

Comunicación entre componentes

Primera Parte

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1 Objetivo

Al terminar esta práctica, usted estará en posición de crear una aplicación basada en Angular 8 que tenga un menú con el cual se pueda navegar para mostrar diferentes componentes.

2 Pasos

Los pasos a seguir son los siguientes:

```

1 $ sudo apt-get install curl
2 $ curl -sL https://deb.nodesource.com/setup/_12.x | sudo -E bash -
3 $ sudo apt-get install nodejs
4 $ node -v
5 $ npm -v

```

Listing 1: Configuración del entorno

2.1 Creación y configuración de la aplicación básica

```

1 d:\> npm install -g @angular/cli@latest
2 d:\> mkdir cursoNG8
3 d:\> cd cursoNG8
4 d:\cursoNG8> ng new prBasica01 --routing --style=scss
5 d:\cursoNG8> cd prBasica01
6 d:\cursoNG8\prBasica01> npm install -g @angular/material @angular/cdk
   hammerjs
7 d:\cursoNG8\prBasica01> ng add @angular/material
8 d:\cursoNG8\prBasica01> npm install material-icons

```

Listing 2: Configuración del entorno

2.2 Creación de los componentes

```

1 d:\cursoNG8\prBasica01> ng generate component --spec=false header
2 d:\cursoNG8\prBasica01> ng generate component --spec=false footer
3 d:\cursoNG8\prBasica01> ng generate component --spec=false notFound
4 d:\cursoNG8\prBasica01> ng generate component --spec=false principal
5 d:\cursoNG8\prBasica01> ng generate component --spec=false about
6 d:\cursoNG8\prBasica01>
7 d:\cursoNG8\prBasica01> ng generate module --routing materialDesign
8 d:\cursoNG8\prBasica01>
9 d:\cursoNG8\prBasica01> ng generate module --routing diary
10 d:\cursoNG8\prBasica01> ng generate component --spec=false diary/
    todoListing

```

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

import { ReactiveFormsModule } from '@angular/forms';

@NgModule({
  imports: [
    // other imports ...
    ReactiveFormsModule
  ],
})
export class AppModule { }
```

Figure 1: Extracto del fichero app.module.ts

```
11 d:\cursoNG8\prBasica01> ng generate component --spec=false diary/
    todoDetail
12 d:\cursoNG8\prBasica01> ng generate component --spec=false diary/
    todoCreateUpdate
13 d:\cursoNG8\prBasica01>
14 d:\cursoNG8\prBasica01> ng generate module --routing student
15 d:\cursoNG8\prBasica01> ng generate component --spec=false student/
    studentListing
16 d:\cursoNG8\prBasica01> ng generate component --spec=false student/
    studentDetail
17 d:\cursoNG8\prBasica01> ng generate component --spec=false student/
    studentCreateUpdate
18 d:\cursoNG8\prBasica01>
19 d:\cursoNG8\prBasica01> ng generate module --routing visitedPlace
20 d:\cursoNG8\prBasica01> ng generate component --spec=false visited-place/
    placeListing
21 d:\cursoNG8\prBasica01> ng generate component --spec=false visited-place/
    placeDetail
22 d:\cursoNG8\prBasica01> ng generate component --spec=false visited-place/
    placeCreateUpdate
23 d:\cursoNG8\prBasica01>
24 d:\cursoNG8\prBasica01> ng generate service services/auth
25 d:\cursoNG8\prBasica01> ng generate service services/student
26 d:\cursoNG8\prBasica01> ng generate service services/todo
27 d:\cursoNG8\prBasica01> ng generate service services/visitedPlace
28 d:\cursoNG8\prBasica01>
29 d:\cursoNG8\prBasica01> ng generate guard auth/auth
```

Listing 3: Creación de componentes

2.3 Enrutamiento

Editar y modificar el fichero app.module.ts, de acuerdo al siguiente extracto

2.4 Creación de los componentes: fichero app.module.ts

```
1 import { BrowserModule } from '@angular/platform-browser';
```

```

2 import { NgModule } from '@angular/core';
3 import { AppRoutingModuleModule } from '../app-routing.module';
4 import { AppComponent } from '../app.component';
5 import { BrowserAnimationsModule } from '@angular/platform-
  browser/animations';
6 import { HeaderComponent } from '../header/header.component';
7 import { FooterComponent } from '../footer/footer.component';
8 import { NotFoundComponent } from '../not-found/not-found.
  component';
9 import { PrincipalComponent } from '../principal/principal.
  component';
10 import { AboutComponent } from '../about/about.component';
11 import { ReactiveFormsModule } from '@angular/forms';
12 import { MaterialDesignModule } from '../material-design/
  material-design.module';
13 import ReactiveFormsModule from 'angular/forms';
14 import MaterialDesignModule from
  '../material-design/material-design.module';
15
16 @NgModule({
17   declarations: [
18     AppComponent,
19     HeaderComponent,
20     FooterComponent,
21     NotFoundComponent,
22     PrincipalComponent,
23     AboutComponent,
24   ],
25   imports: [
26     BrowserModule,
27     AppRoutingModuleModule,
28     BrowserAnimationsModule,
29     ReactiveFormsModule
30     MaterialDesignModule
31   ],
32   providers: [],
33   bootstrap: [AppComponent]
34 })
35 export class AppModule { }

```

Reemplazar el código del fichero app.component.html por el código mostrado a continuación:

```

1 <app-header></app-header>
2
3 <router-outlet></router-outlet>
4

```

```
5 <app-footer></app-footer>
```

Listing 4: Contenido del fichero app.component.html

3 Routing

Para conseguir que se muestren los componentes que se han creado, es necesario editar los siguientes ficheros:

- app-routing.module.ts
- diary-routing.module.ts
- student-routing.module.ts
- visited-place-routing.module.ts

3.1 app-routing.module.ts

```
1 import { PrincipalComponent } from '../principal/principal.
  component';
2 import { NotFoundComponent } from '../not-found/not-found.
  component';
3 import { AboutComponent } from '../about/about.component';
4
5 const routes: Routes = [
6   { path: '', redirectTo: 'principal', pathMatch: 'full'},
7   { path: 'principal', component: PrincipalComponent},
8   { path: 'about', component: AboutComponent },
9   { path: 'diary', loadChildren: () =>
    import('../diary/diary.module').then(m => m.DiaryModule) },
10  { path: 'studentManagement', loadChildren:
    '../student/student.module#StudentModule' },
11  { path: 'visitedPlaceManagement', loadChildren: () =>
    import('../visited-place/visited-place.module').then(m =>
    m.VisitedPlaceModule) },
12  { path: '**', component: NotFoundComponent},
13 ];
14
15 @NgModule({
16   imports: [RouterModule.forRoot(routes)],
17   exports: [RouterModule]
18 })
19 export class AppRoutingModule { }
```

3.2 diary-routing.module.ts

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { TodoListingComponent } from '../todo-listing/todo-
  listing.component';
4
5
6 const routes: Routes = [
7   { path: '/', redirectTo: 'todoListing', pathMatch: 'full'},
8   { path: 'todoListing', component: TodoListingComponent}
9 ];
10
11 @NgModule({
12   imports: [RouterModule.forChild(routes)],
13   exports: [RouterModule]
14 })
15 export class DiaryRoutingModule { }
```

3.3 student-routing.module.ts

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { StudentListingComponent } from '../student-listing/
  student-listing.component';
4
5
6
7 const routes: Routes = [
8   { path: '/', redirectTo: 'studentListing', pathMatch:
  'full'},
9   { path: 'studentListing', component:
  StudentListingComponent},
10 ];
11
12 @NgModule({
13   imports: [RouterModule.forChild(routes)],
14   exports: [RouterModule]
15 })
16 export class StudentRoutingModule { }
```

3.4 visited-place-routing.module.ts

```
1 import { NgModule } from '@angular/core';
2 import { Routes, RouterModule } from '@angular/router';
3 import { PlaceListingComponent } from '../place-listing/place-
  listing.component';
```

```
4
5
6 const routes: Routes = [
7   { path: "", redirectTo: 'visitedPlacesListing', pathMatch:
     'full'},
8   { path: 'visitedPlacesListing', component:
     PlaceListingComponent},
9 ];
10
11 @NgModule({
12   imports: [RouterModule.forChild(routes)],
13   exports: [RouterModule]
14 })
15 export class VisitedPlaceRoutingModule { }
```

4 Material Design

4.1 Preparativos

```
1 import { NgModule } from '@angular/core';
2 import { CommonModule } from '@angular/common';
3 import {
4   MatAutocompleteModule,
5   MatBadgeModule,
6   MatBottomSheetModule,
7   MatButtonModule,
8   MatButtonToggleModule,
9   MatCardModule,
10  MatCheckboxModule,
11  MatChipsModule,
12  MatDatepickerModule,
13  MatDialogModule,
14  MatDividerModule,
15  MatExpansionModule,
16  MatGridListModule,
17  MatIconModule,
18  MatInputModule,
19  MatListModule,
20  MatMenuModule,
21  MatNativeDateModule,
22  MatPaginatorModule,
23  MatProgressBarModule,
24  MatProgressSpinnerModule,
25  MatRadioModule,
26  MatRippleModule,
```

```
27 MatSelectModule,  
28 MatSidenavModule,  
29 MatSliderModule,  
30 MatSlideToggleModule,  
31 MatSnackBarModule,  
32 MatSortModule,  
33 MatStepperModule,  
34 MatTableModule,  
35 MatTabsModule,  
36 MatToolbarModule,  
37 MatTooltipModule,  
38 MatTreeModule,  
39 } from '@angular/material';  
40  
41  
42 @NgModule({  
43   declarations: [],  
44   imports: [  
45     CommonModule  
46   ],  
47   exports: [  
48     MatAutocompleteModule,  
49     MatBadgeModule,  
50     MatBottomSheetModule,  
51     MatButtonModule,  
52     MatButtonModuleToggleModule,  
53     MatCardModule,  
54     MatCheckboxModule,  
55     MatChipsModule,  
56     MatDatepickerModule,  
57     MatDialogModule,  
58     MatDividerModule,  
59     MatExpansionModule,  
60     MatGridListModule,  
61     MatIconModule,  
62     MatInputModule,  
63     MatListModule,  
64     MatMenuModule,  
65     MatNativeDateModule,  
66     MatPaginatorModule,  
67     MatProgressBarModule,  
68     MatProgressSpinnerModule,  
69     MatRadioModule,  
70     MatRippleModule,  
71     MatSelectModule,
```



```

72   MatSidenavModule,
73   MatSliderModule,
74   MatSlideToggleModule,
75   MatSnackBarModule,
76   MatSortModule,
77   MatStepperModule,
78   MatTableModule,
79   MatTabsModule,
80   MatToolbarModule,
81   MatTooltipModule,
82   MatTreeModule,
83 ]
84 })
85 export class MaterialDesignModule { }

```

5 Aspecto Visual de la aplicación

Mediante los componentes de Material Design se va a mejorar el aspecto de header y de footer. Los ficheros a modificar son:

- header.component.html
- header.component.scss
- footer.component.html
- footer.component.scss

5.1 header.component.html

```

1 <mat-toolbar color="primary">
2   <mat-toolbar-row>
3     <span>Lenin Lemus' Web Site</span>
4     <span class="spacer"></span>
5     <mat-icon routerLink="/principal" class="icon" aria-
      hidden="false" aria-label="Home">home</mat-icon>
6     <button mat-button routerLink="/diary">Diary</button>
7     <button mat-button routerLink="/studentManagement">
      Students Mgm</button>
8     <button mat-button routerLink="/
      visitedPlaceManagement">Visited Places Mgm</button>
9     <mat-icon routerLink="/about" class="icon" aria-hidden
      ="false" aria-label="About">about</mat-icon>
10   </mat-toolbar-row>
11 </mat-toolbar>

```

5.2 header.component.scss

```
1 .icon {  
2   padding: 0 14px;  
3 }  
4  
5 .spacer {  
6   flex: 1 1 auto;  
7 }
```

5.3 footer.component.html

```
1 <mat-toolbar color="primary">  
2   <mat-toolbar-row>  
3     <span>&copy; 2019. Lenin Lemus</span>  
4     <span class="spacer"></span>  
5     <mat-icon class="icon" aria-hidden="false" aria-label  
6       ="Example heart icon">favorite</mat-icon>  
7   </mat-toolbar-row>  
8 </mat-toolbar>
```

5.4 footer.component.scss

```
1 .icon {  
2   padding: 0 14px;  
3 }  
4  
5 .spacer {  
6   flex: 1 1 auto;  
7 }
```

6 Últimas mejoras a la visualización

Para terminar la aplicación, vamos a realizar los siguientes cambios:

- Agregar una imagen que sirva como logo en la barra de navegación.
- Utilizar el componente sidenav en el módulo diary

A continuación se indican los cambios a realizar.

6.1 Añadir una imagen en la barra de navegación

De la web del curso descargar el fichero imgNG.zip y descomprimirlo en la carpeta src/app/assets.

Modificar el fichero header.component.html.

```

1 <mat-toolbar color="primary">
2   <mat-toolbar-row>
3     <span>
4       
6       Lenin Lemus' Web Site
7     </span>
8     <span class="spacer"></span>
9     <mat-icon routerLink="/principal" class="icon" aria-
10      hidden="false" aria-label="Home">home</mat-icon>
11     <button mat-button routerLink="/diary">Diary</button>
12     <button mat-button routerLink="/studentManagement">
13       Students Mgm</button>
14     <button mat-button routerLink="/
15       visitedPlaceManagement">Visited Places Mgm</button>
16     <button mat-button routerLink="/about">About</button>
17   </mat-toolbar-row>
18 </mat-toolbar>

```

Acto seguido agregar el siguiente código al fichero header.component.scss

```

.angular-logo {
  margin: 0 4px 3px 0;
  height: 35px;
  vertical-align: middle;
}

```

6.2 Mejorar aspecto de diary

Ficheros a modificar:

- diary.module.ts
- todo-listing.component.html
- todo-listing.component.scss
- todo-listing.component.ts

6.2.1 diary.module.ts

```

1 import { NgModule } from '@angular/core';
2 import { CommonModule } from '@angular/common';
3 import { DiaryRoutingModule } from './diary-routing.module';
4 import { TodoListingComponent } from './todo-listing/todo-
  listing.component';

```

```

5 import { TodoDetailComponent } from './todo-detail/todo-detail
  .component';
6 import { TodoCreateUpdateComponent } from './todo-create-
  update/todo-create-update.component';
7 import MaterialDesignModule from
  './material-design/material-design.module';
8 import ReactiveFormsModule from '@angular/forms;
9
10 @NgModule({
11   declarations: [TodoListingComponent, TodoDetailComponent,
    TodoCreateUpdateComponent],
12   imports: [
13     CommonModule,
14     MaterialDesignModule,
15     ReactiveFormsModule,
16     DiaryRoutingModule
17   ]
18 })
19 export class DiaryModule { }

```

6.2.2 todo-listing.component.html

```

<ng-container>
  <mat-toolbar class="header" color="primary">
    <span>
      
    <button mat-button (click)="sidenav.toggle()">
      <mat-icon class="icon" aria-hidden="false">dehaze</mat-icon>
    </button>
    <span class="spacer"></span>
    <mat-icon routerLink="/principal" class="icon" aria-hidden="false" aria-label
    <button mat-button (click)="prepareNewTodo()">New Todo</button>
    <button mat-button (click)="sidenav.toggle()">Toggle Show-Hide Sidenav</butto
    <button mat-button (click)="toggleCreateUpdate()">Toggle Show-Hide CreateUpda
  </mat-toolbar>

  <mat-sidenav-container class="container">
    <mat-sidenav #sidenav mode="side" opened class="sidenav" [fixedInViewport]="o
      [fixedTopGap]="options.value.top" [fixedBottomGap]="options.value.bottom">
      {{options.value.fixed ? 'Fixed' : 'Non-fixed'}} Sidenav
    </mat-sidenav>

    <mat-sidenav-content [formGroup]="options">

```

```

    <div *ngIf="!createUpdate">
      <p><mat-checkbox formControlName="fixed">Fixe</mat-checkbox></p>
      <p><mat-form-field>
        <input matInput type="number" formControlName="top" placeholder="Top">
      </mat-form-field></p>
      <p><mat-form-field>
        <input matInput type="number" formControlName="bottom" placeholder="Bottom">
      </mat-form-field></p>
    </div>
    <div *ngIf="createUpdate">
      <p>Create Update Todo</p>
    </div>

  </mat-sidenav-content>

</mat-sidenav-container>

<mat-toolbar color="primary" class="footer">Footer</mat-toolbar>
</ng-container>

```

6.2.3 todo-listing.component.scss

```

.container {
  padding: 0, 0, 0, 100px;
  margin: 0, 0, 0, 100px;
  position: absolute;
  top: 60px;
  bottom: 60px;
  left: 0;
  right: 0;
}

.sidenav {
  display: flex;
  align-items: center;
  justify-content: center;
  width: 200px;
  background: rgba(255, 0, 0, 0.5);
}

.header {
  position: fixed;
  top: 0;
  left: 0;
  right: 0;
}

```

```
}

.footer {
  position: fixed;
  bottom: 0;
  left: 0;
  right: 0;
}
.angular-logo {
  margin: 0 4px 3px 0;
  height: 35px;
  vertical-align: middle;
}
.spacer {
  flex: 1 1 auto;
}
```

6.2.4 todo-listing.component.ts

```
1 import { Component, OnInit } from '@angular/core';
2 import FormGroup, FormBuilder from '@angular/forms';
3
4 @Component({
5   selector: 'app-todo-listing',
6   templateUrl: './todo-listing.component.html',
7   styleUrls: ['./todo-listing.component.scss']
8 })
9 export class TodoListingComponent implements OnInit {
10
11   sidenavActive=true;
12   options: FormGroup;
13   createUpdate=false;
14
15   constructor(fb: FormBuilder) {
16     this.options = fb.group({
17       bottom: 0,
18       fixed: false,
19       top: 0
20     });
21   }
22   toggleCreateUpdate() {
23     this.createUpdate = ! this.createUpdate;
24   }
```

```
25  
26   ngOnInit() {  
27 }
```

7 Funcionamiento de la aplicación

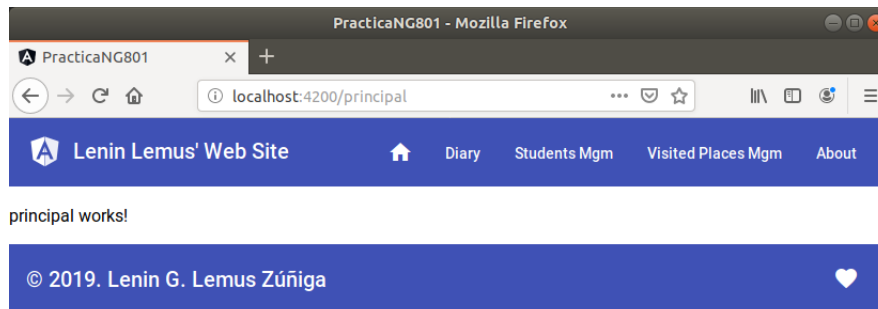


Figure 2: Aspecto inicial

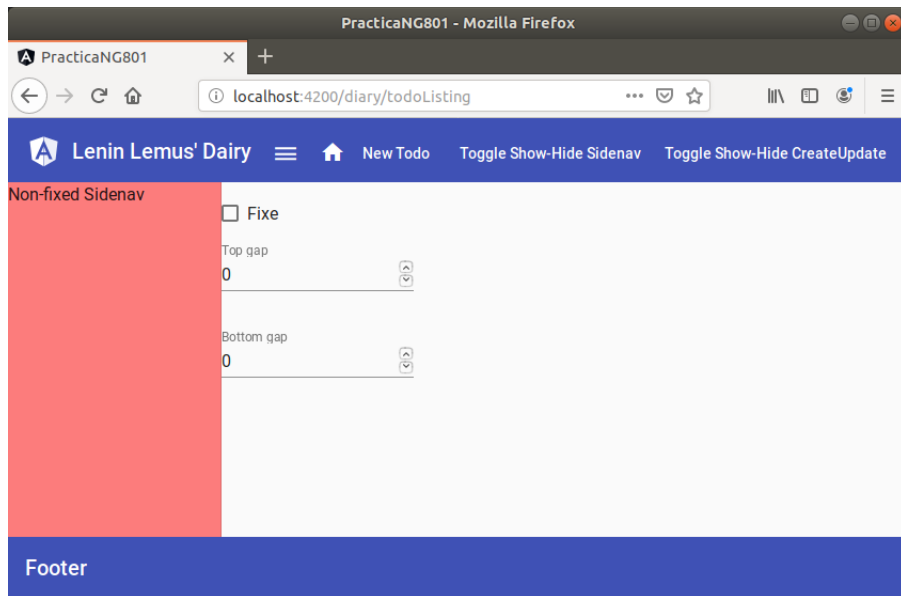


Figure 3: Aplicación básica.

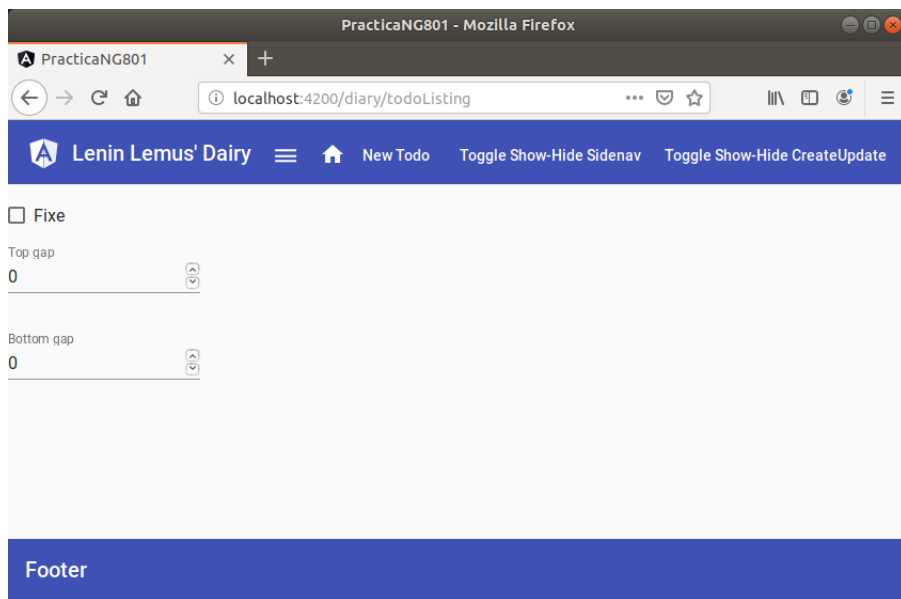


Figure 4: Aplicación básica.

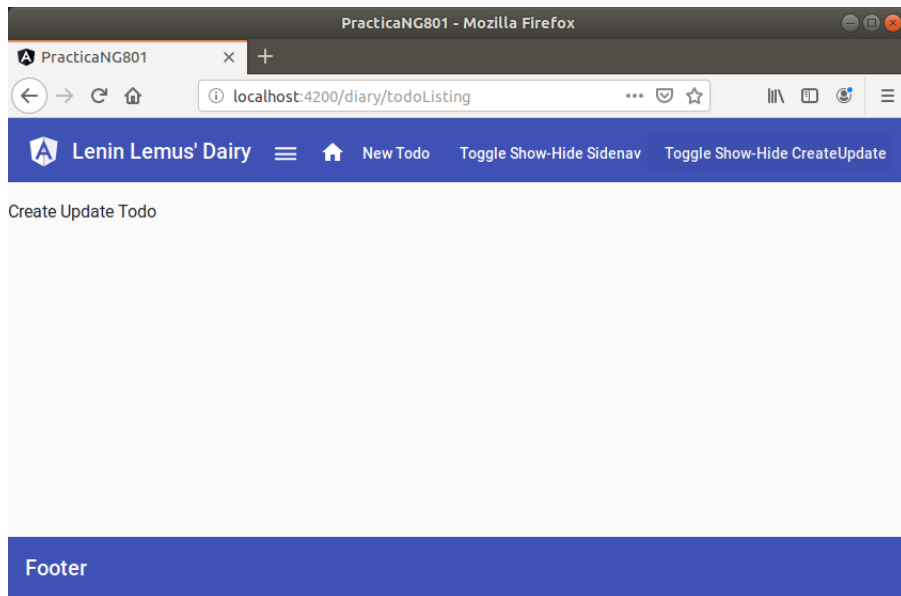


Figure 5: Aplicación básica.

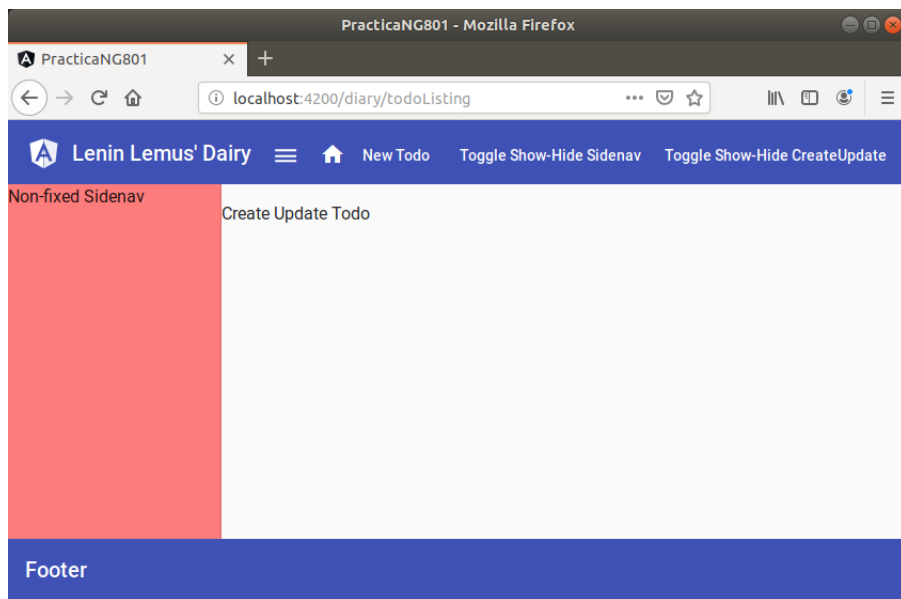


Figure 6: Aplicación básica.

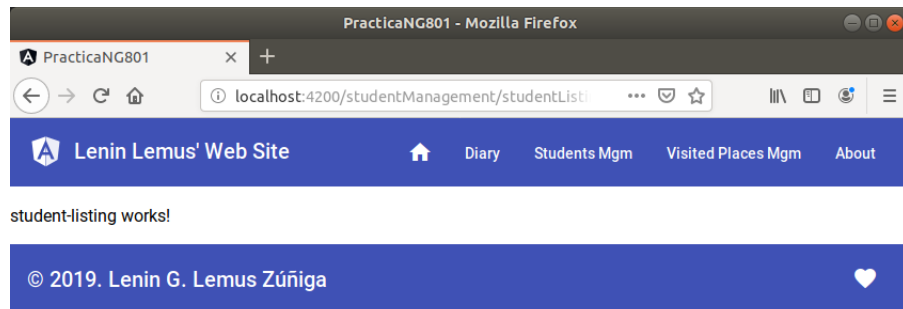


Figure 7: Aplicación básica.

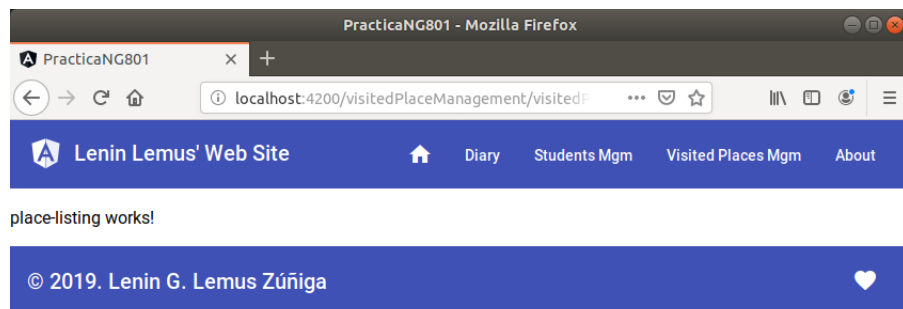


Figure 8: Aplicación básica.

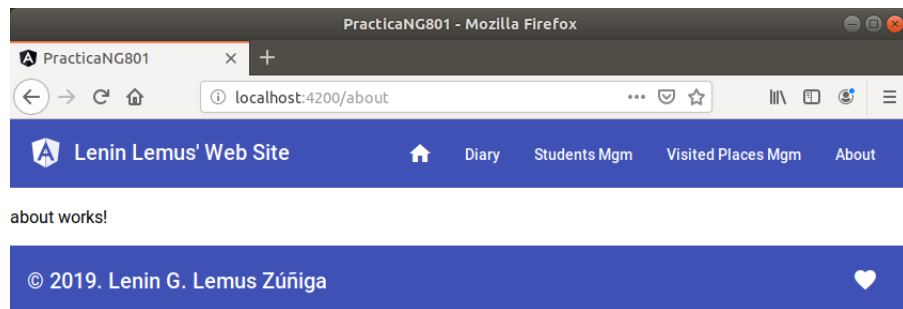


Figure 9: Aplicación básica.