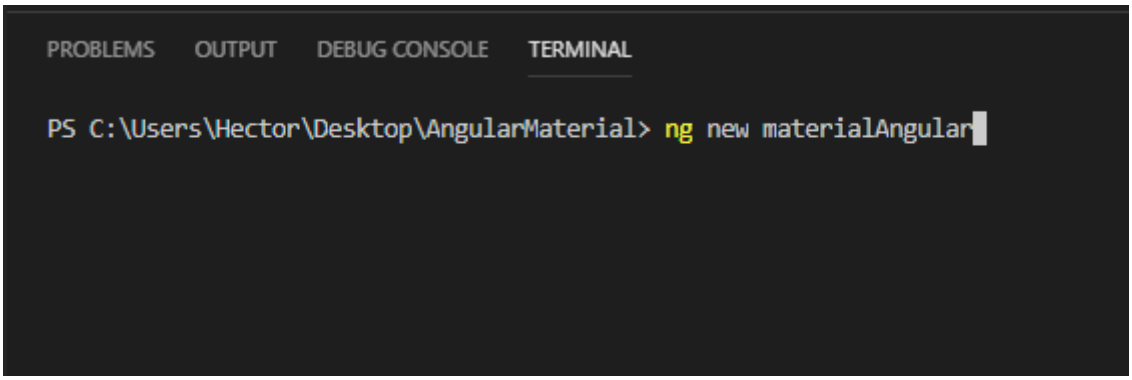
MATERIAL

Hector

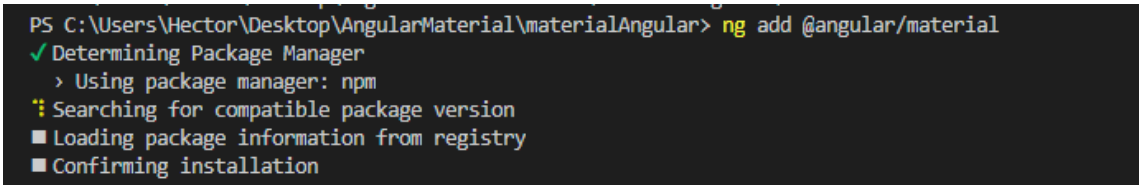
18/02/2025

Para la instalacion de material en un proyecto de angular se hace con el siguiente comando:

a. Primero creamos un proyecto de angular:

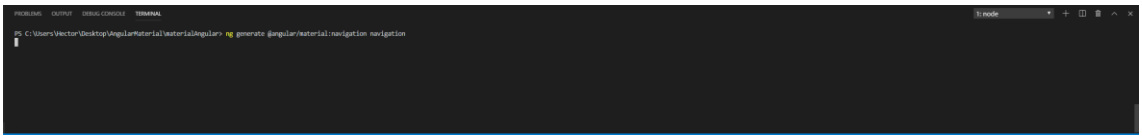


b. Implementamos material en el proyecto angular:



Tras haber implementado Material en el proyecto de angular creamos el componente de navegacion, material contiene unos comandos para crear los componentes directamente con el programado:

a. Creamos un componente navigation:



b. Aquí tenemos el codigo html del componente navigation:

navigation.component.html

materialAngular > src > app > navigation > navigation.component.html > mat-sidenav-container.sidenav-container > mat-sidenav.sidenav

```html
<mat-sidenav-container class="sidenav-container">
  <mat-sidenav #drawer class="sidenav" fixedInViewport
      [attr.role]="(isHandset$ | async) ? 'dialog' : 'navigation'"
      [mode]="(isHandset$ | async) ? 'over' : 'side'"
      [opened]="(isHandset$ | async) === false">
    <mat-toolbar>Menu</mat-toolbar>
    <mat-nav-list>
      <a mat-list-item href="#">Link 1</a>
      <a mat-list-item href="#">Link 2</a>
      <a mat-list-item href="#">Link 3</a>
    </mat-nav-list>
  </mat-sidenav>
  <mat-sidenav-content>
    <mat-toolbar color="primary">
      @if (isHandset$ | async) {
        <button
          type="button"
          aria-label="Toggle sidenav"
          mat-icon-button
          (click)="drawer.toggle()">
          <mat-icon aria-label="Side nav toggle icon">menu</mat-icon>
        </button>
      }
      <span>materialAngular</span>
    </mat-toolbar>
    <!-- Add Content Here -->
  </mat-sidenav-content>
</mat-sidenav-container>

```

c. Aquí el codigo de css:

navigation.component.css

materialAngular > src > app > navigation > # navigation.component.css

```css
.sidenav-container {
  height: 100%;
}

.sidenav {
  width: 200px;
}

.sidenav .mat-toolbar {
  background: inherit;
}

.mat-toolbar.mat-primary {
  position: sticky;
  top: 0;
  z-index: 1;
}

```

d. Aquí el codigo de TypeScript:

navigation.component.ts

```ts
import { Component, inject } from '@angular/core';
import { BreakpointObserver, Breakpoints } from '@angular/cdk/layout';
import { AsyncPipe } from '@angular/common';
import { MatToolbarModule } from '@angular/material/toolbar';
import { MatButtonModule } from '@angular/material/button';
import { MatSidenavModule } from '@angular/material/sidenav';
import { MatListModule } from '@angular/material/list';
import { MatIconModule } from '@angular/material/icon';
import { Observable } from 'rxjs';
import { map, shareReplay } from 'rxjs/operators';

@Component({
  selector: 'app-navigation',
  templateUrl: './navigation.component.html',
  styleUrl: './navigation.component.css',
  standalone: true,
  imports: [
    MatToolbarModule,
    MatButtonModule,
    MatSidenavModule,
    MatListModule,
    MatIconModule,
    AsyncPipe,
  ]
})
export class NavigationComponent {
  private breakpointObserver = inject(BreakpointObserver);

  isHandset$: Observable<boolean> = this.breakpointObserver.observe(Breakpoints.Handset)
    .pipe(
      map(result => result.matches),
      shareReplay()
    );
}
```

Una vez creado el componente vamos a crear un componente Formulario:

a. Aquí esta el comando para crear el componente:

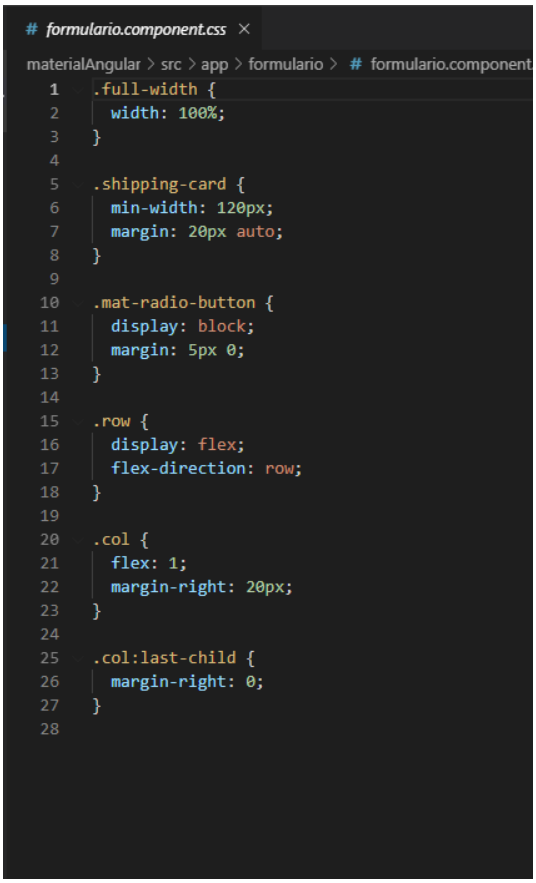
```
PS C:\Users\Hector\Desktop\AngularMaterial\materialAngular> ng generate @angular/material:address-form formulario
CREATE src/app/formulario/formulario.component.html (4018 bytes)
CREATE src/app/formulario/formulario.component.spec.ts (762 bytes)
CREATE src/app/formulario/formulario.component.ts (4136 bytes)
CREATE src/app/formulario/formulario.component.css (310 bytes)
PS C:\Users\Hector\Desktop\AngularMaterial\materialAngular>
```

b. Aquí el codigo html:

formulario.component.html

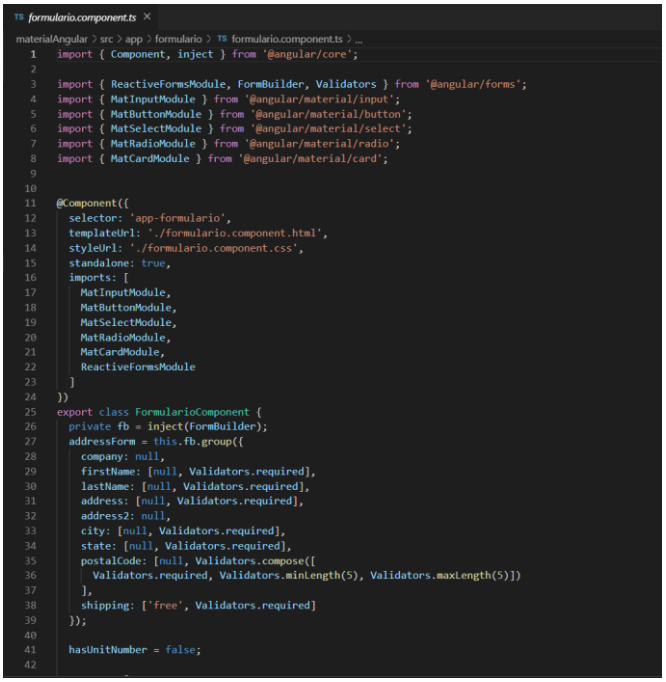
```html
<form [formGroup]="addressForm" novalidate (ngSubmit)="onSubmit()">
  <mat-card class="shipping-card">
    <mat-card-header>
      <mat-card-title>Shipping Information</mat-card-title>
    </mat-card-header>
    <mat-card-content>
      <div class="row">
        <div class="col">
          <mat-form-field class="full-width">
            <input matInput placeholder="Company" formControlName="company">
          </mat-form-field>
        </div>
      </div>
      <div class="row">
        <div class="col">
          <mat-form-field class="full-width">
            <input matInput placeholder="First name" formControlName="firstName">
            @if (addressForm.controls['firstName'].hasError('required')) {
              <mat-error>First name is <strong>required</strong></mat-error>
            }
          </mat-form-field>
        </div>
        <div class="col">
          <mat-form-field class="full-width">
            <input matInput placeholder="Last name" formControlName="lastName">
            @if (addressForm.controls['lastName'].hasError('required')) {
              <mat-error>Last name is <strong>required</strong></mat-error>
            }
          </mat-form-field>
        </div>
      </div>
      <div class="row">
        <div class="col">
          <mat-form-field class="full-width">
            <textarea matInput placeholder="Address" formControlName="address"></textarea>
            @if (addressForm.controls['address'].hasError('required')) {
              <mat-error>Address is <strong>required</strong></mat-error>
            }
          </mat-form-field>
        </div>
      </div>
      <div class="row">
        <div class="col">
          @if (hasUnitNumber) {
            <mat-form-field class="full-width">
              <textarea matInput placeholder="Address 2" formControlName="address2"></textarea>
            </mat-form-field>
          } @else {
            <button mat-button type="button" (click)="hasUnitNumber = !hasUnitNumber">
              + Add C/O, Apt, Suite, Unit
            </button>
          }
        </div>
      </div>
```

c. Aquí el codigo CSS:



```
# formulario.component.css ×
materialAngular > src > app > formulario > # formulario.component
1   .full-width {
2     width: 100%;
3   }
4
5   .shipping-card {
6     min-width: 120px;
7     margin: 20px auto;
8   }
9
10  .mat-radio-button {
11    display: block;
12    margin: 5px 0;
13  }
14
15  .row {
16    display: flex;
17    flex-direction: row;
18  }
19
20  .col {
21    flex: 1;
22    margin-right: 20px;
23  }
24
25  .col:last-child {
26    margin-right: 0;
27  }
28
```

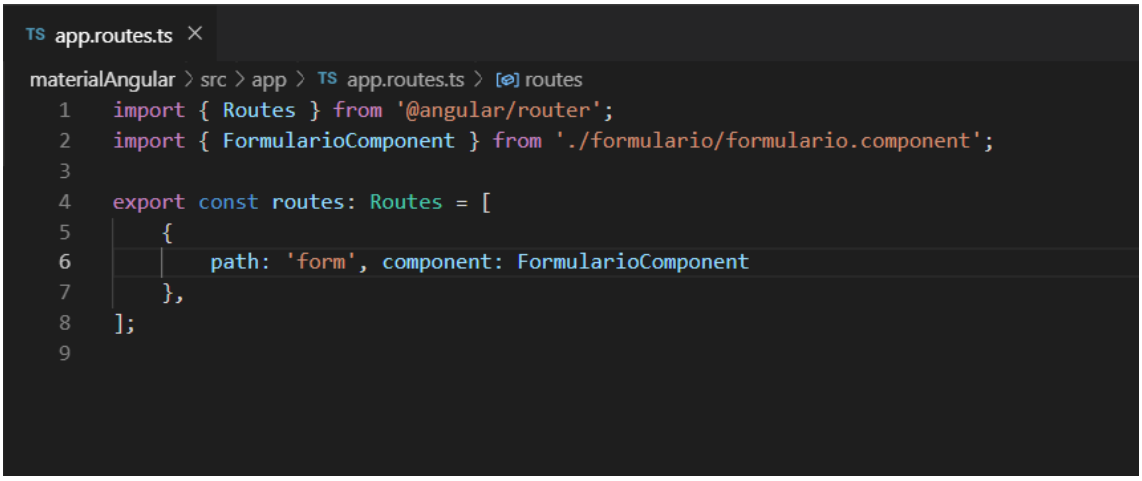
d. Aquí el TypeScript:



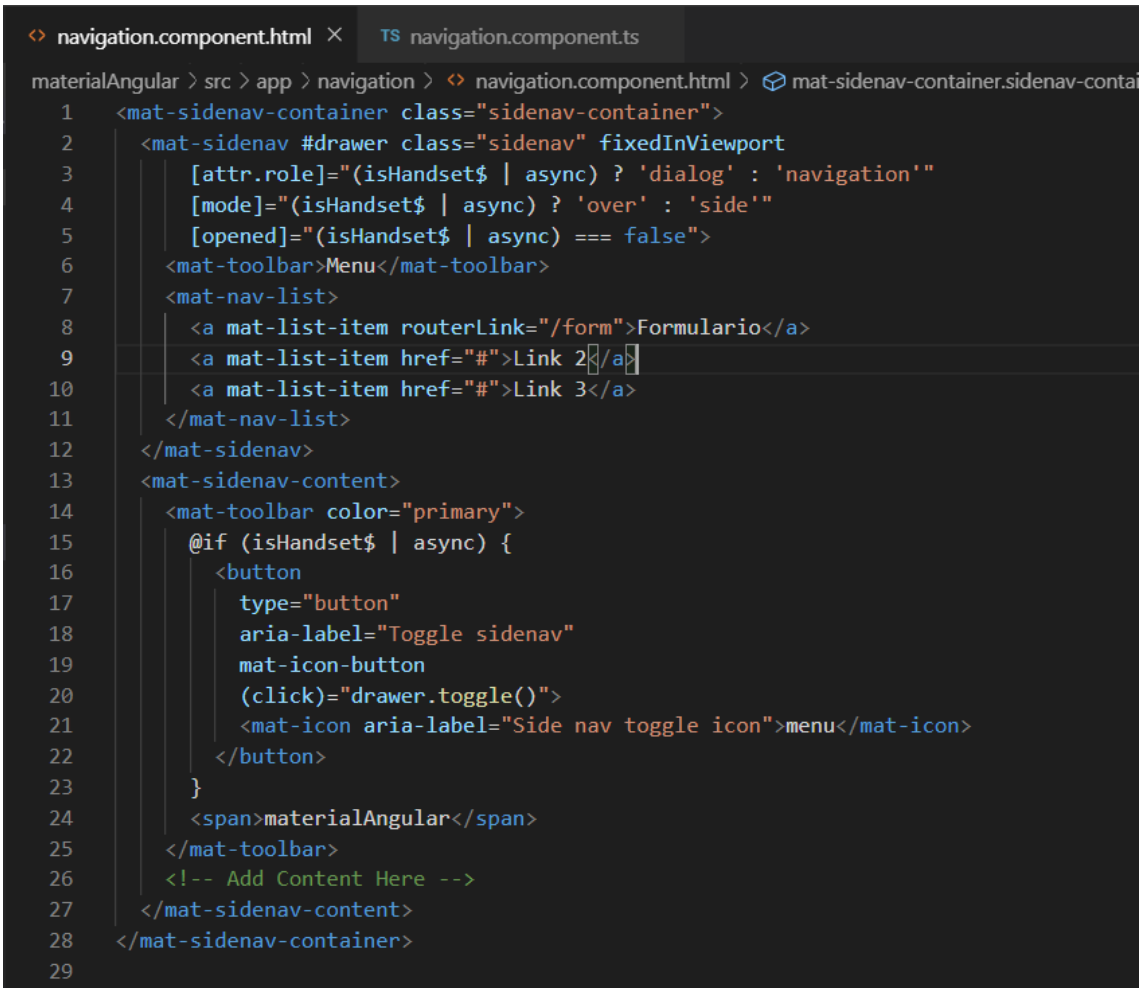
```
TS formulario.component.ts ×
materialAngular > src > app > formulario > TS formulario.component.ts > ...
1   import { Component, inject } from '@angular/core';
2
3   import { ReactiveFormsModule, FormBuilder, Validators } from '@angular/forms';
4   import { MatInputModule } from '@angular/material/input';
5   import { MatButtonModule } from '@angular/material/button';
6   import { MatSelectModule } from '@angular/material/select';
7   import { MatRadioModule } from '@angular/material/radio';
8   import { MatCardModule } from '@angular/material/card';
9
10
11  @Component({
12    selector: 'app-formulario',
13    templateUrl: './formulario.component.html',
14    styleUrl: './formulario.component.css',
15    standalone: true,
16    imports: [
17      MatInputModule,
18      MatButtonModule,
19      MatSelectModule,
20      MatRadioModule,
21      MatCardModule,
22      ReactiveFormsModule
23    ]
24  })
25  export class FormularioComponent {
26    private fb = inject(FormBuilder);
27    addressForm = this.fb.group({
28      company: null,
29      firstName: [null, Validators.required],
30      lastName: [null, Validators.required],
31      address: [null, Validators.required],
32      address2: null,
33      city: [null, Validators.required],
34      state: [null, Validators.required],
35      postalCode: [null, Validators.compose([
36        Validators.required, Validators.minLength(5), Validators.maxLength(5)])
37      ],
38      shipping: ['free', Validators.required]
39    });
40
41    hasUnitNumber = false;
42
```

Ahora creamos la ruta para colocar el componente formulario en el navigation:

a. Nos vamos al archivo app.routes.ts:



b. Una vez creada la ruta nos vamos al componente del navigation y con un routerLink enlazamos al componente:



c. Importamos el routerLink en el navigation.component.ts:

navigation.component.html | app.routes.ts | navigation.component.ts

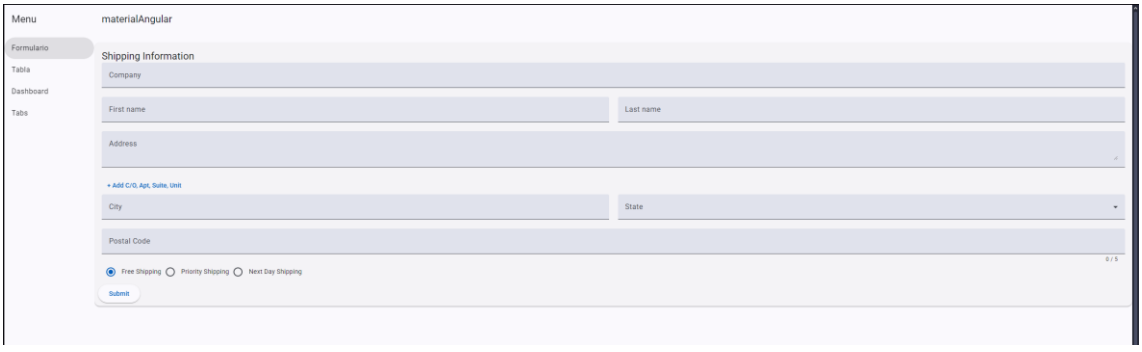
materialAngular > src > app > navigation > navigation.component.ts > NavigationComponent

```ts
import { Component, inject } from '@angular/core';
import { BreakpointObserver, Breakpoints } from '@angular/cdk/layout';
import { AsyncPipe } from '@angular/common';
import { MatToolbarModule } from '@angular/material/toolbar';
import { MatButtonModule } from '@angular/material/button';
import { MatSidenavModule } from '@angular/material/sidenav';
import { MatListModule } from '@angular/material/list';
import { MatIconModule } from '@angular/material/icon';
import { Observable } from 'rxjs';
import { map, shareReplay } from 'rxjs/operators';
import { Router, RouterLink, RouterOutlet } from '@angular/router';

@Component({
  selector: 'app-navigation',
  templateUrl: './navigation.component.html',
  styleUrl: './navigation.component.css',
  standalone: true,
  imports: [
    MatToolbarModule,
    MatButtonModule,
    MatSidenavModule,
    MatListModule,
    MatIconModule,
    AsyncPipe,
    RouterLink,
    RouterOutlet
  ]
})
export class NavigationComponent {
  private breakpointObserver = inject(BreakpointObserver);

  isHandset$: Observable<boolean> = this.breakpointObserver.observe(Breakpoints.Handset)
    .pipe(
```

d. Nos quedaria algo asi:



Una vez creado el formulario y enlazarlo creamos el componente tabla:

a. Lo creamos con el siguiente comando:

```
\AngularMaterial\materialAngular> ng generate @angular/material:table tabla
CREATE src/app/tabla/tabla-datasource.ts (3710 bytes)
CREATE src/app/tabla/tabla.component.html (908 bytes)
CREATE src/app/tabla/tabla.component.spec.ts (732 bytes)
CREATE src/app/tabla/tabla.component.ts (1108 bytes)
CREATE src/app/tabla/tabla.component.css (40 bytes)
PS C:\Users\Hector\Desktop\AngularMaterial\materialAngular>
```

b. Este esel codigo html del componente tabla que nos ha creado material:

tabla.component.html

materialAngular > src > app > tabla > tabla.component.html > div.mat-elevation-z2

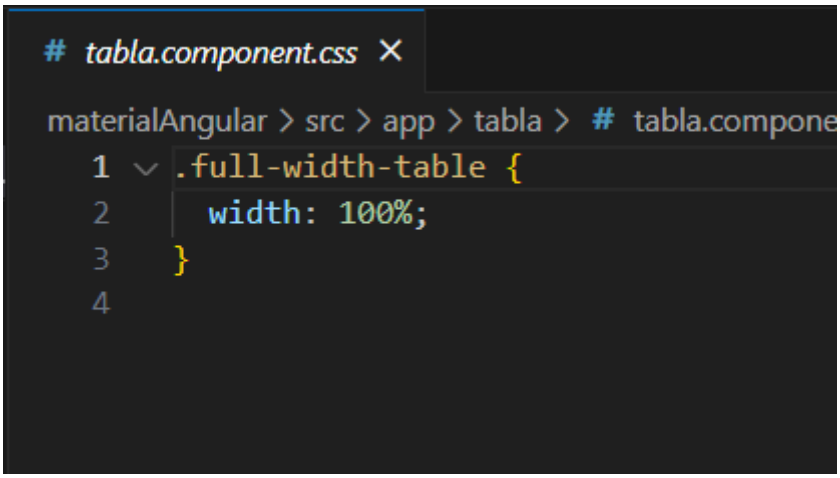
```
Go to component
<div class="mat-elevation-z2">
  <table mat-table class="full-width-table" matSort aria-label="Elements">
    <!-- Id Column -->
    <ng-container matColumnDef="id">
      <th mat-header-cell *matHeaderCellDef mat-sort-header>Id</th>
      <td mat-cell *matCellDef="let row">{{row.id}}</td>
    </ng-container>

    <!-- Name Column -->
    <ng-container matColumnDef="name">
      <th mat-header-cell *matHeaderCellDef mat-sort-header>Name</th>
      <td mat-cell *matCellDef="let row">{{row.name}}</td>
    </ng-container>

    <tr mat-header-row *matHeaderRowDef="displayedColumns"></tr>
    <tr mat-row *matRowDef="let row; columns: displayedColumns;"></tr>
  </table>

  <mat-paginator #paginator
      [length]="dataSource.data.length"
      [pageIndex]="0"
      [pageSize]="10"
      [pageSizeOptions]="[5, 10, 20]"
      aria-label="Select page">
  </mat-paginator>
</div>
```

c. Este es el codigo del css:



Una vez creado ese componente modificamos el app.routes.ts para colocar un path y un componente:

a. Asi nos debe de quedar el archivo app.routes.ts:

b. Una vez creada la ruta en el html del navigation creamos un routerLink para la tabla:

navigation.component.html

materialAngular > src > app > navigation > navigation.component.html > mat-sidenav-container.sidenav-container > mat-siden

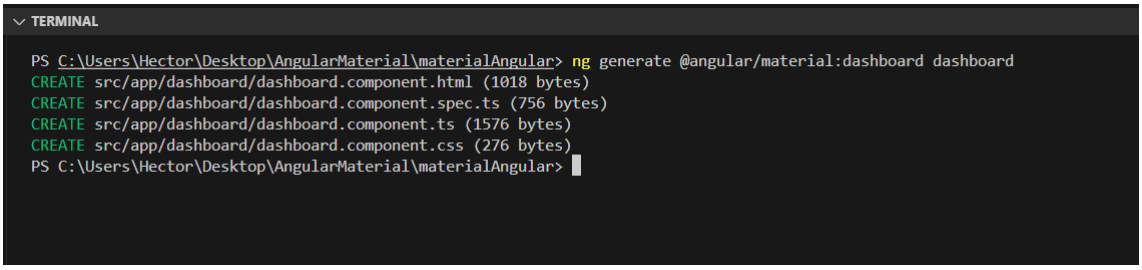
Go to component

```
<mat-sidenav-container class="sidenav-container">
  <mat-sidenav #drawer class="sidenav" fixedInViewport
      [attr.role]="(isHandset$ | async) ? 'dialog' : 'navigation'"
      [mode]="(isHandset$ | async) ? 'over' : 'side'"
      [opened]="(isHandset$ | async) === false">
    <mat-toolbar>Menu</mat-toolbar>
    <mat-nav-list>
      <a mat-list-item routerLink="/formulario">Formulario</a>
      <a mat-list-item routerLink="/table">Tabla</a>
      <a mat-list-item href="#">Dashboard</a>
      <a mat-list-item href="#">Tabs</a>
    </mat-nav-list>
  </mat-sidenav>
  <mat-sidenav-content>
    <mat-toolbar color="primary">
      <button
        *ngIf="isHandset$ | async"
        type="button"
        aria-label="Toggle sidenav"
        mat-icon-button
        (click)="drawer.toggle()">
        <mat-icon aria-label="Side nav toggle icon">menu</mat-icon>
      </button>
      <span>materialAngular</span>
    </mat-toolbar>
    <!-- Add Content Here -->
    <router-outlet></router-outlet>
  </mat-sidenav-content>
</mat-sidenav-container>
```

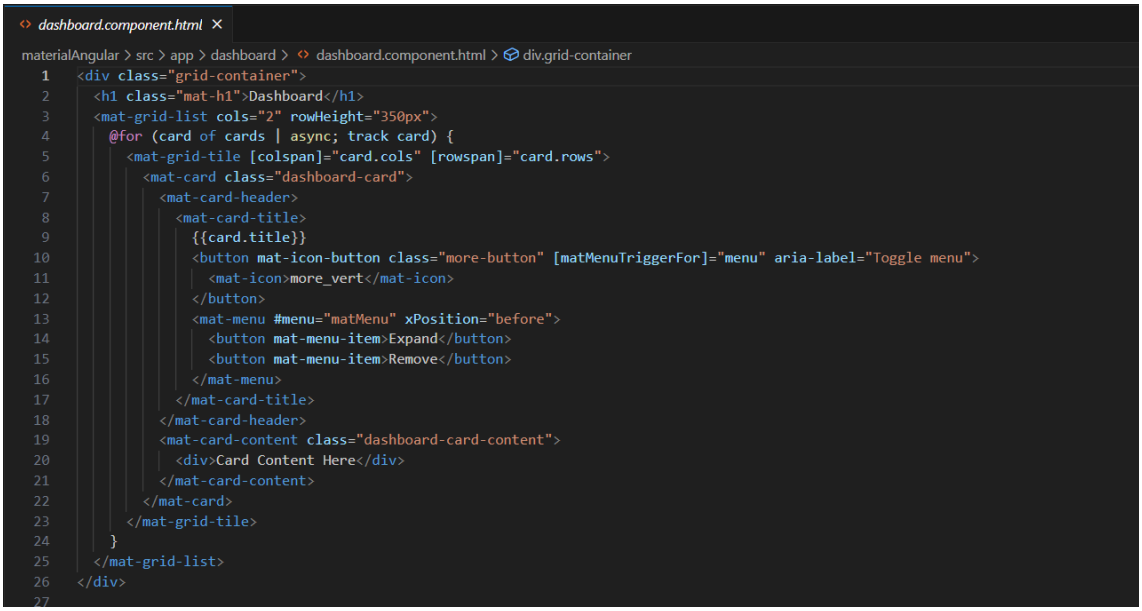
c. Quedaria algo asi:

Ahora crearemos el componente dashboard:

a. Con el siguiente comando creamos el componente:



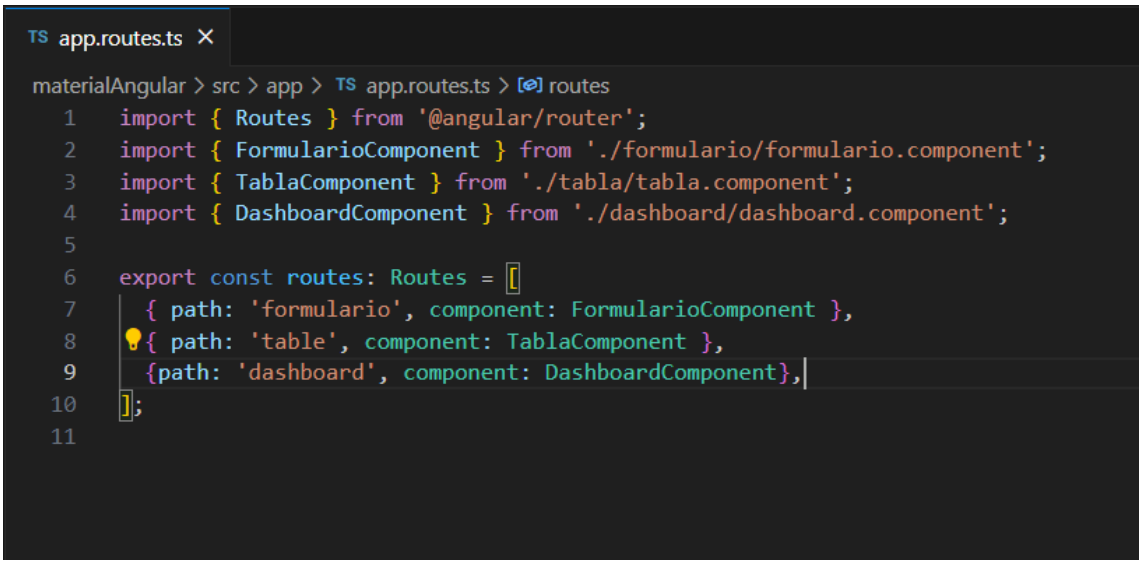
b. Una vez ejecutado el componente este seria el html:



c. Este seria el codigo css:

Una vez creado el componente modificamos el archivo app.routes.ts para enlazar el dashboard con el navigation:

a. Este serie el app.routes.ts:



b. Modificamos el html del navigation:

app.routes.ts | navigation.component.html

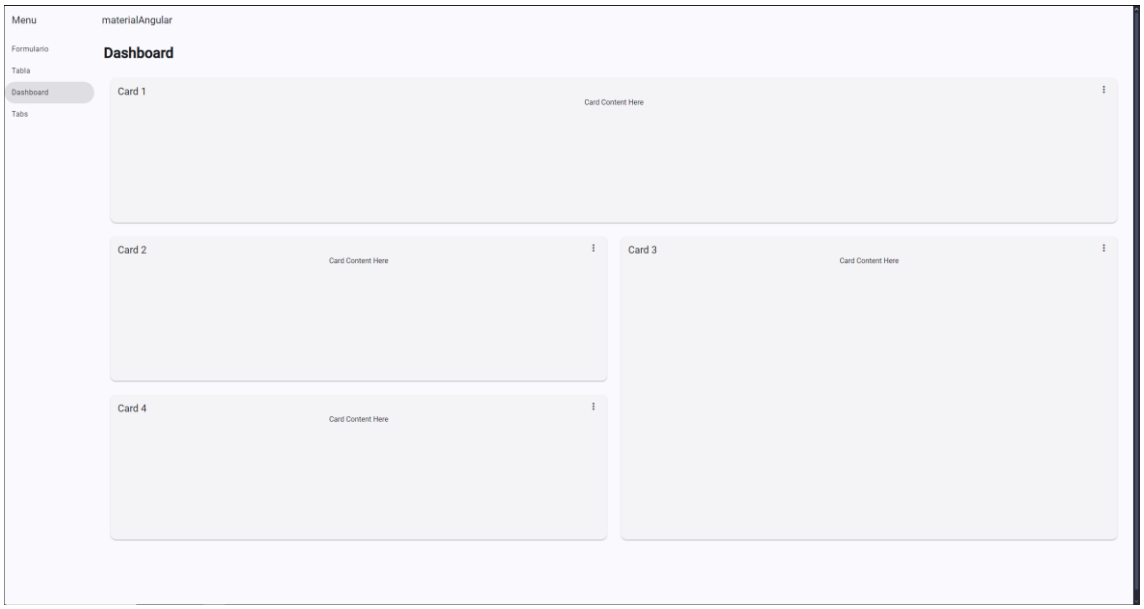
materialAngular > src > app > navigation > navigation.component.html > mat-sidenav-container.sidenav-containe

Go to component

```
<mat-sidenav-container class="sidenav-container">
  <mat-sidenav #drawer class="sidenav" fixedInViewport
      [attr.role]="(isHandset$ | async) ? 'dialog' : 'navigation'"
      [mode]="(isHandset$ | async) ? 'over' : 'side'"
      [opened]="(isHandset$ | async) === false">
    <mat-toolbar>Menu</mat-toolbar>
    <mat-nav-list>
      <a mat-list-item routerLink="/formulario">Formulario</a>
      <a mat-list-item routerLink="/table">Tabla</a>
      <a mat-list-item routerLink="/dashboard">Dashboard</a>
      <a mat-list-item href="#">Tabs</a>
    </mat-nav-list>
  </mat-sidenav>
  <mat-sidenav-content>
    <mat-toolbar color="primary">
      <button
        *ngIf="isHandset$ | async"
        type="button"
        aria-label="Toggle sidenav"
        mat-icon-button
        (click)="drawer.toggle()">
        <mat-icon aria-label="Side nav toggle icon">menu</mat-icon>
      </button>
      <span>materialAngular</span>
    </mat-toolbar>
    <!-- Add Content Here -->
    <router-outlet></router-outlet>
  </mat-sidenav-content>
</mat-sidenav-container>

```

Una vez creado el dashboard comprobamos que funciones debe de quedar asi:



Por ultimo creamos el componente tabs, en este caso debemos de coger los codigos del componente de la pagina oficial de material:

a. El comando seria el siguiente:

```
PS C:\Users\Hector\Desktop\AngularMaterial\materialAngular> ng g c tabs
CREATE src/app/tabs/tabs.component.html (20 bytes)
CREATE src/app/tabs/tabs.component.spec.ts (601 bytes)
CREATE src/app/tabs/tabs.component.ts (217 bytes)
CREATE src/app/tabs/tabs.component.css (0 bytes)
PS C:\Users\Hector\Desktop\AngularMaterial\materialAngular>
```

b. Este serie el html de los tabs:

tabs.component.html | tabs.component.ts 1

materialAngular > src > app > tabs > tabs.component.html > mat-tab-group

Go to component

```
<mat-tab-group>
  <mat-tab label="First"> Content 1 </mat-tab>
  <mat-tab label="Second"> Content 2 </mat-tab>
  <mat-tab label="Third"> Content 3 </mat-tab>
</mat-tab-group>
```

c. Creamos en el archivo app.routes.ts la ruta del componente tabs:

materialAngular > src > app > app.routes.ts > routes

```
import { Routes } from '@angular/router';
import { FormularioComponent } from './formulario/formulario.component';
import { TablaComponent } from './tabla/tabla.component';
import { DashboardComponent } from './dashboard/dashboard.component';
import { TabsComponent } from './tabs/tabs.component';

export const routes: Routes = [
  { path: 'formulario', component: FormularioComponent },
  { path: 'table', component: TablaComponent },
  {path: 'dashboard', component: DashboardComponent},
  {path: 'tabs', component: TabsComponent},
];

```

En el componente navigation creamos un routerlink para enlazar el componente tabs:

a. Asi quedaria el html del componente navigation:

navigation.component.html | app.routes.ts

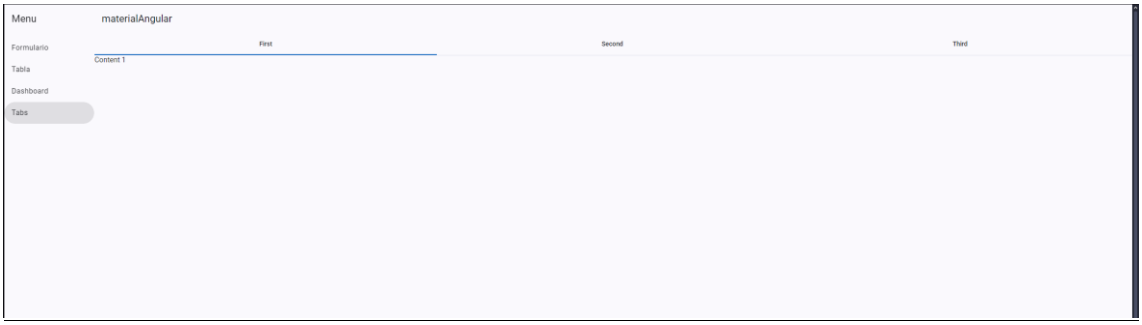
materialAngular > src > app > navigation > navigation.component.html > mat-sidenav-container.sidenav-container > mat-

Go to component

```
<mat-sidenav-container class="sidenav-container">
  <mat-sidenav #drawer class="sidenav" fixedInViewport
      [attr.role]="(isHandset$ | async) ? 'dialog' : 'navigation'"
      [mode]="(isHandset$ | async) ? 'over' : 'side'"
      [opened]="(isHandset$ | async) === false">
    <mat-toolbar>Menu</mat-toolbar>
    <mat-nav-list>
      <a mat-list-item routerLink="/formulario">Formulario</a>
      <a mat-list-item routerLink="/table">Tabla</a>
      <a mat-list-item routerLink="/dashboard">Dashboard</a>
      <a mat-list-item routerLink="/tabs">Tabs</a>
    </mat-nav-list>
  </mat-sidenav>
  <mat-sidenav-content>
    <mat-toolbar color="primary">
      <button
        *ngIf="isHandset$ | async"
        type="button"
        aria-label="Toggle sidenav"
        mat-icon-button
        (click)="drawer.toggle()">
        <mat-icon aria-label="Side nav toggle icon">menu</mat-icon>
      </button>
      <span>materialAngular</span>
    </mat-toolbar>
    <!-- Add Content Here -->
    <router-outlet></router-outlet>
  </mat-sidenav-content>
</mat-sidenav-container>

```

b. Quedaría asi:



En el tab1 añadiremos una card de Shiba Inu de material:

a. Este seria el codigo html de la card dentro del tab:

tabs.component.html | tabs.component.css | tabs.component.ts

materialAngular > src > app > tabs > tabs.component.html > mat-tab-group > mat-tab > mat-card.example-card

Go to component

```
<mat-tab-group>
  <mat-tab label="First">
    <mat-card class="example-card" appearance="outlined">
      <mat-card-header>
        <div mat-card-avatar class="example-header-image"></div>
        <mat-card-title>Shiba Inu</mat-card-title>
        <mat-card-subtitle>Dog Breed</mat-card-subtitle>
      </mat-card-header>
      <img mat-card-image src="https://material.angular.io/assets/img/examples/shiba2.jpg" alt="Photo of a Shiba Inu">
      <mat-card-content>
        <p>
          The Shiba Inu is the smallest of the six original and distinct spitz breeds of dog from Japan.
          A small, agile dog that copes very well with mountainous terrain, the Shiba Inu was originally
          bred for hunting.
        </p>
      </mat-card-content>
      <mat-card-actions>
        <button mat-button>LIKE</button>
        <button mat-button>SHARE</button>
      </mat-card-actions>
    </mat-card>
  </mat-tab>
  <mat-tab label="Second"> Content 2 </mat-tab>
  <mat-tab label="Third"> Content 3 </mat-tab>
</mat-tab-group>
```

b. Este seria el codigo css:

materialAngular > src > app > tabs > # tabs.component.css > ...

```
.example-card {
  max-width: 400px;
}

.example-header-image {
  background-image: url('https://material.angular.io/assets/img/examples/shiba1.jpg');
  background-size: cover;
}
```

c. Este seria el tab con la card: