

Angular2 in Action

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2016-10-28



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 - Component(template,style,animation),Module,Route
- **Angular2 Core Architecture**
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Angular-cli



2009, front-end big bang...

Angular-cli



Angular-cli



When we develop Angular apps, we need...

Angular-cli



Angular-cli is more than a tool, it is a **PLATFORM!**

Angular-cli



```
>npm install -g angular-cli  
>ng help  
>ng new my-project1  
>ng serve
```


>ng generate

cl:class

c:component

d:directive

e:enum

m:module

p:pipe

s:service

Angular-cli

















```
angular-cli
WARNING in ./@angular/core/src/linker/system.js ng module factory loader.js
45:15 Critical dependency: the request of a dependency is an expression
WARNING in ./@angular/core/src/linker/system.js ng module factory loader.js
57:15 Critical dependency: the request of a dependency is an expression
ERROR in [default] E:\github\ng2-bootstrap-demo\src\app\user\add-user.component.spec.ts:8:20
  Supplied parameters do not match any signature of call target.
13 10 2016 10:58:21.772:INFO [karma]: Karma v1.2.0 server started at http://localhost:9876/
13 10 2016 10:58:21.773:INFO [launcher]: Launching browser Chrome with unlimited concurrency
13 10 2016 10:58:21.897:INFO [launcher]: Starting browser Chrome
13 10 2016 10:58:24.805:INFO [Chrome 53.0.2785 (Windows 10 0.0.0)]: Connected on socket /#i6GL146TuIVZ1kPKAAAA with id 79091848
Chrome 53.0.2785 (Windows 10 0.0.0): App: Angular2BootstrapSass should create the app FAILED
  'router-outlet' is not a known element:
  1. If 'router-outlet' is an Angular component, then verify that it is part of this module.
  2. If 'router-outlet' is a Web Component then add "CUSTOM_ELEMENTS_SCHEMA" to the '@NgModule.schema' of this component to suppress this message.
  </div>
  <div class="main-container">
    [ERROR ->]<router-outlet></router-outlet>
  </div>
  ): AppComponent#42:4
Error: Template parse errors:
  at TemplateParser.parse (http://localhost:9876/_karma_webpack_/0.bundle.js:7333:19)
  at RuntimeCompiler.compileTemplate (http://localhost:9876/_karma_webpack_/0.bundle.js:15632:51)
  at http://localhost:9876/_karma_webpack_/0.bundle.js:15555:83
  at Set.forEach (native)
  at compile (http://localhost:9876/_karma_webpack_/0.bundle.js:15555:47)
  at RuntimeCompiler._compileComponents (http://localhost:9876/_karma_webpack_/0.bundle.js:15557:13)
  at RuntimeCompiler.compileModuleAndAllComponents (http://localhost:9876/_karma_webpack_/0.bundle.js:15474:37)
  at RuntimeCompiler.compileModuleAndAllComponentsSync (http://localhost:9876/_karma_webpack_/0.bundle.js:15462:21)
  at TestingCompilerImpl.compileModuleAndAllComponentsSync (http://localhost:9876/_karma_webpack_/0.bundle.js:20504:35)
  at TestBed._initIfNeeded (webpack:///E:/github/ng2-bootstrap-demo/_karma_webpack_/0.bundle.js:1059:0 <- src/test.ts:8814:40)
Chrome 53.0.2785 (Windows 10 0.0.0): Executed 1 of 10 FAILED (0 secs / 0.101 secs)
Chrome 53.0.2785 (Windows 10 0.0.0): App: Angular2BootstrapSass should create the app FAILED
  'router-outlet' is not a known element:
  1. If 'router-outlet' is an Angular component, then verify that it is part of this module.
  2. If 'router-outlet' is a Web Component then add "CUSTOM_ELEMENTS_SCHEMA" to the '@NgModule.schema' of this component to suppress this message.
  </div>
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    [ERROR ->]<router-outlet></router-outlet>
  </div>
  ): AppComponent#42:4
Error: Template parse errors:
  at TemplateParser.parse (http://localhost:9876/_karma_webpack_/0.bundle.js:7333:19)
```

>ng test



Using Angular2

Using Angular2



















 Android	 Firefox	 Chrome	 IE
4.1  * ✓	46  7 ✓	52  7 ✓	9  7 ✗
4.2  * ✓			10  8 ✓
4.3  * ✓			11  8.1 ✓
4.4  * ✓			
5.1  * ✓			

Browser support of Angular2

Using Angular2

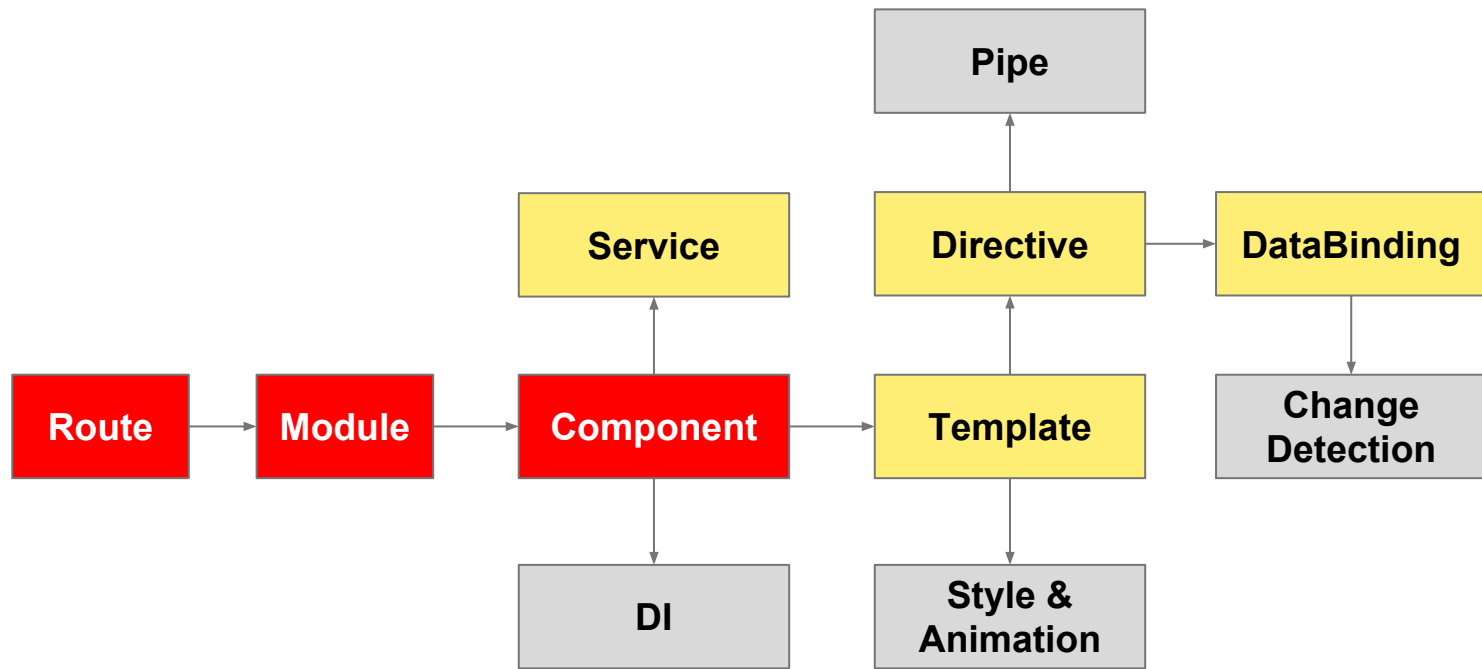


build **passing** coverage **99%** downloads **1M** npm **v2.0.3** license **MIT**

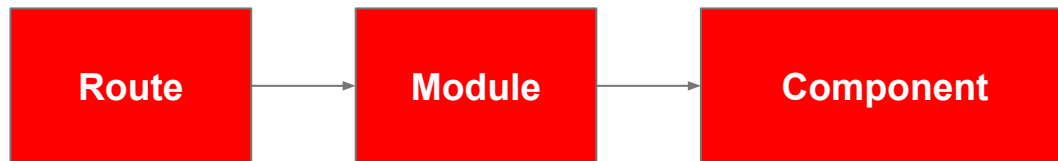
 Android	 Firefox	 Chrome	 IE	 iPhone	 Edge	 Safari
4.2  * ✓	45  * ✓	51  7 ✓	9  7 ✓	7.0  10.9 ✓	13  10 ✓	8  10.10 ✓
5.1  * ✓			10  8 ✓	9.2  10.10 ✓		
			11  8.1 ✓			

Browser support of Vuejs

Using Angular2



Using Angular2



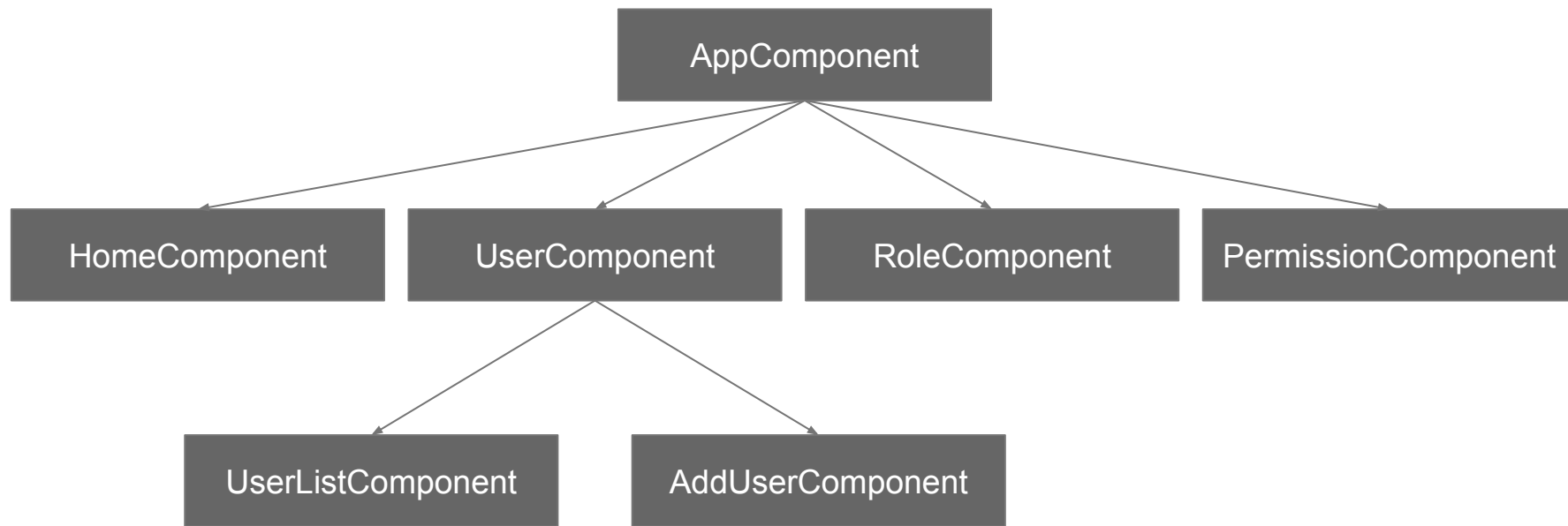
Using Angular2



<https://github.com/damoqiongqiu/ng2-bootstrap-demo>

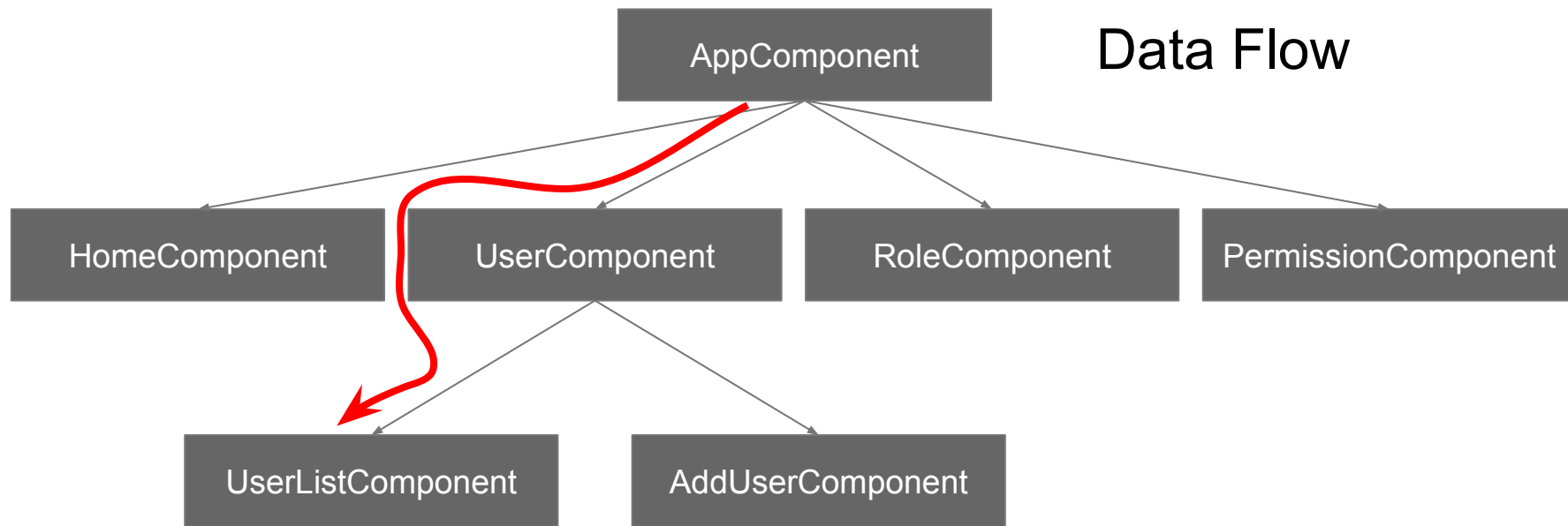


Using Angular2

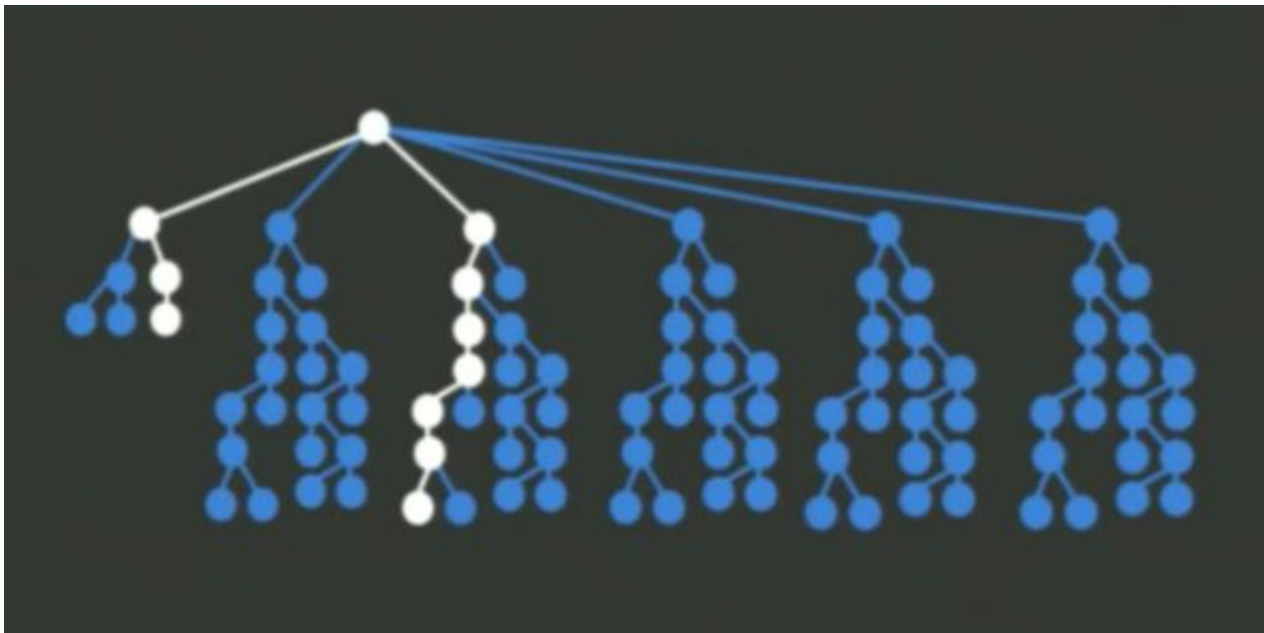


Tree

Using Angular2



Using Angular2



With immutable data

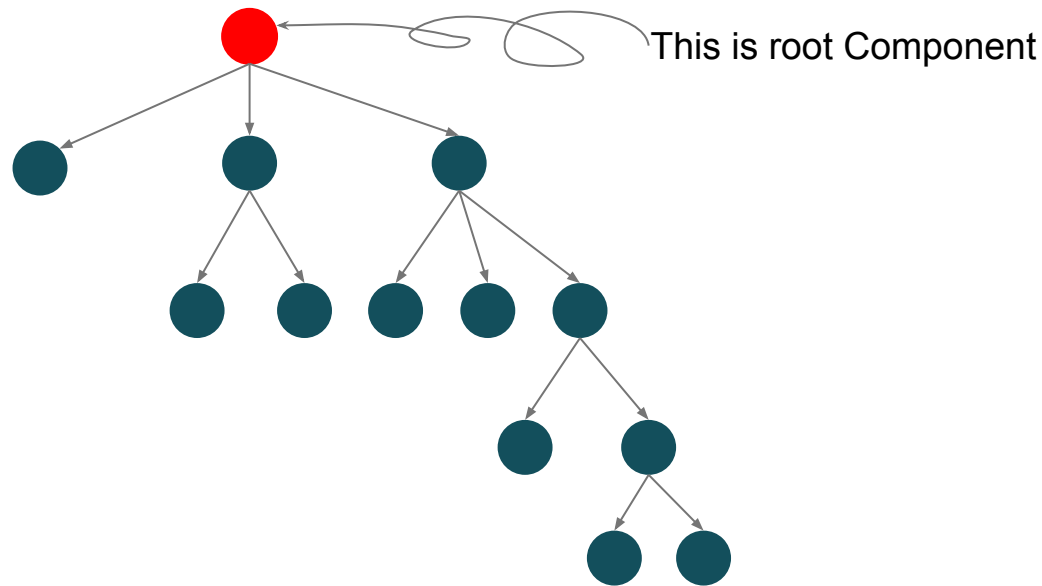
Using Angular2:Module



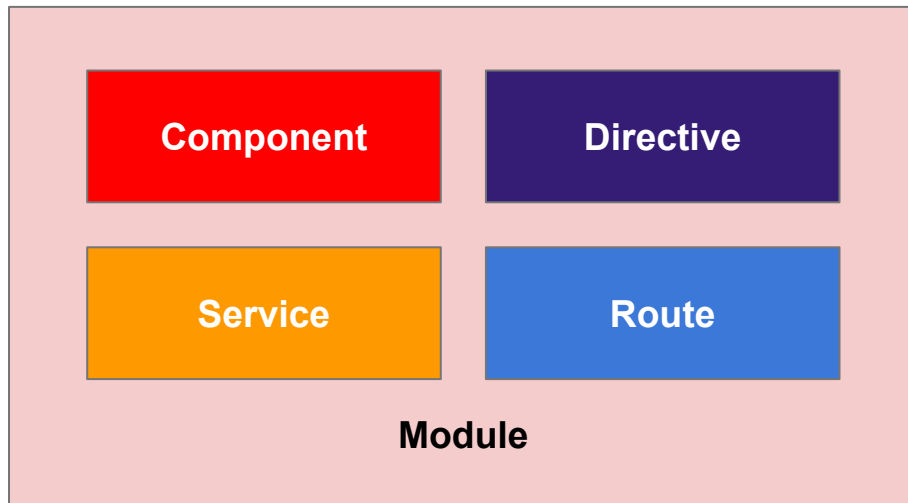
Why we need NgModule?



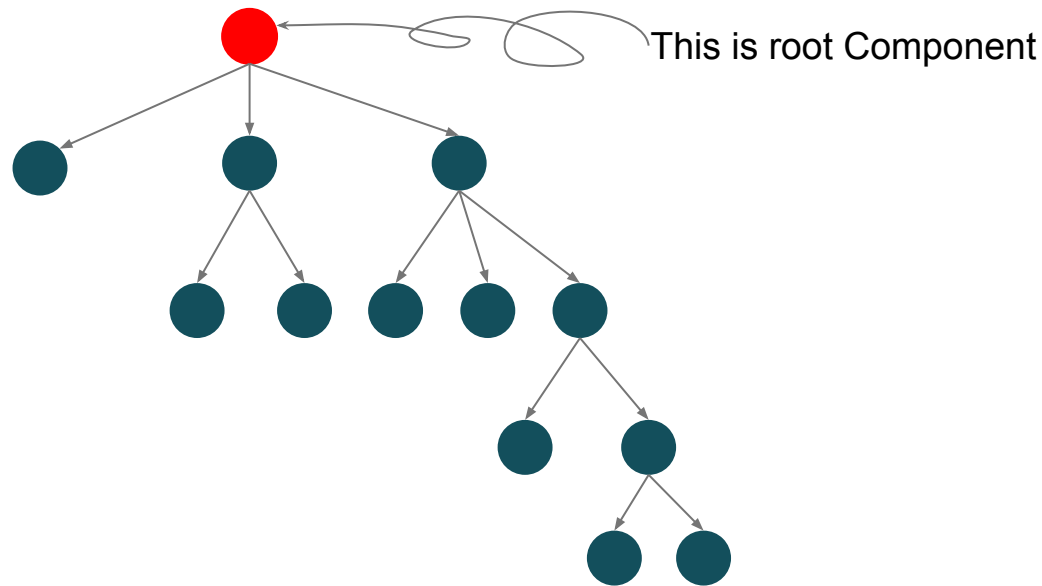
Using Angular2:Module



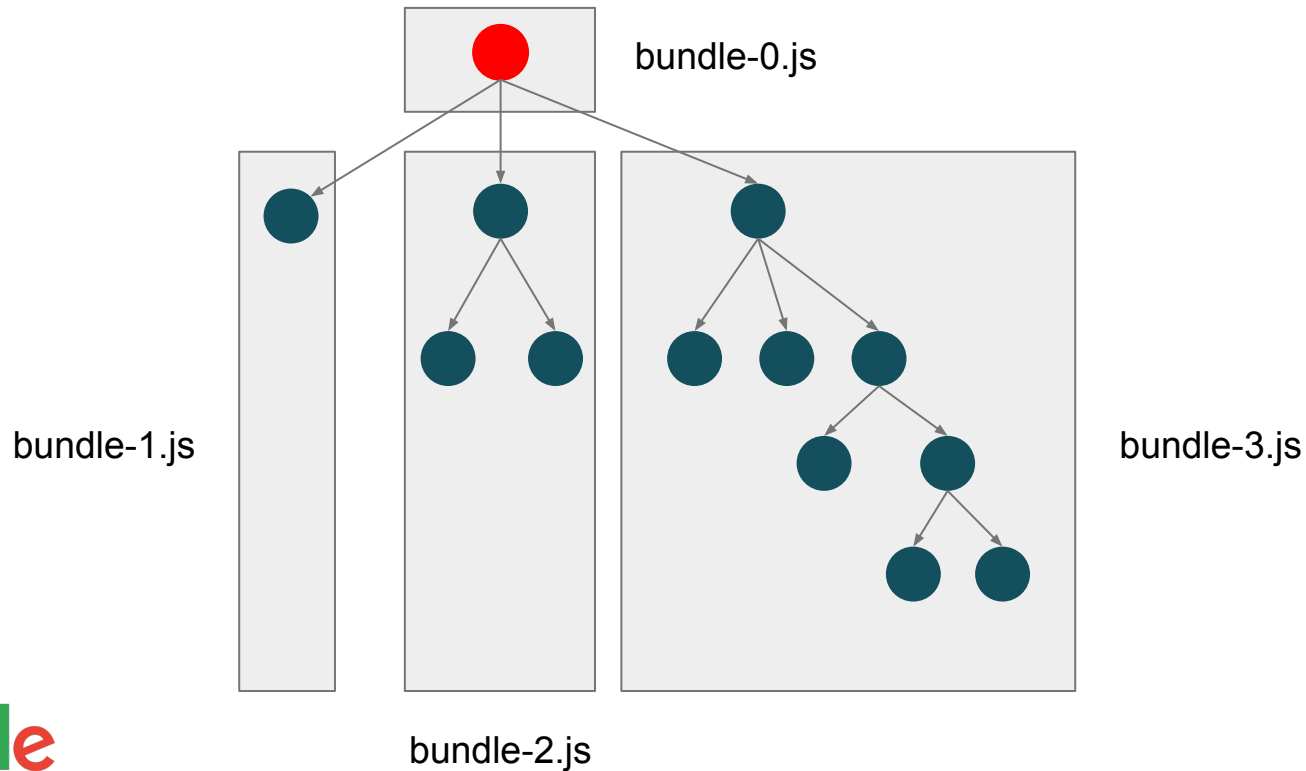
Using Angular2:Module



Using Angular2:Module



Using Angular2:Module



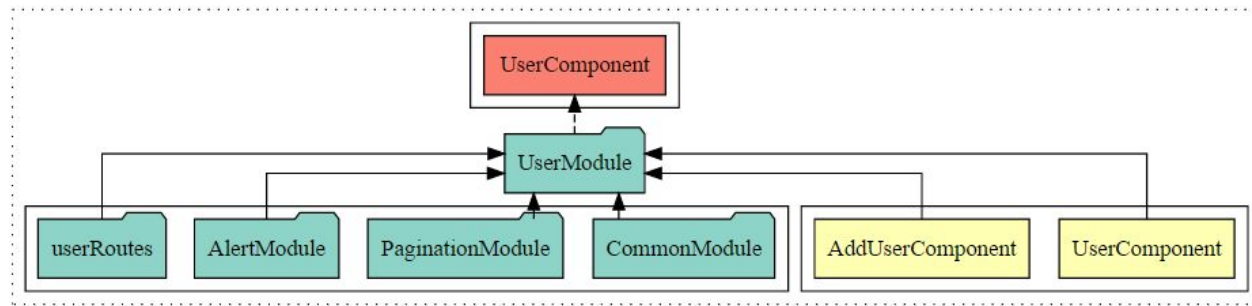
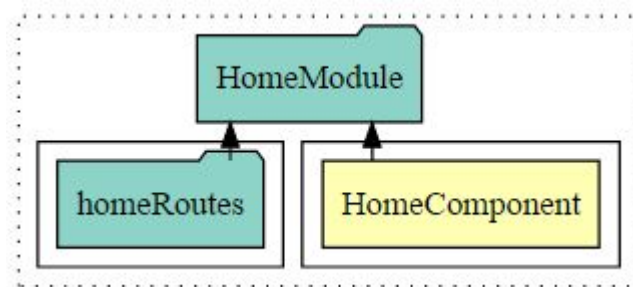
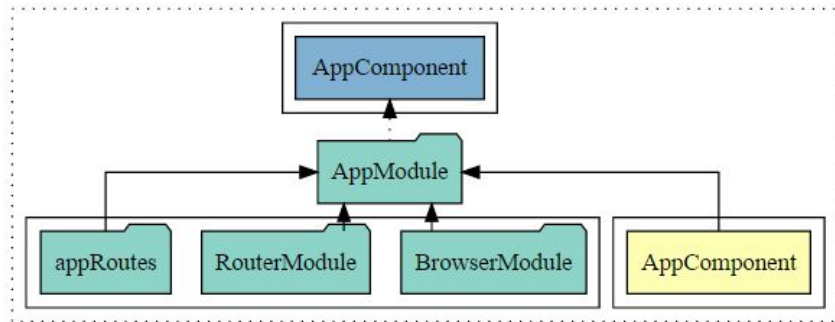
Using Angular2:Module

```
app.routes.ts
1 import { RouterModule } from '@angular/router';
2
3 const appRoutes=[
4   {
5     path: '',
6     loadChildren: 'app/home/home.module'
7   }, {
8     path: 'home',
9     loadChildren: 'app/home/home.module'
10  }, {
11    path: 'user',
12    loadChildren: 'app/user/user.module'
13  }, {
14    path: 'role',
15    loadChildren: 'app/role/role.module'
16  }, {
17    path: '**', //fallback router must in the last
18    loadChildren: 'app/home/home.module'
19  }
20 ];
21 export default RouterModule.forRoot(appRoutes);
```

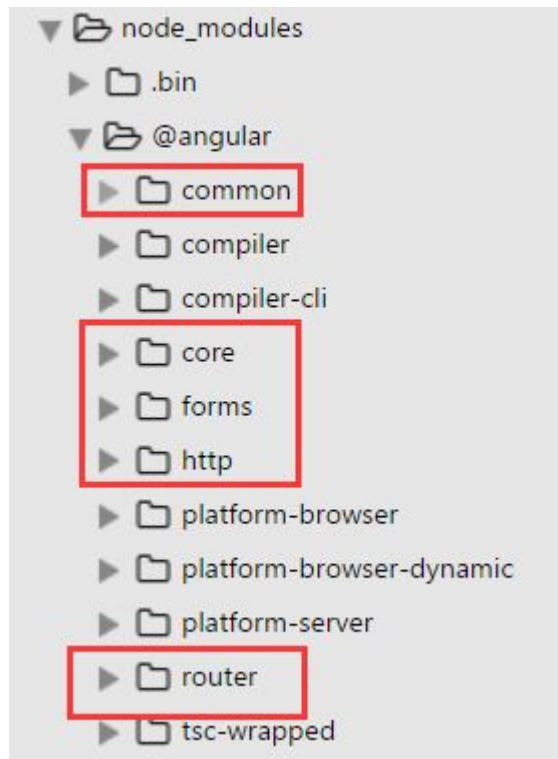
Using Angular2:Module

```
home.routes.ts
1 import {RouterModule} from "@angular/router";
2 import {HomeComponent} from "../home.component";
3
4 const homeRoutes= [
5   {path: '', component: HomeComponent}
6 ];
7
8 export default RouterModule.forChild(homeRoutes);
```

Using Angular2:Module



Using Angular2:Module



Using Angular2:Route



Basic Route



Using Angular2:Route

```
app.routes.ts
1 import { RouterModule } from '@angular/router';
2
3 const appRoutes=[
4   {
5     path:'',
6     loadChildren:'app/home/home.module'
7   },{
8     path:'home',
9     loadChildren:'app/home/home.module'
10  },{
11    path:'user',
12    loadChildren:'app/user/user.module'
13  },{
14    path:'role',
15    loadChildren:'app/role/role.module'
16  },{
17    path:'**',//fallback router must in the last
18    loadChildren:'app/home/home.module'
19  }
20 ];
21 export default RouterModule.forRoot(appRoutes);
```

Route and lazy loading.

Using Angular2:Route

localhost:4200/user/team/2

Angular2-Bootstrap

Home User Role Permission Settings ECharts AboutMe

Department-1

- Team-1
- Team-2

Department-2

- Team-3
- Team-4

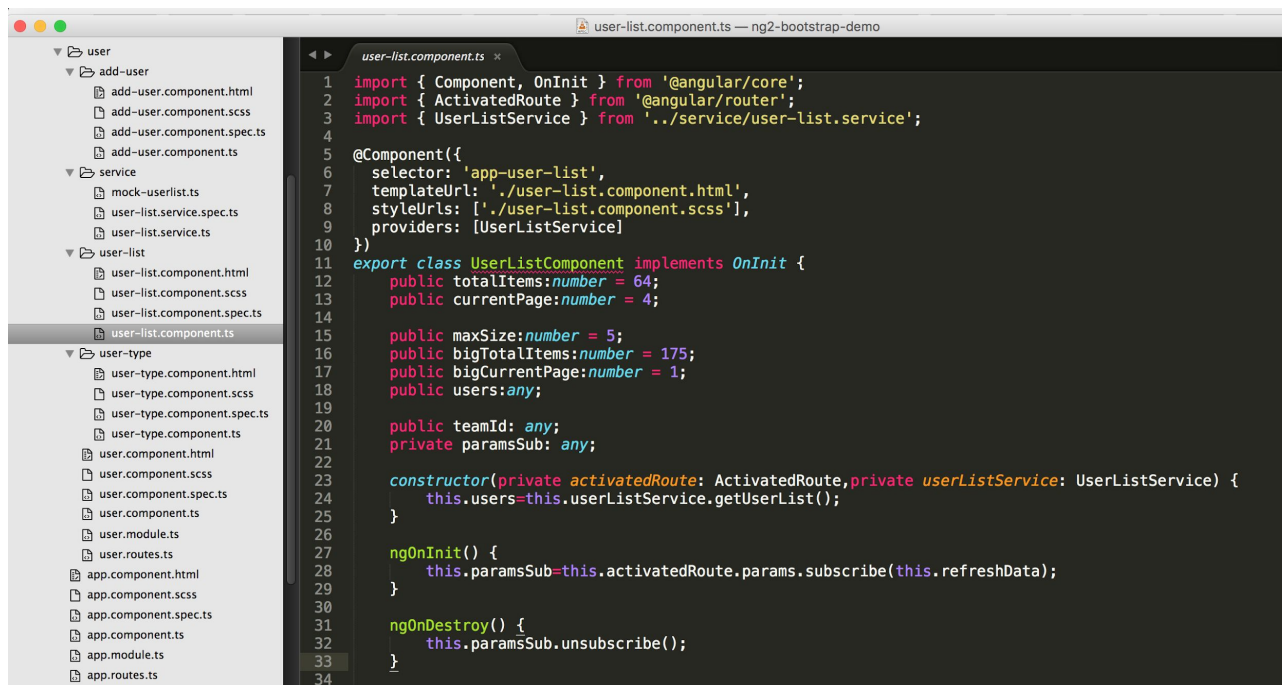
Search + Add User

Index	UserName	NickName	Operation
1	momo	大漠穷秋	× ?
2	momo	大漠穷秋	× ?
3	momo	大漠穷秋	× ?
4	momo	大漠穷秋	× ?
5	momo	大漠穷秋	× ?
6	momo	大漠穷秋	× ?
7	momo	大漠穷秋	× ?
8	momo	大漠穷秋	× ?
9	momo	大漠穷秋	× ?
10	momo	大漠穷秋	× ?

First Previous 1 2 3 4 5 ... Next Last

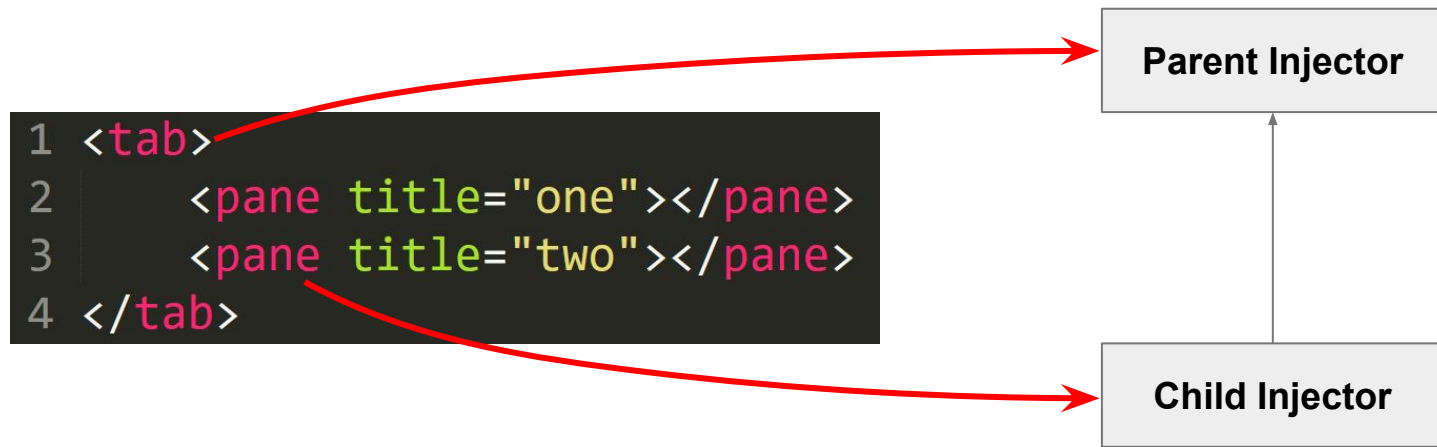
Angular2 Core Architecture

Architecture:DI



```
1 import { Component, OnInit } from '@angular/core';
2 import { ActivatedRoute } from '@angular/router';
3 import { UserListService } from '../service/user-list.service';
4
5 @Component({
6   selector: 'app-user-list',
7   templateUrl: './user-list.component.html',
8   styleUrls: ['./user-list.component.scss'],
9   providers: [UserListService]
10 })
11 export class UserListComponent implements OnInit {
12   public totalItems:number = 64;
13   public currentPage:number = 4;
14
15   public maxSize:number = 5;
16   public bigTotalItems:number = 175;
17   public bigCurrentPage:number = 1;
18   public users:any;
19
20   public teamId: any;
21   private paramsSub: any;
22
23   constructor(private activatedRoute: ActivatedRoute,private userListService: UserListService) {
24     this.users=this.userListService.getUserList();
25   }
26
27   ngOnInit() {
28     this.paramsSub=this.activatedRoute.params.subscribe(this.refreshData);
29   }
30
31   ngOnDestroy() {
32     this.paramsSub.unsubscribe();
33   }
34 }
```

Architecture:DI



Injector tree

Architecture:DI

```
⊗ 🔍 <top frame>          ▾ ☐ Preserve log
▼ EXCEPTION: No provider for NgForm (ShowError -> NgForm)      browser_adapter.js:110
STACKTRACE:                                                    browser_adapter.js:106
Error: DI Exception                                             browser_adapter.js:106
  at NoBindingError.BaseException (lang.js:163)
  at NoBindingError.AbstractBindingError (exceptions.js:48)
  at new NoBindingError (exceptions.js:70)
  at Injector.execute.$__export._throwOrNull (injector.js:640)
  at Injector.execute.$__export._getByKeySelf (injector.js:645)
  at Injector.execute.$__export._getByKey (injector.js:629)
  at Injector.execute.$__export._getByDependency (injector.js:621)
  at Injector.execute.$__export._instantiate (injector.js:518)
  at Injector.execute.$__export._new (injector.js:491)
  at InjectorInlineStrategy.execute.$__export.instantiateBinding (injector.js:283)
ERROR CONTEXT:                                                  browser_adapter.js:106
  ▼ _Context {element: show-error.ng-binding, componentElement: template-driven-forms, injector: Injector}
    ▶ componentElement: template-driven-forms
    ▶ element: show-error.ng-binding
    ▶ injector: Injector
    ▶ __proto__: _Context
```

The injector of the element where Angular failed to instantiate a directive

- Each HTML tag has a injector
- Inject through constructor
- @Injectable and its children @Component

<https://vsavkin.com/dependency-injection-in-angular-1-and-angular-2-d69589979c18#.3ptlx48zf>

<https://my.oschina.net/mumu/blog/775695>

Architecture:DataBinding



<http://blog.thoughttram.io/angular/2016/02/22/angular-2-change-detection-explained.html>

<http://pascalprecht.github.io/slides/angular-2-change-detection-explained/#/>



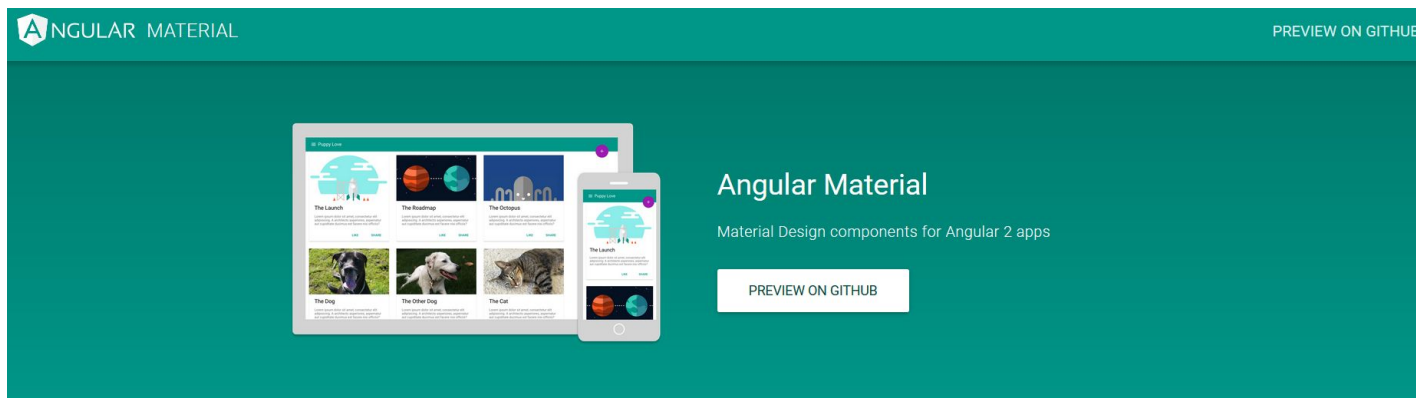
UI Libraries

UI Libraries

- [ng-bootstrap](#) is currently available.
- [PrimeNG](#) has largest number of components.
- [Angular-Material2](#) is in beta.
- [KendoUI](#) is creating components for ng2.
- [Ionic](#) is very popular.

What if there is no ANSI C standard library?

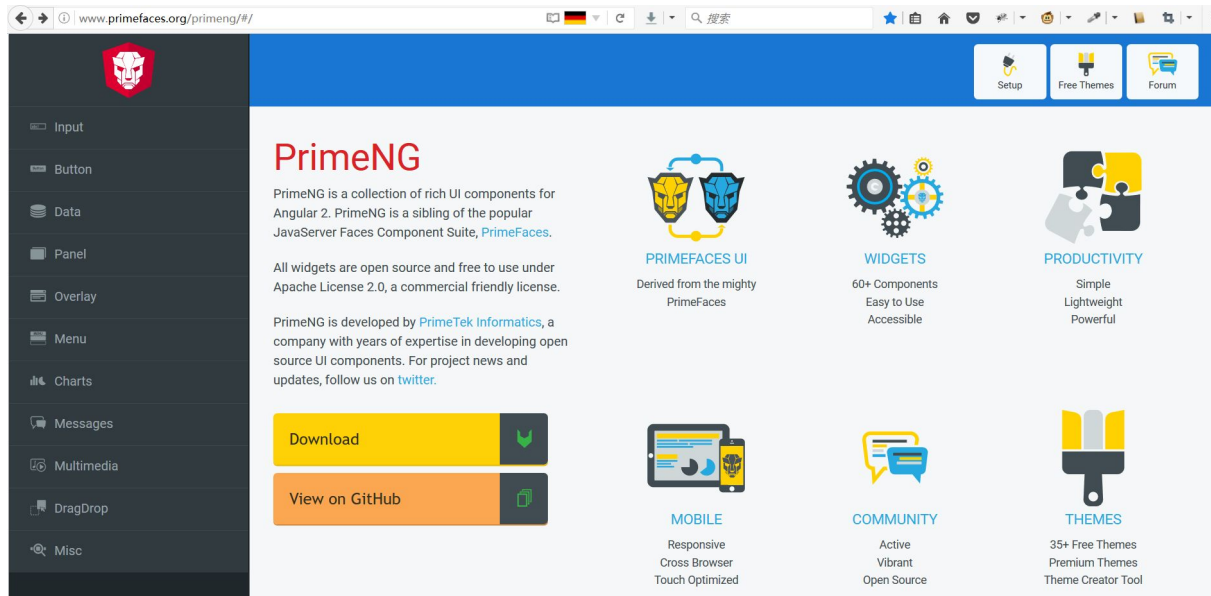
UI Libraries



Sprint from Zero to App

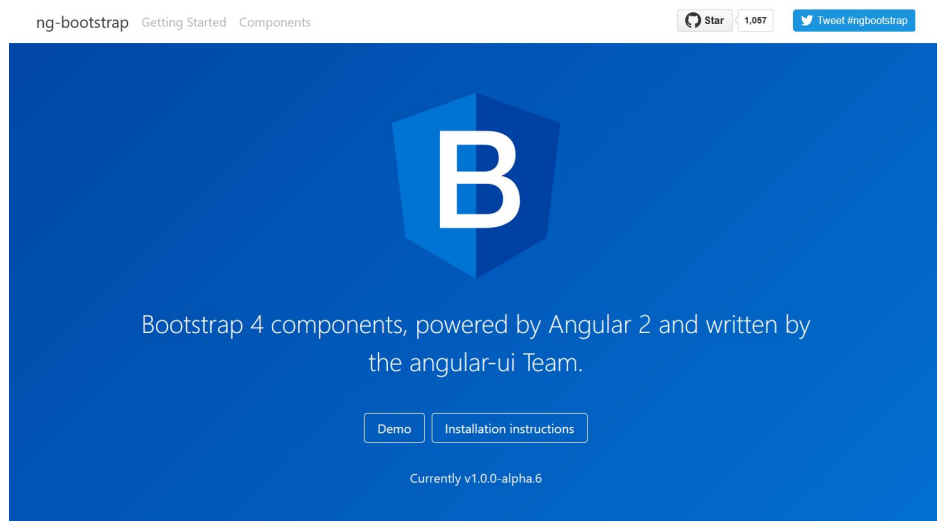
Hit the ground running with comprehensive, modern UI components that work across web, mobile and desktop.

UI Libraries



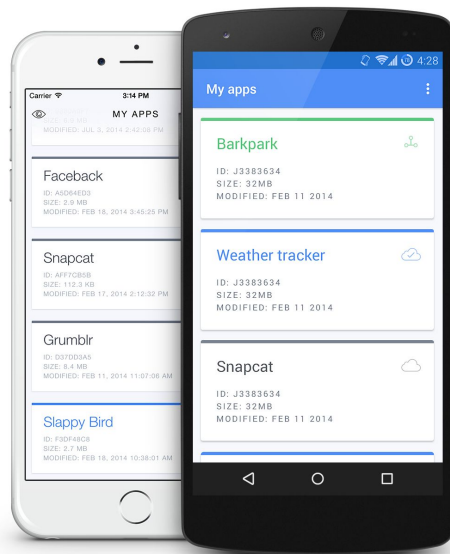
PrimeNG

UI Libraries



RECOMMENDED:ng-bootstrap

UI Libraries



ionic

A Complex Demo of ng2-bootstrap

A Complex Demo Of ng2-bootstrap

Google Developers



<https://github.com/damoqiongqiu/ng2-bootstrap-demo>



Angular Team



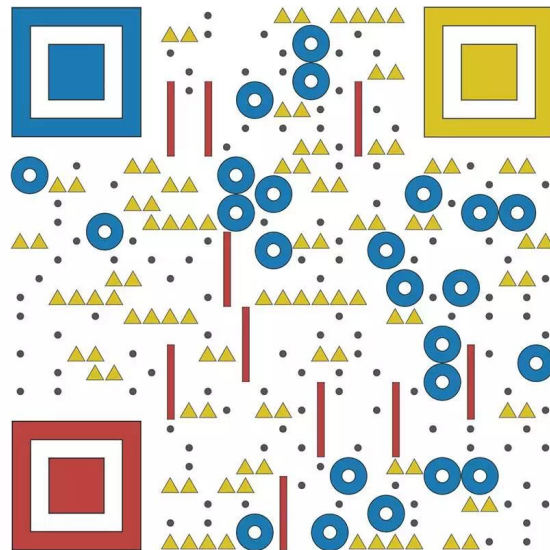
Contact



Google Developers

长按关注 谷歌官方公众号

『谷歌开发者』



DevRel-China-Contact@google.com

谢谢