

Programação WEB III

CRUD completo com Angular 18

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Criar Projeto Angular 18

Você pode criar seu aplicativo Angular usando o seguinte comando:

ng new my-new-app



Instalar Bootstrap

Instale o Bootstrap para sua aplicação CRUD:

npm install bootstrap --save

Importe no arquivo angular.json:

```
"styles": [
    "node_modules/bootstrap/dist/css/bootstrap.min.css",
    "src/styles.css"
```

Criar Módulo de Postagem

Após criar o aplicativo com sucesso, precisamos criar o módulo de postagem usando o comando da CLI do Angular:

ng generate module post

Após executar o comando com sucesso, serão criados arquivos no seguinte caminho: src/app/post/post.module.ts



Criar Componentes para o Módulo

Agora adicionaremos novos componentes ao nosso módulo de postagem:

ng generate component post/index ng generate component post/view ng generate component post/create ng generate component post/edit



Criar Componentes para o Módulo

Após executar os comandos com sucesso, serão criados arquivos nos seguintes caminhos:

src/app/post/index/*
src/app/post/view/*
src/app/post/create/*
src/app/post/edit/*



Criar Rotas

Atualize o arquivo de rotas app.routes.ts:

```
import { Routes } from '@angular/router';
import { IndexComponent } from './post/index/index.component';
import { ViewComponent } from './post/view/view.component';
import { CreateComponent } from './post/create/create.component';
import { EditComponent } from './post/edit/edit.component';
export const routes: Routes = [
 { path: 'post', redirectTo: 'post/index', pathMatch: 'full'},
 { path: 'post/index', component: IndexComponent },
 { path: 'post/:postId/view', component: ViewComponent },
 { path: 'post/create', component: CreateComponent },
 { path: 'post/:postId/edit', component: EditComponent }
```



Criar Interface

Crie a interface para o módulo de postagem:

ng generate interface post/post

```
src/app/post/post.ts
```

```
export interface Post {
  id: number;
  title: string;
  body: string;
}
```



No home.component.html vou digitar o hello world

Criaremos o arquivo de serviço de postagem e implementaremos os métodos de serviço web getAll(), create(), find(), update() e delete().

ng generate service post/post



src/app/post/post.service.ts Código completo

```
import { HttpClient, HttpHeaders } from '@angular/common/http':
import { Observable, throwError } from 'rxjs';
import { catchError } from 'rxjs/operators';
import { Post } from './post';
@Injectable({
 providedIn: 'root'
 private apiURL = "https://jsonplaceholder.typicode.com";
  headers: new HttpHeaders({
   'Content-Type': 'application/json'
constructor(private httpClient: HttpClient) { }
 getAll(): Observable<any> {
  return this.httpClient.get(this.apiURL + '/posts/')
     catchError(this.errorHandler)
 create(post: Post): Observable<any> {
  return this.httpClient.post(this.apiURL + '/posts/', JSON.stringify(post), this.httpOptions)
     catchError(this.errorHandler)
 find(id: number): Observable<any> {
  return this.httpClient.get(this.apiURL + '/posts/' + id)
     catchError(this.errorHandler)
 update(id: number, post; Post); Observable<anv> {
  return this.httpClient.put(this.apiURL + '/posts/' + id, JSON.stringify(post), this.httpOptions)
     catchError(this.errorHandler)
  return this.httpClient.delete(this.apiURL + '/posts/' + id, this.httpOptions)
    catchError(this.errorHandler)
  errorHandler(error: any) {
  let errorMessage = ";
  if (error.error instanceof ErrorEvent) {
   errorMessage = error.error.message;
   errorMessage = 'Error Code: ${error.status}\nMessage: ${error.message}';
  return throwError(errorMessage);
```



src/app/post/post.service.ts

```
import { Injectable } from '@angular/core';
import { HttpClient, HttpHeaders } from '@angular/common/http';
import { Observable, throwError } from 'rxjs';
import { catchError } from 'rxjs/operators';
import { Post } from './post';
@Injectable({
 providedIn: 'root'
export class PostService {
 private apiURL = "https://jsonplaceholder.typicode.com";
 httpOptions = {
  headers: new HttpHeaders({
   'Content-Type': 'application/json'
```



src/app/post/post.service.ts

find(id: number): Observable<any> {

```
getAll(): Observable<any> {
  return this.httpClient.get(this.apiURL + '/posts/')
  .pipe(
    catchError(this.errorHandler)
```

constructor(private httpClient: HttpClient) { }

```
create(post: Post): Observable<any> {
  return this.httpClient.post(this.apiURL + '/posts/', JSON.stringify(post), this.httpOptions)
  .pipe(
    catchError(this.errorHandler)
  )
}
```



src/app/post/post.service.ts

```
find(id: number): Observable<any> {
 return this.httpClient.get(this.apiURL + '/posts/' + id)
  .pipe(
   catchError(this.errorHandler)
update(id: number, post: Post): Observable<any> {
 return this.httpClient.put(this.apiURL + '/posts/' + id, JSON.stringify(post), this.httpOptions)
  .pipe(
   catchError(this.errorHandler)
```



src/app/post/post.service.ts

```
delete(id: number) {
return this.httpClient.delete(this.apiURL + '/posts/' + id, this.httpOptions)
  .pipe(
   catchError(this.errorHandler)
errorHandler(error: any) {
 let errorMessage = ";
 if (error.error instanceof ErrorEvent) {
 errorMessage = error.error.message;
 } else {
 errorMessage = `Error Code: ${error.status}\nMessage: ${error.message}`;
 return throwError(errorMessage);
```



Template e Componente da Página de Lista src/app/post/index/index.component.ts Código completo

```
import { Component } from '@angular/core':
import { CommonModule } from '@angular/common';
import { RouterModule } from '@angular/router';
import { PostService } from '../post.service';
import { Post } from '../post';
@Component({
 selector: 'app-index',
 standalone: true,
 imports: [CommonModule, RouterModule],
 templateUrl: './index.component.html',
 styleUrl: './index.component.css'
export class IndexComponent {
 posts: Post[] = [];
 constructor(public postService: PostService) { }
 ngOnInit(): void {
  this.postService.getAll().subscribe((data: Post[]) => {
   this.posts = data;
   console.log(this.posts);
 deletePost(id: number) {
  this.postService.delete(id).subscribe(res => {
   this.posts = this.posts.filter(item => item.id !== id);
   console.log('Post deletado com sucesso!'):
```



Template e Componente da Página de Lista src/app/post/index/index.component.ts

```
import { Component } from '@angular/core';
import { CommonModule } from '@angular/common';
import { RouterModule } from '@angular/router';
import { PostService } from '../post.service';
import { Post } from '../post';
@Component({
 selector: 'app-index',
 standalone: true,
 imports: [CommonModule, RouterModule],
 templateUrl: './index.component.html',
 styleUrl: './index.component.css'
export class IndexComponent {
 posts: Post[] = [];
```



Template e Componente da Página de Lista src/app/post/index/index.component.ts

```
constructor(public postService: PostService) { }
ngOnInit(): void {
 this.postService.getAll().subscribe((data: Post[]) => {
  this.posts = data;
  console.log(this.posts);
deletePost(id: number) {
 this.postService.delete(id).subscribe(res => {
  this.posts = this.posts.filter(item => item.id !== id);
  console.log('Post deletado com sucesso!');
```



Template e Componente da Página de Lista src/app/post/index/index.component.html código completo

```
<div class="container">
<h1>Exemplo CRUD Angular 18</h1>
<a href="#" routerLink="/post/create/" class="btn btn-success">Criar Nova Postagem</a>
<thead>
  ID
   Título
   Corpo
   Ação
  </thead>
  {{ post.id }}
   {{ post.title }}
   {{ post.body }}
   <a href="#" [routerLink]="['/post/', post.id, 'view']" class="btn btn-info">Visualizar</a>
   <a href="#" [routerLink]="['/post/', post.id, 'edit']" class="btn btn-primary">Editar</a>
   <button type="button" (click)="deletePost(post.id)" class="btn btn-danger">Deletar</button>
  </div>
```



Template e Componente da Página de Lista src/app/post/index/index.component.html

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```
<div class="container">
<h1>Exemplo CRUD Angular 18</h1>
<a href="#" routerLink="/post/create/" class="btn btn-success">Criar Nova Postagem</a>
<thead>
  ID
  Título
  Corpo
  Ação
  </thead>
```

Template e Componente da Página de Lista src/app/post/index/index.component.html

```
{{ post.id }}
   {{ post.title }}
   {{ post.body }}
   <a href="#" [routerLink]="['/post/', post.id, 'view']" class="btn btn-info">Visualizar</a>
    <a href="#" [routerLink]="['/post/', post.id, 'edit']" class="btn btn-primary">Editar</a>
    <button type="button" (click)="deletePost(post.id)" class="btn btn-danger">Deletar</button>
   </div>
```

Criar Template e Componente de Página Aqui, utilizaremos formulários reativos para armazenar dados no servidor utilizando serviços web. Vamos configurar o componente e o template.

Arquivo: src/app/post/create/create.component.ts

Arquivo: src/app/post/create/create.component.html



Arquivo: src/app/post/create/create.component.ts Código completo

```
import { Component } from '@angular/core':
import { CommonModule } from '@angular/common';
import { PostService } from '../post.service';
import { Router } from '@angular/router';
import { ReactiveFormsModule, FormGroup, FormControl, Validators } from '@angular/forms':
@Component({
 selector: 'app-create',
 standalone: true,
 imports: [CommonModule, ReactiveFormsModule],
 templateUrl: './create.component.html',
 styleUrl: './create.component.css'
export class CreateComponent {
 form!: FormGroup:
 constructor(
 public postService: PostService,
 private router: Router
 ) { }
 ngOnInit(): void {
  this.form = new FormGroup({
   title: new FormControl(", [Validators.required]),
   body: new FormControl(", Validators.required)
 get f() {
 return this.form.controls:
 submit() {
  console.log(this.form.value);
  this.postService.create(this.form.value).subscribe((res: any) => {
   console.log('Post criado com sucesso!'):
   this.router.navigateByUrl('post/index');
```



imports: [CommonModule, ReactiveFormsModule],

templateUrl: './create.component.html',

```
Arquivo: src/app/post/create/create.component.ts
import { Component } from '@angular/core';
import { CommonModule } from '@angular/common';
import { PostService } from '../post.service';
import { Router } from '@angular/router';
import { ReactiveFormsModule, FormGroup, FormControl,
                                                             Validators
                                                                            trom
'@angular/forms';
@Component({
 selector: 'app-create',
 standalone: true,
```



styleUrl: './create.component.css'

Arquivo: src/app/post/create/create.component.ts export class CreateComponent {

```
constructor(
 public postService: PostService,
 private router: Router
) { }
ngOnInit(): void {
 this.form = new FormGroup({
  title: new FormControl(", [Validators.required]),
  body: new FormControl(", Validators.required)
 });
```

form!: FormGroup;



```
Arquivo: src/app/post/create/create.component.ts
 get f() {
  return this.form.controls;
 submit() {
  console.log(this.form.value);
 this.postService.create(this.form.value).subscribe((res: any) => {
   console.log('Post criado com sucesso!');
   this.router.navigateByUrl('post/index');
  });
```



Arquivo: src/app/post/create/create.component.html Código completo

```
<div class="container">
<h1>Criar Nova Postagem</h1>
 <a href="#" routerLink="/post/index" class="btn btn-primary">Voltar</a>
<form [formGroup]="form" (ngSubmit)="submit()">
  <div class="form-group">
   <label for="title">Título:</label>
   <input
   formControlName="title"
    id="title"
    type="text"
    class="form-control">
   <div *ngIf="f['title'].touched && f['title'].invalid" class="alert alert-danger">
    <div *nglf="f['title'].errors && f['title'].errors['required']">
    O título é obrigatório.
    </div>
   </div>
  </div>
  <div class="form-group">
   <label for="body">Conteúdo</label>
   <textarea
   formControlName="body"
    id="bodv"
    type="text"
    class="form-control">
   </textarea>
   <div *nglf="f['body'].touched && f['body'].invalid" class="alert alert-danger">
    <div *ngIf="f['body'].errors && f['body'].errors['required']">
    O conteúdo é obrigatório.
    </div>
   </div>
  </div>
  <button class="btn btn-primary" type="submit" [disabled]="!form.valid">Enviar</button>
 </form>
</div>
```



Arquivo: src/app/post/create/create.component.html

```
<div class="container">
<h1>Criar Nova Postagem</h1>
<a href="#" routerLink="/post/index" class="btn btn-primary">Voltar</a>
<form [formGroup]="form" (ngSubmit)="submit()">
 <div class="form-group">
   <label for="title">Título:</label>
   <input
    formControlName="title"
   id="title"
   type="text"
    class="form-control">
   <div *nglf="f['title'].touched && f['title'].invalid" class="alert alert-danger">
    <div *nglf="f['title'].errors && f['title'].errors['required']">
     O título é obrigatório.
    </div>
   </div>
```



Arquivo: src/app/post/create/create.component.html

```
<div class="form-group">
   <label for="body">Conteúdo</label>
   <textarea
    formControlName="body"
   id="body"
    type="text"
    class="form-control">
   </textarea>
   <div *ngIf="f['body'].touched && f['body'].invalid" class="alert alert-danger">
    <div *ngIf="f['body'].errors && f['body'].errors['required']">
     O conteúdo é obrigatório.
    </div>
   </div>
 </div>
 <button class="btn btn-primary" type="submit" [disabled]="!form.valid">Enviar</button>
 </form>
</div>
```



Editar Template e Componente de Página Aqui, utilizaremos formulários reativos para atualizar informações de postagens no servidor usando serviços web.

Arquivo: src/app/post/edit/edit.component.ts

Arquivo: src/app/post/edit/edit.component.html



Arquivo: src/app/post/edit/edit.component.ts Código completo

```
import { Component } from '@angular/core':
import { CommonModule } from '@angular/common':
import { PostService } from '../post.service':
import { ActivatedRoute, Router } from '@angular/router';
import { Post } from '../post';
import { ReactiveFormsModule, FormGroup, FormControl, Validators } from '@angular/forms':
@Component({
 selector: 'app-edit'.
 standalone: true.
 imports: [CommonModule, ReactiveFormsModule]
templateUrl: './edit.component.html',
styleUrl: './edit.component.css'
export class EditComponent {
 id!: number:
 post!: Post;
 form!: FormGroup;
 constructor(
 public postService: PostService.
 private route: ActivatedRoute.
 private router: Router
) { }
 ngOnInit(); void {
 this.id = this.route.snapshot.params['postId']:
 this.postService.find(this.id).subscribe((data: Post) => {
  this.post = data:
 this.form = new FormGroup({
  title: new FormControl(", [Validators,required]).
  body: new FormControl(", Validators,required)
 get f() {
 return this.form.controls:
 submit() {
 console.log(this.form.value):
  this.postService.update(this.id, this.form.value).subscribe((res: any) => {
  console.log('Post atualizado com sucesso!');
  this.router.navigateByUrl('post/index');
```



Arquivo: src/app/post/edit/edit.component.ts

```
import { Component } from '@angular/core';
import { CommonModule } from '@angular/common';
import { PostService } from '../post.service';
import { ActivatedRoute, Router } from '@angular/router';
import { Post } from '../post';
import { ReactiveFormsModule, FormGroup, FormControl, Validators } from '@angular/forms';
@Component({
selector: 'app-edit',
standalone: true,
imports: [CommonModule, ReactiveFormsModule],
templateUrl: './edit.component.html',
styleUrl: './edit.component.css'
})
```



Arquivo: src/app/post/edit/edit.component.ts

```
export class EditComponent {
```

```
id!: number;
post!: Post;
form!: FormGroup;
constructor(
 public postService: PostService,
 private route: ActivatedRoute,
 private router: Router
) { }
ngOnInit(): void {
 this.id = this.route.snapshot.params['postId'];
 this.postService.find(this.id).subscribe((data: Post) => {
  this.post = data;
 });
 this.form = new FormGroup({
```



Arquivo: src/app/post/edit/edit.component.ts

```
this.form = new FormGroup({
  title: new FormControl(", [Validators.required]),
  body: new FormControl(", Validators.required)
 });
get f() {
 return this.form.controls;
submit() {
 console.log(this.form.value);
 this.postService.update(this.id, this.form.value).subscribe((res: any) => {
  console.log('Post atualizado com sucesso!');
  this.router.navigateByUrl('post/index');
 });
```



Arquivo: src/app/post/edit/edit.component.html Código completo

```
<h1>Atualizar Postagem</h1>
<a href="#" routerLink="/post/index" class="btn btn-primary">Voltar</a>
<form [formGroup]="form" (ngSubmit)="submit()">
  <div class="form-group">
  <label for="title">Título:</label>
  <input
   formControlName="title"
   id="title"
   type="text"
   [(ngModel)]="post.title"
   class="form-control">
   <div *ngIf="f['title'].touched && f['title'].invalid" class="alert alert-danger">
   <div *nglf="f['title'].errors && f['title'].errors['required']">
    O título é obrigatório.
   </div>
  </div>
  </div>
  <div class="form-group">
  <label for="body">Conteúdo</label>
  <textarea
   formControlName="body"
   id="body"
   [(ngModel)]="post.body"
   class="form-control">
  <div *nglf="ff'body'].touched && ff'body'].invalid" class="alert alert-danger">
   <div *ngIf="f['body'].errors && f['body'].errors['required']">
    O conteúdo é obrigatório.
   </div>
  </div>
 </div>
 <button class="btn btn-primary" type="submit" [disabled]="!form.valid">Atualizar</button>
</form>
</div>
```



Arquivo: src/app/post/edit/edit.component.html

```
<div class="container">
 <h1>Atualizar Postagem</h1>
 <a href="#" routerLink="/post/index" class="btn btn-primary">Voltar</a>
 <form [formGroup]="form" (ngSubmit)="submit()">
  <div class="form-group">
   <label for="title">Título:</label>
   <input
    formControlName="title"
    id="title"
    type="text"
    [(ngModel)]="post.title"
    class="form-control">
   <div *ngIf="f['title'].touched && f['title'].invalid" class="alert alert-danger">
    <div *ngIf="f['title'].errors && f['title'].errors['required']">
     O título é obrigatório.
    </div>
   </div>
  </div>
```



Arquivo: src/app/post/edit/edit.component.html

```
<div class="form-group">
   <label for="body">Conteúdo</label>
   <textarea
    formControlName="body"
    id="body"
    type="text"
    [(ngModel)]="post.body"
    class="form-control">
   </textarea>
   <div *ngIf="f['body'].touched && f['body'].invalid" class="alert alert-danger">
    <div *ngIf="f['body'].errors && f['body'].errors['required']">
     O conteúdo é obrigatório.
    </div>
   </div>
  </div>
 <button class="btn btn-primary" type="submit" [disabled]="!form.valid">Atualizar</button>
</form>
</div>
```



Detalhar Template e Componente de Página Aqui, exibiremos os dados da postagem armazenados no servidor.

Arquivo: src/app/post/view/view.component.ts

Arquivo: src/app/post/view/view.component.html



Arquivo: src/app/post/view/view.component.ts Código completo

```
import { Component } from '@angular/core';
import { PostService } from '../post.service';
import { ActivatedRoute, Router } from '@angular/router';
import { Post } from '../post';
@Component({
selector: 'app-view',
standalone: true,
imports: [],
templateUrl: './view.component.html',
styleUrl: './view.component.css'
export class ViewComponent {
id!: number;
post!: Post;
 constructor(
  public postService: PostService,
  private route: ActivatedRoute,
  private router: Router
) { }
ngOnInit(): void {
  this.id = this.route.snapshot.params['postId'];
  this.postService.find(this.id).subscribe((data: Post) => {
  this.post = data;
  });
```



Arquivo: src/app/post/view/view.component.ts

```
import { Component } from '@angular/core';
import { PostService } from '../post.service';
import { ActivatedRoute, Router } from '@angular/router';
import { Post } from '../post';
@Component({
 selector: 'app-view',
 standalone: true,
 imports: [],
 templateUrl: './view.component.html',
styleUrl: './view.component.css'
export class ViewComponent {
 id!: number;
 post!: Post;
```



Arquivo: src/app/post/view/view.component.ts

```
constructor(
 public postService: PostService,
 private route: ActivatedRoute,
 private router: Router
) { }
ngOnInit(): void {
this.id = this.route.snapshot.params['postId'];
 this.postService.find(this.id).subscribe((data: Post) => {
  this.post = data;
 });
```



Arquivo: src/app/post/view/view.component.html Código completo

```
<h1>Visualizar Postagem</h1>
<a href="#" routerLink="/post/index" class="btn btn-primary">Voltar</a>
<div>
<strong>ID:</strong>
{{ post.id }}
</div>
<div>
<strong>Título:</strong>
{{ post.title }}
</div>
<div>
<strong>Conteúdo:</strong>
{{ post.body }}
</div>
</div>
</div>
```

<div class="container">



Arquivo: src/app/post/view/view.component.html

```
<div class="container">
<h1>Visualizar Postagem</h1>
<a href="#" routerLink="/post/index" class="btn btn-primary">Voltar</a>
<div>
 <strong>ID:</strong>
 {{ post.id }}
</div>
<div>
 <strong>Título:</strong>
 {{ post.title }}
</div>
```



Arquivo: src/app/post/view/view.component.html

```
<div>
<strong>Conteúdo:</strong>
{{ post.body }}
</div>
</div>
```



Atualizar Visualização no app.component.html

<router-outlet></router-outlet>



Executar Aplicativo Angular

Execute o aplicativo com o comando:

ng serve

Abra no navegador: http://localhost:4200/post



Referências

- Site oficial do angular: https://angular.dev/
- Introdução ao Angular
 https://codelabs.developers.google.com/introduction-to-angular?hl=pt-br#0
- Angular Documentation <u>https://devdocs.io/angular/</u>

 Guide to AngularJS Documentation https://docs.angularjs.org/guide



Referências

- Projeto Angular: <u>https://github.com/savanihd/Angular-18-CRUD-A</u> <u>pplication-Tutorial-Example</u>
- Aplicação CRUD Angular 18 Tutorial Exemplo <u>https://github.com/daniel-abella/angular18-crud</u> <u>//?tab=readme-ov-file#arquivo-srcapppostedite</u> <u>ditcomponenthtml</u>
- Angular 18 Básico
 https://github.com/daniel-abella/angular
 co

