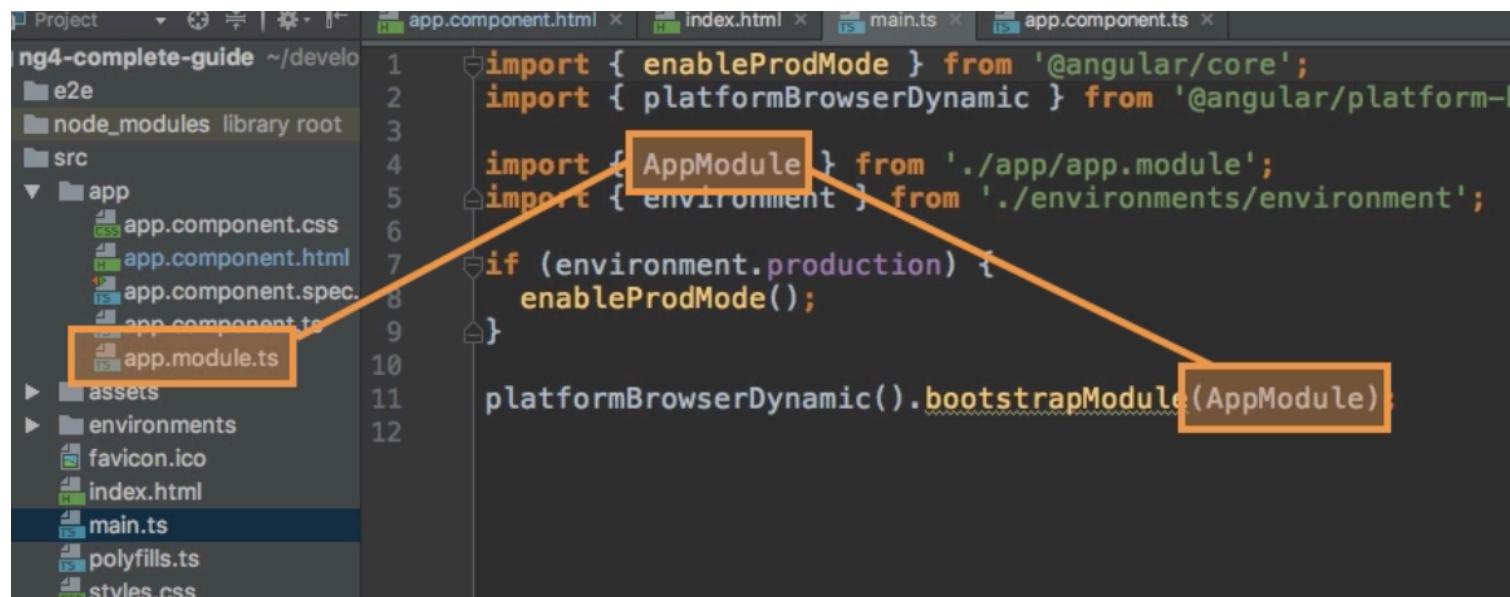
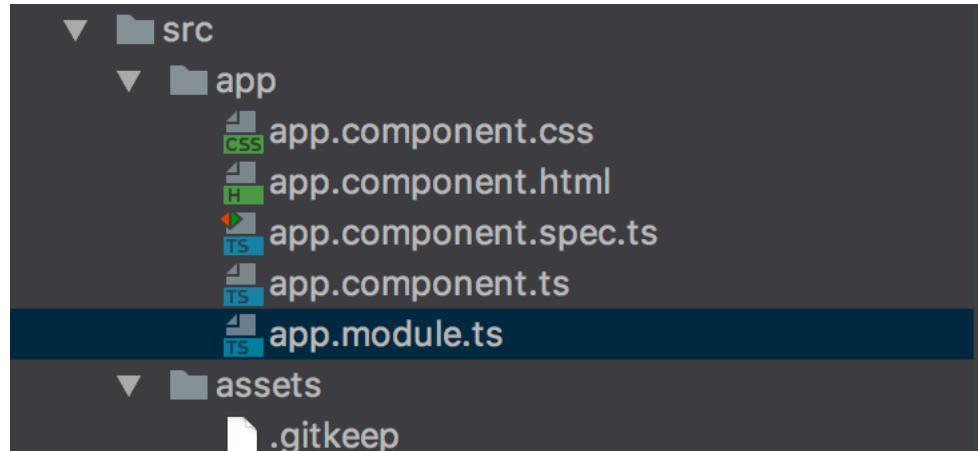


Angular 的安装

- 去官网
- 配置
 - `npm install -g @angular/cli`
 - `ng new 项目名字`
 - `cd 项目路径`
 - `ng serve`

Angular 的运行顺序

- ng serve 后访问 localhost:4200
- Angular 6 是怎么载入页面的？
- App下各种文件的关系是什么？



A screenshot of an IDE showing the 'main.ts' file. The code is as follows:

```
import { enableProdMode } from '@angular/core';
import { platformBrowserDynamic } from '@angular/platform-browser-dynamic';

import { AppModule } from './app/app.module';
import { environment } from './environments/environment';

if (environment.production) {
  enableProdMode();
}

platformBrowserDynamic().bootstrapModule(AppModule);
```

The 'app.module.ts' file in the 'src/app' folder is highlighted in the sidebar. The line 'import { AppModule } from './app/app.module';' and the call to 'bootstrapModule' are highlighted with orange boxes and arrows pointing to them from the sidebar.

Angular 的运行顺序



The diagram illustrates the execution flow of Angular components and modules. It shows the file structure of an Angular project and highlights specific files and code snippets.

File Structure:

- Project: ng4-complete-guide
- src folder:
 - e2e
 - node_modules library root
 - src folder:
 - app folder:
 - app.component.css
 - app.component.html
 - app.component.spec.ts
 - app.component.ts
 - main.ts
 - polyfills.ts
 - styles.css
 - test.ts
 - tsconfig.json
- .angular-cli.json
- .editorconfig
- .gitignore
- karma.conf.js
- package.json
- protractor.conf.js

Code Snippets:

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

5 import { AppComponent } from './app.component';

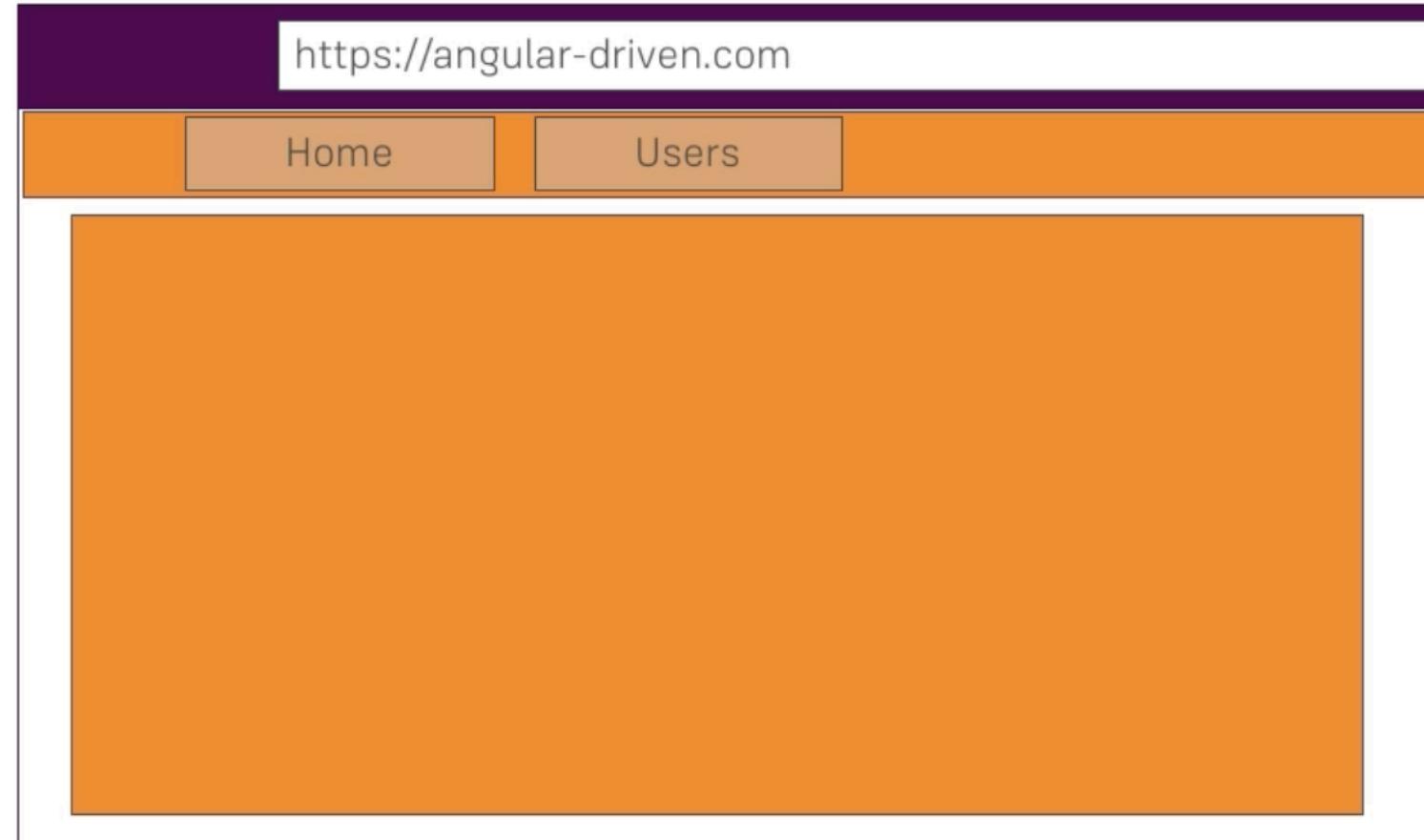
6 @NgModule({
7   declarations: [
8     AppComponent
9   ],
10  imports: [
11    BrowserModule,
12    FormsModule,
13    HttpClientModule
14  ],
15  providers: [],
16  bootstrap: [AppComponent]
17 })
18 export class AppModule { }
```

The code snippet shows the `app.module.ts` file. It imports several Angular modules: `BrowserModule`, `FormsModule`, `HttpClientModule`, and `HttpClientModule`. It then imports the `AppComponent` component. The `@NgModule` decorator defines the module's configuration, including declarations, imports, providers, and bootstrap components. The `bootstrap` array contains the `AppComponent`.

Angular 的OOD



- 什么是Component?
- 树状结构 ?
- Component 还能嵌套 component?



新建Component

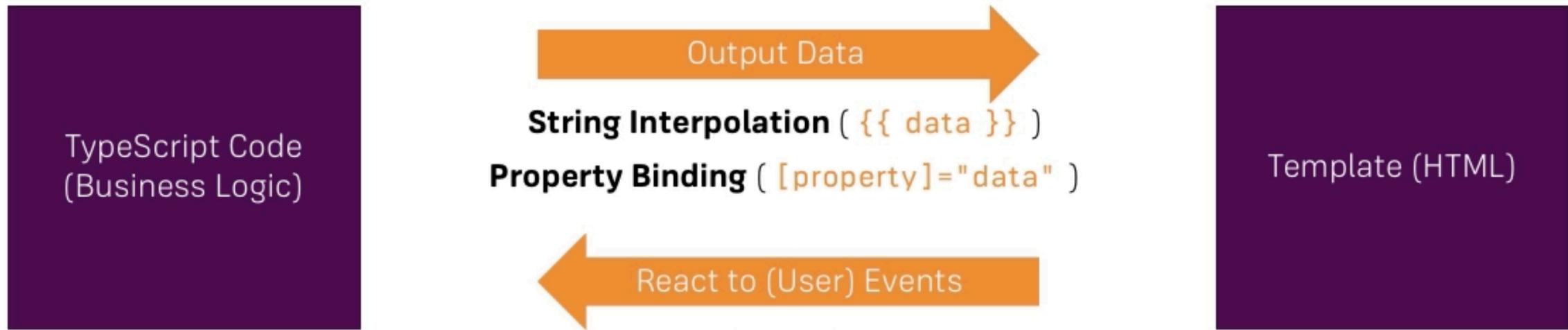


- 手动copy
- ng generate component [NAME]
- ng g c [NAME]

数据绑定



Databinding = Communication



Combination of Both: **Two-Way-Binding** ([(ngModel)]="data")

This is a Component Example.

Server with ID 10 is offLine

Server with ID 10 is offLine

Server with ID 10 is offLine

```
component.html × H server.component.html × TS app.module.ts × JSON angular.json × CSS app
<h4>This is a Component Example. </h4>
<p> Server with ID {{ serverId }} is {{ serverStatus }} </p>
<p> {{ 'Server' }} with ID {{ serverId }} is {{ serverStatus }} </p>
<p> {{ 'Server' }} with ID {{ serverId }} is {{ getServerStatus() }} </p>

<hr>
```

Event Binding / Two way data binding



- 什么是Event Binding?
- 什么是Two Way Data Binding?

Important: For Two-Way-Binding (covered in the next lecture) to work, you need to enable the `ngModel` directive. This is done by adding the `FormsModule` to the `imports[]` array in the AppModule.

You then also need to add the import from `@angular/forms` in the app.module.ts file:

```
import { FormsModule } from '@angular/forms';
```

Event Binding



This is a counter

2

Add One

Reset Counter

```
counter = 0;
```

```
counterPlus() {  
    this.counter++;  
}
```

```
resetCounter() {  
    this.counter = 0;  
}
```

Two-way data binding



This is a input Box with Two Way Data Binding

User Name:

Password:

Login

Sign Out

```
<button class="btn btn-light" (click)= "signout()">> Sign Out
```

```
<h4>This is a input Box with Two Way Data Binding</h4>
```

```
<div>
```

```
  <span>User Name: </span>
```

```
  <input type="text" [(ngModel)]= "userName">
```

```
</div>
```

关键语法



- ngIf/else
- ngFor
- ngStyle
- ngClass

A screenshot of a code editor showing an Angular template. The code is contained within a `p` tag. It includes two binding expressions: `[ngStyle] = "{backgroundColor: getColor()}"` and `[ngClass] = "{online: serverStatus === 'online'}"`. The text inside the `p` tag is: `{{ 'Server' }} with ID {{ serverId }} is {{ getServerStatus() }}`.

```
<p>
  [ngStyle] = "{backgroundColor: getColor()}"
  [ngClass] = "{online: serverStatus === 'online'}"
  {{ 'Server' }} with ID {{ serverId }} is {{ getServerStatus() }}
</p>
```

Router imports

The Angular Router is an optional service that presents a particular component view for a given URL. It is not part of the Angular core. It is in its own library package, `@angular/router`. Import what you need from it as you would from any other Angular package.

src/app/app.module.ts (import)

```
import { RouterModule, Routes } from '@angular/router';
```

Routing



src/app/app.module.ts (excerpt)

```
const appRoutes: Routes = [
  { path: 'crisis-center', component: CrisisListComponent },
  { path: 'hero/:id',      component: HeroDetailComponent },
  {
    path: 'heroes',
    component: HeroListComponent,
    data: { title: 'Heroes List' }
  },
  { path: '',
    redirectTo: '/heroes',
    pathMatch: 'full'
  },
  { path: '**', component: PageNotFoundComponent }
];

@NgModule({
  imports: [
    RouterModule.forRoot(
      appRoutes,
      { enableTracing: true } // <-- debugging purposes only
    )
    // other imports here
  ],
  ...
})
export class AppModule {}
```

Router links

Now you have routes configured and a place to render them, but how do you navigate? The URL could arrive directly from the browser address bar. But most of the time you navigate as a result of some user action such as the click of an anchor tag.

Consider the following template:

src/app/app.component.html

```
<h1>Angular Router</h1>
<nav>
  <a routerLink="/crisis-center" routerLinkActive="active">Crisis Center</a>
  <a routerLink="/heroes" routerLinkActive="active">Heroes</a>
</nav>
<router-outlet></router-outlet>
```

作业



- 利用Angular 6来做一个小游戏:
 - A. 用户能添加宠物小精灵到两个不同的队伍(可以用一个文本框和数组以及按钮)
 - B. 系统要判断哪一队的战斗力能够获胜(数据绑定和判断)
 - C. 胜利后要输出队伍名称以及组成的成员(文本框数据绑定)
- 要求实现功能
- 要求界面简单美观

Questions?



THANK YOU

