Angular CanDeactivate Guard

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The Angular CanDeactivate Guard determines whether we can navigate away from a route. In this tutorial, we will learn what is `CanDeactivate` Guard is and how to use it with a simple `CanDeactivate` example application.

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What is CanDeactivate Guard

The Angular CanDeactivate guard is called, whenever we navigate away from the route before the current component gets deactivated.

The best use case for `CanDectivate` guard is the data entry component. The user may have filled the data entry and tries to leave that component without saving his work. The `CanDeactivate` guard gives us a chance to warn the user that he has not saved his work and give him a chance to cancel the navigation.

How to use CanDeactivate Guard

First, we need to create an Angular Service.

The service must import & implement the `CanDeactivate` Interface. This Interface is defined in the `@angular/router` module. The Interface has one method i.e. `canDeactivate`. We need to implement it in our Service. The details of the `CanDeactivate` interface is as shown below.

```
1
2 interface CanDeactivate<T> {
3   canDeactivate(component: T,
4                 currentRoute: ActivatedRouteSnapshot,
5                 currentState: RouterStateSnapshot,
6                 nextState?: RouterStateSnapshot): Observable<boolean | UrlTree> | Promise<bo
7 }
8
```

The method gets the instance of the component being deactivated as the first argument.

The method also gets the instance of the `ActivatedRouteSnapshot`, the current state of the `RouterStateSnapshot`, next state of the `RouterStateSnapshot`. We can use this to get access to the route parameter, query parameter, etc.

The guard must return **true/false** or a UrlTree . The return value can be in the form of **observable** or a **promise** or a simple `boolean` value.

A route can have more than one `canDeactivate` guard.

If **all guards** return `true` , the component will get deactivated and you will navigate to the next route.

If **anyone of the guard returns false, navigation will be canceled** and you will stay in the same route/component.

If **any one of the guards** returns a `UrlTree` , current navigation will be canceled and new navigation will be kicked off to the `UrlTree` returned from the guard. The current component will get deactivated.

The example of `canDeactivate` the guard is as follows

CanDeactivate Example

First create a component, with a method `canExit`, which returns a boolean. In the `canExit` method, you can check if there are any unsaved data, etc. If Yes, then ask for confirmation whether the user wants to leave or not. Return true to exit the component else return false to stay in the same component.

```
1
2  import { Component } from '@angular/core';
3
4  @Component({
5    templateUrl: "register.component.html",
6  })
7  export class RegisterComponent
8
9     //Check if there any unsaved data etc. If yes then as for confirmation
10   canExit() : boolean {
11
12   if (confirm("Do you wish to Please confirm")) {
13       return true
14     } else {
15       return false
16     }
17   }
18
19 }
20
```

Next, create a guard service, which implements the `CanDeactivate` Interface.

```
1
2  import { Injectable } from '@angular/core';
3  import { CanDeactivate } from '@angular/router/src/utils/preactivation';
4  import { ActivatedRouteSnapshot, RouterStateSnapshot } from '@angular/router';
5  import { Observable } from 'rxjs';
6  import { RegisterComponent } from './register.component';
```

```
7
8  @Injectable()
9  export class DeactivateGuard implements CanDeactivate
10 {
11    component: Object;
12    route: ActivatedRouteSnapshot;
13
14   constructor(){
15   }
16
17   canDeactivate(component:RegisterComponent,
18              route: ActivatedRouteSnapshot,
19              state: RouterStateSnapshot,
20              nextState: RouterStateSnapshot) : Observable<boolean> | Promise<boolean>
21
22       return component.canExit();
23
24    }
25
26 }
27
```

Update the route definition with the `canDeactivate` guard as shown below. You can apply more than one guard to a route and a route can have more than one guard

```
1
2   { path: 'register', component: RegisterComponent, canDeactivate:[DeactivateGuard] },
3
```

The guard created in the above example is specific to `RegisterComponent`. We can create a general-purpose `DeactivateGuard` Service and use it everywhere, by making use of the interface

General Purpose DeactivateGuard Service

First Define an Interface `IDeactivateComponent` as shown below

```
export interface IDeactivateComponent {
   canExit: () => Observable<boolean> | Promise<boolean> | boolean;
}
```

Next, Open the component, where you wish to implement the Deactivate Guard. In our case it is `RegisterComponent`. Make the component implement the `IDeactivateComponent` as shown below. Implement the `canExit` method

```
import { Component } from '@angular/core';
import { IDeactivateComponent } from './decativate.guard';


@Component({
  templateUrl: "register.component.html",
})
export class RegisterComponent implements IDeactivateComponent
{

   //Check if there any unsaved data etc. If yes then as for confirmation
  canExit() : boolean {

  if (confirm("Do you wish to Please confirm")) {
      return true
    } else {
      return false
    }
  }

}
```

Now, in the guard service, use the `IDeactivateComponent` interface instead of the actual component.

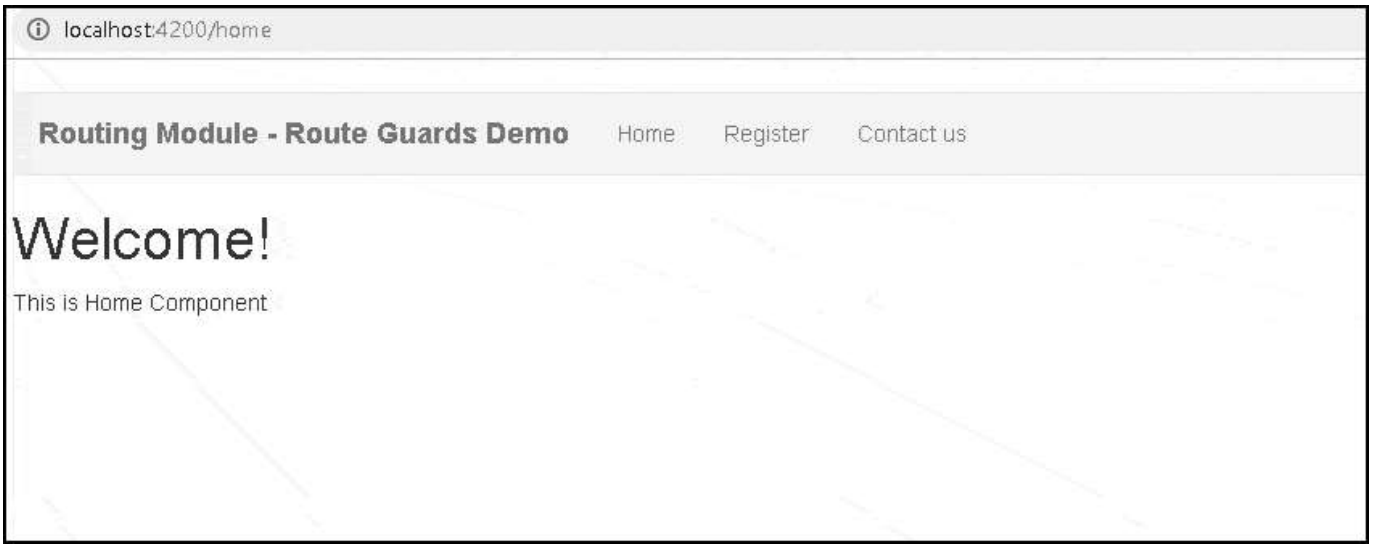
```
@Injectable()
export class DeactivateGuard implements CanDeactivate
{
   component: Object;
   route: ActivatedRouteSnapshot;

  constructor(){
  }

  canDeactivate(component:IDeactivateComponent,
            route: ActivatedRouteSnapshot,
            state: RouterStateSnapshot,
            nextState: RouterStateSnapshot) : Observable<boolean> | Promise<boolean>

      return component.canExit ? component.canExit() : true;
 }

}
```



Complete Source Code

```
<div class="container">
<nav class="navbar navbar-default">
  <div class="container-fluid">
    <div class="navbar-header">
```

```
    <a class="navbar-brand" [routerLink]="['/']"><strong> {{title}} </strong></a>
   </div>
   <ul class="nav navbar-nav">
      <li><a [routerLink]="['home']">Home</a></li>
      <li><a [routerLink]="['register']">Register</a></li>
      <li><a [routerLink]="['contact']">Contact us</a></li>

   </ul>
  </div>
</nav>
 <router-outlet></router-outlet>
</div>

```

```

import { Component } from '@angular/core';
import { Router } from '@angular/router';
@Component({
  selector: 'app-root',
  templateUrl: './app.component.html'
})
export class AppComponent {
  title = 'Routing Module - Route Guards Demo';
  constructor (private router:Router) {
  }
}


```

```

import { BrowserModule } from '@angular/platform-browser';
import { NgModule } from '@angular/core';
import { HttpModule } from '@angular/http';
import { FormsModule }    from '@angular/forms';
import { RouterModule } from '@angular/router';
import { AppComponent } from './app.component';
import { HomeComponent} from './home.component'
import { ContactComponent} from './contact.component'
import { appRoutes } from './app.routes';
import { RegisterComponent } from './register.component';
import { DeactivateGuard } from './decativate.guard';
@NgModule({
  declarations: [
    AppComponent,HomeComponent,ContactComponent,RegisterComponent
  ],
  imports: [
```

```
    BrowserModule,
    FormsModule,
    HttpModule,
    RouterModule.forRoot(appRoutes)
  ],
  providers: [DeactivateGuard],
  bootstrap: [AppComponent]
})
export class AppModule { }


```

```

import { Routes } from '@angular/router';
import { HomeComponent} from './home.component'
import { ContactComponent} from './contact.component'
import { RegisterComponent } from './register.component';
import { DeactivateGuard } from './decativate.guard';
export const appRoutes: Routes = [
  { path: 'home', component: HomeComponent },
  { path: 'contact', component: ContactComponent },
  { path: 'register', component: RegisterComponent, canDeactivate:[DeactivateGuard] },
  { path: '', redirectTo: 'home', pathMatch: 'full' },
];


```

```

import { Injectable } from '@angular/core';
import { CanDeactivate } from '@angular/router/src/utils/preactivation';
import { ActivatedRouteSnapshot, RouterStateSnapshot } from '@angular/router';
import { Observable } from 'rxjs';
import { RegisterComponent } from './register.component';
export interface IDeactivateComponent {
    canExit: () => Observable<boolean> | Promise<boolean> | boolean;
}
@Injectable()
export class DeactivateGuard implements CanDeactivate
{
    component: Object;
    route: ActivatedRouteSnapshot;
   constructor(){
   }
   canDeactivate(component:IDeactivateComponent,
                route: ActivatedRouteSnapshot,
                state: RouterStateSnapshot,
```

```
            nextState: RouterStateSnapshot) : Observable<boolean> | Promise<boolean>

      return component.canExit ? component.canExit() : true;
  }

}

```

```

import {Component} from '@angular/core';
@Component({
    template: `<h1>Contact Us</h1>
            <p>TekTutorialsHub </p>
            `
})
export class ContactComponent {
}

```

```

import {Component} from '@angular/core';
@Component({
   template: `<h1>Welcome!</h1>
           <p>This is Home Component </p>
          `
})
export class HomeComponent {
}

```

```

import { Component } from '@angular/core';
import { IDeactivateComponent } from './decativate.guard';
@Component({
 template: `<h1>Register User</h1>
        <p> </p>`,
})
export class RegisterComponent    implements IDeactivateComponent
{
  //Check if there any unsaved data etc. If yes then as for confirmation
 canExit() : boolean {
 if (confirm("Do you wish to Please confirm")) {
    return true
   } else {
    return false
```