

INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E  
TECNOLOGIA DO RIO GRANDE DO NORTE

# Desenvolvimento para Dispositivos Móveis

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# Sumário

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- Introdução ao IONIC
- Primeiros Passos com IONIC

# Introdução ao IONIC

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# IONIC Framework

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- <https://ionicframework.com>
- O Ionic é um framework open source para desenvolvimento de aplicativos móveis multiplataforma.
- Utiliza na sua construção Front-end HTML, CSS e JavaScript
- O Ionic também utiliza as linguagens TypeScript e Angular





# IONIC Framework

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- A visualização da aplicação pode ser feita diretamente no navegador.
- Possui um cliente de linha de comando (CLI) para gerenciar todo projeto criado com o Ionic
- O desenvolvimento front-end pode se dar através das linguagens Vue, Angular e React
- Através do JavaScript, a aplicação pode ter acesso aos recursos do dispositivo como Câmera, Geolocalização, Bluetooth, entre outros.



- Angular: O AngularJS é um framework de código aberto usado para construir aplicativos para web baseados em uma única página dinâmica.
- React: React é um framework JavaScript criado pelo Facebook (atual Meta) que é usado para criar interfaces de usuário (UI) em aplicativos web.
- Vue: Vue é um framework progressivo para a construção de interfaces de usuário.

# Primeiros Passos com IONIC

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# Instalação do IONIC/CLI

- No prompt de comando  
npm i -g @ionic/cli

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.19044.2251]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Eberton SM>npm install -g @ionic/cli
npm WARN deprecated formidable@1.2.6: Please upgrade to latest, formidable@v2 or formidable@v3! Check these notes: https://bit.ly/2ZEqIau
npm WARN deprecated superagent@5.3.1: Please upgrade to v7.0.2+ of superagent. We have fixed numerous issues with streams, form-data, attach(), filesystem errors not bubbling up (ENOENT on attach()), and all tests are now passing. See the releases tab for more information at <https://github.com/visionmedia/superagent/releases>.

changed 218 packages, and audited 219 packages in 21s

27 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
npm notice
npm notice New major version of npm available! 8.19.2 -> 9.1.2
npm notice Changelog: https://github.com/npm/cli/releases/tag/v9.1.2
npm notice Run npm install -g npm@9.1.2 to update!
npm notice

C:\Users\Eberton SM>
```



# Primeiros Passos com IONIC

- Crie uma pasta onde vai ser colocado o projeto
- Entre na pasta criada no prompt do Windows e dê o seguinte comando  
`ionic start <nome do projeto> <template>`

**ionic start pdv sidemenu**

## Opções de Template

- tabs
- sidemenu
- blank
- list
- my-first-app

## Opções de Framework:

- Angular
- React
- Vue

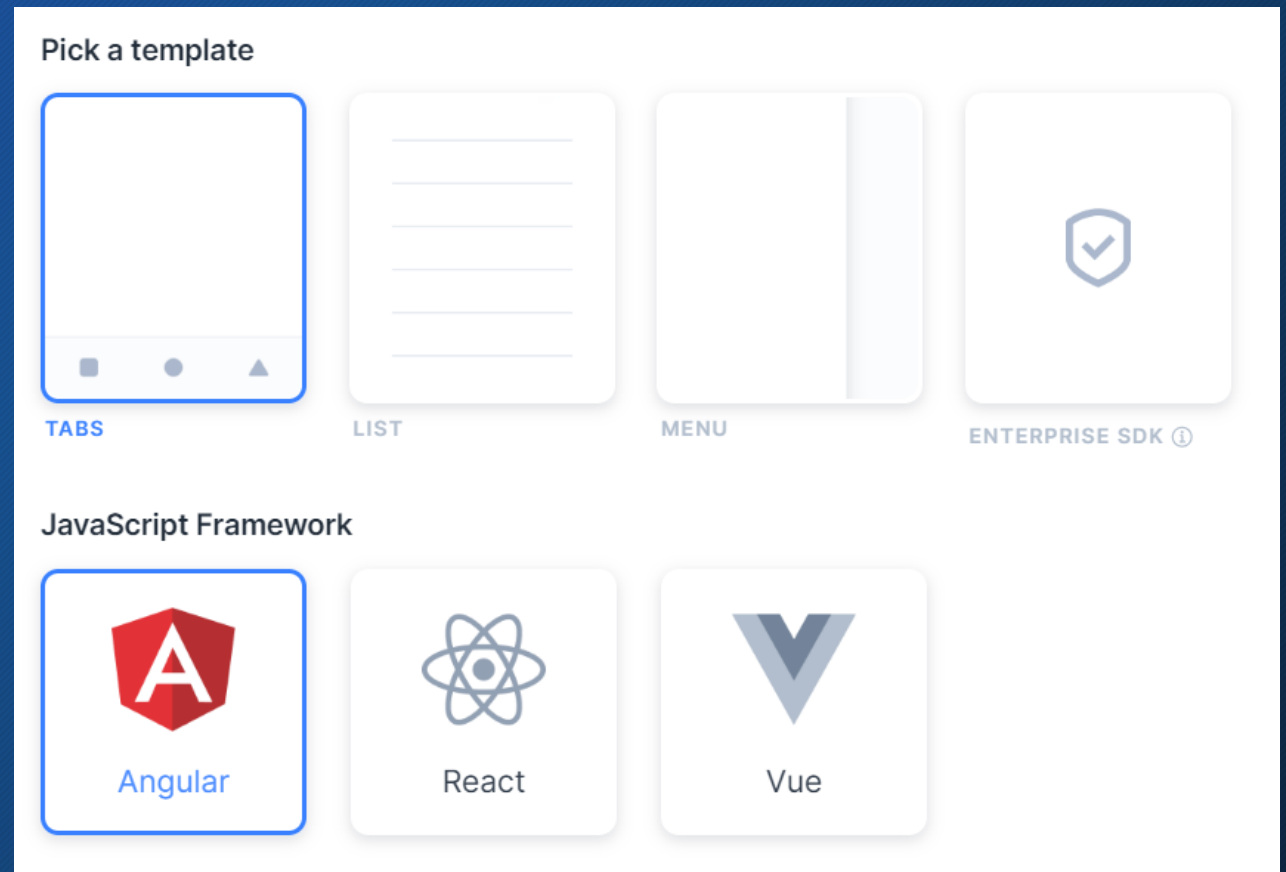
# Primeiros Passos com IONIC

## Opções de Template

- tabs
- sidemenu
- blank
- list
- my-first-app

## Opções de Framework:

- Angular
- React
- Vue



# Primeiros Passos com IONIC

- ionic start pdv sidemenu

```
C:\Windows\system32\cmd.exe

C:\Users\Eberton SM\Documents\ionic7\pdv1>ionic start pdv sidemenu

Pick a framework!

Please select the JavaScript framework to use for your new app. To bypass this prompt next time, supply a value for the
--type option.

? Framework: Angular
✓ Preparing directory .\pdv in 1.69ms
✓ Downloading and extracting sidemenu starter in 512.79ms
> ionic integrations enable capacitor --quiet -- pdv io.ionic.starter
> npm.cmd i --save -E @capacitor/core@latest
npm WARN deprecated @npmcli/move-file@2.0.1: This functionality has been moved to @npmcli/fs

added 1073 packages, and audited 1074 packages in 2m

152 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
> npm.cmd i -D -E @capacitor/cli@latest

added 36 packages, and audited 1110 packages in 7s

152 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
> npm.cmd i --save -E @capacitor/haptics @capacitor/app @capacitor/keyboard @capacitor/status-bar
```

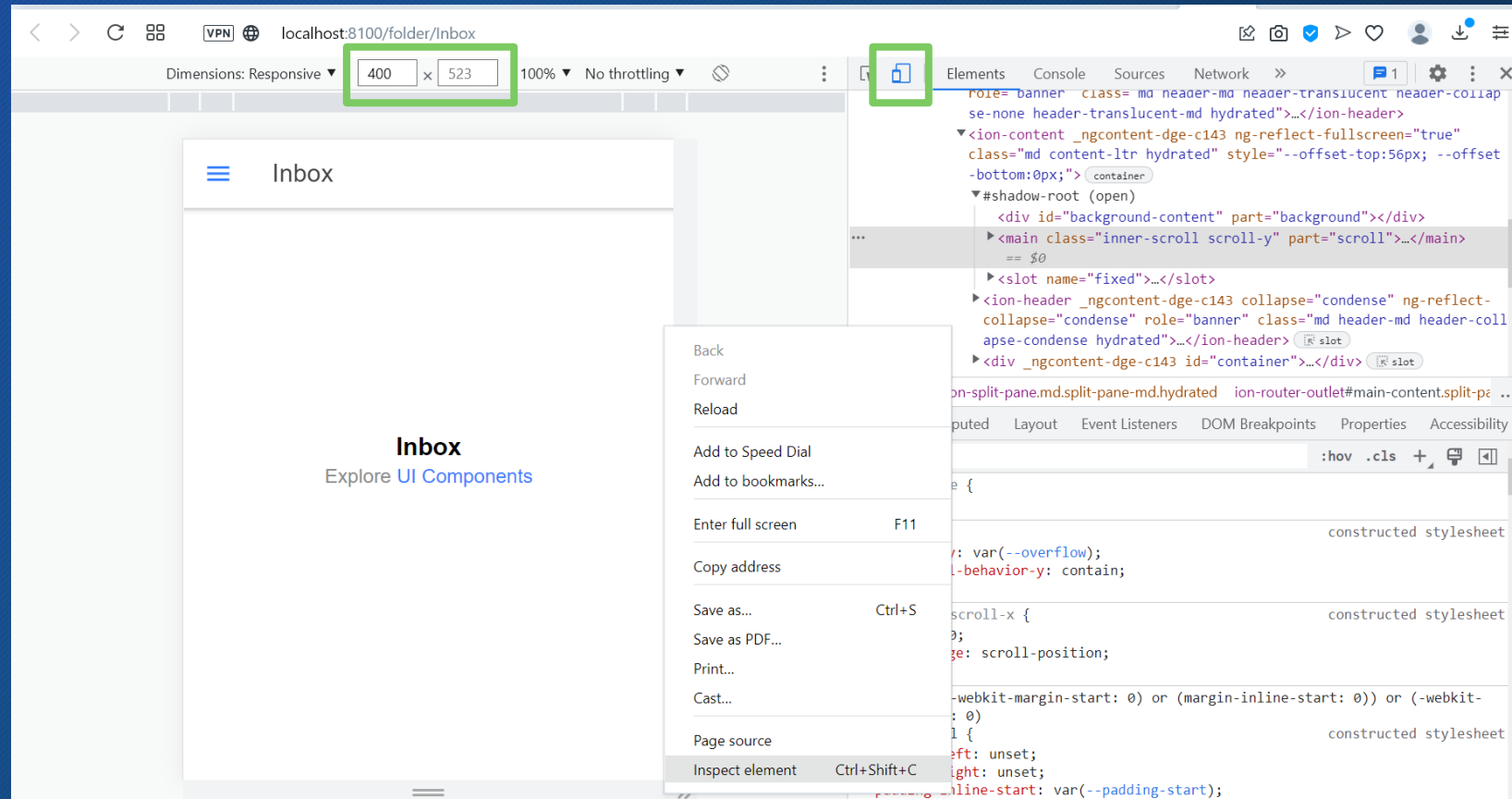


# Primeiros Passos com IONIC

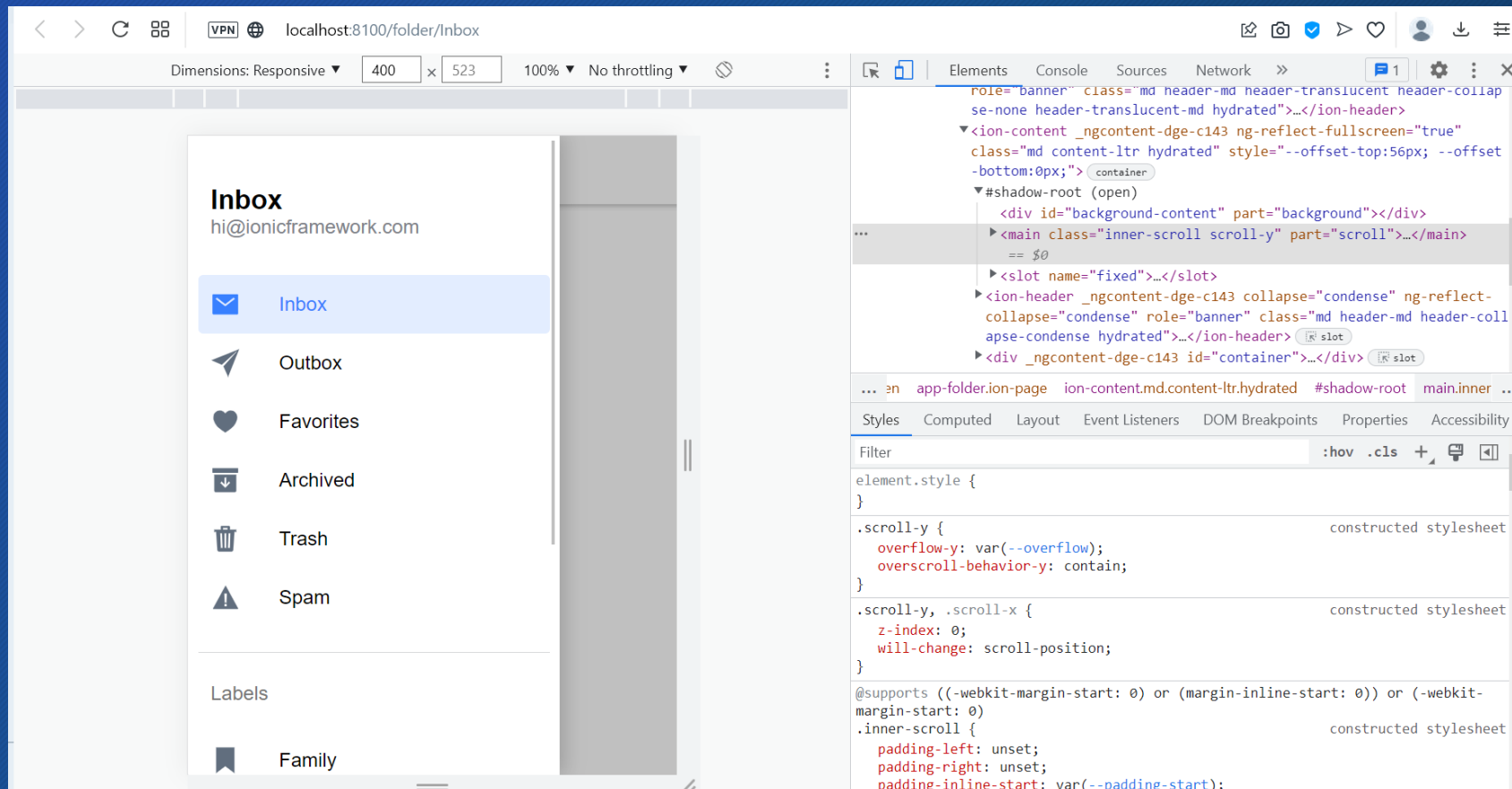
- Na pasta do projeto Ionic digite o comando

**ionic serve**

- No navegador escolha a opção Inspect Element
  - Ajuste o display para o tamanho desejável



# Primeiros Passos com IONIC



# Sistema de Estacionamiento

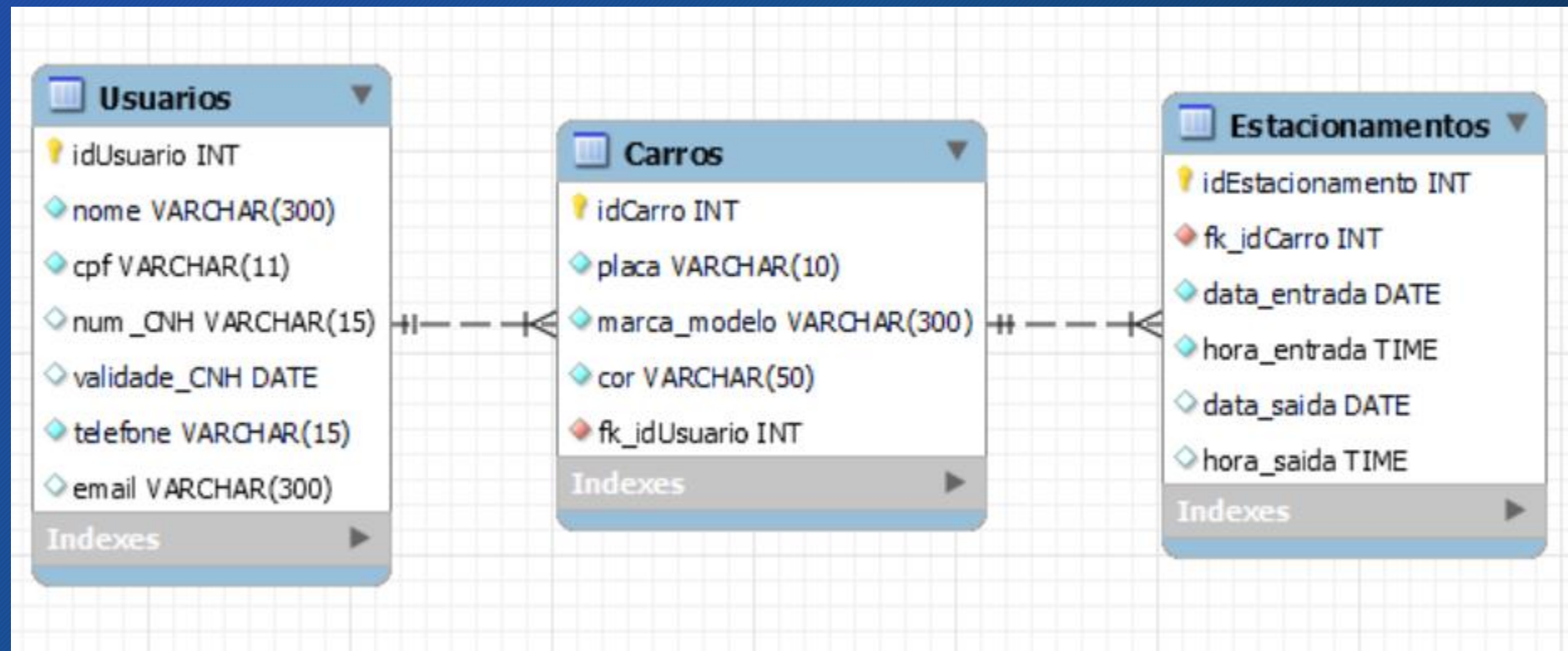
14



# Sistema de Estacionamento

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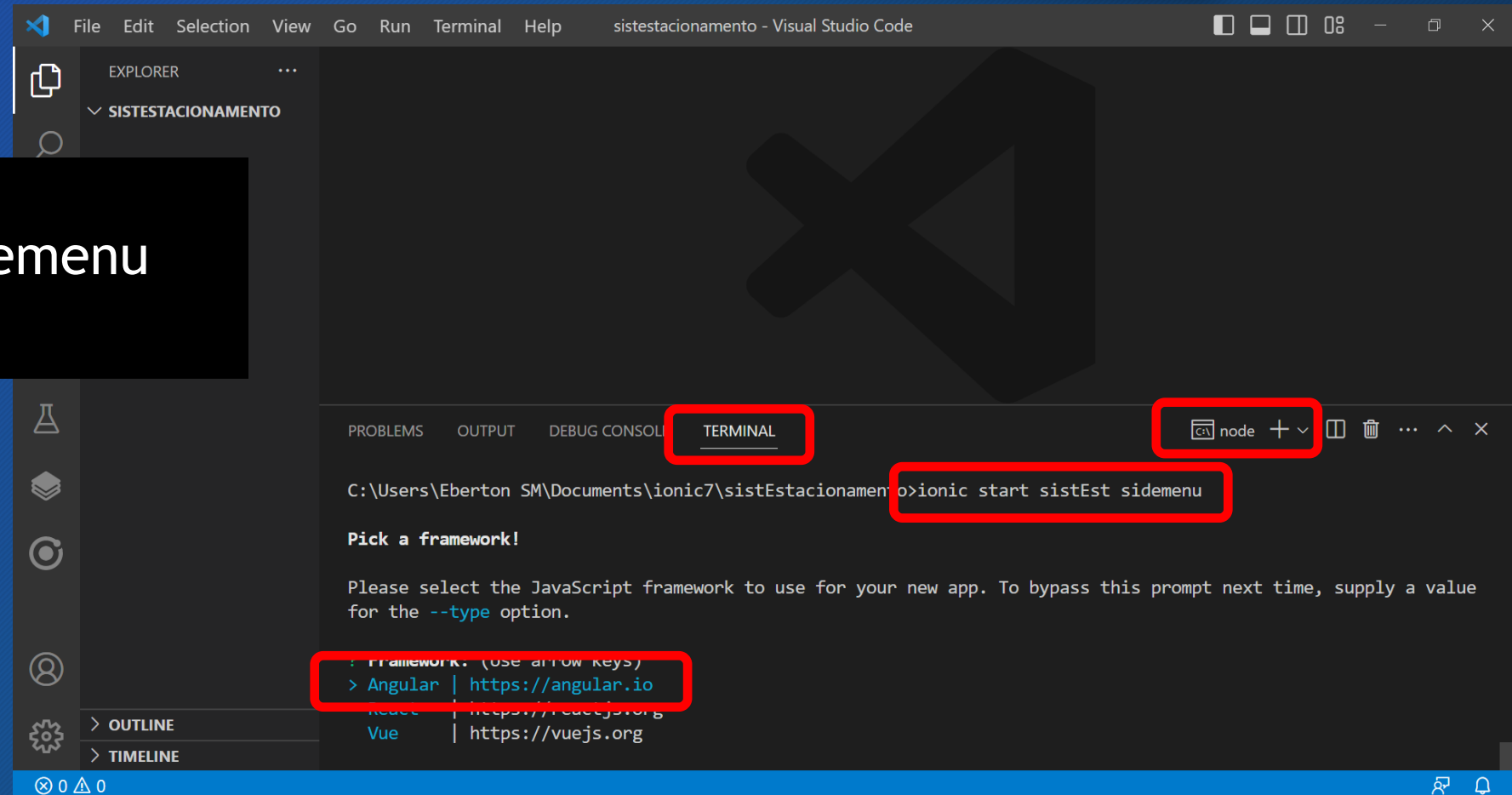
- BD para o Sistema de Estacionamento



# Projeto Estacionamento

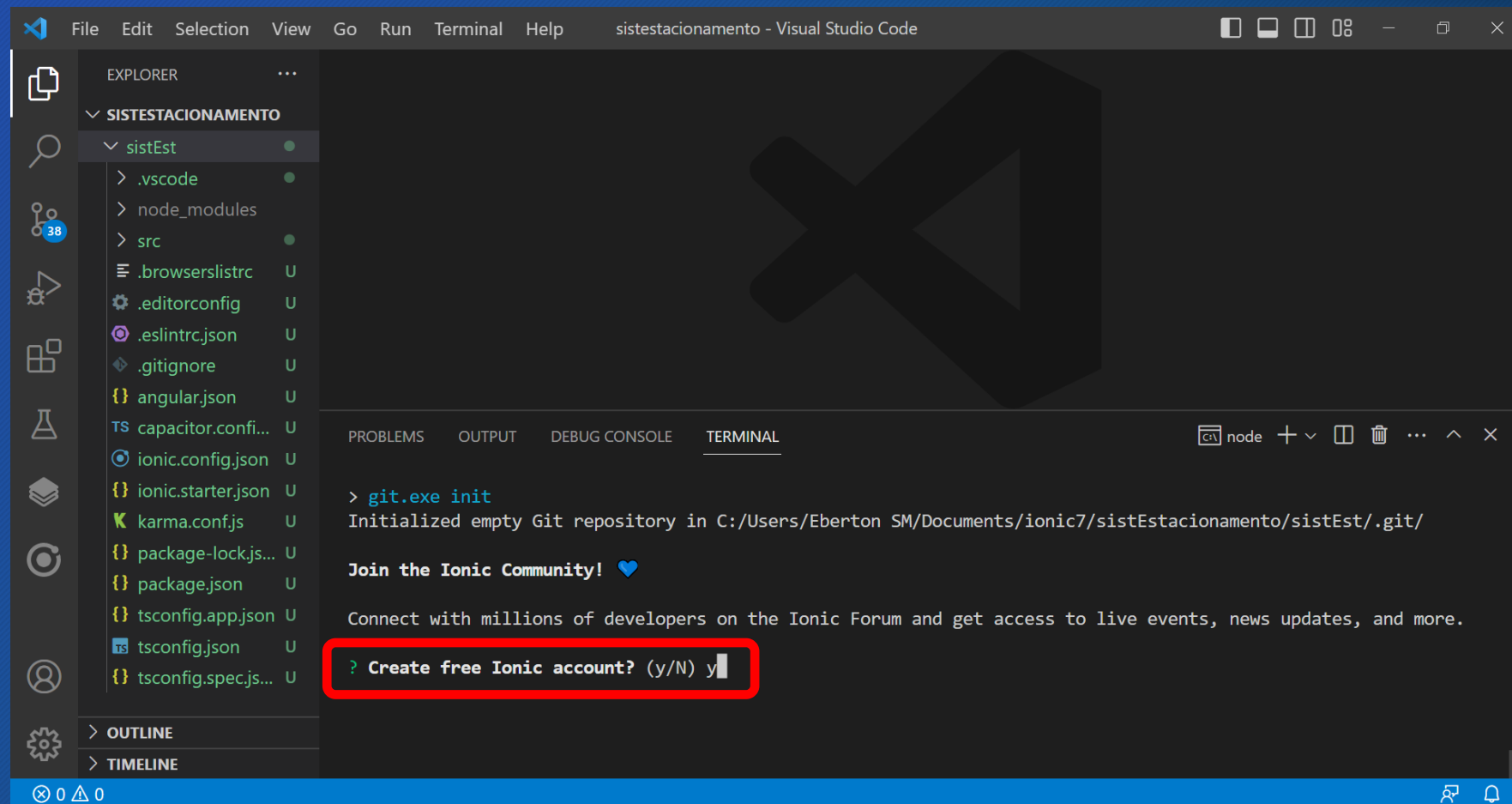
16

ionic start sistEst sidemenu



# Projeto Estacionamento

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The screenshot shows the Visual Studio Code interface with a terminal window open. The Explorer panel on the left shows the project structure for 'SISTESTACIONAMENTO', with the 'sistEst' folder expanded. The terminal window displays the output of the 'git.exe init' command, indicating that a new Git repository has been initialized. Below the terminal output, there is a prompt to 'Create free Ionic account?' with a red box highlighting the input field where 'y' has been entered.

```
File Edit Selection View Go Run Terminal Help sistestacionamento - Visual Studio Code
```

EXPLORER

- ▼ SISTESTACIONAMENTO
  - ▼ sistEst
    - > .vscode
    - > node\_modules
    - > src
    - .browserslistrc U
    - .editorconfig U
    - .eslintrc.json U
    - .gitignore U
    - angular.json U
    - TS capacitor.conf... U
    - ionic.config.json U
    - ionic.starter.json U
    - karma.conf.js U
    - package-lock.js... U
    - package.json U
    - tsconfig.app.json U
    - tsconfig.json U
    - tsconfig.spec.js... U
  - > OUTLINE
  - > TIMELINE

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
> git.exe init
Initialized empty Git repository in C:/Users/Eberton SM/Documents/ionic7/sistEstacionamento/sistEst/.git/

Join the Ionic Community! ❤️

Connect with millions of developers on the Ionic Forum and get access to live events, news updates, and more.

? Create free Ionic account? (y/N) y
```

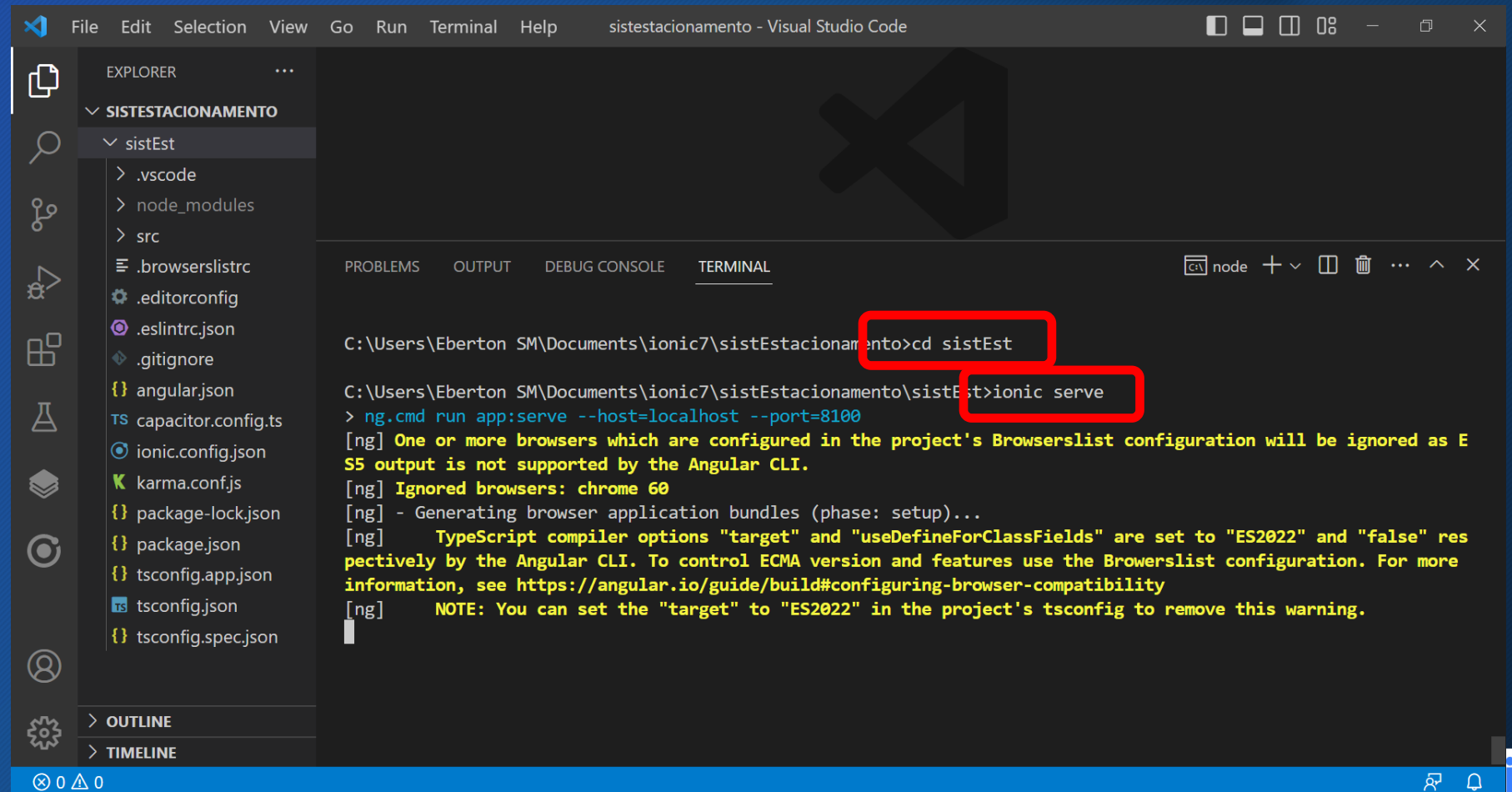


# Projeto Estacionamento

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cd sistEst

ionic serve



The screenshot shows the Visual Studio Code interface with the 'sistEstacionamento' project open. The Explorer panel on the left shows the project structure, including the 'sistEst' directory. The Terminal panel at the bottom shows the command prompt output for the 'ionic serve' command. The output indicates that the project is running successfully, with a warning about browser compatibility.

```
File Edit Selection View Go Run Terminal Help sistEstacionamento - Visual Studio Code

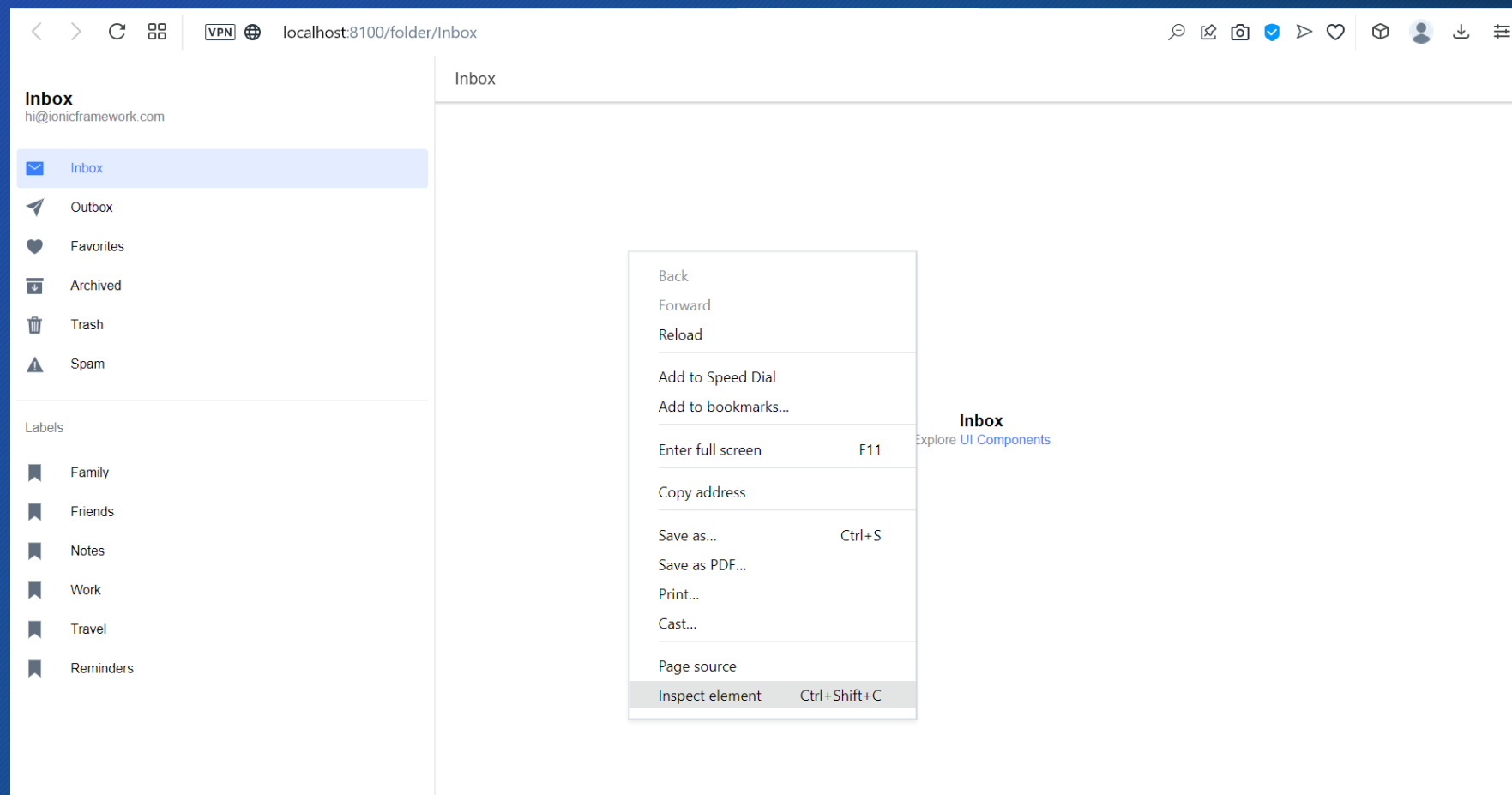
EXPLORER
  SISTESTACIONAMENTO
    sistEst
      .vscode
      node_modules
      src
      .browserslistrc
      .editorconfig
      .eslintrc.json
      .gitignore
      angular.json
      capacitor.config.ts
      ionic.config.json
      karma.conf.js
      package-lock.json
      package.json
      tsconfig.app.json
      tsconfig.json
      tsconfig.spec.json

  OUTLINE
  TIMELINE

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
C:\Users\Eberton SM\Documents\ionic7\sistEstacionamento>cd sistEst
C:\Users\Eberton SM\Documents\ionic7\sistEstacionamento\sistEst>ionic serve
> ng.cmd run app:serve --host=localhost --port=8100
[ng] One or more browsers which are configured in the project's Browserslist configuration will be ignored as ES5 output is not supported by the Angular CLI.
[ng] Ignored browsers: chrome 60
[ng] - Generating browser application bundles (phase: setup)...
[ng] TypeScript compiler options "target" and "useDefineForClassFields" are set to "ES2022" and "false" respectively by the Angular CLI. To control ECMA version and features use the Browserslist configuration. For more information, see https://angular.io/guide/build#configuring-browser-compatibility
[ng] NOTE: You can set the "target" to "ES2022" in the project's tsconfig to remove this warning.
```

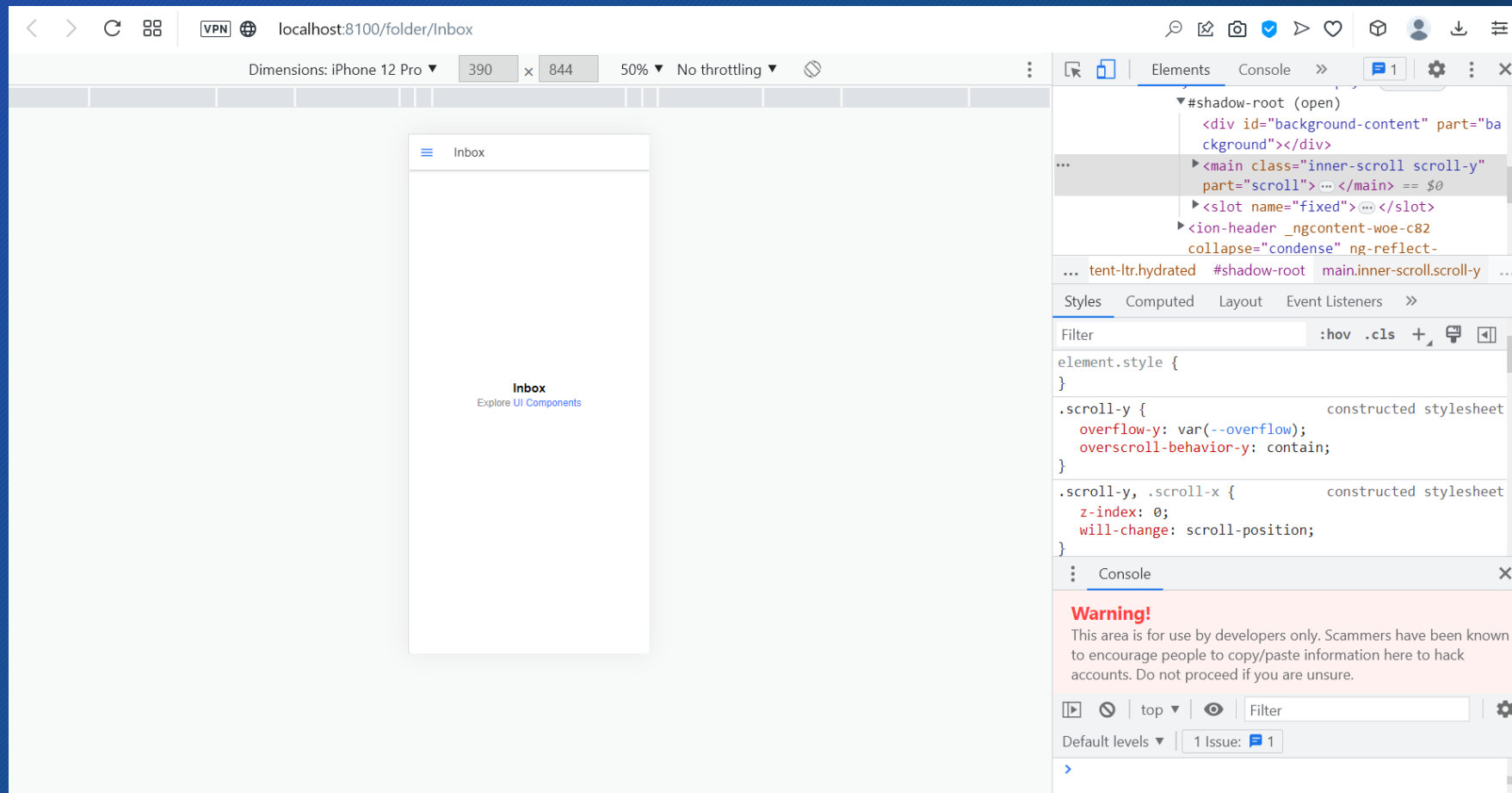
# Projeto Estacionamento

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# Projeto Estacionamento

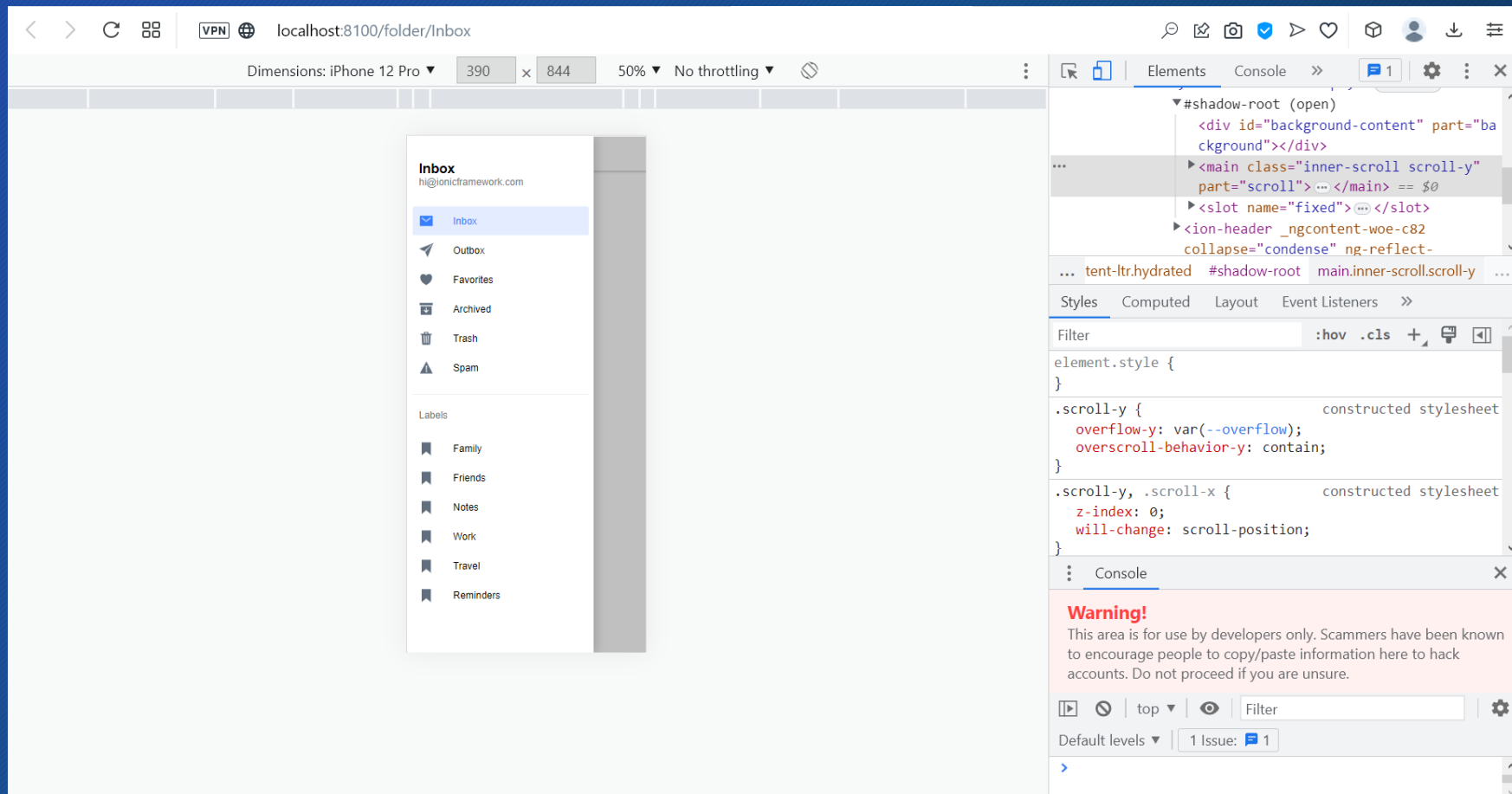
20



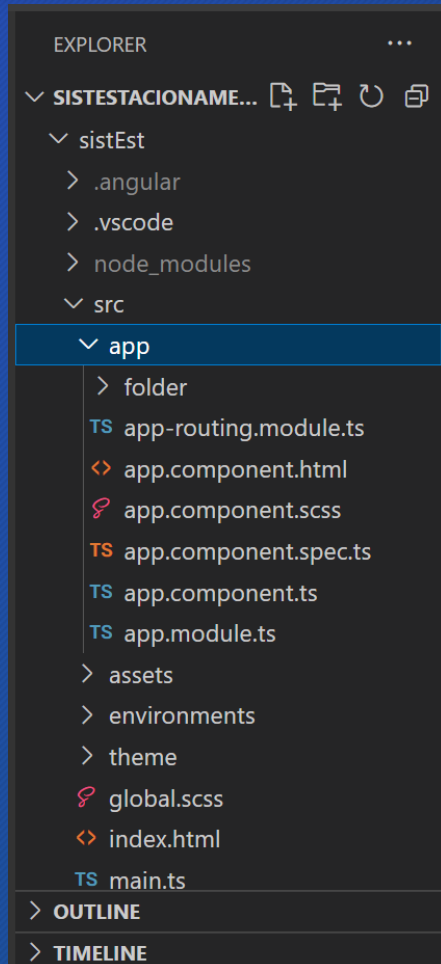


# Projeto Estacionamento

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# Projeto Estacionamento



- `app-routing.module.ts`: Especifica as rotas/caminhos das páginas da aplicação organizadas no menu
- `app-component.html`: Define as características e ações de interação front-end do menu
- `app-component.ts`: Armazena as variáveis que serão utilizadas pelo html de mesmo nome
- `app-component.spec.ts`: Arquivo de teste

# Projeto Estacionamento

- path: URL da página
- redirectTo: caminho para onde será redirecionado
- pathMatch
  - full: Compara toda a URL digitada
  - prefix: Compara apenas parte da URL digitada

```
TS app-routing.module.ts X
src > app > TS app-routing.module.ts > ...
1  import { NgModule } from '@angular/core';
2  import { PreloadAllModules, RouterModule, Routes } from '@angular/router';
3
4  const routes: Routes = [
5    {
6      path: '',
7      redirectTo: 'folder/Inbox',
8      pathMatch: 'full'
9    },
10   {
11     path: 'folder/:id',
12     loadChildren: () => import('./folder/folder.module').then( m => m.FolderPa
13   }
14 ];
15
```

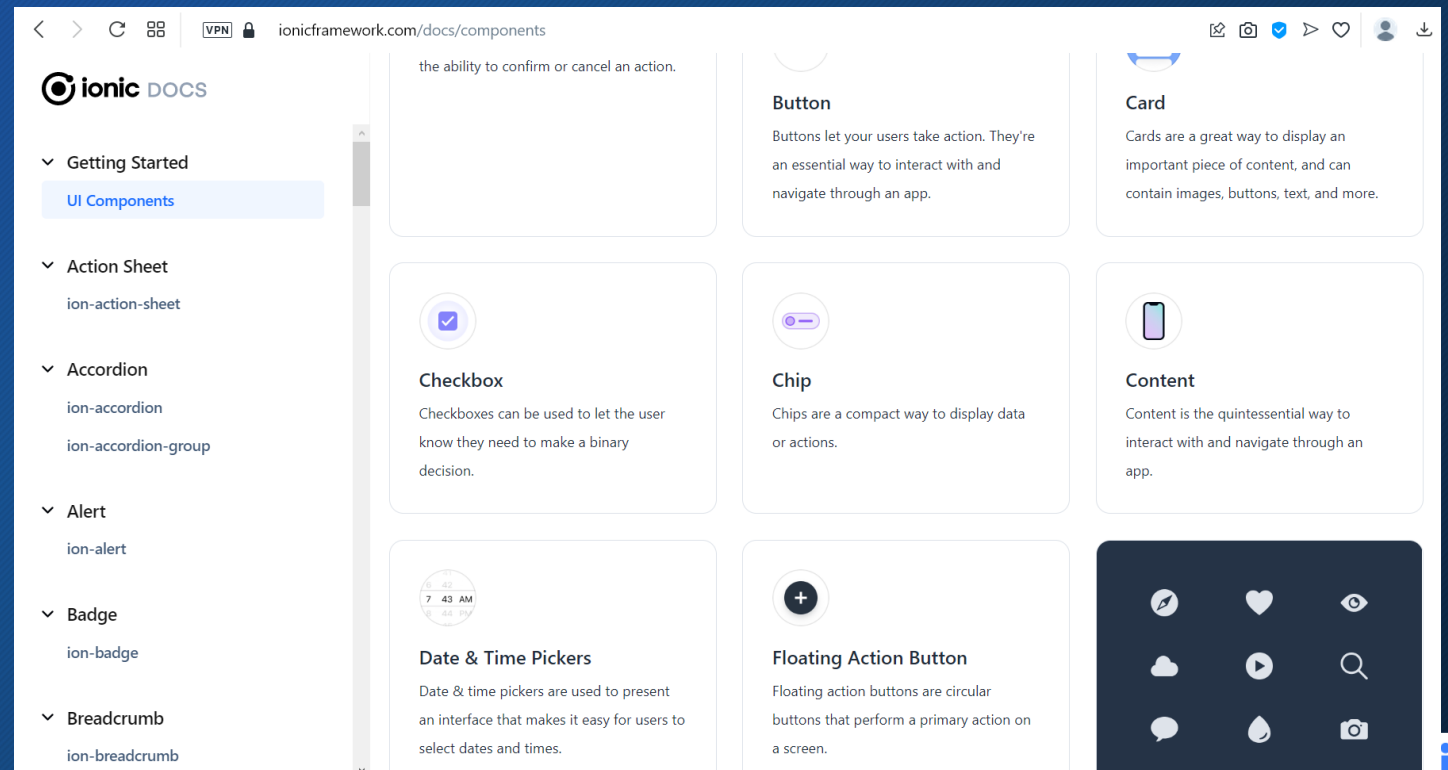
# Projeto Estacionamento

```
TS app-routing.module.ts  app.component.html X
src > app > app.component.html > ion-app > ion-split-pane > ion-menu > ion-content > ion-list#inbox-list > ion-n
1  ion-app>
2    <ion-split-pane contentId="main-content">
3      <ion-menu contentId="main-content" type="overlay">
4        <ion-content>
5          <ion-list id="inbox-list">
6            <ion-list-header>Inbox</ion-list-header>
7            <ion-note>hi@ionicframework.com</ion-note>
8
9            <ion-menu-toggle auto-hide="false" *ngFor="let p of appPages; let i = ind
10              <ion-item routerDirection="root" [routerLink]="[p.url]" lines="none" de
11                <ion-icon slot="start" [ios]="p.icon + '-outline'" [md]="p.icon + '-s
12                <ion-label>{{ p.title }}</ion-label>
13              </ion-item>
14            </ion-menu-toggle>
15          </ion-list>
```



# Projeto Estacionamento

<https://ionicframework.com/docs/components>



# Projeto Estacionamento

```
TS app-routing.module.ts  <> app.component.html M  TS app.component.ts X
src > app > TS app.component.ts > ...
1  import { Component } from '@angular/core';
2  @Component({
3    selector: 'app-root',
4    templateUrl: 'app.component.html',
5    styleUrls: ['app.component.scss'],
6  })
7  export class AppComponent {
8    public appPages = [
9      { title: 'Inbox', url: '/folder/Inbox', icon: 'mail' },
10     { title: 'Outbox', url: '/folder/Outbox', icon: 'paper-plane' },
11     { title: 'Favorites', url: '/folder/Favorites', icon: 'heart' },
12     { title: 'Archived', url: '/folder/Archived', icon: 'archive' },
13     { title: 'Trash', url: '/folder/Trash', icon: 'trash' },
14     { title: 'Spam', url: '/folder/Spam', icon: 'warning' },
15   ];
16   public labels = ['Family', 'Friends', 'Notes', 'Work', 'Travel', 'Reminders'];
17   constructor() {}
```

# Exercícios

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