



DEVELOPPEMENT WEB COTE CLIENT ANGULAR AVANCE

ROUTAGE ET NAVIGATION

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ROUTAGE ET NAVIGATION

- ❑ Une application Angular contient plusieurs composants,
- ❑ Chaque composant possède une vue (template)
- ❑ Il faut pouvoir naviguer entre les vues quand l'utilisateur réalise une action.

CAS D'UTILISATION: ROUTAGE ET NAVIGATION

Localhost:4200

Routing navigation

Départements

Employés

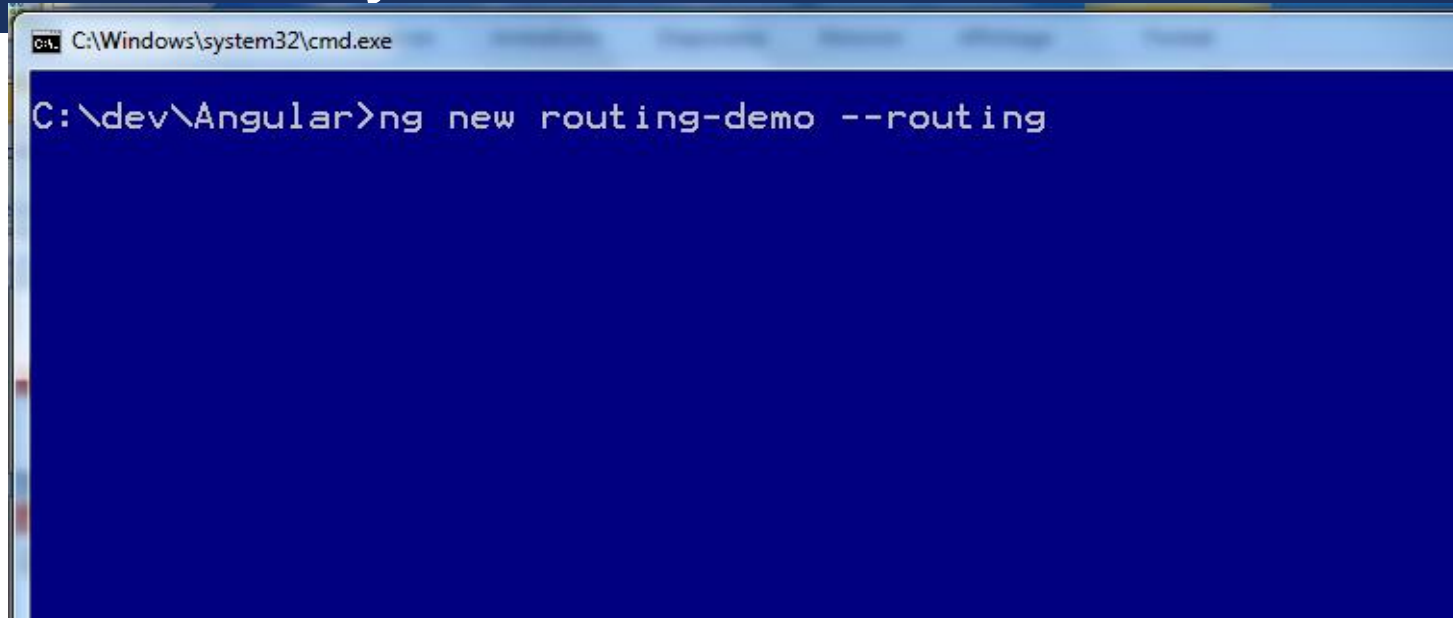
localhost:4200/departements

localhost:4200/employes

DÉMARCHE

- 1) Générer un projet Angular **avec l'option routing**
- 2) Générer les composants `departementList` et `emplyesList`
- 3) **Configurer les routes**
- 4) Ajouter les boutons et utiliser les directives pour naviguer.

CRÉATION DU PROJET AVEC L'OPTION ROUTING

A screenshot of a Windows command prompt window. The title bar at the top reads 'C:\Windows\system32\cmd.exe'. The command prompt shows the current directory as 'C:\dev\Angular' and the command 'ng new routing-demo --routing' has been entered. The background of the command prompt window is dark blue.

```
C:\Windows\system32\cmd.exe  
C:\dev\Angular>ng new routing-demo --routing
```

AJOUT DU ROUTING À UN PROJET EXISTANT

EXPLORER

OPEN EDITORS

- × app-routing.module.ts src\app

ROUTING-DEMO

- > e2e
- > node_modules
- src
 - app
 - app-routing.module.ts
 - app.component.css
 - app.component.html
 - app.component.spec.ts
 - app.component.ts
 - app.module.ts

app-routing.module.ts





```
src > app >  app-routing.module.ts > ...  
1  import { NgModule } from '@angular/core';  
2  import { Routes, RouterModule } from '@angular/router';  
3  
4  
5  const routes: Routes = [];  
6  
7  @NgModule({  
8    imports: [RouterModule.forRoot(routes)],  
9    exports: [RouterModule]  
10 })  
11 export class AppRoutingModule { }  
12
```

EXPLORER

OPEN EDITORS

X  app.module.ts src\app

ROUTING-DEMO

✓  src✓  app app-routing.module.ts app.component.css app.component.html app.component.spec.ts app.component.ts app.module.ts>  assets>  environments favicon.ico index.html

TS main.ts

TS polyfills.ts

 app.module.ts Xsrc > app >  app.module.ts > ...

```
1  import { BrowserModule } from '@angular/platform-browser';
2  import { NgModule } from '@angular/core';
3
4  import { AppRoutingModule } from './app-routing.module';
5  import { AppComponent } from './app.component';
6
7  @NgModule({
8    declarations: [
9      AppComponent
10   ],
11   imports: [
12     BrowserModule,
13     AppRoutingModule
14   ],
15   providers: [],
16   bootstrap: [AppComponent]
17 })
18 export class AppModule { }
19
```

EXPLORER

OPEN EDITORS

- index.html src M

ROUTING-DEMO

- src
 - app
 - app-routing.module.ts
 - app.component.css
 - app.component.html
 - app.component.spec.ts
 - app.component.ts
 - app.module.ts
 - assets
 - environments
 - favicon.ico
 - index.html M
 - main.ts
 - polyfills.ts

index.html X

src > index.html > html > head

```
1 <!doctype html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <title>RoutingDemo</title>
6
7   <base href="/">
8
9   <meta name="viewport" content="width=device-width, initial-scale=1">
10  <link rel="icon" type="image/x-icon" href="favicon.ico">
11 </head>
12 <body>
13   <app-root></app-root>
14 </body>
15 </html>
16
```


AJOUTER

The screenshot shows the Visual Studio Code interface. On the left, the Explorer sidebar displays the project structure. The 'ROUTING-DEMO' folder is expanded, showing a 'src' directory which contains an 'app' subdirectory. The 'app' directory contains several files: 'app-routing.module.ts', 'app.component.css', 'app.component.html' (selected), 'app.component.spec.ts', 'app.component.ts', and 'app.module.ts'. Other files like 'assets', 'environments', 'favicon.ico', 'index.html', 'main.ts', and 'polyfills.ts' are also visible. The main Editor area shows the content of 'app.component.html'. The file path is 'src > app > app.component.html'. The code contains an h2 tag for 'Routing et Navigation' and a red-outlined '<router-outlet></router-outlet>' tag. A comment below indicates that components will be injected there. Line numbers 1 through 15 are visible on the left side of the editor.

EXPLORER

OPEN EDITORS 1 UNSAVED

- app.component.html s... M

ROUTING-DEMO

- src
 - app
 - app-routing.module.ts
 - app.component.css
 - app.component.html M
 - app.component.spec.ts
 - app.component.ts
 - app.module.ts
 - assets
 - environments
 - favicon.ico
 - index.html M
 - main.ts
 - polyfills.ts

src > app > app.component.html

```
1  
2 <h2>Routing et Navigation</h2>  
3  
4  
5 <router-outlet></router-outlet>  
6  
7 <!--les composants seront injectés ici-->  
8  
9  
10  
11  
12  
13  
14  
15
```

GÉNÉRER LES COMPOSANTS

- `ng generate component departementList`
- `ng generate component emplyestList`

N EDITORS

app-routing.module.ts ... M

TING-DEMO

src

app

departement-list

employees-list

app-routing.modul... M

app.component.css

app.component.html M

app.component.spec.ts

app.component.ts

app.module.ts M

assets

environments

favicon.ico

app-routing.module.ts X

src > app > app-routing.module.ts > ...

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { DepartementListComponent } from '../departement-list/depart
4 import { EmployeesListComponent } from '../employees-list/employees-lis
5
6
7 const routes: Routes = [
8   {path: 'departements', component: DepartementListComponent},
9   {path: 'employees', component: EmployeesListComponent}
10 ];
11
12 @NgModule({
13   imports: [RouterModule.forRoot(routes)],
14   exports: [RouterModule]
15 })
16 export class AppRoutingModule { }
17
```

BONNE PRATIQUE

app-routing.module.ts

src > app > app-routing.module.ts > ...

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { DepartementListComponent } from '../departement-list/departement-list.component';
4 import { EmployesListComponent } from '../employes-list/employes-list.component';
5
6 const routes: Routes = [
7   {path: 'departements', component: DepartementListComponent},
8   {path: 'employes', component: EmployesListComponent}
9 ];
10 @NgModule({
11   imports: [RouterModule.forRoot(routes)],
12   exports: [RouterModule]
13 })
14 export class AppRoutingModule { }
15
16 export const listComponents = [DepartementListComponent, EmployesListComponent]
```

src > app > app.module.ts > AppModule

```
1 import { BrowserModule } from '@angular/platform-browser';
2 import { NgModule } from '@angular/core';
3
4 import { AppRoutingModule, listComponents } from './app-routing.module';
5 import { AppComponent } from './app.component';
6 //import { DepartementListComponent } from './departement-list/departement-list.component';
7 //import { EmployesListComponent } from './employes-list/employes-list.component';
8
9 @NgModule({
10   declarations: [
11     AppComponent,
12     //DepartementListComponent,
13     //EmployesListComponent
14     listComponents
15   ],
16   imports: [
17     BrowserModule,
18     AppRoutingModule
19   ],
20   providers: [],
21   bootstrap: [AppComponent]
```

app.module.ts ×

src > app > app.module.ts > ...

```
1  import { BrowserModule } from '@angular/platform-browser';
2  import { NgModule } from '@angular/core';
3
4  import { AppRoutingModule, listComponents } from './app-routing.module';
5  import { AppComponent } from './app.component';
6
7  @NgModule({
8    declarations: [
9      AppComponent,
10     listComponents
11   ],
12   imports: [
13     BrowserModule,
14     AppRoutingModule
15   ],
16   providers: [],
17   bootstrap: [AppComponent]
18 })
19 export class AppModule { }
20
```

NAVIGATION

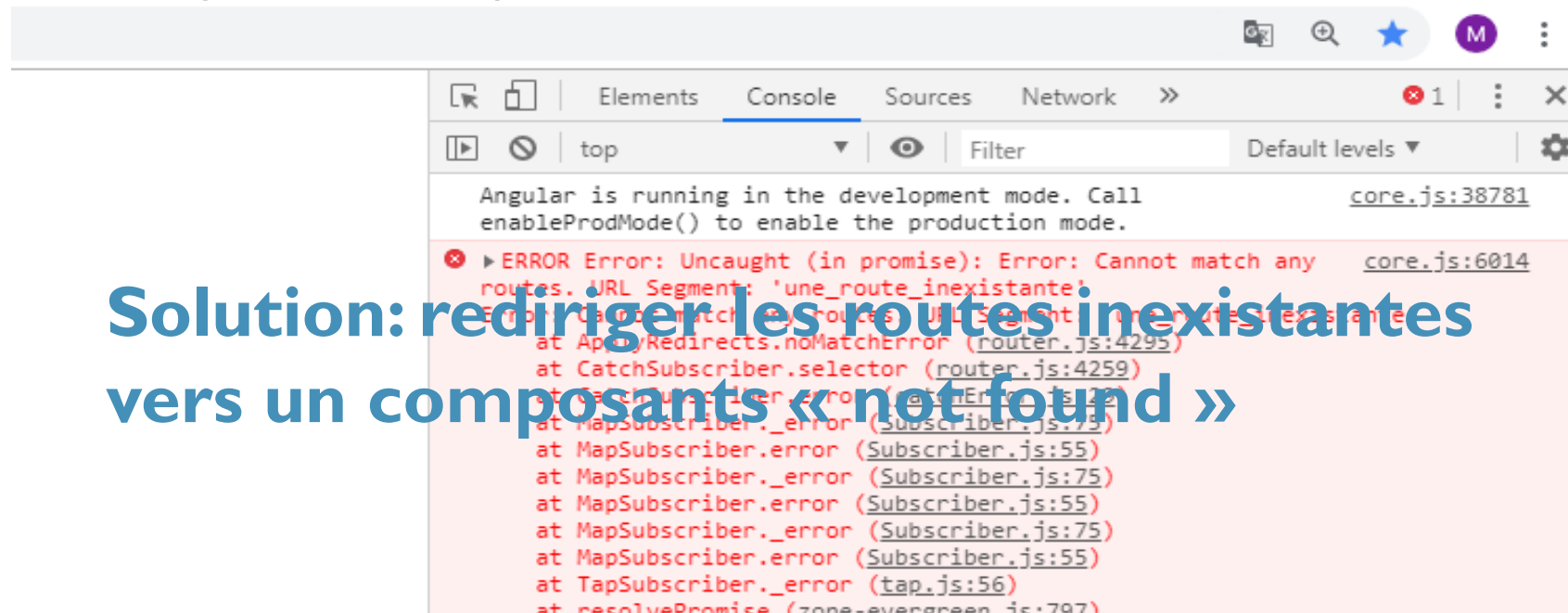
app.component.html ×

src > app > app.component.html > ...

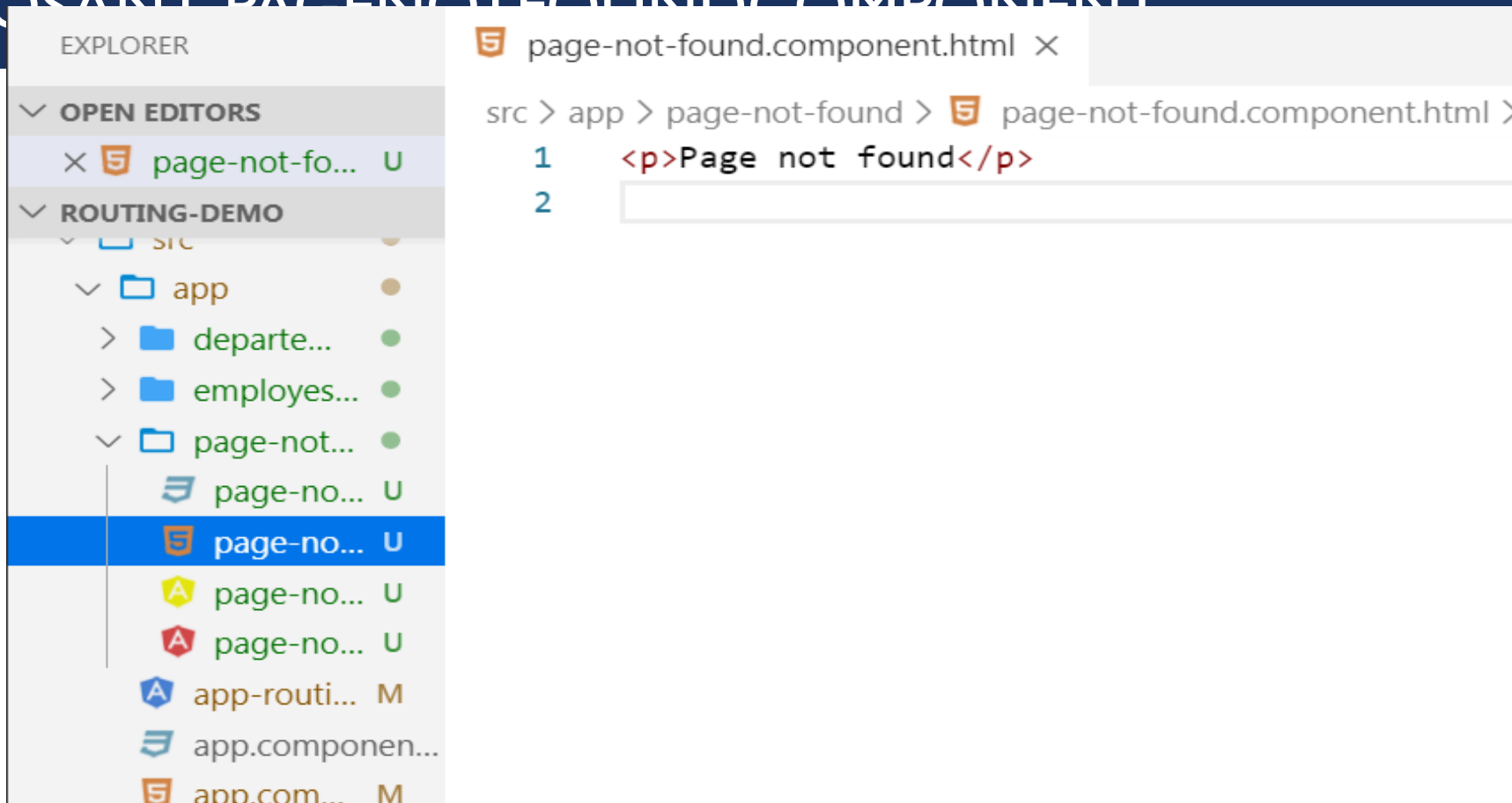
```
1  
2 <h2>Routing et Navigation</h2>  
3 <nav>  
4   <a [routerLink]="['/departements']" routerLinkActive="active" >Departements</a>  
5   <a [routerLink]="['/employes']" routerLinkActive="active" >Employés</a>  
6 </nav>  
7  
8 <router-outlet></router-outlet>  
9  
10 <!--les composants seront injectés ici-->  
11  
12
```

ROUTE DE REDIRECTION

- ❑ Très souvent, un utilisateur essaye de naviguer vers une route qui n'est pas configurée.
- ❑ Cela génère une exception.




COMPOSANT PAGE NOT FOUND COMPONENT















The image shows a screenshot of the Visual Studio Code interface. On the left, the Explorer sidebar is open, showing a project structure. The 'ROUTING-DEMO' folder is expanded, revealing a 'page-not-found' subfolder. Inside this folder, the file 'page-not-found.component.html' is selected and highlighted in blue. The Editor view on the right shows the content of this file. The breadcrumb path at the top of the editor is 'src > app > page-not-found > page-not-found.component.html'. The file content consists of two lines: line 1 contains the HTML tag '<p>Page not found</p>' and line 2 is an empty line with a text cursor.

EXPLORER


✓ OPEN EDITORS

- ×  page-not-fo... U

✓ ROUTING-DEMO

- ✓  src
- ✓  app
 - >  departe...
 - >  employes...
 - ✓  page-not...
 -  page-no... U
 -  **page-no... U**
 -  page-no... U
 -  page-no... U
 -  app-routi... M
 -  app.componen...
 -  app.com... M

page-not-found.component.html ×

src > app > page-not-found >  page-not-found.component.html >

```
1 <p>Page not found</p>
2
```

src > app > app-routing.module.ts > listComponents

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { DepartementListComponent } from '../departement-list/departement-list
4 import { EmployesListComponent } from '../employes-list/employes-list.component
5 import { PageNotFoundComponent } from '../page-not-found/page-not-found.compon
6
7 const routes: Routes = [
8   {path: 'departements', component: DepartementListComponent},
9   {path: 'employes', component: EmployesListComponent},
10  {path: '**', component: PageNotFoundComponent}
11 ];
12 @NgModule({
13   imports: [RouterModule.forRoot(routes)],
14   exports: [RouterModule]
15 })
16 export class AppRoutingModule { }
17
18 export const listComponents = [DepartementListComponent,
19                               EmployesListComponent,
20                               PageNotFoundComponent]
```

ROUT

app-routing.module.ts ×

src > app > app-routing.module.ts > ...

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { DepartementListComponent } from '../departement-list/departement-list.component';
4 import { EmployesListComponent } from '../employes-list/employes-list.component';
5 import { PageNotFoundComponent } from '../page-not-found/page-not-found.component';
6
7 const routes: Routes = [
8   {path: '', redirectTo: '/departements', pathMatch: 'full'},
9   {path: 'departements', component: DepartementListComponent},
10  {path: 'employes', component: EmployesListComponent},
11  {path: '**', component: PageNotFoundComponent}
12 ];
13 @NgModule({
14   imports: [RouterModule.forRoot(routes)],
15   exports: [RouterModule]
16 })
17 export class AppRoutingModule { }
18
```

ROUTES AVEC PARAMÈTRES

DepartementList

- 1) Technologies de L'informatique
- 2) Électrique
- 3) Mécanique
- 4) Gestion

id

DepartementDetails

Vous avez sélectionné le
département avec l'**id= 1**

DÉMARCHE

- Générer un composant `DepartementDetails`
- Configurer le routage avec paramètres vers `DepartementDetails`
- Dans le composant `DepartementList`, programmer la navigation vers `DepartementDetails`
- Dans le composant `DepartementDetails`, extraire l'`id` de la route active.

GÉNÉRER DEPARTEMENTDETAILS

- ng generate component departementDetails

app-routing.module.ts X

src > app > app-routing.module.ts > ...

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { EmployesListComponent } from '../employes-list/employes-list.component';
4 import { PageNotFoundComponent } from '../page-not-found/page-not-found.component';
5 import { DepartementListComponent } from '../departement-list/departement-list.component';
6 import { DepartementDetailsComponent } from '../departement-details/departement-details.component';
7
8 const routes: Routes = [
9   {path: '', redirectTo: '/departements', pathMatch: 'full'},
10  {path: 'departements', component: DepartementListComponent},
11  {path: 'departements/:id', component: DepartementDetailsComponent},
12  {path: 'employes', component: EmployesListComponent},
13  {path: '**', component: PageNotFoundComponent}
14 ];
15 @NgModule({
16   imports: [RouterModule.forRoot(routes)],
17   exports: [RouterModule]
18 })
19 export class AppRoutingModule { }
20
21 export const listComponents = [DepartementListComponent,
22                               EmployesListComponent,
23                               PageNotFoundComponent,
24                               DepartementDetailsComponent]
```

PROGRAM

```
departement-list.component.ts
src > app > departement-list > departement-list.component.ts > DepartementListComponent
1 import { Component, OnInit } from '@angular/core';
2 import { Router } from '@angular/router';
3
4 @Component({
5   selector: 'app-departement-list',
6   templateUrl: './departement-list.component.html',
7   styleUrls: ['./departement-list.component.css']
8 })
9 export class DepartementListComponent implements OnInit {
10
11   departements = [
12     {id: 1, nom: 'Technologies de l\'informatique'},
13     {id: 2, nom: 'Electrique'},
14     {id: 3, nom: 'Mecanique'},
15     {id: 4, nom: 'Gestion'}
16   ];
17
18   constructor(private _router: Router) { }
19
20   ngOnInit() {
21   }
22
23   onSelectDep(departement){
24     this._router.navigate(['/departements', departement.id]);
25   }
26 }
```

Injecter le service de
routage Router

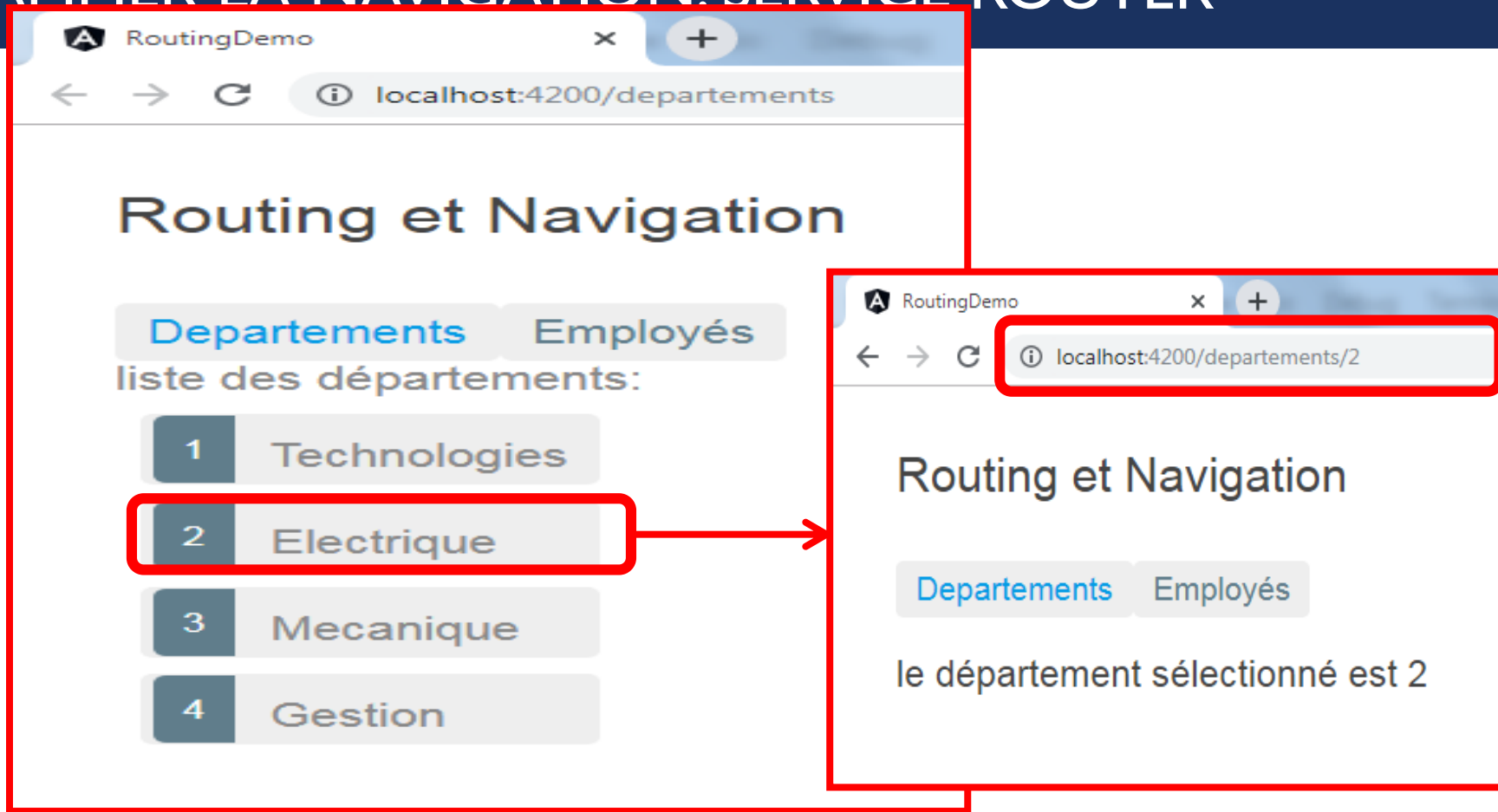
PROGRAMMER LA NAVIGATION: SERVICE POLITE

📄 departement-list.component.html ✕

src > app > departement-list > 📄 departement-list.component.html > ...

```
1  <div>
2  liste des départements:
3  </div>
4  <div>
5  <ul class="items">
6  |   <li (click)="onSelectDep(departement)" *ngFor="let departement of departements">
7  |     <span class="badge">{{departement.id}}</span>{{departement.nom}}
8  |   </li>
9  </ul>
10 </div>
11
```

PROGRAMMER LA NAVIGATION: SERVICE ROUTER



src > app > departement-details > departement-details.component.ts > ...

```
1 import { Component, OnInit } from '@angular/core';
2 import { ActivatedRoute, ParamMap } from '@angular/router';
3
4 @Component({
5   selector: 'app-departement-details',
6   templateUrl: './departement-details.component.html',
7   styleUrls: ['./departement-details.component.css']
8 })
9 export class DepartementDetailsComponent implements OnInit {
10
11   public departementId;
12
13   constructor(private _activateRoute : ActivatedRoute)
14   {
15   }
16
17   ngOnInit() {
18
19     this._activateRoute.paramMap.subscribe((params: ParamMap) => {
20       this.departementId = parseInt(params.get('id'));
21     });
22
23   }
24
25 }
```

src > app > departement-details > departement-details.component.html > ...

```
1
2 <h3>le département sélectionné est {{departementId}}</h3>
3
```



ANGULAR

MERCI