The Many Adventures of Routing

October 11, 2017 @3:30

Deborah Kurata

@DeborahK

ANGULAR MIX

Deborah Kurata

- Developer
- Angular Documentation Team Member (angular.io)
- Pluralsight Author
  - Angular Getting Started
  - Angular Reactive Forms
  - Angular Routing
- Microsoft Most Valuable Professional (MVP)
- Google Developer Expert (GDE)
- @DeborahKurata

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

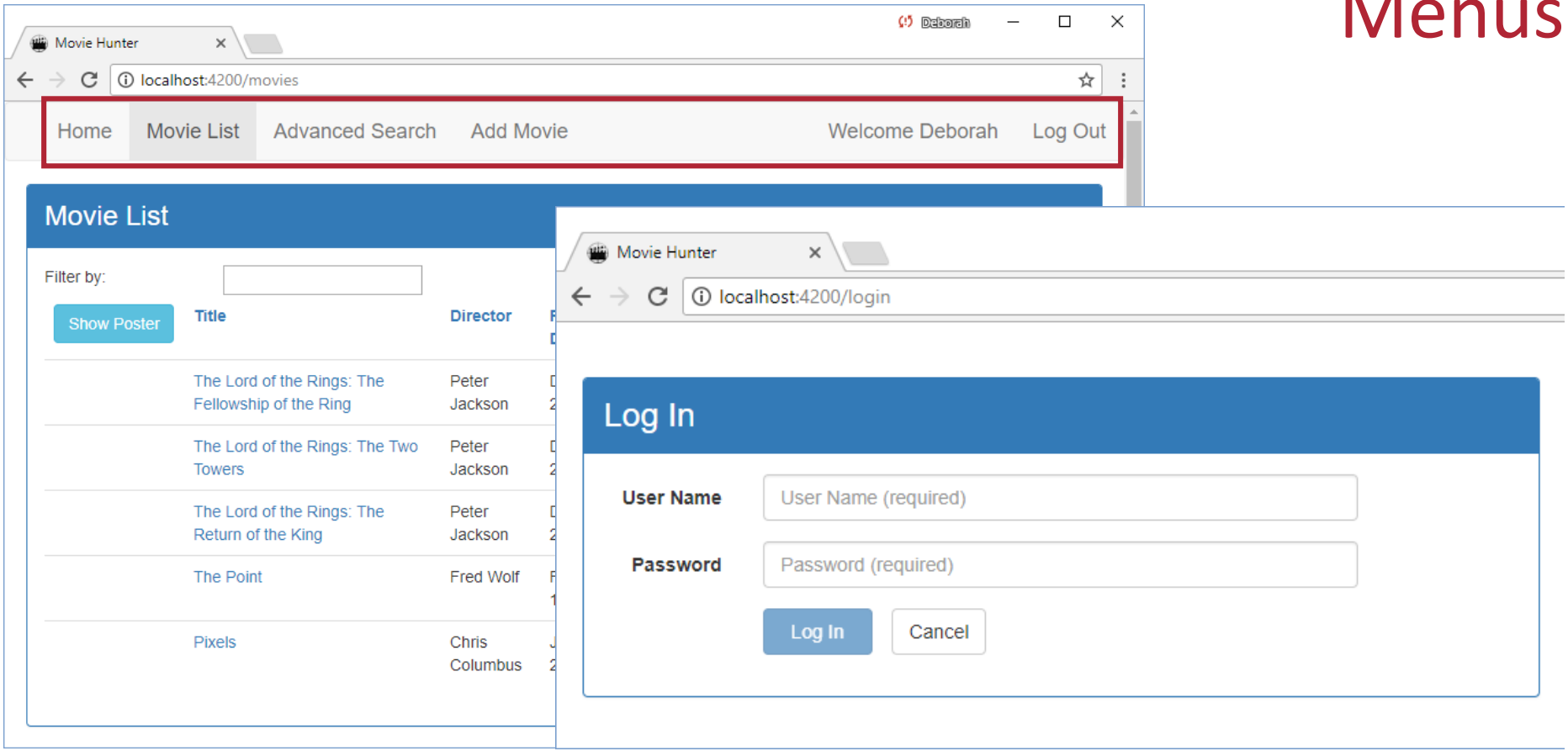
Introduction

- **Overview of Routing**
- **Several Routing Adventures**
  - What routing can do!
- **Sample Application**
  - https://github.com/DeborahK/MovieHunter-routing

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

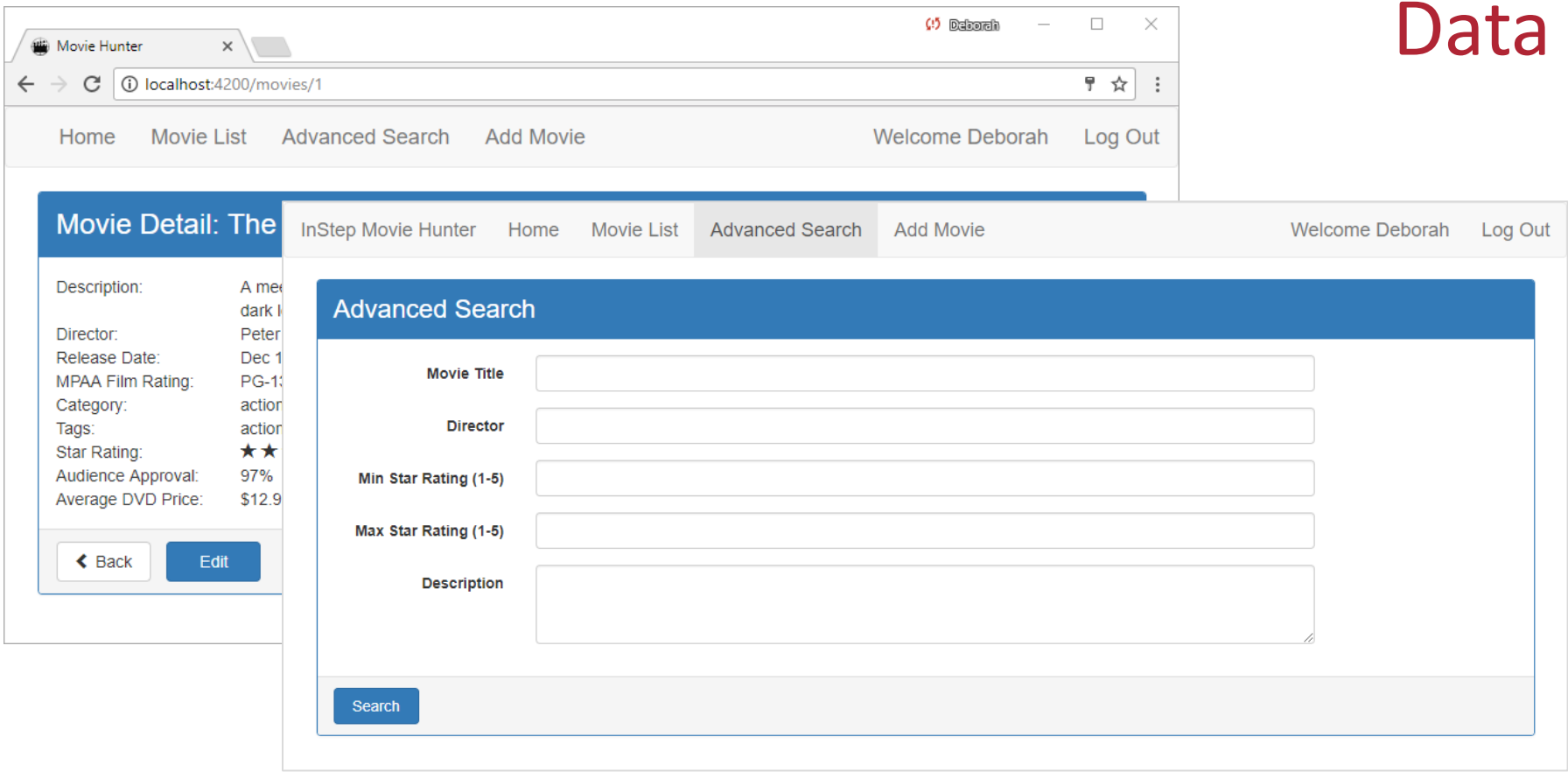
Menus



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

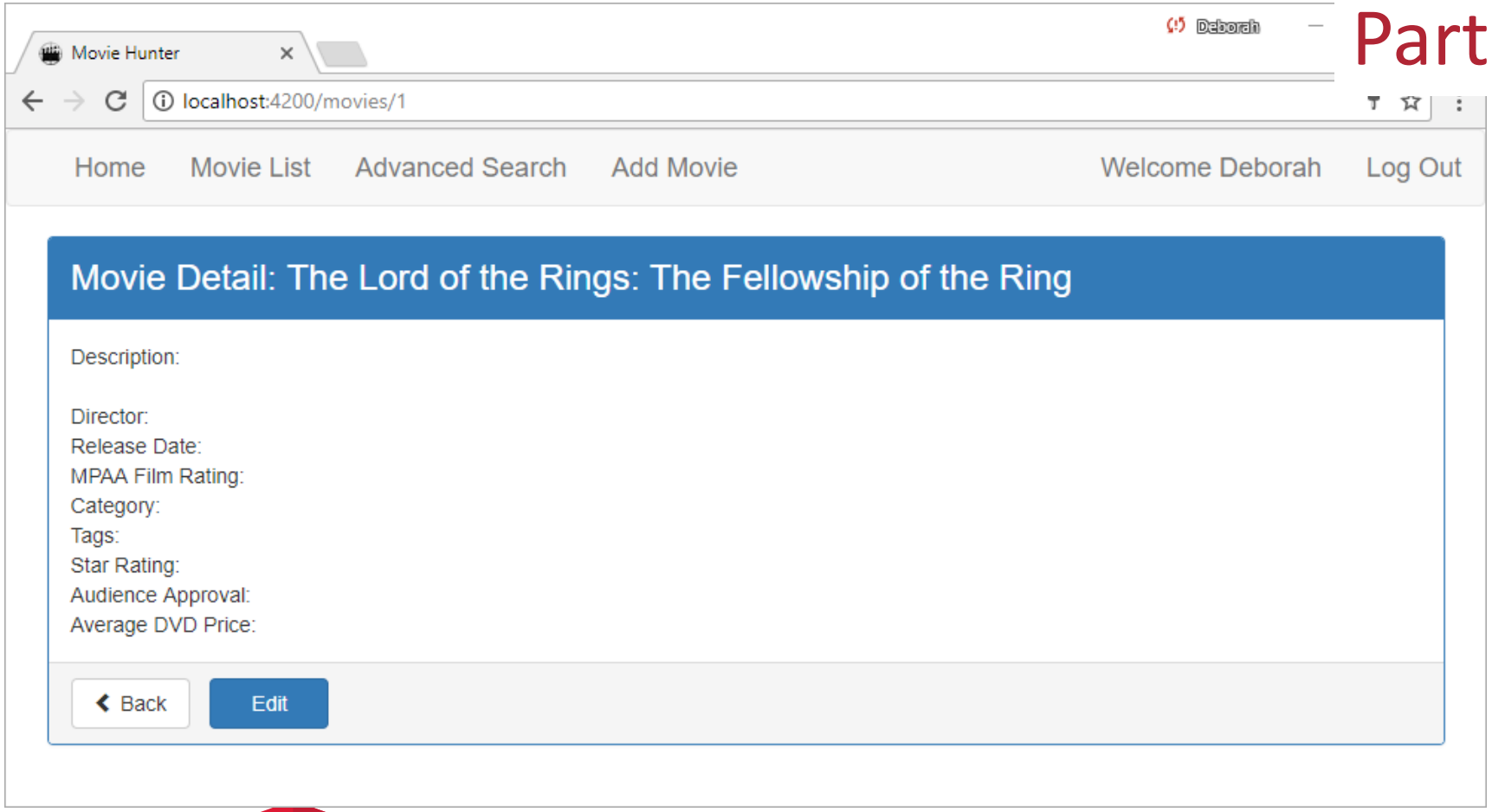
Data



ANGULAR MIX

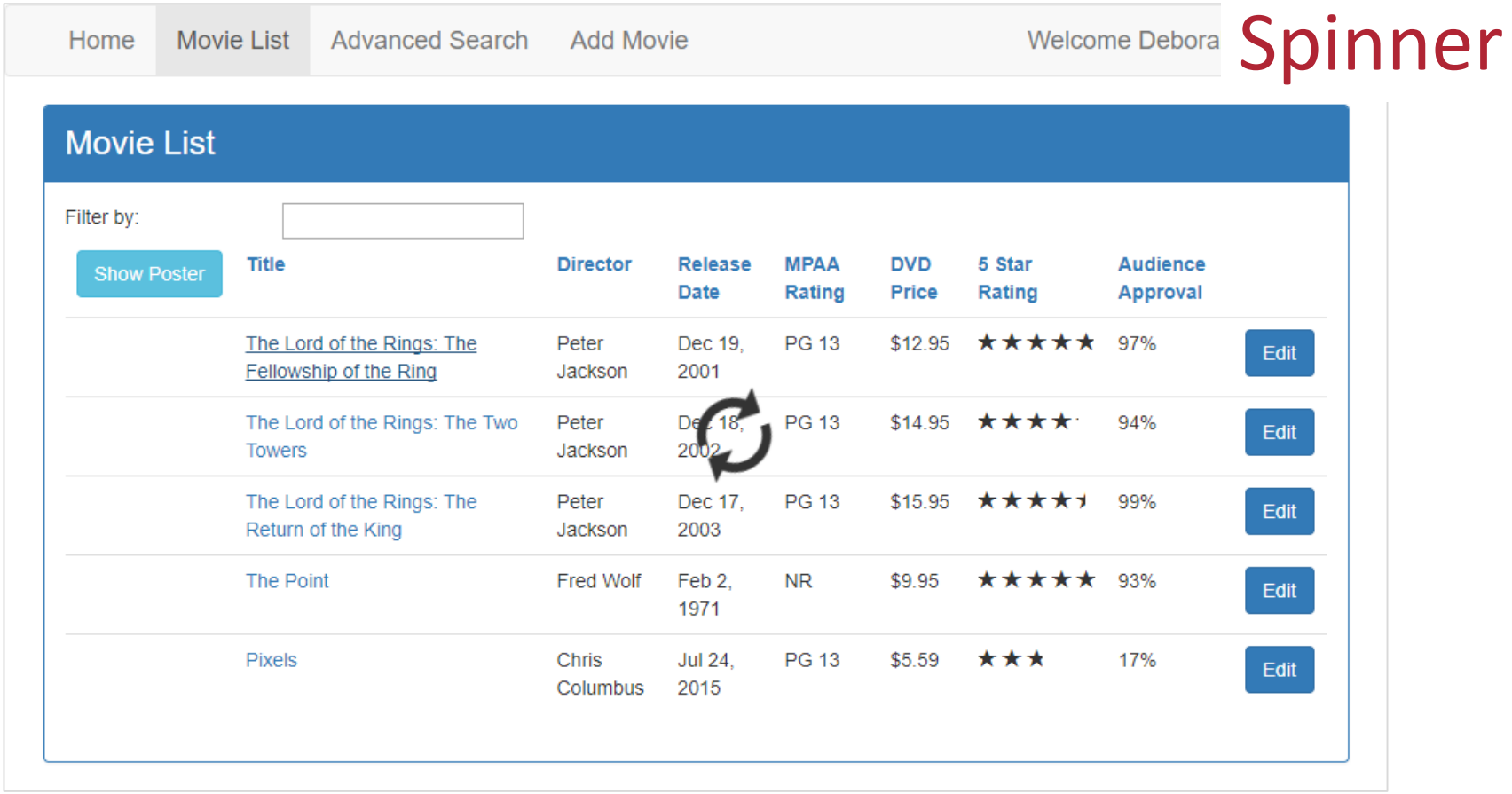
© AngularMIX All rights reserved.
https://www.angularmix.com

Partial



ANGULAR MIX

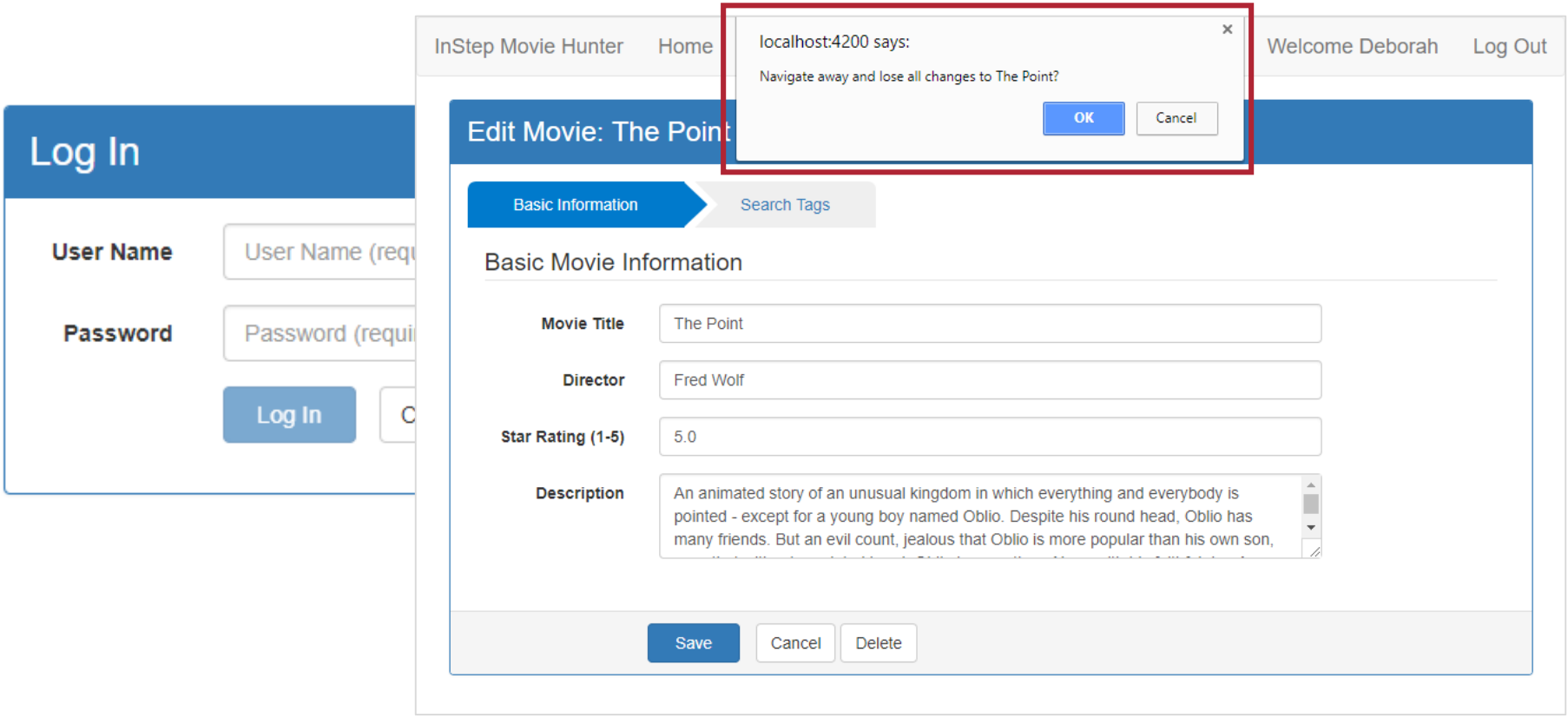
© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

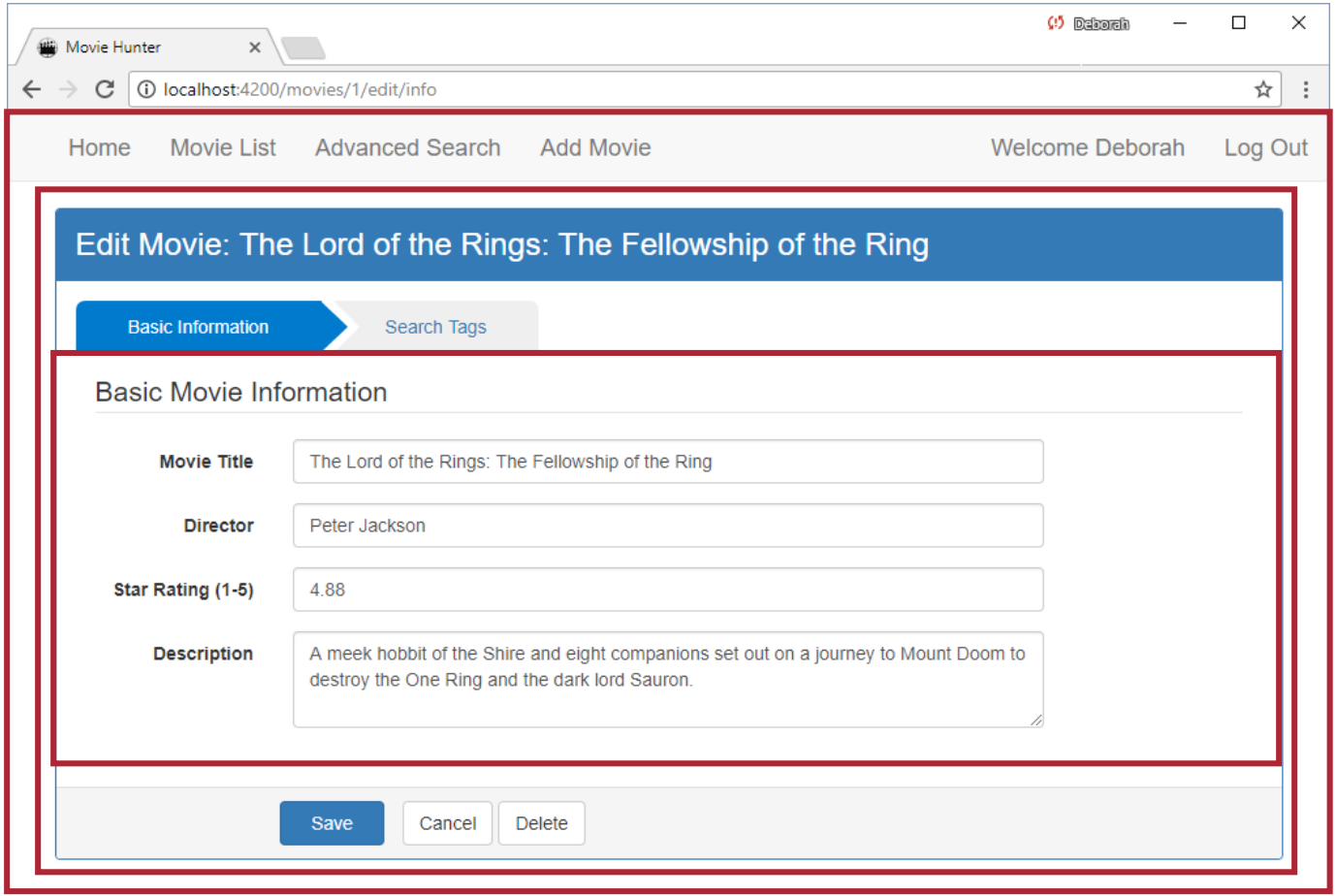
Guards



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Tabs



ANGULAR MIX

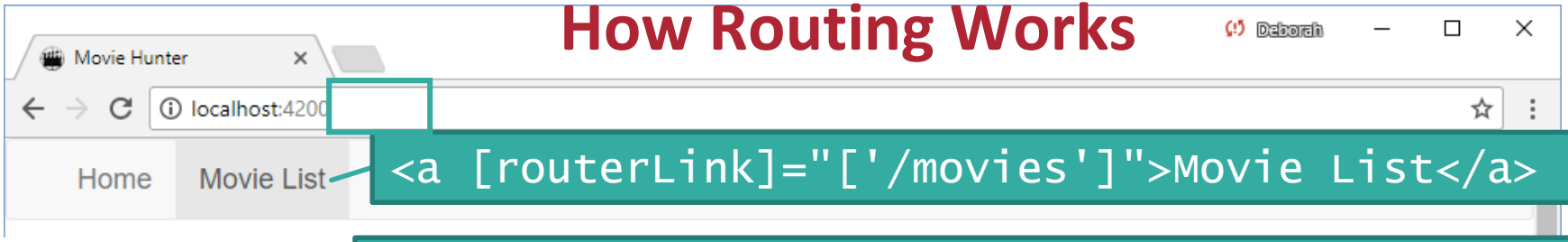
© AngularMIX All rights reserved.
https://www.angularmix.com

Lazy

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

How Routing Works




```
<a [routerLink]="['/movies']">Movie List</a>
```

```
{ path: 'movies', component: MovieListComponent }
```

```
<router-outlet></router-outlet>
```

movie-list.component.ts

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

@Component({
  templateUrl: 'movie-list.component.html'
})
export class MovieListComponent { }
```

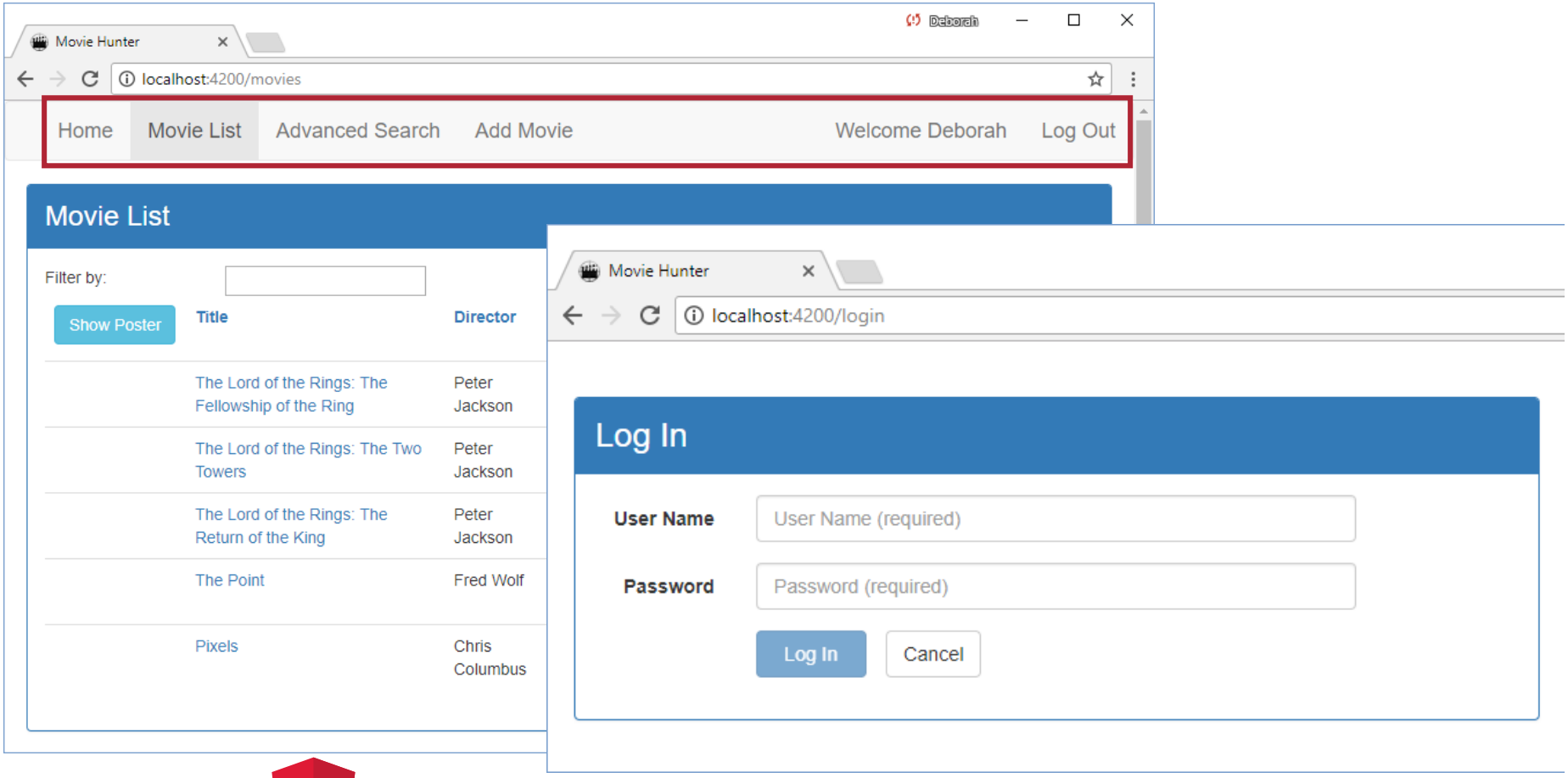
ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

To Menu
or Not To Menu

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

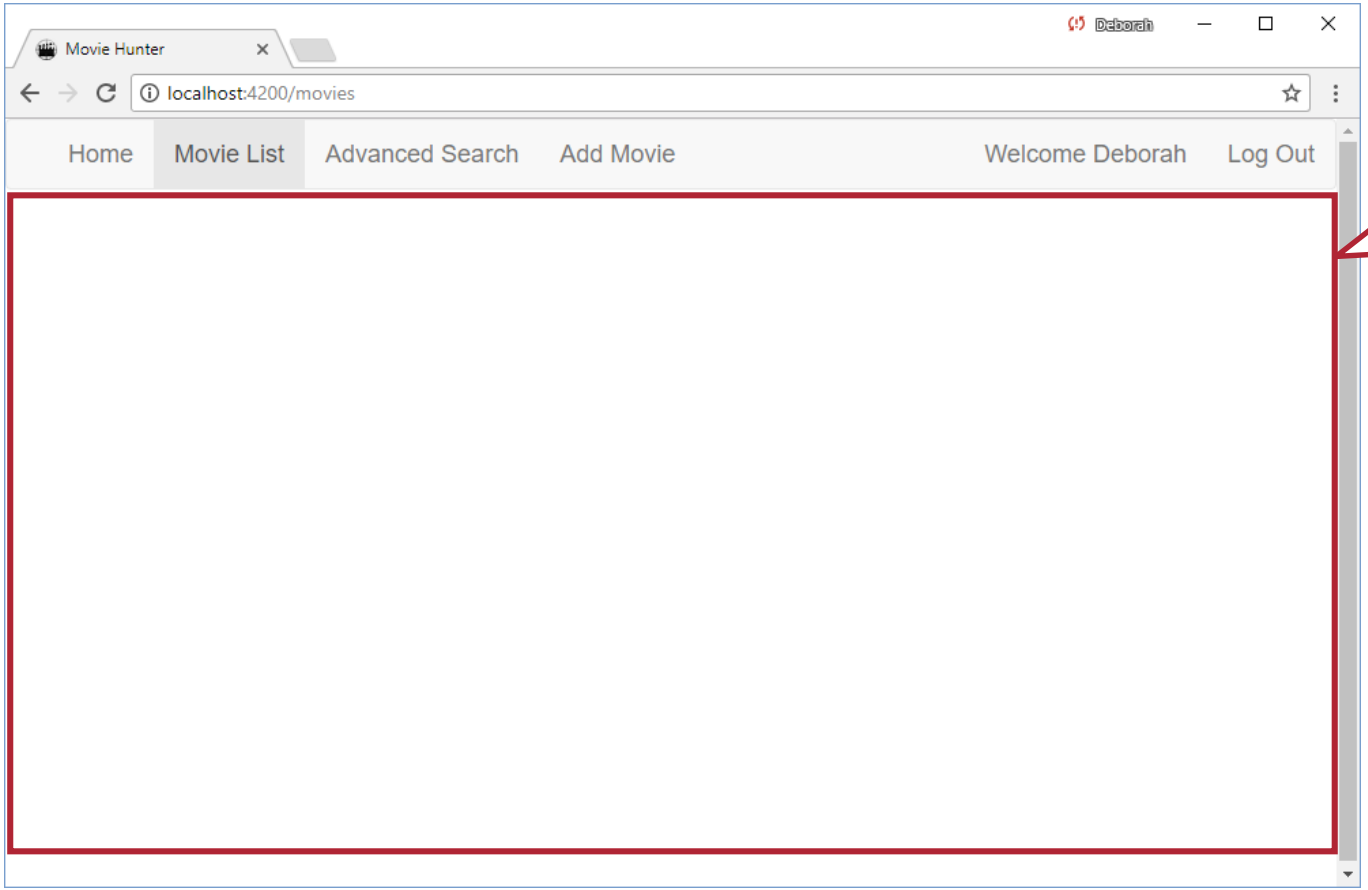
© AngularMIX All rights reserved.
https://www.angularmix.com

app.component.html

```
<div class="container">
  <nav class="navbar navbar-default">
    <div class="container-fluid">
      <a class="navbar-brand">{{pageTitle}}</a>
      <ul class="nav navbar-nav">
        <li><a [routerLink]="['/welcome']">Home</a></li>
        <li><a [routerLink]="['/movies']">Movie List</a></li>
      </ul>
    </div>
  </nav>
  <div class="container">
    <router-outlet></router-outlet>
  </div>
</div>
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

app.component.html

```
<div class="container">
  <nav class="navbar navbar-default" *ngIf="displayMenu">
    <div class="container-fluid">
      <a class="navbar-brand">{{pageTitle}}</a>
      <ul class="nav navbar-nav">
        <li><a [routerLink]="['/welcome']">Home</a></li>
        <li><a [routerLink]="['/movies']">Movie List</a></li>
      </ul>
    </div>
  </nav>
  <div class="container">
    <router-outlet></router-outlet>
  </div>
</div>
```

ANGULAR MIX

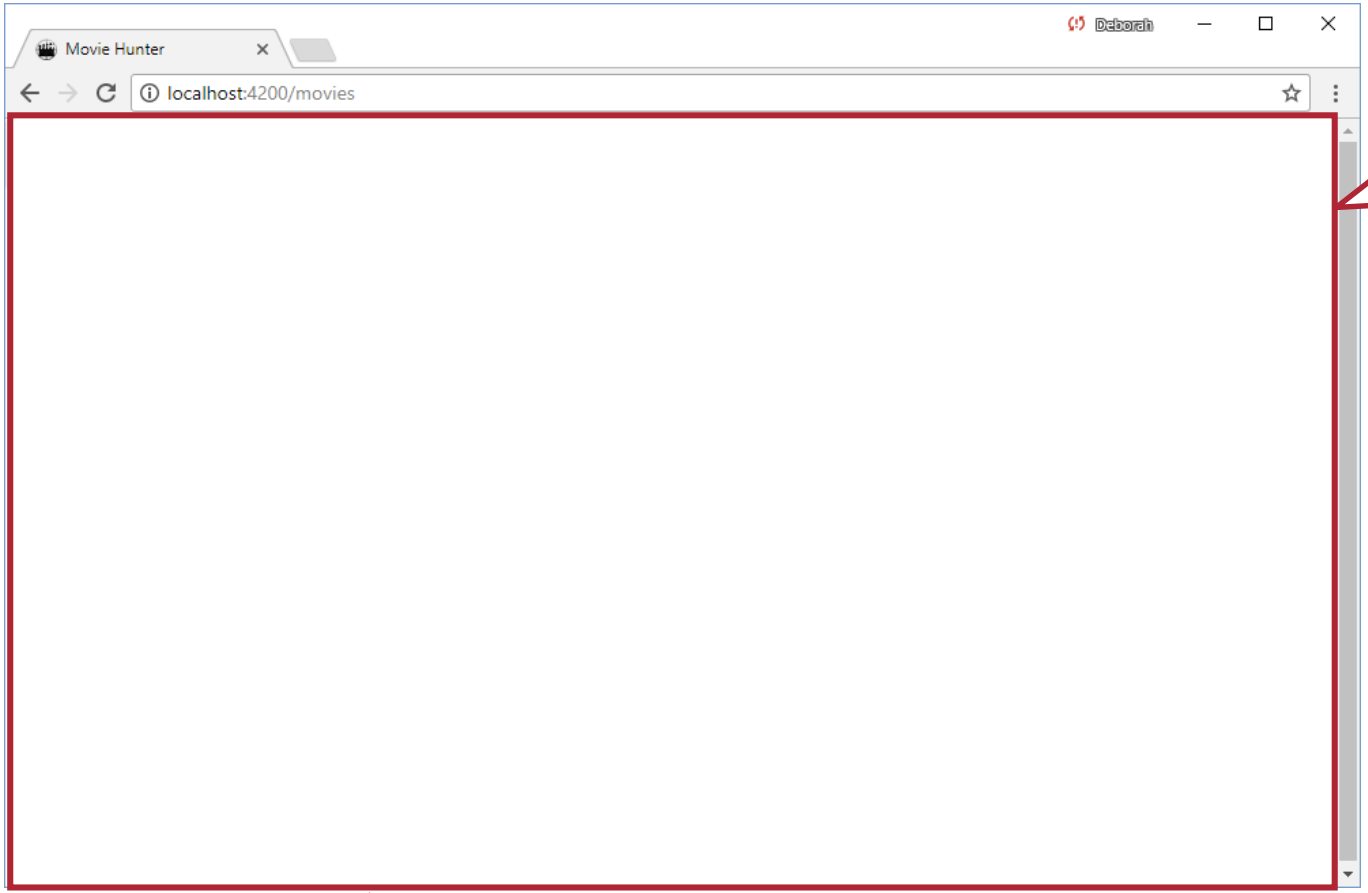
© AngularMIX All rights reserved.
https://www.angularmix.com

app.component.html

```
<router-outlet></router-outlet>
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

shell.component.html

```
<div class="container">
  <nav class="navbar navbar-default">
    <div class="container-fluid">
      <a class="navbar-brand">{{pageTitle}}</a>
      <ul class="nav navbar-nav">
        <li><a [routerLink]="['/welcome']">Home</a></li>
        <li><a [routerLink]="['/movies']">Movie List</a></li>
      </ul>
    </div>
  </nav>
  <div class="container">
    <router-outlet></router-outlet>
  </div>
</div>
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

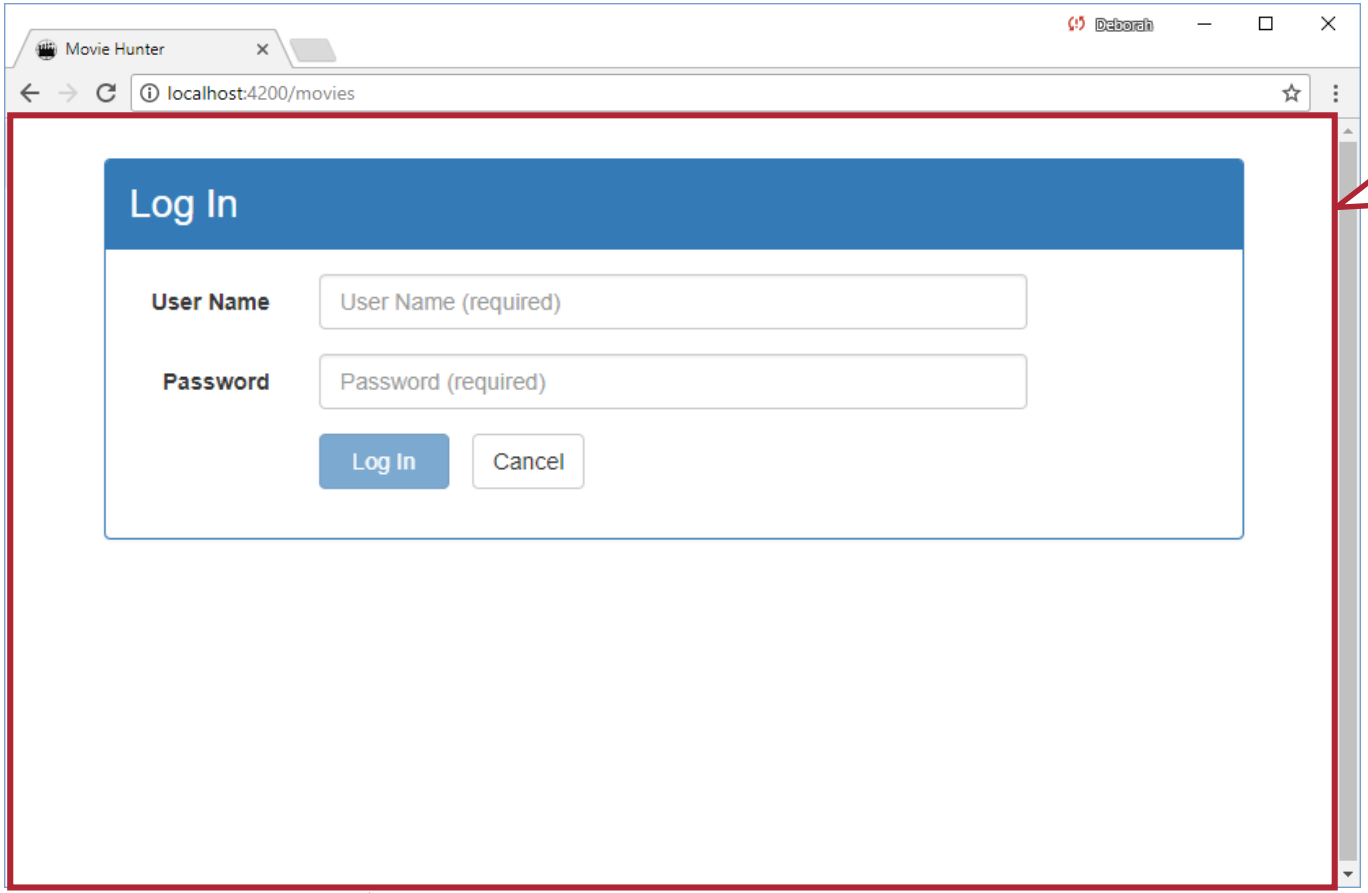
shell.component.html

```
<mh-menu></mh-menu>

<div class='container'>
   <router-outlet></router-outlet>
</div>
```

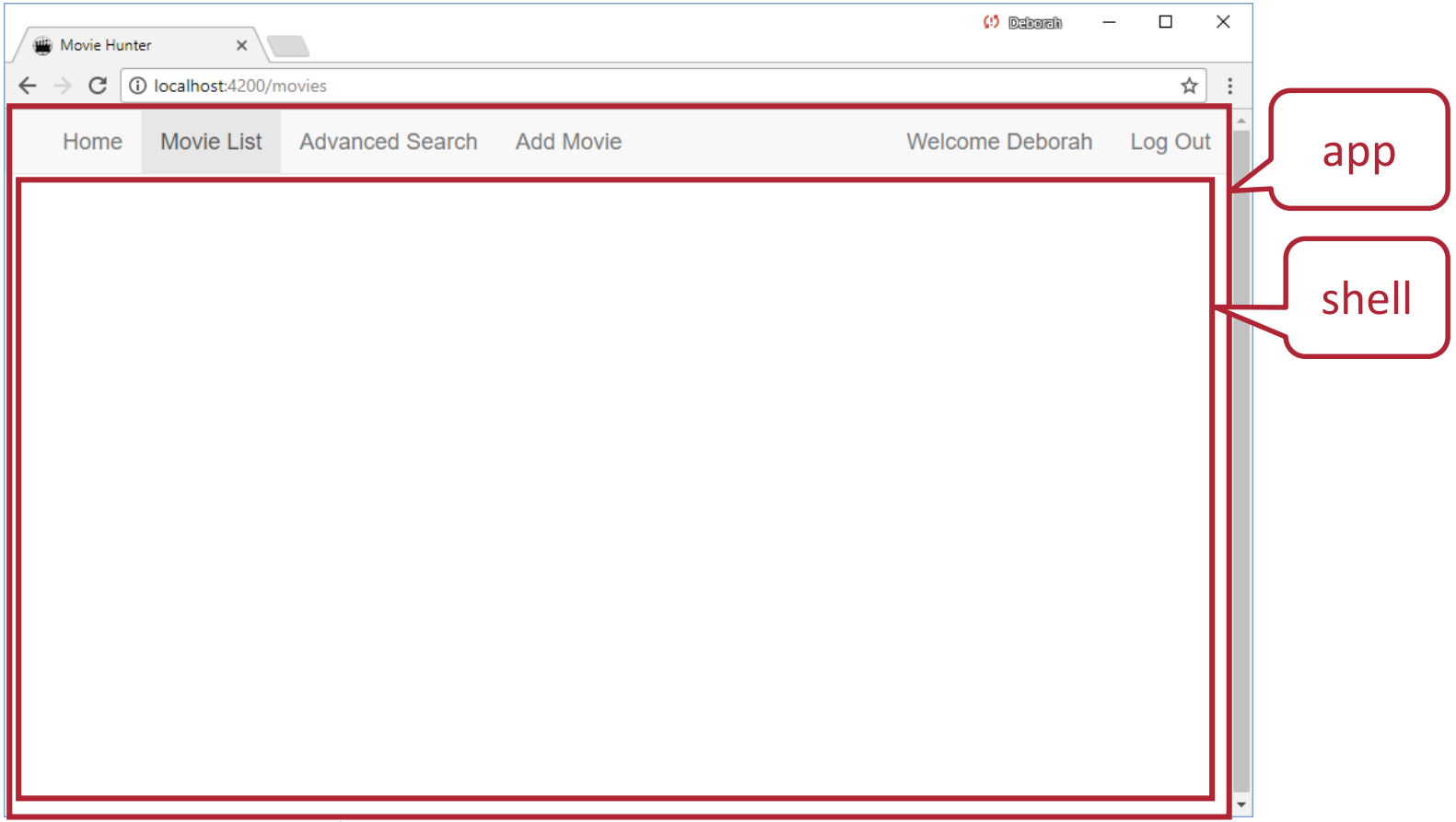
ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

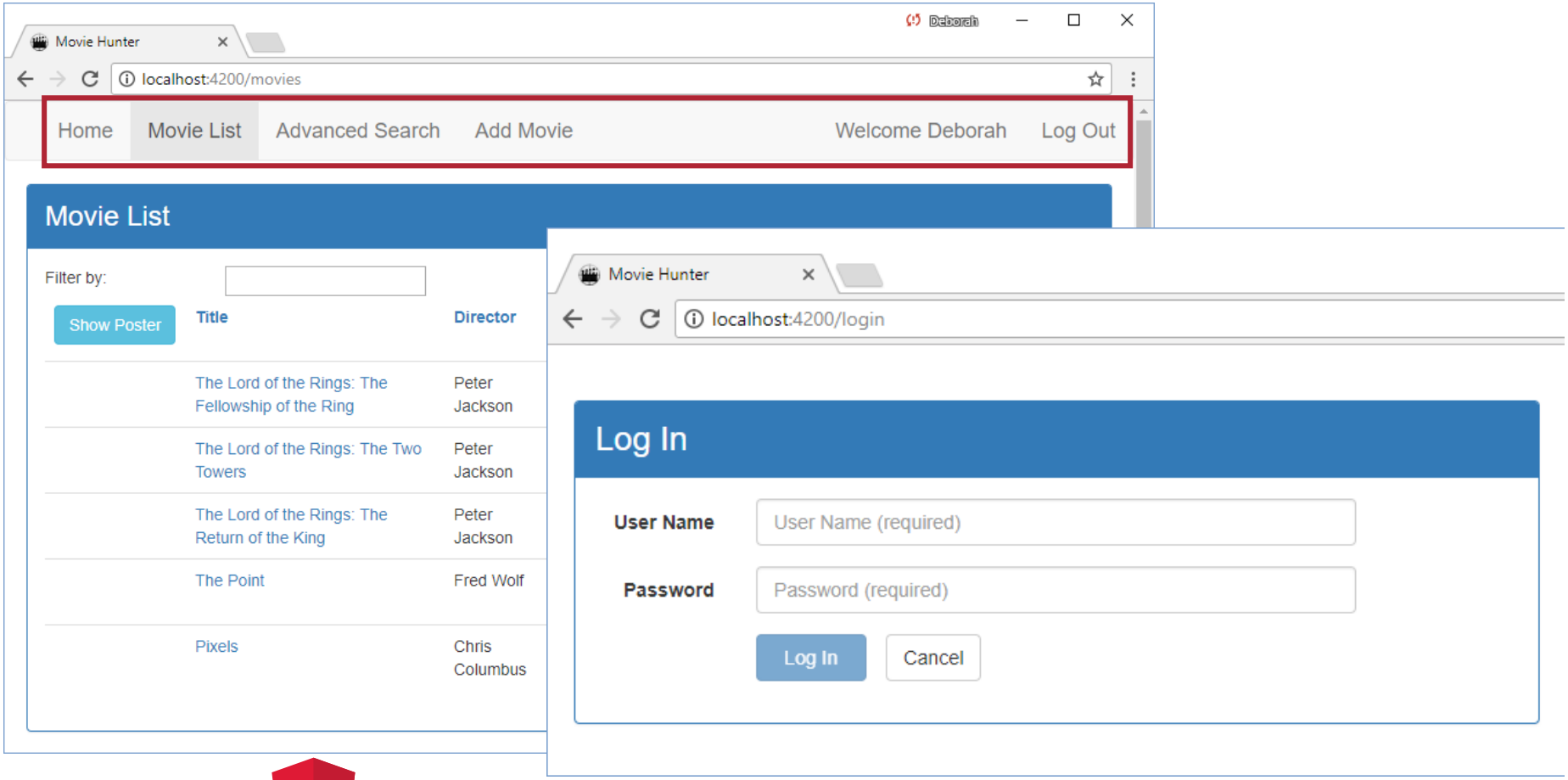
© AngularMIX All rights reserved.
https://www.angularmix.com

app-routing.module.ts

```
RouterModule.forRoot([
  {
    path: '',
    component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies', component: MovieListComponent },
      { path: '', redirectTo: 'welcome', pathMatch: 'full' },
    ]
  },
  { path: 'login', component: LoginComponent }
  { path: '**', component: PageNotFoundComponent }
])
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



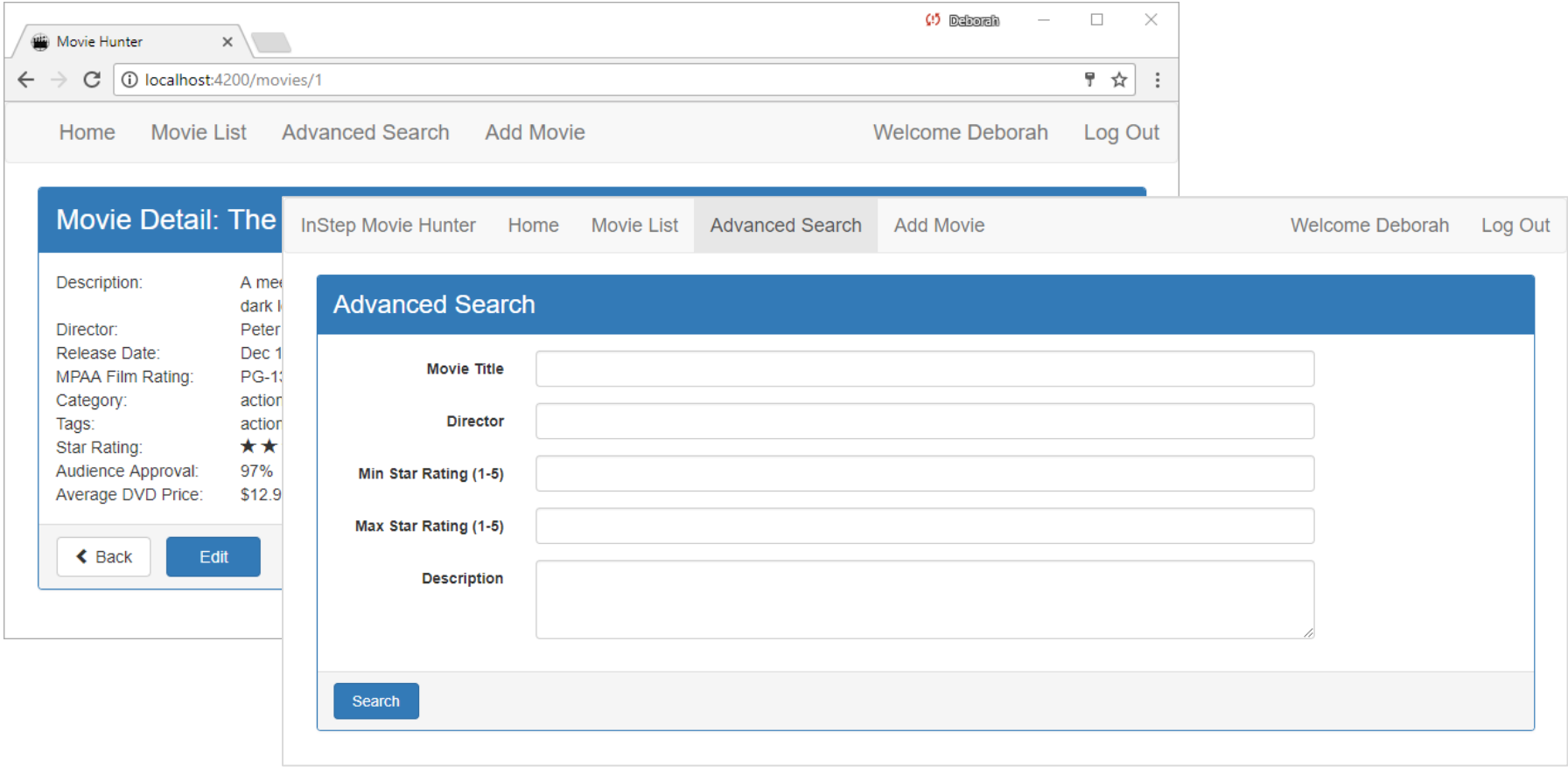
ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Data, Data, Data

ANGULAR MIX

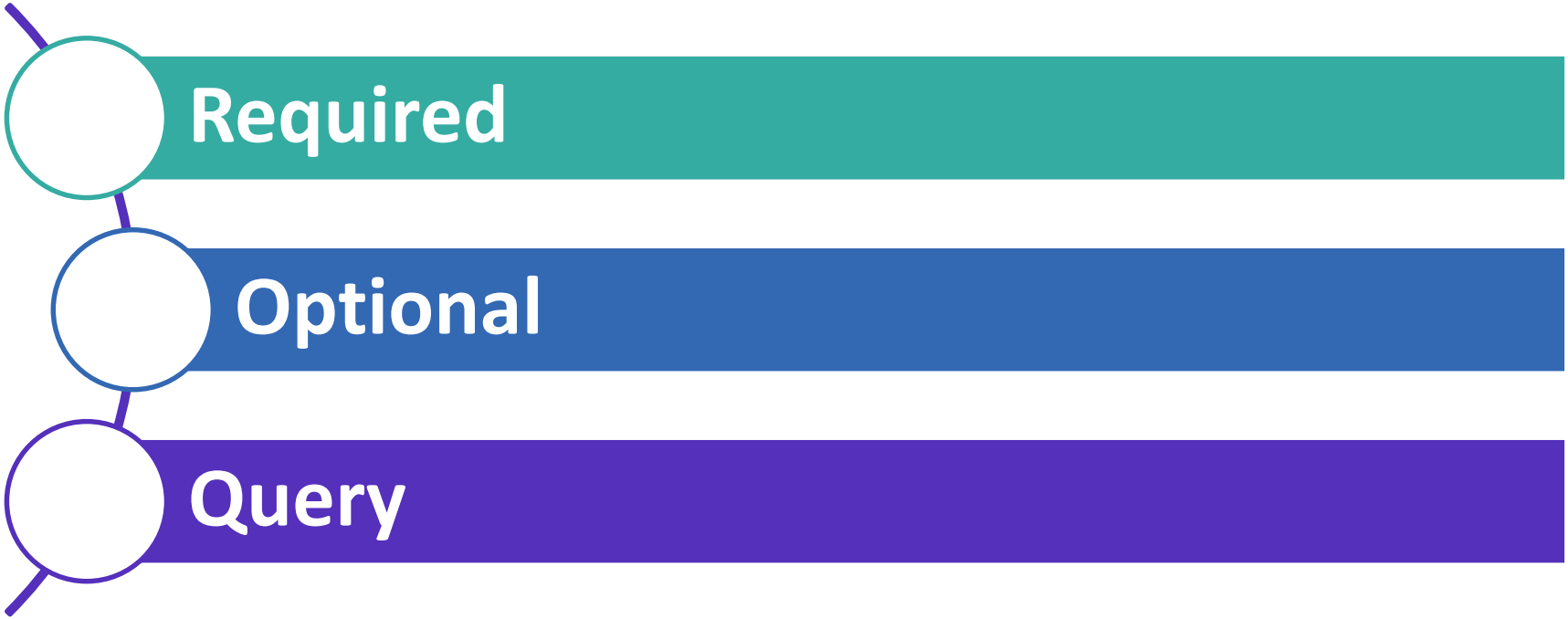
© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Routing Parameters



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Required Parameters

Configure

```
{ path: 'movies/:id', component: MovieDetailComponent }
```

Activate

```
<a [routerLink]="['/movies', movie.id]">...</a>
```

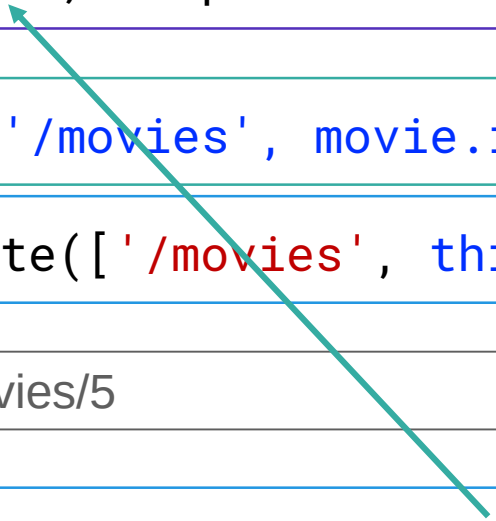
```
this.router.navigate(['/movies', this.movie.id]);
```

Resulting Url

```
http://localhost:4200/movies/5
```

Read

```
this.route.snapshot.paramMap.get('id');
```



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Optional Parameters

Configure

```
{ path: 'movies', component: MovieListComponent }
```

Activate

```
<a [routerLink]="['/movies',{title:ring,si: true}]">...</a>
```

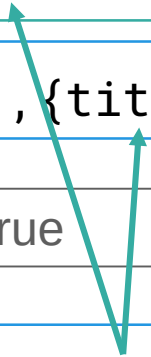
```
this.router.navigate(['/movies',{title: ring, si:true}]);
```

Resulting Url

```
http://localhost:4200/movies;title=ring;si=true
```

Read

```
this.route.snapshot.paramMap.get('title');
```



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Query Parameters

Configure

```
{ path: 'movies', component: MovieListComponent }
```

Activate

```
<a [routerLink]="['/movies']"
   [queryParams]= "{title: ring, si: true}">...</a>
```

```
this.router.navigate(['/movies'],
                     {queryParams: {title: 'ring', si:true}});
```

Resulting Url

```
http://localhost:4200/movies?title=ring&si=true
```

Read

```
this.route.snapshot.queryParamMap.get('title');
```

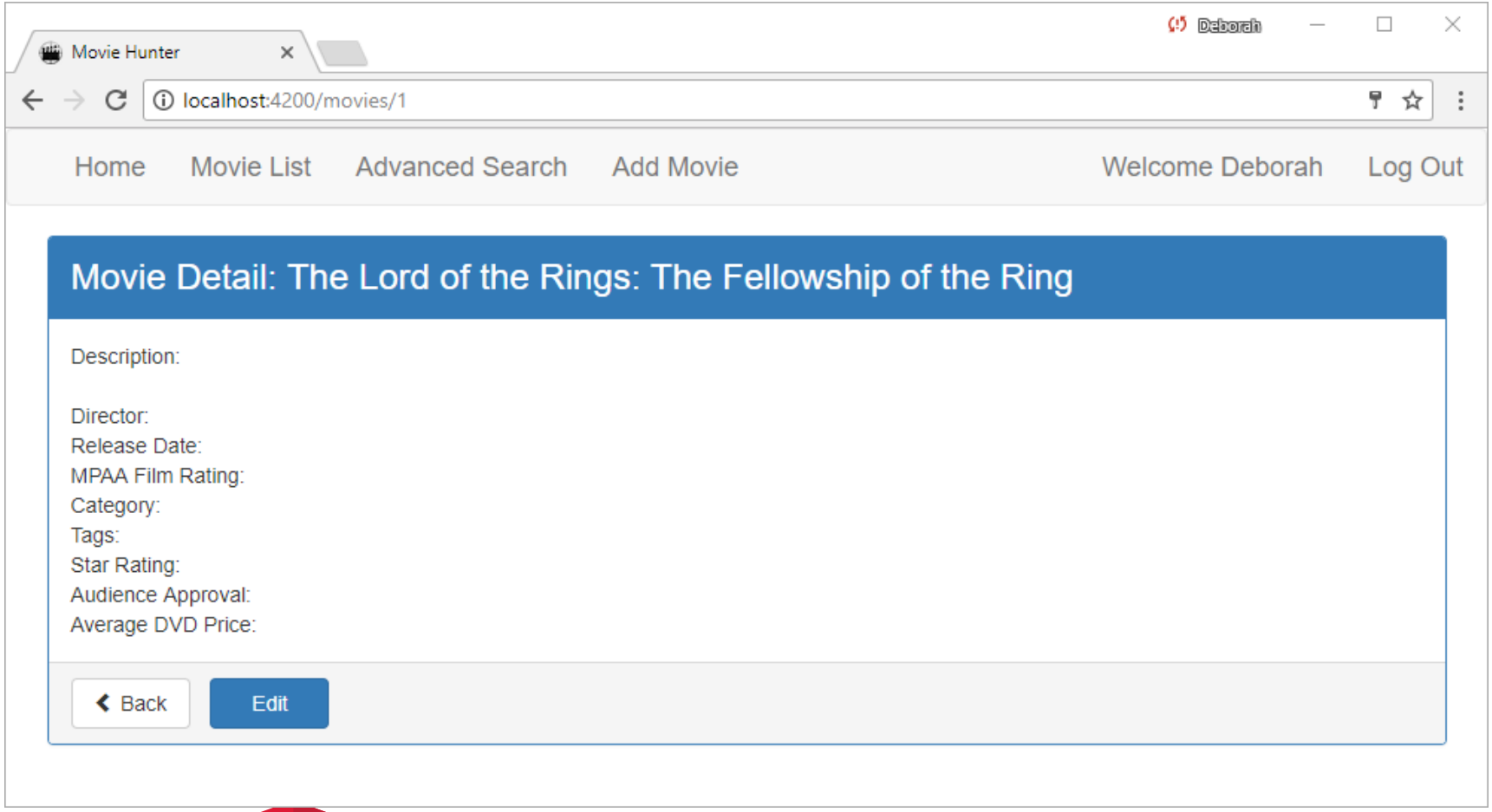
ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Preventing Partial Page Display

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Build a Resolver Service

movie-resolver.service.ts

```
@Injectable()
export class MovieResolver implements Resolve<IMovie> {

  constructor(private movieService: MovieService) { }

  resolve(route: ActivatedRouteSnapshot,
          state: RouterStateSnapshot): Observable<IMovie> {
    const id = route.paramMap.get('id');
    return this.movieService.getMovie(+id);
  }
}
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Register the Resolver

movie.module.ts

```
providers: [
    MovieService,
    MovieResolver
]
```

© AngularMIX All rights reserved.
https://www.angularmix.com

Add Resolver to Route

movie.module.ts

```
{
    path: 'movies/:id',
    resolve: { movie: MovieResolver },
    component: MovieDetailComponent
},
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

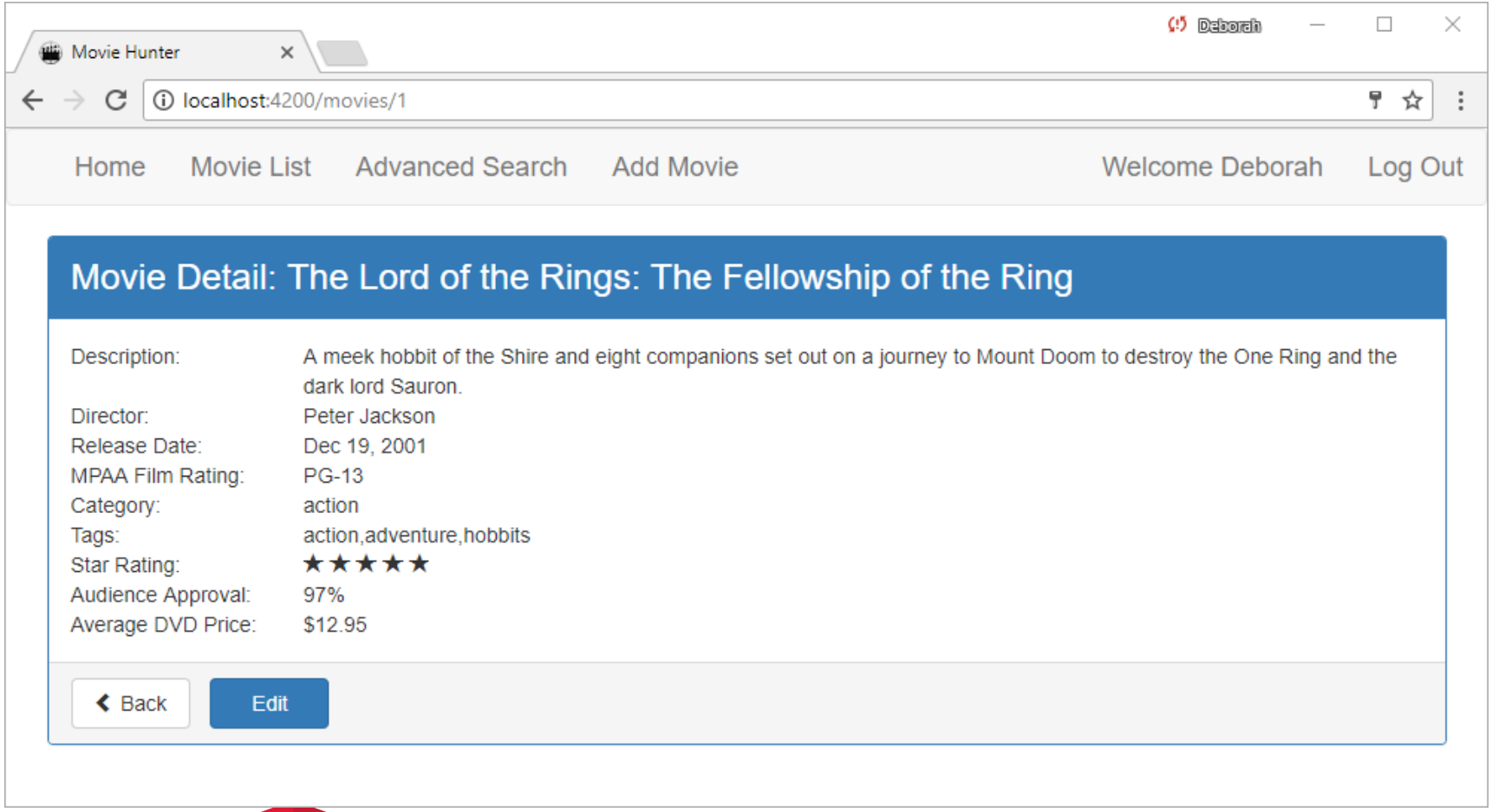
Read Resolver Data

movie-detail.component.ts

```
ngOnInit(): void {
    this.movie = this.route.snapshot.data['movie'];
}
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



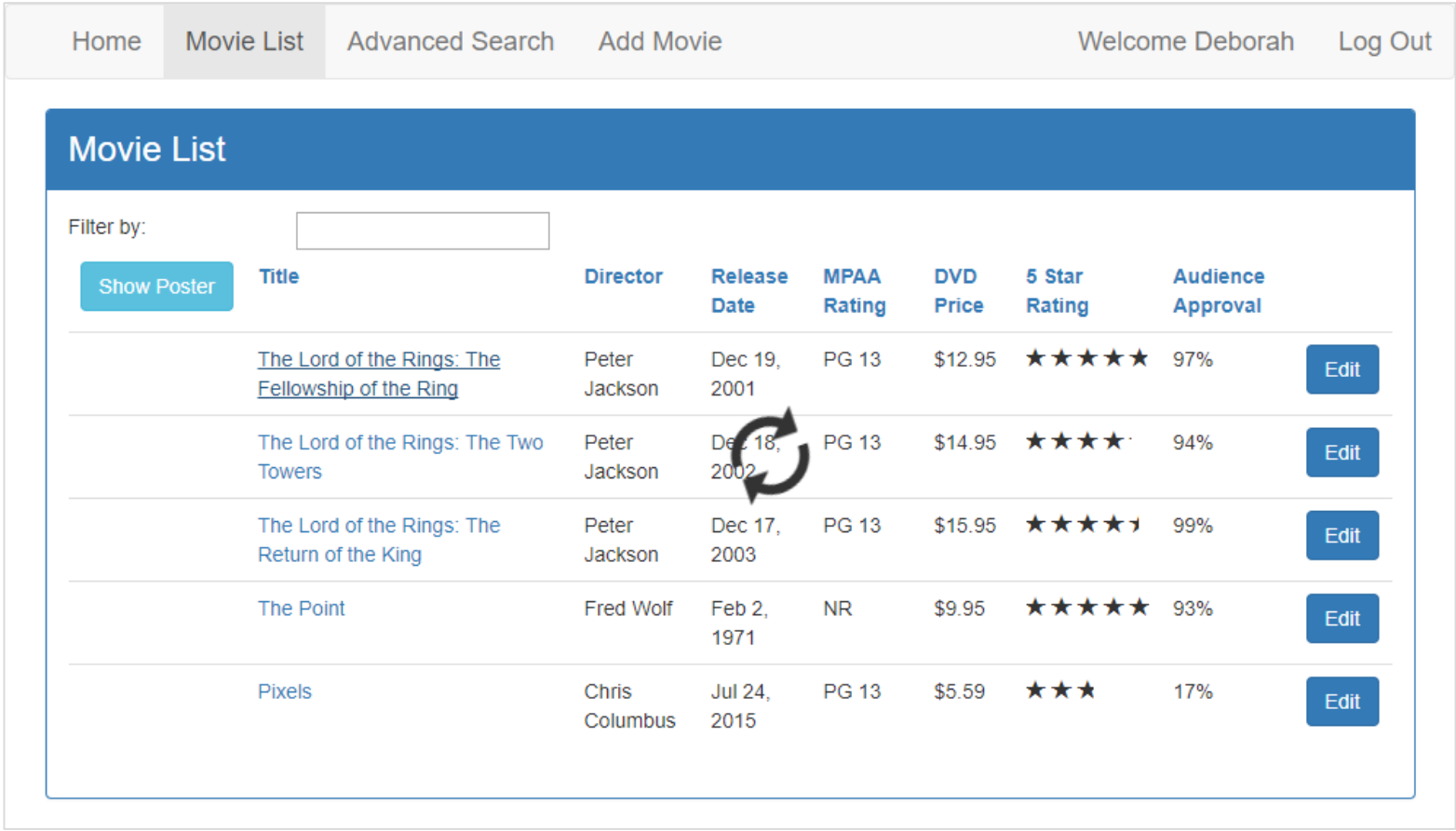
ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

I'm Waiting …

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Check Router Events

app.component.ts

```
checkRouterEvent(routerEvent: Event): void {
   if (routerEvent instanceof NavigationStart) {
      this.loading = true;
   }

   if (routerEvent instanceof NavigationEnd ||
       routerEvent instanceof NavigationCancel ||
       routerEvent instanceof NavigationError) {
      this.loading = false;
   }
}
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

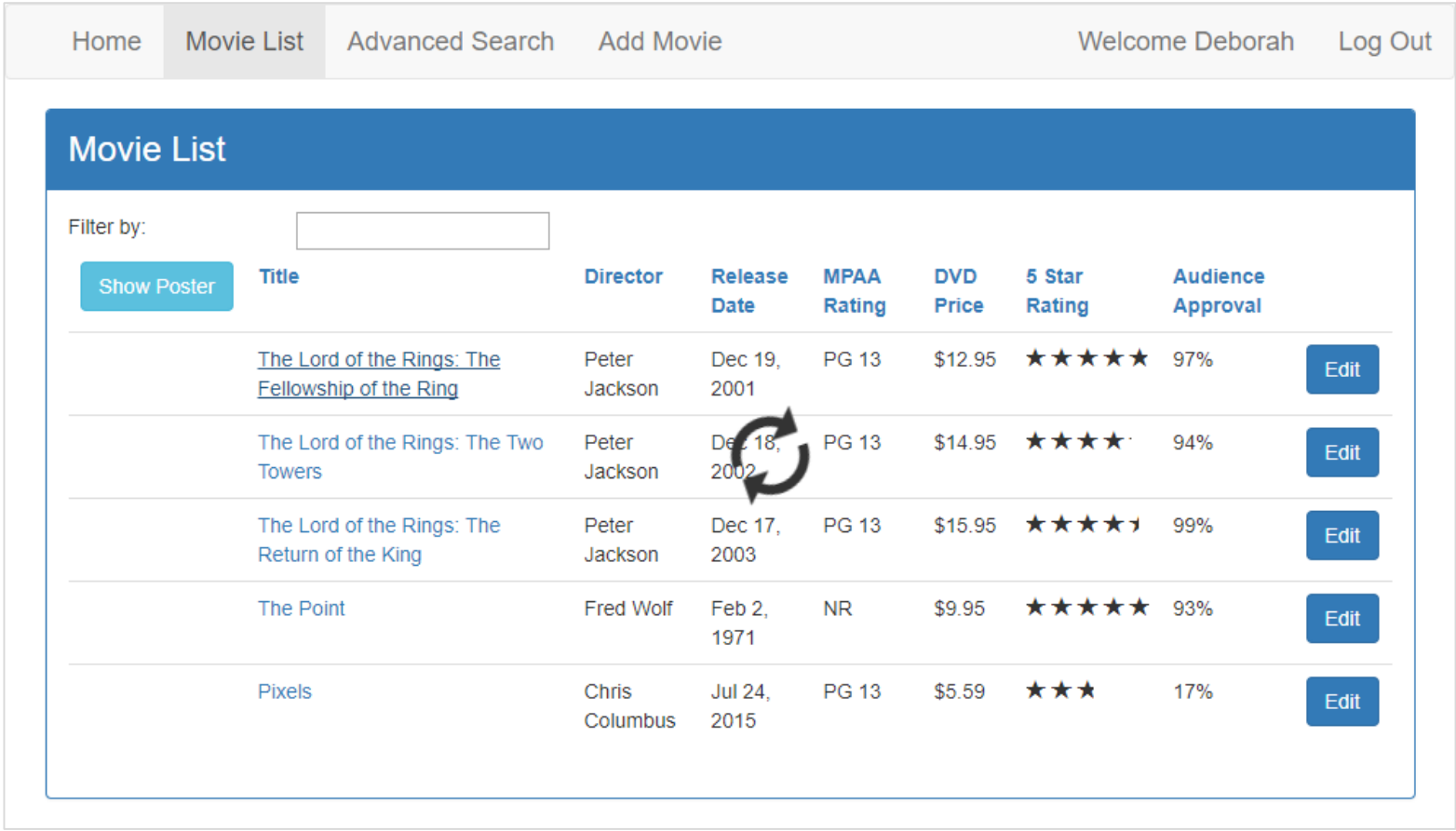
Display the Spinner

app.component.html

```
<span class="glyphicon glyphicon-refresh glyphicon-spin spinner"
      *ngIf="loading"></span>
<router-outlet></router-outlet>
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



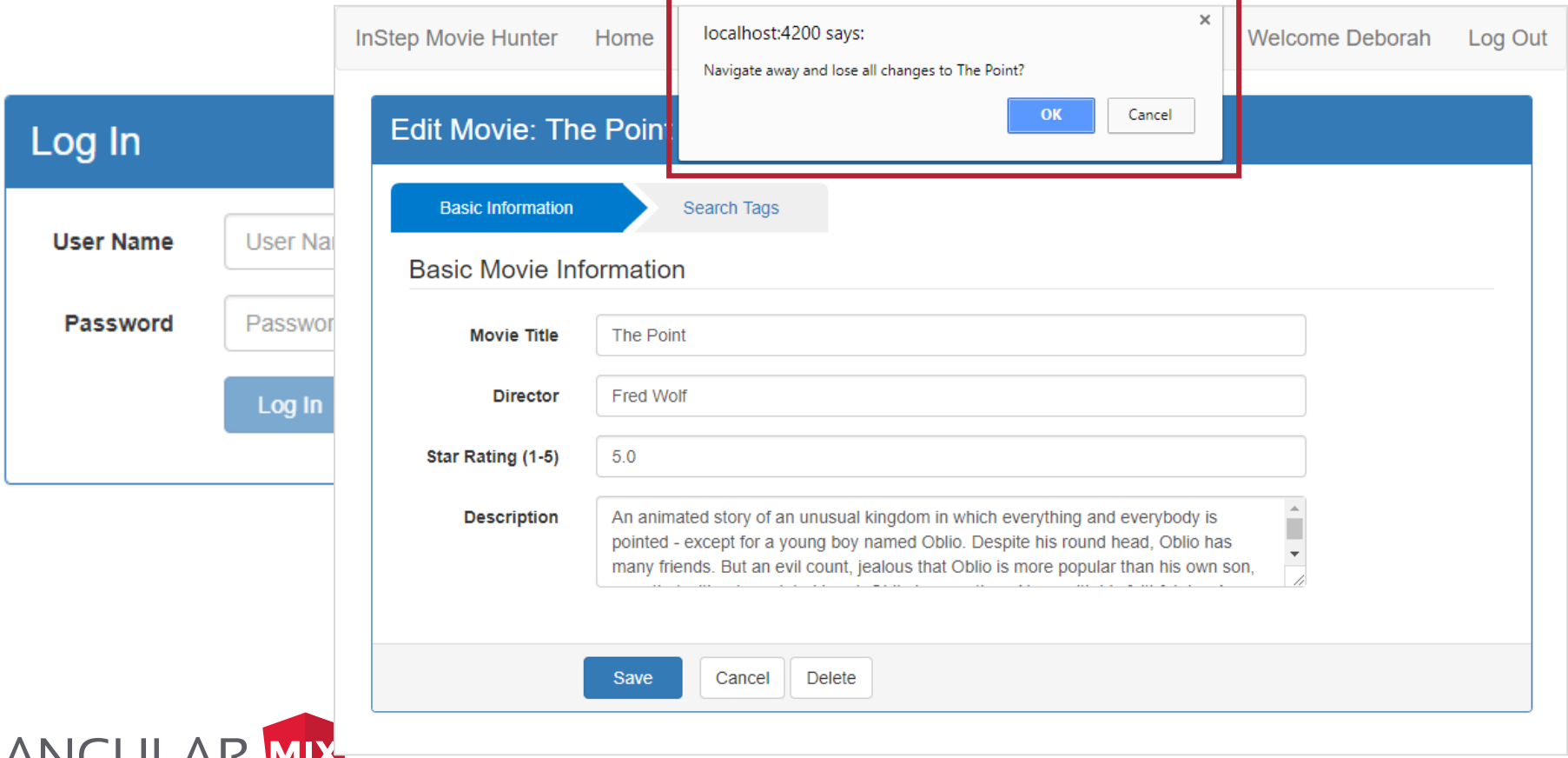
ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Guards at the Ready

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Build a Guard Service

movie-edit-guard.service.ts

```
@Injectable()
export class MovieEditGuard implements
                                    CanDeactivate<MovieEditComponent> {

   canDeactivate(component: MovieEditComponent): boolean {
      if (component.isDirty) {
         const title = component.movie.title || 'New Movie';
         return confirm(`Lose all changes to ${title}?`);
      }
      return true;
   }
}
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Register the Guard

movie.module.ts

```
providers: [
    MovieService,
    MovieResolver,
    MovieEditGuard
]
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

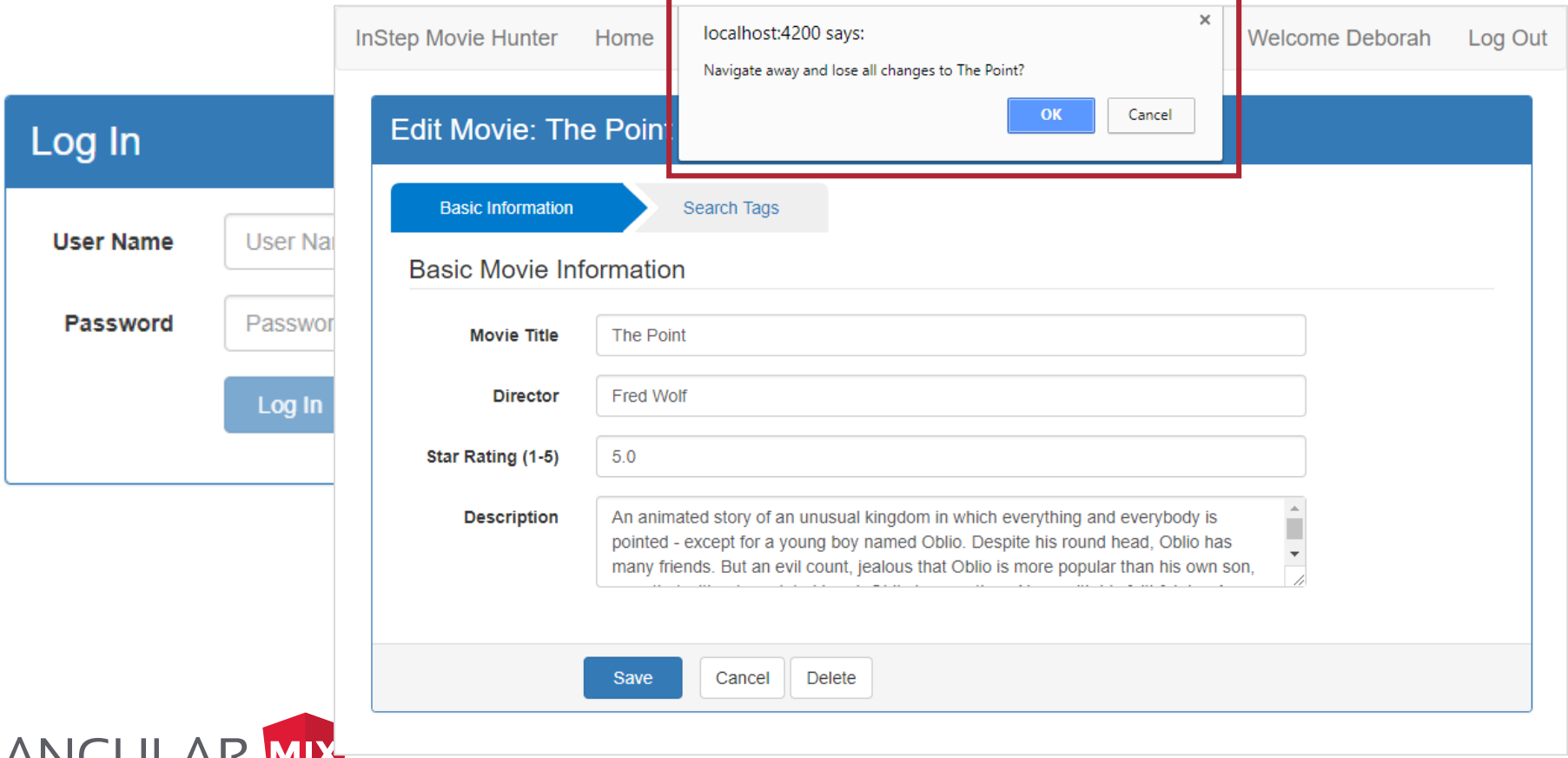
Add Guard to Route

movie.module.ts

```
{
    path: 'movies/:id/edit',
    resolve: { movie: MovieResolver },
    canDeactivate: [ MovieEditGuard ],
    component: MovieEditComponent
}
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



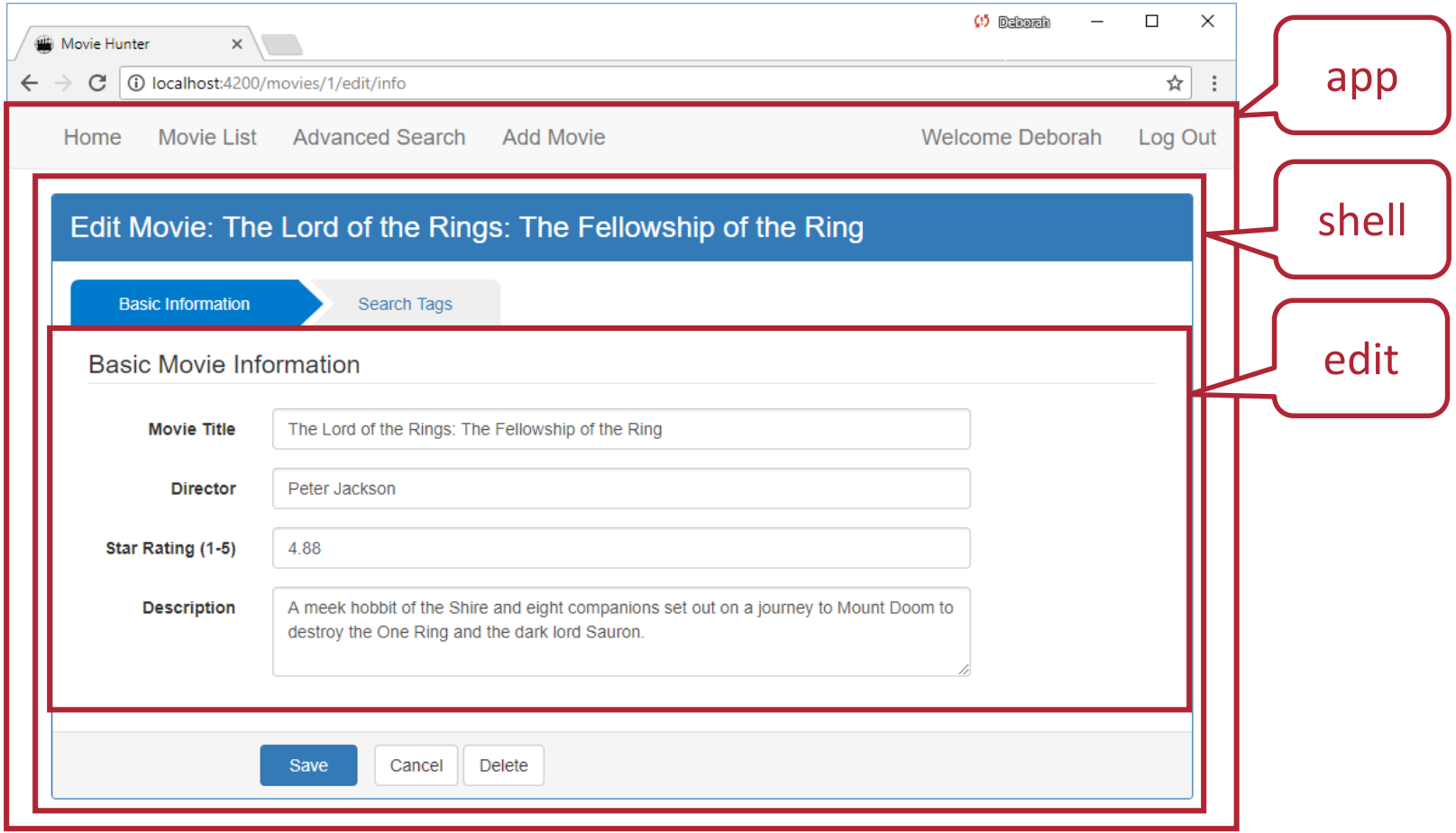
ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Keep Tabs

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

app-routing.module.ts

```
RouterModule.forRoot([
  {
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies', component: MovieListComponent },
      { path: '', redirectTo: 'welcome', pathMatch: 'full' },
    ]
  },
  { path: 'login', component: LoginComponent }
  { path: '**', component: PageNotFoundComponent }
])
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

app-routing.module.ts

```
{
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies', component: MovieListComponent },
      { path: 'movies/:id/edit', component: MovieEditComponent,
        children: [
          { path: '', redirectTo: 'info', pathMatch: 'full' },
          { path: 'info', component: MovieEditInfoComponent },
          { path: 'tags', component: MovieEditTagsComponent }
        ]
      }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Edit View

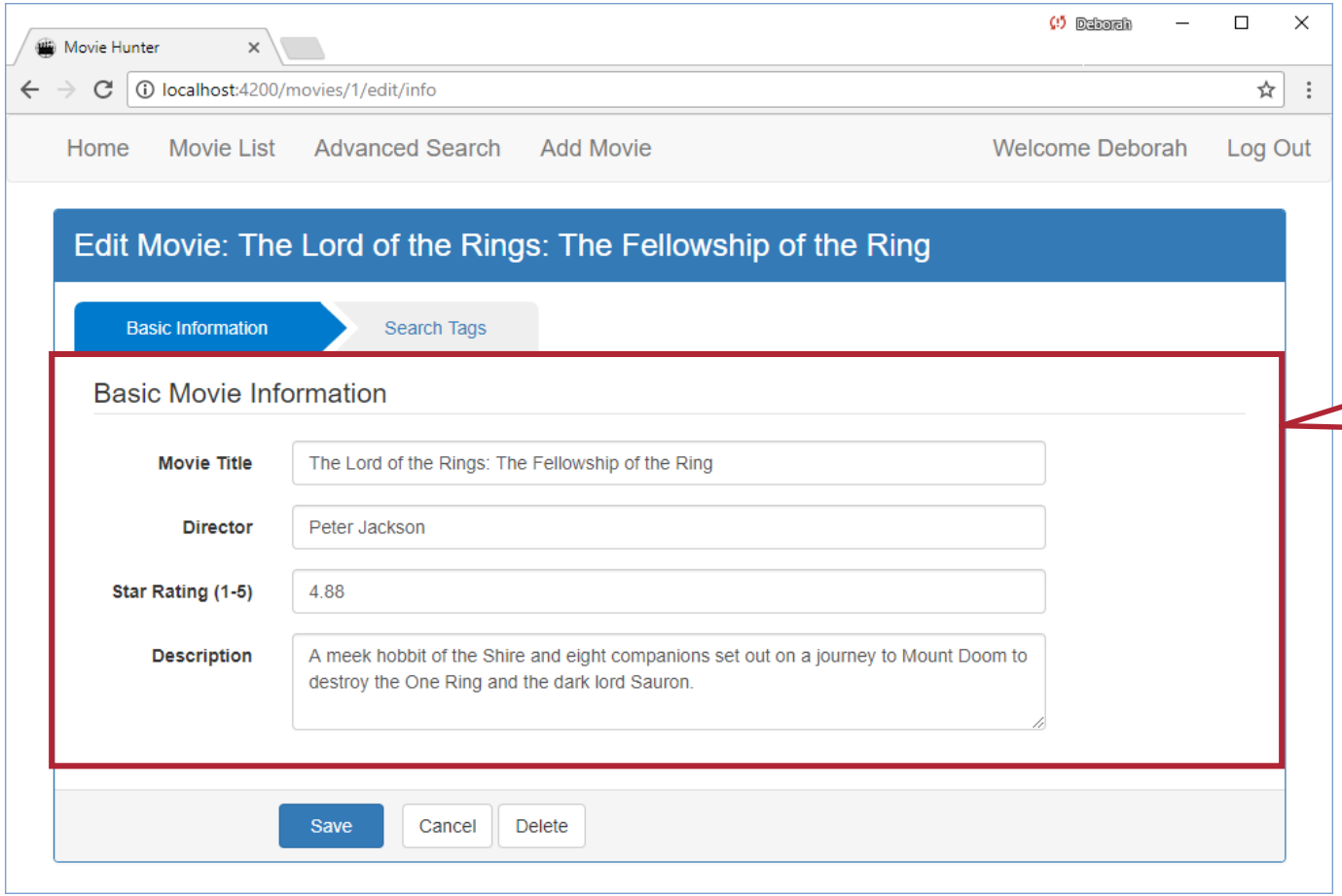
movie-edit.component.html

```
<div class="panel-body">
  <div class="wizard">
    <a [routerLink]="['info']" routerLinkActive="active">
       Basic Information</a>
    <a [routerLink]="['tags']" routerLinkActive="active">
       Search Tags</a>
  </div>

  <router-outlet></router-outlet>
</div>
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

app-routing.module.ts

```
{
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies', component: MovieListComponent } ,
      { path: ':id', component: MovieDetailComponent },
      { path: 'movies/:id/edit', component: MovieEditComponent,
        children: [
          { path: '', redirectTo: 'info', pathMatch: 'full' },
          { path: 'info', component: MovieEditInfoComponent },
          { path: 'tags', component: MovieEditTagsComponent }
        ]
      }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

What About Paths in Feature Modules?

movie.module.ts

```
{ path: '', component: MovieListComponent } ,
{ path: ':id', component: MovieDetailComponent },
{ path: ':id/edit', component: MovieEditComponent,
    children: [
      { path: '', redirectTo: 'info', pathMatch: 'full' },
      { path: 'info', component: MovieEditInfoComponent },
      { path: 'tags', component: MovieEditTagsComponent }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Use loadChildren

app-routing.module.ts

```
{
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies',  loadChildren: () => MovieModule }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

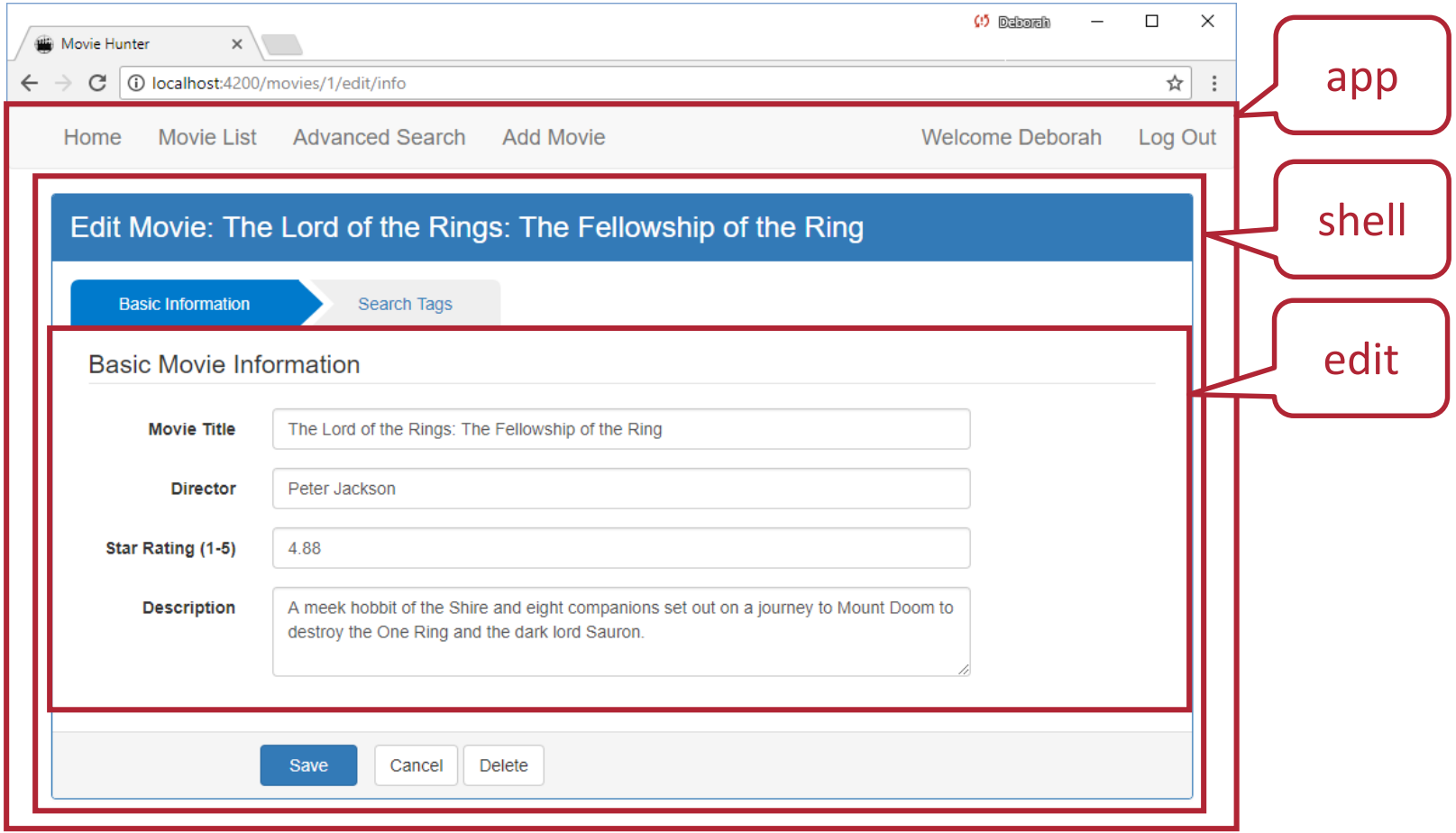
But for AOT …

app-routing.module.ts

```
export function _movieModuleLoader() {
   return MovieModule;
}
...
{
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies', loadChildren: _movieModuleLoader }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com



ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Lazy Loading

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

ANGULAR MIX

From: Angular Routing course on Pluralsight

© AngularMIX All rights reserved.
https://www.angularmix.com

Preparing for Lazy Loading

Use a feature module

movie.module.ts

```
@NgModule({
  imports: [
    SharedModule,
    RouterModule.forChild([...])
  ],
  declarations: [
    MovieListComponent,
    MovieDetailComponent,
    MovieEditComponent, ...
  ],
  providers: [ MovieService, ... ]
})
export class MovieModule {}
```

Preparing for Lazy Loading

Use a feature module

Do not import the feature module in another module

app.module.ts

```
@NgModule({
  imports: [
    BrowserModule,
    HttpClientModule,
    MovieModule,
    RoutingModule.forRoot([...])
  ],
  declarations: [
    AppComponent,
    WelcomeComponent,
    PageNotFoundComponent
  ],
  bootstrap: [ AppComponent ]
})
export class AppModule { }
```

Preparing for Lazy Loading

Use a feature module

Do not import the feature module in another module

Group routes under a single parent

product.module.ts

```
RouterModule.forChild([
  {
    path: 'movies',
    children: [
      {
        path: '',
        component: MovieListComponent
      },
      {
        path: ':id',
        component: MovieDetailComponent
      }
    ]
  }
])
```

Preparing for Lazy Loading

Use a feature module

Do not import the feature module in another module

Group routes under a single parent

Remove the parent **`path`** and **`children`**

product.module.ts

```
RouterModule.forChild([
  {
    path: 'movies',
    children: [
      {
        path: '',
        component: MovieListComponent
      },
      {
        path: ':id',
        component: MovieDetailComponent
      }
    ]
  }
])
```

Resulting Feature Module

movie.module.ts

```
{ path: '', component: MovieListComponent },
{ path: ':id', component: MovieDetailComponent },
{ path: ':id/edit', component: MovieEditComponent,
    children: [
      { path: '', redirectTo: 'info', pathMatch: 'full' },
      { path: 'info', component: MovieEditInfoComponent },
      { path: 'tags', component: MovieEditTagsComponent }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Use loadChildren

app-routing.module.ts

```
{
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies',
        loadChildren: () => MovieModule
      }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Use loadChildren

app-routing.module.ts

```
{
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies',
        loadChildren: './movies/movie.module#MovieModule'
      }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Guarding all Feature Routes

app-routing.module.ts

```
{
    path: '', component: ShellComponent,
    children: [
      { path: 'welcome', component: WelcomeComponent },
      { path: 'movies',
        canActivate: [AuthGuard],
        loadChildren: './movies/movie.module#MovieModule'
      }
    ]
}, ...
```

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Demo

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Routing Adventures

- To menu or not to menu
- Data, data, data
- Preventing partial page display
- I'm waiting …
- Guards at the ready
- Keeping tabs
- Lazy loading

https://app.pluralsight.com/library/courses/angular-routing

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com

Please use EventsXD to fill out a session evaluation.

Thank you!

ANGULAR MIX

© AngularMIX All rights reserved.
https://www.angularmix.com