**Angular Routing with Parameter:**

**Structure:**

1. **EmployeeComponent**
   1. **EmpAdd**
   2. **EmpList**
   3. **EmpDetail**
2. **Login**
3. **Emp.service.ts**

**Emp.service.ts**

import { Injectable } from '@angular/core';

import { Employee } from 'employee';

@Injectable({

providedIn: 'root'

})

export class EmpService {

getemployees():Employee[]{

return[

{

id:1,

name:'Steve',

gender:'Male',

contactPreference:'Email',

email:'steve@gmail.com' ,

dateOfBirth:new Date('01/03/2010'),

department:'Apple',

isActive:true,

photoPath:'assets/steve.jpeg'

},

{

id:2,

name:'Bill Gates',

gender:'Male',

contactPreference:'Phone',

phonenumber:9850048765 ,

dateOfBirth:new Date('01/03/2012'),

department:'Microsoft',

isActive:true,

photoPath:'assets/Billgates.jpeg',

},

{

id:3,

name:'Sundar',

gender:'Male',

contactPreference:'Email',

email:'Sundar@gmail.com' ,

dateOfBirth:new Date('05/07/2010'),

department:'Google',

isActive:true,

photoPath:'assets/sundar.jpeg',

}

];

}

constructor() { }

}

**App.routing.module.ts**

import { NgModule } from '@angular/core';

import { Routes, RouterModule } from '@angular/router';

import { EmplistComponent } from './employee/emplist/emplist.component';

import { EmpaddComponent } from './employee/empadd/empadd.component';

import { EmpdetailComponent } from './employee/empdetail/empdetail.component';

import { EmployeeComponent } from './employee/employee.component';

import { AuthGuardService } from './auth-guard.service';

import { LoginComponent } from './login/login.component';

const routes: Routes = [

{

path:"emplist", component:EmplistComponent,canActivate: [AuthGuardService]

},

{

path:"empadd",component:EmpaddComponent

},

{

path:"empdetail/:id",component:EmpdetailComponent

},

{

path:"emp", component:EmployeeComponent

},

{

path:"login", component:LoginComponent

}

];

@NgModule({

imports: [RouterModule.forRoot(routes)],

exports: [RouterModule]

})

export class AppRoutingModule { }

**Employee.component.html**

<div style="text-align:center;color:green;font-size:30px">CTS Admin Site</div>

<div class="panel panel-primary">

<div class="panel-heading">

<h3 class="panel-title" style="text-align:center">Admin Dashboard</h3>

</div>

</div>

<nav class="navbar navbar-expand-sm bg-light">

<div class="navbar-nav">

<span class="nav-item" style="padding-left:20px">

<a routerLink="emplist">List of Employees</a>

</span>

<span class="nav-item" style="padding-left:40px">

<a routerLink="empadd"> Add a New Employee</a>

</span>

</div>

</nav>

<router-outlet></router-outlet>

**emplist.component.html**

<div class="panel panel-primary" \*ngFor="let employee of employees">

<div class="panel-heading">

<h3 class="panel-title">{{employee.name}}</h3>

</div>

<div class="panel-body">

<div class="col-xs-10">

<div class="row">

<div class="col-xs-4">

<img height="100" width="100" [src]="employee.photoPath">

</div>

<div class="col-xs-8">

<div class="row">

<div class="col-xs-6">

Gender

</div>

<div class="col-xs-6">

:{{employee.gender}}

</div>

</div>

<div class="row">

<div class="col-xs-6">

contactPreference

</div>

<div class="col-xs-6">

:{{employee.contactPreference}}

</div>

</div>

<div class="row" \*ngIf="employee.email">

<div class="col-xs-6">

Email

</div>

<div class="col-xs-6">

:{{employee.email}}

</div>

</div>

<div class="row" [hidden]="!employee.phonenumber">

<div class="col-xs-6">

Phone Number

</div>

<div class="col-xs-6">

:{{employee.phonenumber}}

</div>

</div>

<div class="row">

<div class="col-xs-6">

dateOfBirth

</div>

<div class="col-xs-6">

:{{employee.dateOfBirth|date }}

</div>

</div>

<div class="row">

<div class="col-xs-6">

department

</div>

<div class="col-xs-6">

:{{employee.department}}

</div>

</div>

<div class="row">

<div class="col-xs-6">

IsActive

</div>

<div class="col-xs-6">

:{{employee.isActive}}

</div>

<div>

<a routerLink="../empdetail/{{employee.id}}">Click for More Detail</a>

</div>

</div>

</div>

</div>

</div>

</div>

</div>

**Emplist.component.ts**

import { Component, OnInit } from '@angular/core';

import { Employee } from 'employee';

import { EmpService } from 'src/app/emp.service';

import { UserAuthService } from 'src/app/user-auth.service';

@Component({

selector: 'app-emplist',

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

styleUrls: ['./emplist.component.css']

})

export class EmplistComponent implements OnInit {

employees:Employee[];

constructor(empservice:EmpService,private authservice:UserAuthService) {

//this.authservice.logIn();

this.employees=empservice.getemployees();

}

ngOnInit() {

}

}

**Empdetail.component.html**

<div>

<!-- Enter the id for which you want the Detail:

<input type="text" #eid style="margin-left:20px" />

<input type="submit" style="margin-left:20px" (click)="employee=searchemp(eid.value)"> -->

<hr/>

<br/><br/>

<!-- <div class="d1" \*ngIf="eid.value"> -->

<div class="d1">

ID: {{employee.id}} <br/>

Name: {{employee.name}} <br/>

Email: {{employee.email}}<br/>

Photo: <img [src]="employee.photoPath" height=100 width=100/>

</div>

<input type="button" class="btn btn-primary" (click)="goback()" value="Go Back"/>

</div>

**Empdetail.component.ts**

import { Component, OnInit } from '@angular/core';

import { Employee } from 'employee';

import { EmpService } from 'src/app/emp.service';

import { Route, ActivatedRoute } from '@angular/router';

import {Location} from '@angular/common';

@Component({

selector: 'app-empdetail',

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

styleUrls: ['./empdetail.component.css']

})

export class EmpdetailComponent implements OnInit {

employee:Employee;

emps:Employee[];

constructor(empservice:EmpService,private route:ActivatedRoute,private location:Location)

{

this.emps=empservice.getemployees();

}

ngOnInit() {

this.getEmp();

}

getEmp():void{

const eid = +this.route.snapshot.paramMap.get('id');

this.employee=this.emps.find(e=>e.id==eid);

}

searchemp(eid:number):Employee

{

return this.employee=this.emps.find(e=>e.id==eid);

}

goback():void{

this.location.back();

}

}

**User-Auth.service.ts**

import { Injectable } from '@angular/core';

@Injectable({

providedIn: 'root'

})

export class UserAuthService {

loggedIn=false;

logIn()

{

this.loggedIn=true;

}

logOut()

{

this.loggedIn=false;

}

constructor() { }

}

**Auth-guard.service.ts**

import { Injectable } from '@angular/core';

import { CanActivate, Router, ActivatedRouteSnapshot } from '@angular/router';

import { UserAuthService } from './user-auth.service';

@Injectable({

providedIn: 'root'

})

export class AuthGuardService implements CanActivate {

isLoggedIn = false;

constructor(private \_router : Router, private \_authService :UserAuthService){

}

canActivate(route: ActivatedRouteSnapshot): boolean{

this.isLoggedIn = this.\_authService.loggedIn;

console.log("isLoggedIn: " + this.isLoggedIn);

if(this.isLoggedIn){

return true;

}

else{

this.\_router.navigate(['login']);

return false;

}

}

}

**Routing module changes:**

{

path:"emplist", component:EmplistComponent,canActivate: [AuthGuardService]

},

**Logincomponent.html**

<form (ngSubmit)="onSubmit()" #loginForm="ngForm">

<div>

<label>Username</label>&nbsp;

<input type="text" name="username" #username="ngModel" ngModel required>

<div class="text-error" \*ngIf="username.touched && !username.valid">

Username is required

</div>

</div>

<div>

<label>Password</label>&nbsp;

<input type="password" name="password" #password="ngModel" ngModel required>

<div class="text-error" \*ngIf="password.touched && !password.valid">

Password is required

</div>

</div>

<div>

<button type="submit" [disabled]="!loginForm.valid">Login</button>

</div>

</form>

**Login.component.ts**

import { Component, OnInit } from '@angular/core';

import { UserAuthService } from '../user-auth.service';

import { Router } from '@angular/router';

@Component({

selector: 'app-login',

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

styleUrls: ['./login.component.css']

})

export class LoginComponent implements OnInit {

constructor(private \_authService: UserAuthService, private \_router: Router) { }

ngOnInit() {

}

onSubmit(){

this.\_authService.logIn();

this.\_router.navigate(['emplist']);

}

}

**Employee.component.ts**

import { Component, OnInit } from '@angular/core';

import { AuthGuardService } from '../auth-guard.service';

import { Router } from '@angular/router';

import { UserAuthService } from '../user-auth.service';

@Component({

selector: 'app-employee',

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

styleUrls: ['./employee.component.css']

})

export class EmployeeComponent implements OnInit {

constructor(private \_authService: UserAuthService, private \_router: Router) { }

ngOnInit() {

}

logout():void

{

this.\_authService.logOut();

this.\_router.navigate(['/']);

}

}

**Employee.component.html**

<div style="text-align:center;color:green;font-size:30px" >CTS Admin Site</div>

<div class="panel panel-primary">

<div class="panel-heading">

<h3 class="panel-title" style="text-align:center">Admin Dashboard</h3>

</div>

</div>

<nav class="navbar navbar-expand-sm bg-light">

<div class="navbar-nav">

<span class="nav-item" style="padding-left:20px">

<a routerLink="emplist">List of Employees</a>

</span>

<span class="nav-item" style="padding-left:40px">

<a routerLink="empadd"> Add a New Employee</a>

</span>

<span>

<input type="button" class="btn btn-primary" value="Logout" (click)="logout()" style="margin-left:700px"/>

</span>

</div>

</nav>

<router-outlet></router-outlet>

**Angular Arrays:**

Skill.ts

export class Skill

{

Sid:number;

Sname:string;

}

Employee.ts

import { Skill } from './Skill';

export class Employee

{

id:number;

name:string;

salary:number;

permanent:boolean;

skills:Skill[];

}

**App.component.ts**

import { Component } from '@angular/core';

import { Employee } from './Employee';

import {Skill} from './Skill';

@Component({

selector: 'app-root',

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

// template:`<h2> Welcome to my project </h2> <p>The title is : {{title}} </p> <div>The value of i is :{{i}}</div> <div> The message is {{message}} </div>`,

styleUrls: ['./app.component.css']

})

export class AppComponent {

public employee:Employee

={

id:0,

name:"",

permanent:false,

salary:0,

skills:[{Sid:11,Sname:"Java"},{Sid:12,Sname:"Python"}]

}

public employees:Employee[]

=[{id:1,name:"Rama",permanent:true,salary:43000,skills:[{Sid:11,Sname:"Java"}]},

{id:2,name:"Suresh",permanent:true,salary:43000,skills:[{Sid:12,Sname:"Python"}]},

{id:3,name:"Ganga",permanent:true,salary:43000,skills:[{Sid:13,Sname:"C++"}]},

{id:4,name:"Suma",permanent:true,salary:43000,skills:[{Sid:14,Sname:".NET"}]},

]

constructor()

{

this.employee.id=101;

this.employee.name="Radha";

this.employee.salary=87000;

this.employee.skills=[{Sid:1,Sname:'C++'},{Sid:2,Sname:'DBMS'}]

}

}

**App.component.html**

<!--The content below is only a placeholder and can be replaced.-->

<h2> First Basic Application </h2>

<!-- Interpolation -->

<!-- <p>The title is : {{title}} </p>

<div>The value of i is :{{i}}</div>

<div> The message is {{message}} </div>

Age: <input type=text id="age" name="age" [value]="age" [disabled]="data"/><br/>

Name:<input type=text [(ngModel)]="empname"/> <br/>

your name is {{empname}} -->

<!-- {{employee|json}} -->

<div>{{employee.id}}</div>

<div>{{employee.name}}</div>

<div>{{employee.salary}}</div>

<ul \*ngFor="let sk of employee.skills">

<li>{{sk.Sid}}</li>

<li>{{sk.Sname}}</li>

</ul>

<hr/>

<ul \*ngFor="let emps of employees">

<li>{{emps.id}}</li>

<li>{{emps.name}}</li>

<li>{{emps.salary}}</li>

<li>{{emps.permanent}}</li>

<ul \*ngFor="let s of emps.skills">

<li>{{s.Sid}}</li>

<li>{{s.Sname}}</li>

</ul>

</ul>

<!-- {{emp.name}}

{{emp.salary}}

{{emp.permanent}} -->

**Angular HTTP and Observables:**

EmpDetail

Response

Request

Observable

Get

HTTP

EmpService

EmpList

DB

**Observables:**

Source

House 1

House 3

House 2

Subscribe

Convert

NewsPaper Company

An Observable is a sequence of items that arrives **asynchronously** over a time.

With a HTTP Call sends as a single item which is a HTTP Response.

An observable is a HTTP Response which arrives asynchronously.

This is not a format which we can readily use in our application. So we have to convert into an array so that it can be used in our components. We provide this data to only to the components which have subscribed to our service.

**4 Steps:**

1. Http Get Request from EmpService.
2. Receive the observable and cast it in to Employee Array.
3. Subscribe to the Observable from EmpList and EmpDetails
4. Assign the Employee Array to the Local Variable.
5. Employee.json
6. Interface Iemployee
7. Service.ts
8. EmplistComponent

**RxJS:**

RxJS is a library to enable us to work with Observables in Angular Applications. It is Reactive extensions for Javascript. It is an external library to work with observables.

Npm install rxjs

Employee.json

[{

"id": "001",

"name": "Stephen"

},

{

"id": "002",

"name": "David"

},

{

"id": "004",

"name": "Radha"

},

{

"id": "003",

"name": "Vandhana"

}]

**Error Handling in Angular:**

**Employee.Service.ts**

import { Injectable } from '@angular/core';

import {HttpClient, HttpErrorResponse} from '@angular/common/http';

import { IEmployee } from '../app/IEmployee';

import {Observable} from 'rxjs';

import { catchError, map } from 'rxjs/operators';

import {throwError} from 'rxjs';

// import 'rxjs/add/operator/catch';

// import 'rxjs/add/observable/throw';

@Injectable({

providedIn: 'root'

})

export class EmployeeService {

private \_url:string="/assets/Employee123.json";

constructor(private http:HttpClient) { }

getEmployees():Observable<IEmployee[]>

{

return this.http.get<IEmployee[]>(this.\_url)

.pipe(

map(data=>{

return data

}),

catchError(error=>{

console.log(error.message);

return throwError(error.message);

}

));

}

errorHandler(error:HttpErrorResponse)

{

// return Observable.throw(error.message|| "server Error");

return throwError(error);

}

}

**EmpList.Component.ts**

@Component({

selector: 'app-employee-list',

templateUrl: './employee-list.component.html',

styleUrls: ['./employee-list.component.css']

})

export class EmployeeListComponent implements OnInit {

public employees=[];

public errorMsg;

constructor(private \_employeeService:EmployeeService) { }

ngOnInit() {

this.\_employeeService.getEmployees()

.subscribe(data=>this.employees=data,

error=>this.errorMsg=error)

}

}

**Emplist.Component.html**

<p>employee-list works!</p>

{{errorMsg}}

<ul \*ngFor="let emp of employees">

<li>{{emp.name}}</li>

</ul>