

Client Side Scripting

URLs

GitHub Repository	https://github.com/mandyfarrugia/mf_swd62b_css
Remote Website	https://mf-swd62b-css.onrender.com/

Screenshots

KU2.3 - Running the provided backend

```
Mandy@DESKTOP-S43VD18 MINGW64 ~/Documents/mf_swd62b_css/backend (main)
● $ npm install

added 67 packages, and audited 68 packages in 3s

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

found 0 vulnerabilities
❗
Mandy@DESKTOP-S43VD18 MINGW64 ~/Documents/mf_swd62b_css/backend (main)
○ $ npm start

> record_store_backend@1.0.0 start
> node server.js

Record Shop API listening on http://localhost:3000
█
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

● mandyfarrugia@Mandys-Mac-mini mf_swd62b_css % cd backend
● mandyfarrugia@Mandys-Mac-mini backend % npm install

added 67 packages, and audited 68 packages in 1s

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

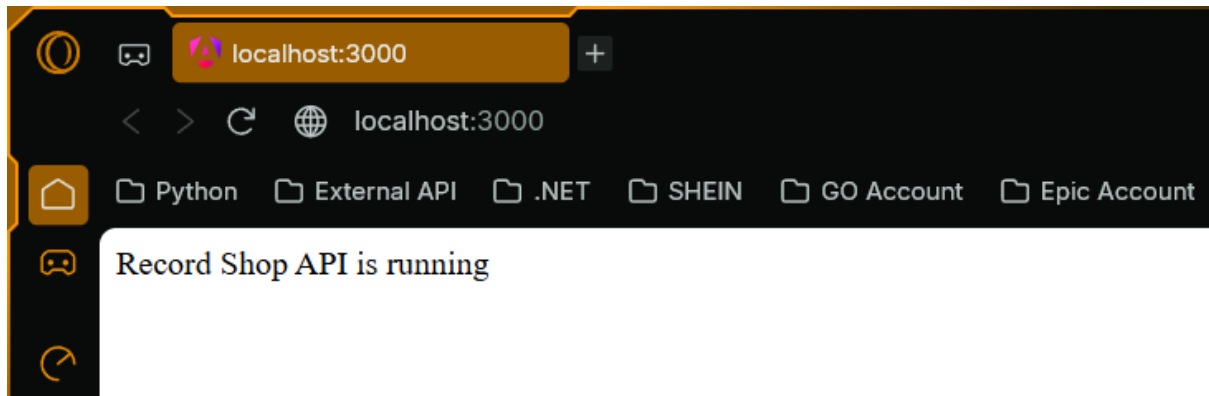
found 0 vulnerabilities
○ mandyfarrugia@Mandys-Mac-mini backend % npm start

> record_store_backend@1.0.0 start
> node server.js

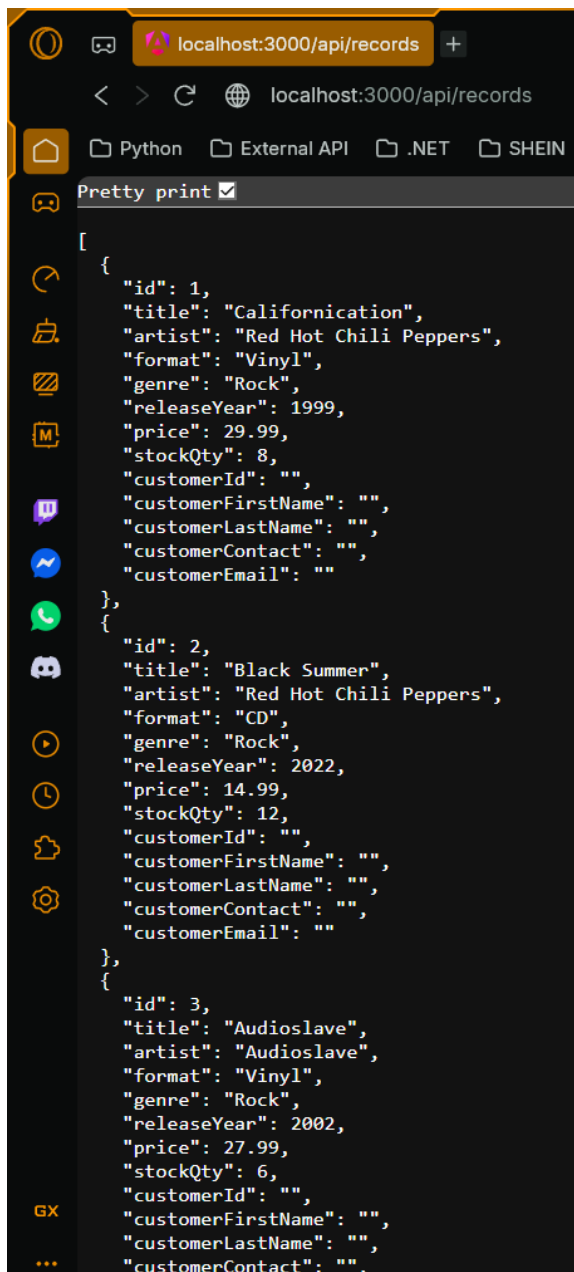
Record Shop API listening on http://localhost:3000
█
```

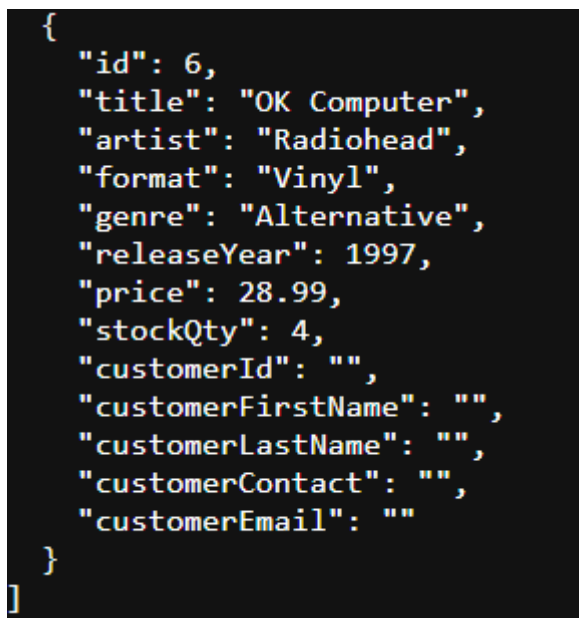
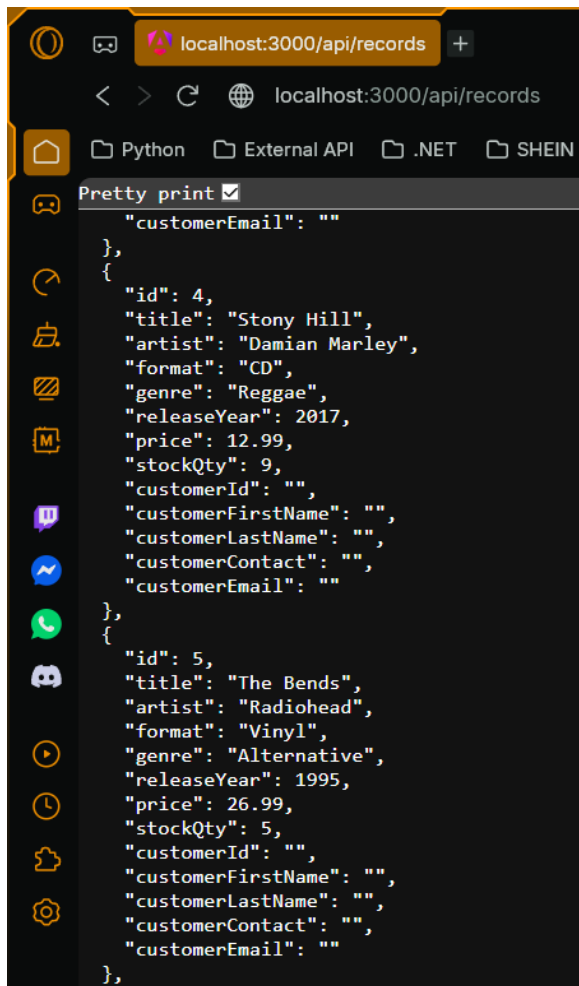
KU2.3 - Accessing the API's documentation in the browser

Health Check



Records





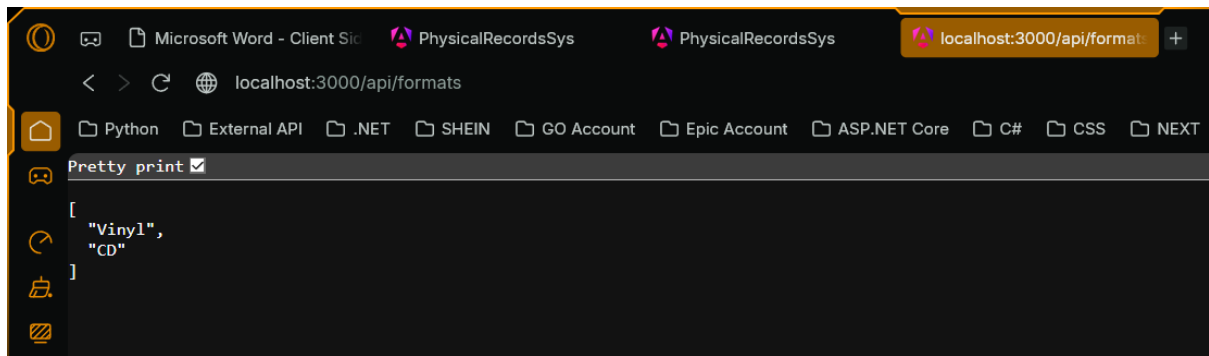
```
Brave File Edit View History Bookmarks Profiles Tab Window Help
localhost:3000/api/records x +
localhost:3000/api/records
Pretty print ☒
[
  {
    "id": 1,
    "title": "Californication",
    "artist": "Red Hot Chili Peppers",
    "format": "Vinyl",
    "genre": "Rock",
    "releaseYear": 1999,
    "price": 29.99,
    "stockQty": 8,
    "customerId": "",
    "customerFirstName": "",
    "customerLastName": "",
    "customerContact": "",
    "customerEmail": ""
  },
  {
    "id": 2,
    "title": "Black Summer",
    "artist": "Red Hot Chili Peppers",
    "format": "CD",
    "genre": "Rock",
    "releaseYear": 2022,
    "price": 14.99,
    "stockQty": 12,
    "customerId": "",
    "customerFirstName": "",
    "customerLastName": "",
    "customerContact": "",
    "customerEmail": ""
  },
  {
    "id": 3,
    "title": "Audioslave",
    "artist": "Audioslave",
    "format": "Vinyl",
    "genre": "Rock",
    "releaseYear": 2002,
    "price": 27.99,
    "stockQty": 6,
    "customerId": "",
    "customerFirstName": "",
    "customerLastName": "",
    "customerContact": "",
    "customerEmail": ""
  },
  {
    "id": 4,
    "title": "Stony Hill",
    "artist": "Damian Marley",
    "format": "CD",
    "genre": "Reggae",
    "releaseYear": 2017,
    "price": 12.99,
    "stockQty": 9,
    "customerId": "",
    "customerFirstName": ""
  }
]
```

```
Apple Preview File Edit View Go Tools Window Help
localhost:3000/api/records x +
localhost:3000/api/records
Pretty print
{
  "format": "Vinyl",
  "genre": "Rock",
  "releaseYear": 2002,
  "price": 27.99,
  "stockQty": 6,
  "customerId": "",
  "customerFirstName": "",
  "customerLastName": "",
  "customerContact": "",
  "customerEmail": ""
},
{
  "id": 4,
  "title": "Stony Hill",
  "artist": "Damian Marley",
  "format": "CD",
  "genre": "Reggae",
  "releaseYear": 2017,
  "price": 12.99,
  "stockQty": 9,
  "customerId": "",
  "customerFirstName": "",
  "customerLastName": "",
  "customerContact": "",
  "customerEmail": ""
},
{
  "id": 5,
  "title": "The Bends",
  "artist": "Radiohead",
  "format": "Vinyl",
  "genre": "Alternative",
  "releaseYear": 1995,
  "price": 26.99,
  "stockQty": 5,
  "customerId": "",
  "customerFirstName": "",
  "customerLastName": "",
  "customerContact": "",
  "customerEmail": ""
},
{
  "id": 6,
  "title": "OK Computer",
  "artist": "Radiohead",
  "format": "Vinyl",
  "genre": "Alternative",
  "releaseYear": 1997,
  "price": 28.99,
  "stockQty": 4,
  "customerId": "",
  "customerFirstName": "",
  "customerLastName": "",
  "customerContact": "",
  "customerEmail": ""
}
}
```

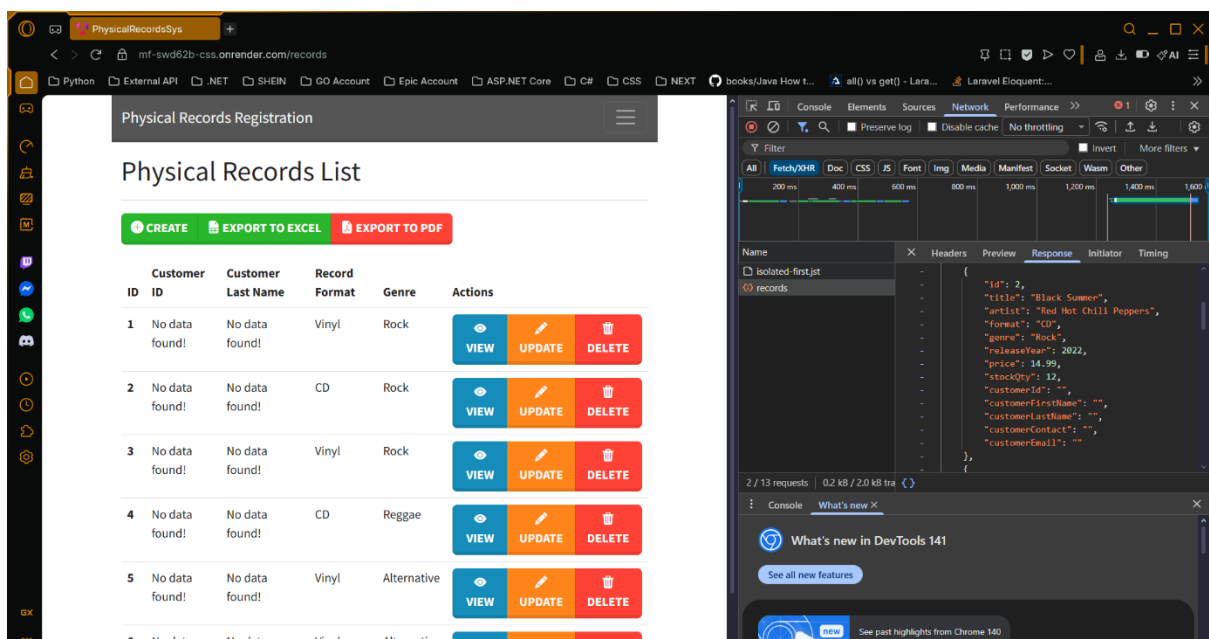
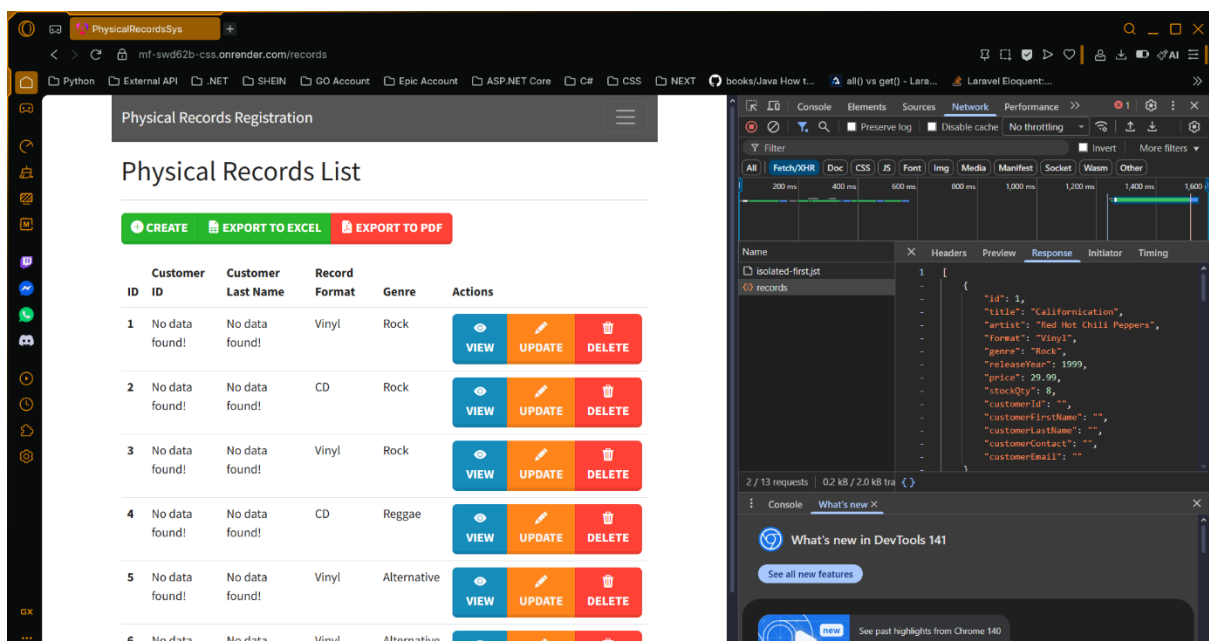
Genres

```
Microsoft Word - Client Side PhysicalRecordsSys PhysicalRecordsSys localhost:3000/api/genres +
localhost:3000/api/genres
Python External API .NET SHEIN GO Account Epic Account ASP.NET Core C# CSS NEXT
Pretty print
[
  "Rock",
  "Pop",
  "Jazz",
  "Hip-Hop",
  "Classical",
  "Electronic"
]
```

Formats



KU2.3 - Execute the GET request to retrieve all records from within the API documentation using the version of the API that enforces authentication



PhysicalRecordsSys

mf-swd62b-css.onrender.com/records

Physical Records Registration

Physical Records List

CREATE EXPORT TO EXCEL EXPORT TO PDF

Customer ID	Customer Last Name	Record Format	Genre	Actions	
1	No data found!	No data found!	Vinyl	Rock	VIEW UPDATE DELETE
2	No data found!	No data found!	CD	Rock	VIEW UPDATE DELETE
3	No data found!	No data found!	Vinyl	Rock	VIEW UPDATE DELETE
4	No data found!	No data found!	CD	Reggae	VIEW UPDATE DELETE
5	No data found!	No data found!	Vinyl	Alternative	VIEW UPDATE DELETE
6	No data found!	No data found!	Vinyl	Alternative	VIEW UPDATE DELETE

2 / 13 requests | 0.2 kB / 2.0 kB tra

What's new in DevTools 141

See past highlights from Chrome 140

Network

Fetch/XHR

records

```
{
  "id": 3,
  "title": "Audioslave",
  "artist": "Audioslave",
  "format": "Vinyl",
  "genre": "Rock",
  "releaseYear": 2002,
  "price": 27.99,
  "stockQty": 6,
  "customerId": "",
  "customerFirstName": "",
  "customerLastName": "",
  "customerContact": "",
  "customerEmail": ""
}
```

PhysicalRecordsSys

mf-swd62b-css.onrender.com/records

Physical Records Registration

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3	No data found!	No data found!	Vinyl	Rock	VIEW UPDATE DELETE
4	No data found!	No data found!	CD	Reggae	VIEW UPDATE DELETE
5	No data found!	No data found!	Vinyl	Alternative	VIEW UPDATE DELETE
6	No data found!	No data found!	Vinyl	Alternative	VIEW UPDATE DELETE

2 / 13 requests | 0.2 kB / 2.0 kB tra

What's new in DevTools 141

See past highlights from Chrome 140

Network

Fetch/XHR

records

```
{
  "id": 4,
  "title": "Stony Hill",
  "artist": "Damian Marley",
  "format": "CD",
  "genre": "Reggae",
  "releaseYear": 2017,
  "price": 12.99,
  "stockQty": 9,
  "customerId": "",
  "customerFirstName": "",
  "customerLastName": "",
  "customerContact": "",
  "customerEmail": ""
}
```

PhysicalRecordsSys

mf-swd62b-css.onrender.com/records

PythonExternal API.NETSHEINGO AccountEpic AccountASP.NET CoreC#CSSNEXTbooks/Java How t...all() vs get() - Lara...Laravel Eloquent...

Physical Records Registration

Physical Records List

CREATEEXPORT TO EXCELEXPORT TO PDF

Customer ID	Customer Last Name	Record Format	Genre	Actions	
1	No data found!	No data found!	Vinyl	Rock	VIEWUPDATEDELETE
2	No data found!	No data found!	CD	Rock	VIEWUPDATEDELETE
3	No data found!	No data found!	Vinyl	Rock	VIEWUPDATEDELETE
4	No data found!	No data found!	CD	Reggae	VIEWUPDATEDELETE
5	No data found!	No data found!	Vinyl	Alternative	VIEWUPDATEDELETE
6	No data found!	No data found!	Vinyl	Alternative	VIEWUPDATEDELETE

2 / 13 requests0.2 kB / 2.0 kB tra

What's new in DevTools 141

See all new features

See past highlights from Chrome 140

PhysicalRecordsSys

mf-swd62b-css.onrender.com/records

PythonExternal API.NETSHEINGO AccountEpic AccountASP.NET CoreC#CSSNEXTbooks/Java How t...all() vs get() - Lara...Laravel Eloquent...

Physical Records Registration

Physical Records List

CREATEEXPORT TO EXCELEXPORT TO PDF

Customer ID	Customer Last Name	Record Format	Genre	Actions	
1	No data found!	No data found!	Vinyl	Rock	VIEWUPDATEDELETE
2	No data found!	No data found!	CD	Rock	VIEWUPDATEDELETE
3	No data found!	No data found!	Vinyl	Rock	VIEWUPDATEDELETE
4	No data found!	No data found!	CD	Reggae	VIEWUPDATEDELETE
5	No data found!	No data found!	Vinyl	Alternative	VIEWUPDATEDELETE
6	No data found!	No data found!	Vinyl	Alternative	VIEWUPDATEDELETE

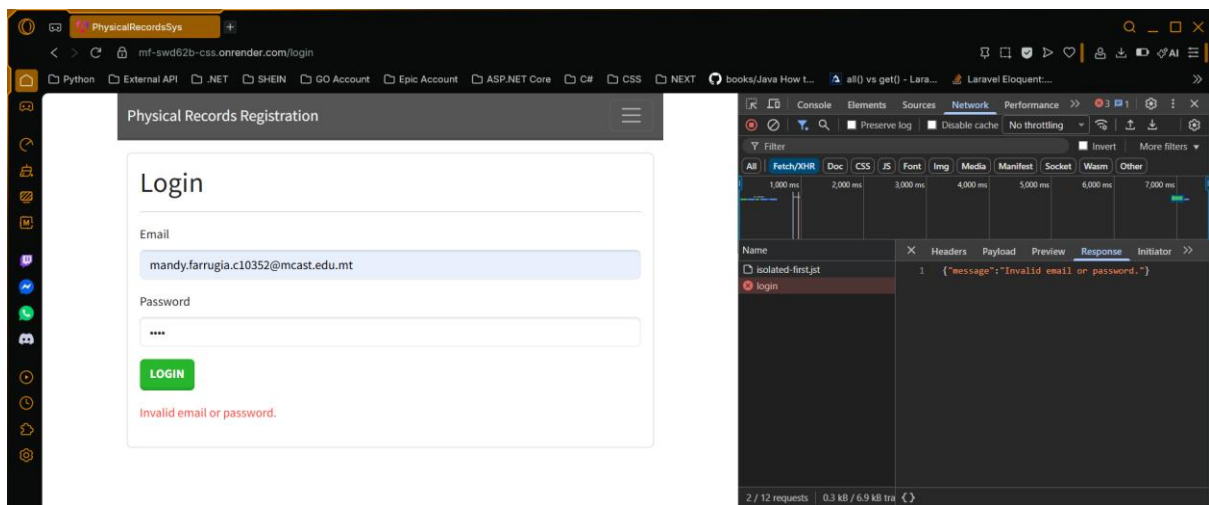
2 / 13 requests0.2 kB / 2.0 kB tra

What's new in DevTools 141

See all new features

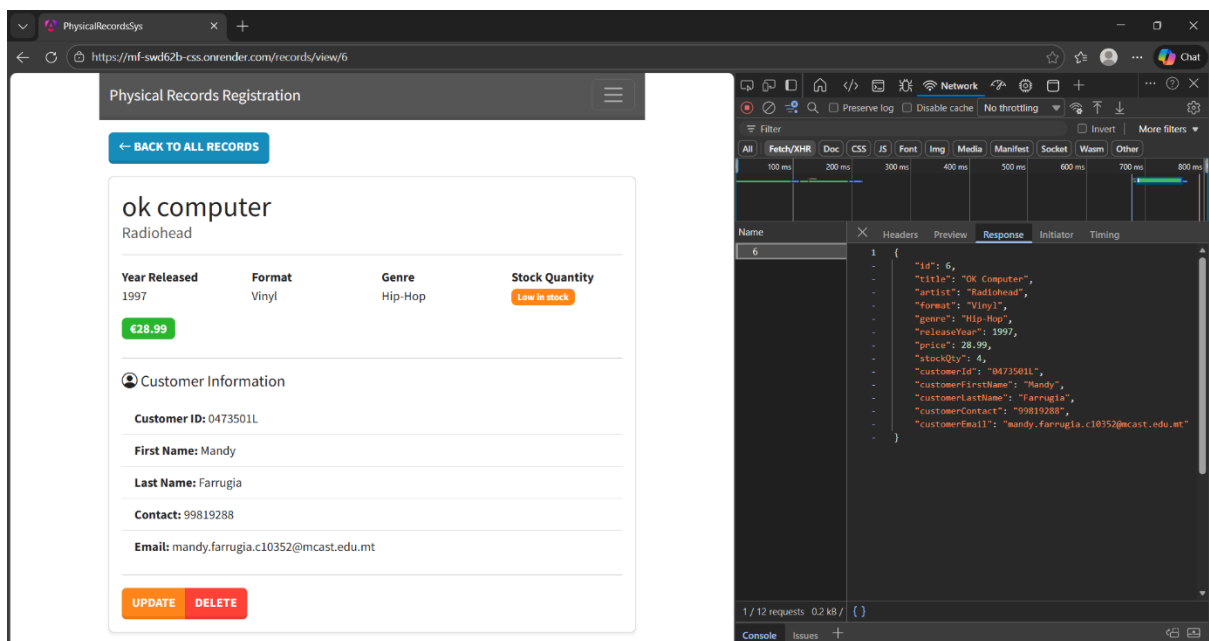
See past highlights from Chrome 140

SE2.2 – Display error message when login fails



SE1.1 - Develop a web application front-end using common concepts such as data binding, events, and methods

Viewing individual record



Editing existing record

The screenshot shows the 'Physical Records Registration' web application. The user is logged in as 'Alex Admin (admin@recordshop.com)'. The page title is 'Edit existing physical record'. The form contains the following fields:

- Title: OK Computer
- Artist: Radiohead
- Format: Vinyl
- Genre: Classical
- Release Year: 1997
- Price (Do not include the currency sign!): 28.99

The Chrome DevTools Network tab is open, showing a request to 'records' with a response body containing a list of records. The response is a JSON array with one object:

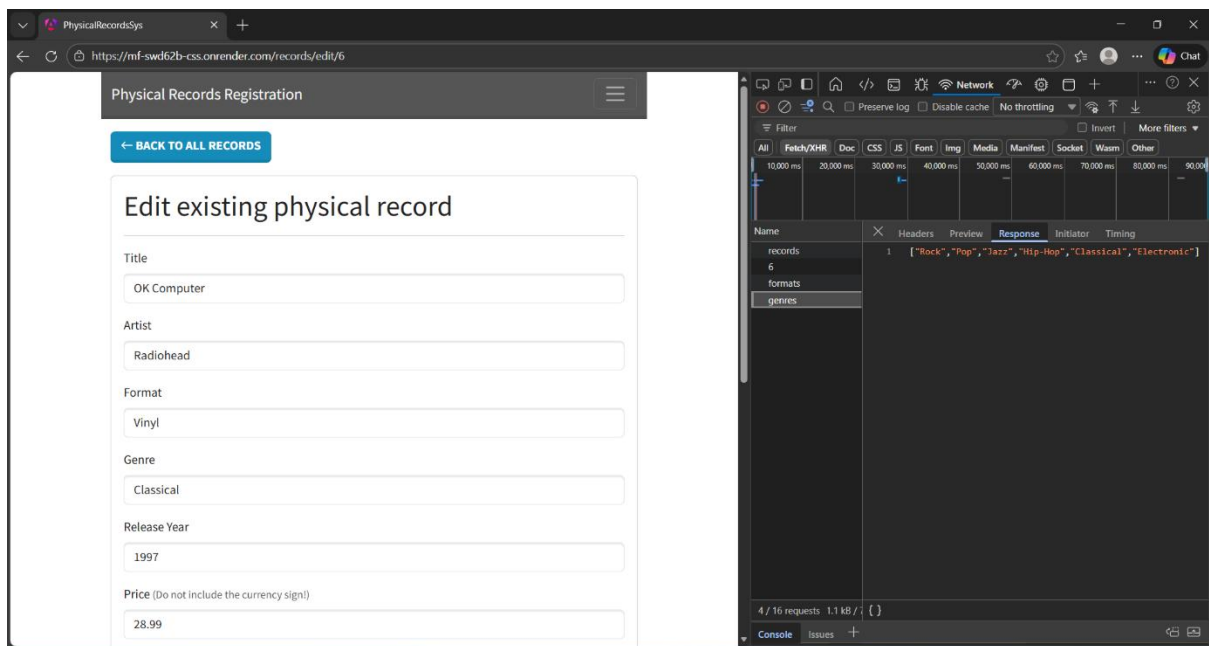
```
{  "id": 6,  "title": "OK Computer",  "artist": "Radiohead",  "format": "Vinyl",  "genre": "Alternative",  "releaseYear": 1997,  "price": 28.99,  "stockQty": 4,  "customerId": "",  "customerFirstName": "",  "customerLastName": "",  "customerContact": "",  "customerEmail": ""}
```

The screenshot shows the 'Physical Records Registration' web application. The user is logged in as 'Alex Admin (admin@recordshop.com)'. The page title is 'Edit existing physical record'. The form contains the following fields:

- Title: OK Computer
- Artist: Radiohead
- Format: Vinyl
- Genre: Classical
- Release Year: 1997
- Price (Do not include the currency sign!): 28.99

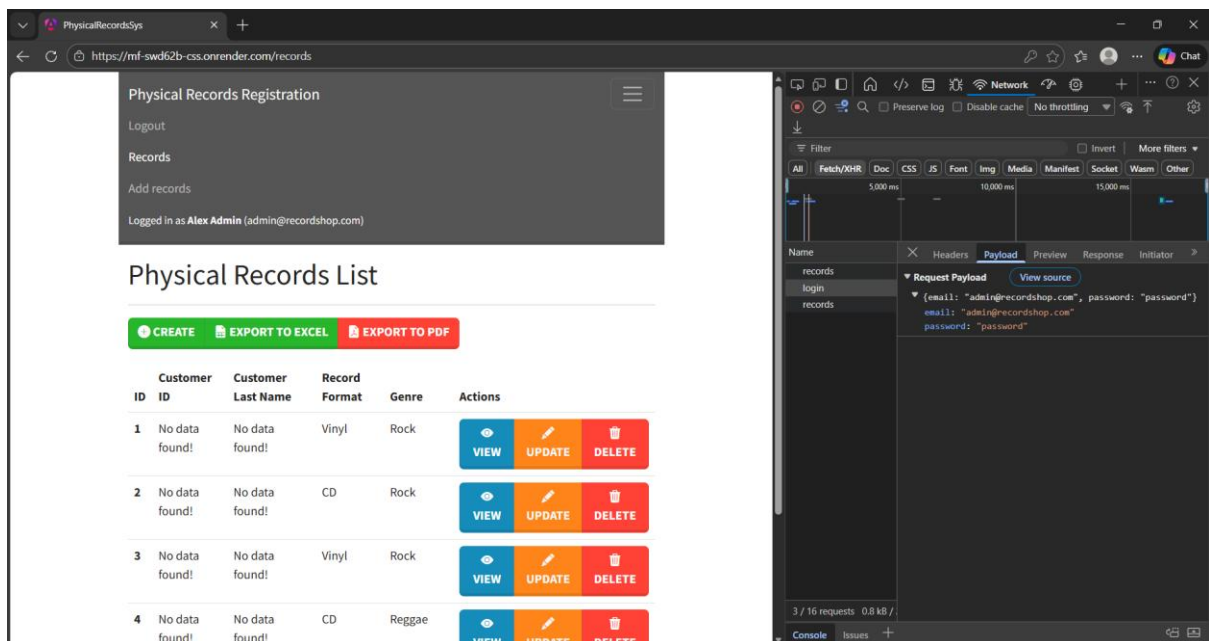
The Chrome DevTools Network tab is open, showing a request to 'records' with a response body containing a list of records. The response is a JSON array with one object:

```
[{"id": 6, "title": "OK Computer", "artist": "Radiohead", "format": "Vinyl", "genre": "Alternative", "releaseYear": 1997, "price": 28.99, "stockQty": 4, "customerId": "", "customerFirstName": "", "customerLastName": "", "customerContact": "", "customerEmail": ""}]
```



SE2.2 – Redirect user to list of records if login succeeds

Payload



Response

The screenshot shows a web application interface on the left and a network tool on the right. The web application, titled 'Physical Records Registration', has a sidebar with 'Logout', 'Records', and 'Add records'. It shows the user is logged in as 'Alex Admin (admin@recordshop.com)'. Below this is a 'Physical Records List' with buttons for 'CREATE', 'EXPORT TO EXCEL', and 'EXPORT TO PDF'. A table lists records with columns for ID, Customer ID, Last Name, Record Name, Format, Genre, and Actions (VIEW, UPDATE). The table contains four rows, all with 'No data found!' in the first two columns.

The network tool on the right shows a response from the 'records' endpoint. The response is a JSON array with one object: `[{"id": 3, "name": "Alex Admin", "email": "admin@recordshop.com", "role": "admin"}]`.

KU2.4 - Implement the necessary functionality to ensure that a user is only able to go to a particular route if he/she has the appropriate user role

```
frontend > physical_records_sys > src > guards > TS role-guard.ts > roleGuard
You, 1 hour ago | 2 authors (You and one other)
1 import { inject } from '@angular/core';
2 import { CanActivateFn, Router } from '@angular/router';
3 import { AuthenticationService } from '../services/authentication-service';
4
5 export const roleGuard: CanActivateFn = (route, state) => {
6   const authenticationService = inject(AuthenticationService);
7   const router = inject(Router);
8
9   const allowedRoles = route.data['roles'] as string[]; //Fetch the roles metadata specified within data in the routing configuration.
10
11   if (!authenticationService.isAuthenticated()) {
12     router.navigate(['/login']); //Override default navigation by redirecting user to the login page instead if they are not yet authenticated.
13     return false; //Block navigation to the path specified in routerLink.
14   }
15
16   //If no roles are specified (hence accessible by either anonymous or any logged in user) or any role can access this route, then allow access.
17   if (!allowedRoles || allowedRoles.includes(authenticationService.user!.role)) {
18     return true;
19   }
20
21   router.navigate(['/records']); //You, last week + Guarding seems to be working. ...
22   return false; //Block navigation to the path specified in routerLink.
23 };
```

KU2.4 - Ensure that buttons are only enabled if the user has the required user role associated with the functionality of the button

Clerk

PhysicalRecordsSys

https://mf-swd62b-css.onrender.com/records

Physical Records Registration

Logout

Records

Add records

Logged in as Chris Clerk (clerk@recordshop.com)

Physical Records List

+ CREATE

EXPORT TO EXCEL

EXPORT TO PDF

ID	Customer ID	Customer Last Name	Record Format	Genre	Actions
1	No data found!	No data found!	Vinyl	Rock	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
2	No data found!	No data found!	CD	Rock	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
3	No data found!	No data found!	Vinyl	Rock	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
4	No data found!	No data found!	CD	Reggae	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
5	No data found!	No data found!	Vinyl	Alternative	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
6	No data found!	No data found!	Vinyl	Alternative	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>

Manager

PhysicalRecordsSys

https://mf-swd62b-css.onrender.com/records

Physical Records Registration

Logout

Records

Add records

Logged in as Mandy Manager (manager@recordshop.com)

Physical Records List

+ CREATE

EXPORT TO EXCEL

EXPORT TO PDF

ID	Customer ID	Customer Last Name	Record Format	Genre	Actions
1	No data found!	No data found!	Vinyl	Rock	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
2	No data found!	No data found!	CD	Rock	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
3	No data found!	No data found!	Vinyl	Rock	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
4	No data found!	No data found!	CD	Reggae	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
5	No data found!	No data found!	Vinyl	Alternative	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>
6	No data found!	No data found!	Vinyl	Alternative	<div><div>VIEW</div><div>UPDATE</div><div>DELETE</div></div>

Administrator

The screenshot shows a web browser window with the URL `https://mf-swd62b-css.onrender.com/records`. The page title is "Physical Records Registration". The navigation bar includes "Logout", "Records", and "Add records". The user is logged in as "Alex Admin (admin@recordshop.com)".

Physical Records List

Buttons: [+ CREATE](#), [EXPORT TO EXCEL](#), [EXPORT TO PDF](#)

ID	Customer ID	Customer Last Name	Record Format	Genre	Actions
1	No data found!	No data found!	Vinyl	Rock	VIEW UPDATE DELETE
2	No data found!	No data found!	CD	Rock	VIEW UPDATE DELETE
3	No data found!	No data found!	Vinyl	Rock	VIEW UPDATE DELETE
4	No data found!	No data found!	CD	Reggae	VIEW UPDATE DELETE
5	No data found!	No data found!	Vinyl	Alternative	VIEW UPDATE DELETE
6	No data found!	No data found!	Vinyl	Alternative	VIEW UPDATE DELETE

KU4.1 – Enabling routing

```
frontend > physical_records_sys > src > app > TS app.config.ts > ...
"Mandy, 2 weeks ago | 2 authors (You and one other)"
1 import { ApplicationConfig, provideBrowserGlobalErrorListeners } from '@angular/core';
2 import { provideRouter } from '@angular/router';
3
4 import { routes } from './app.routes';
5 import { provideHttpClient } from '@angular/common/http';
6
7 export const appConfig: ApplicationConfig = {
8   providers: [
9     provideBrowserGlobalErrorListeners(),
10    provideRouter(routes),
11    provideHttpClient()
12  ]
13 };
```

```

1 import { Routes } from '@angular/router';
2 import { RecordsListComponent } from '../components/records-list-component/records-list-component';
3 import { LoginComponent } from '../components/login-component/login-component';
4 import { RecordsAddNewComponent } from '../components/records-add-new-component/records-add-new-component';
5 import { roleGuard } from '../guards/role-guard';
6 import { RecordsEditComponent } from '../components/records-edit-component/records-edit-component';
7 import { RecordIndividualViewComponent } from '../components/record-individual-view-component/record-individual-view-component';
8 import { NotFoundComponent } from '../components/not-found-component/not-found-component';
9
10 export const routes: Routes = [
11   { path: '', redirectTo: 'records', pathMatch: 'full' },
12   { path: 'login', component: LoginComponent },
13   {
14     path: 'records',
15     component: RecordsListComponent,
16     canActivate: [roleGuard],
17     data: { roles: ['clerk', 'manager', 'admin'] }
18   },
19   {
20     path: 'records/view/:id',
21     component: RecordIndividualViewComponent,
22     canActivate: [roleGuard],
23     data: { roles: ['clerk', 'manager', 'admin'] }
24   },
25   {
26     path: 'records/add-new',
27     component: RecordsAddNewComponent,
28     canActivate: [roleGuard],
29     data: { roles: ['clerk', 'manager', 'admin'] }
30   },
31   {
32     path: 'records/edit/:id',
33     component: RecordsEditComponent,
34     canActivate: [roleGuard],
35     data: { roles: ['manager', 'admin'] }
36   },

```

```

32     path: 'records/edit/:id',
33     component: RecordsEditComponent,
34     canActivate: [roleGuard],
35     data: { roles: ['manager', 'admin'] }
36   },
37   { path: 'error-404-not-found', component: NotFoundComponent },
38   { path: '**', component: NotFoundComponent, pathMatch: 'full' }
39 ];

```

KU4.1 - Use routing to control which component is rendered in the content area of the main component

```

frontend > physical_records_sys > src > app > <> app.html > div.container.mt-3 > router-outlet
You, last week | 2 authors (You and one other) | Go to component
1 <header-component></header-component>
2 <div class="container mt-3">
3   <router-outlet></router-outlet> You, last week • Working on the view component,
4 </div>

```

AA3.2 - Built-in lowercase pipe

```
frontend > physical_records_sys > src > components > record-individual-view-component > TS record-individual-view-component.ts > RecordIndividualViewComponent
You, 11 hours ago | 1 author (You)
1 import { StocksService } from '../services/stocks-service';
2 import { AuthenticationService } from '../services/authentication-service';
3 import { PhysicalRecordDto } from '../dtos/physical-records-dto';
4 import { Component, OnInit, signal, WritableSignal } from '@angular/core';
5 import { PhysicalRecordsApiService } from '../services/physical-records-api-service';
6 import { CurrencyPipe, LowerCasePipe, NgClass } from '@angular/common';
7 import { ActivatedRoute, Router, RouterLink, RouterModule } from '@angular/router';
8 import { StockStatusPipe } from '../pipes/stock-status-pipe';
9 import { PhysicalRecordsFrontendService } from '../services/physical-records-frontend-service';
10 import { CurrentRouteService } from '../services/current-route-service';
11
12 @Component({
13   standalone: true,
14   selector: 'record-individual-view-component',
15   imports: [RouterLink, RouterModule, CurrencyPipe, LowerCasePipe, StockStatusPipe, NgClass],
16   templateUrl: './record-individual-view-component.html',
17   styleUrls: ['./record-individual-view-component.css'],
18 })
You, last week • Prepared component to view individual records. ...
```

```
frontend > physical_records_sys > src > components > record-individual-view-component > record-individual-view-component.html >
You, 5 hours ago | 1 author (You) | Go to component
1 <div class="mb-3">
2   <button class="btn btn-primary" type="button" routerLink="/records">
3     <i class="bi bi-arrow-left"></i>
4     Back to all records
5   </button>
6 </div>
7 <div class="card shadow-sm">
8   <div class="card-body">
9     <div class="mb-3">
10      <h1 class="card-title mb-0">
11        {{ this.recordById()?.title | lowercase }}
12      </h1>
```

AA3.2 – Custom pipe implementation

```
frontend > physical_records_sys > src > pipes > TS stock-status-pipe.ts > StockStatusPipe
You, 6 days ago | 1 author (You)
1 import { StocksService } from '../services/stocks-service';
2 import { Pipe, PipeTransform } from '@angular/core';
3
4 @Pipe({
5   name: 'stockStatus',
6 })
7 export class StockStatusPipe implements PipeTransform {
8   constructor(private stocksService: StocksService) {}
9
10   transform(stockQuantity: number | undefined): string | null {
11     if(stockQuantity === undefined) return null;
12     return this.stocksService.getStatusLabel(stockQuantity);
13   }
14 }
```


AA3.2 – Custom pipe usage in user interface

```
frontend > physical_records_sys > src > components > record-individual-view-component > record-individual-view-component.html > div.card.shadow-sm > div.card-body >
31 <div class="col-md-3">
32 <strong>Stock Quantity</strong>
33 <p class="mb-0"><span [ngClass]="this.getCssClassBasedOnStock(this.recordById()?.stockQty)">{{ this.recordById()?.stockQty |
34 </div>
```

AA3.4 - Implement a data transfer object to model a registration

```
TS physical-records-dto.ts X
frontend > physical_records_sys > src > dtos > TS physical-records-dto.ts > PhysicalRecordDto > customerContact
You, last week | 2 authors (You and one other)
1 export interface PhysicalRecordDto {
2   id: number;
3   title: string;
4   artist: string;
5   format: string;
6   genre: string;
7   releaseYear: number;
8   price: number;
9   stockQty: number;
10  customerId: string;
11  customerFirstName: string;
12  customerLastName: string;
13  customerContact: string;
14  customerEmail: string;
15 }
```

AA3.4 – Implement the necessary HTTP requests

```
frontend > physical_records_sys > src > services > TS physical-records-api-service.ts > PhysicalRecordsApiService > updatePhysicalRecord
You, 23 hours ago | 3 authors ("Mandy and others")
1 import { environment } from '../environments/environment';
2 import { HttpClient } from '@angular/common/http';
3 import { Injectable } from '@angular/core';
4 import { Observable } from 'rxjs';
5 import { PhysicalRecordDto } from '../dtos/physical-records-dto';
6
7 @Injectable({
8   providedIn: 'root',
9 })
10 export class PhysicalRecordsApiService {
11   private readonly endpoint: string = `${environment.apiUrl}/records`;
12
13   constructor(private http: HttpClient) {}
14
15   public getPhysicalRecords(): Observable<PhysicalRecordDto[]> {
16     return this.http.get<PhysicalRecordDto[]>(this.endpoint);
17   }
18
19   public getPhysicalRecordById(id : number) : Observable<PhysicalRecordDto> {
20     return this.http.get<PhysicalRecordDto>(`${this.endpoint}/${id}`);
21   }
22
23   public createPhysicalRecord(record : PhysicalRecordDto) : Observable<PhysicalRecordDto> {
24     return this.http.post<PhysicalRecordDto>(this.endpoint, record);
25   }
26
27   public updatePhysicalRecord(id : number, record : PhysicalRecordDto) : Observable<PhysicalRecordDto> {
28     return this.http.put<PhysicalRecordDto>(`${this.endpoint}/${id}`, record);
29   }
30
31   public deletePhysicalRecord(id : number) : Observable<void> {
32     return this.http.delete<void>(`${this.endpoint}/${id}`);
33   }
34 }
```

AA4.2 - An ID card number shall consist of a numeric string with an alphabetical character at the end

Customer ID

ID Number (for example, 0473501L)

ID must start with 0, contain 7 digits, and end with A, G, H, M, or L.

Customer ID

473501L

ID must start with 0, contain 7 digits, and end with A, G, H, M, or L.

Customer ID

0473501l

ID must start with 0, contain 7 digits, and end with A, G, H, M, or L.

Customer ID

0473501K

ID must start with 0, contain 7 digits, and end with A, G, H, M, or L.

AA4.2 - Contact number must be numeric, non-negative and at least 8 characters long

Customer Contact Number

Customer's phone number (for example, 99819288)

A valid contact number is required.

Customer Contact Number

-99819288

A valid contact number is required.

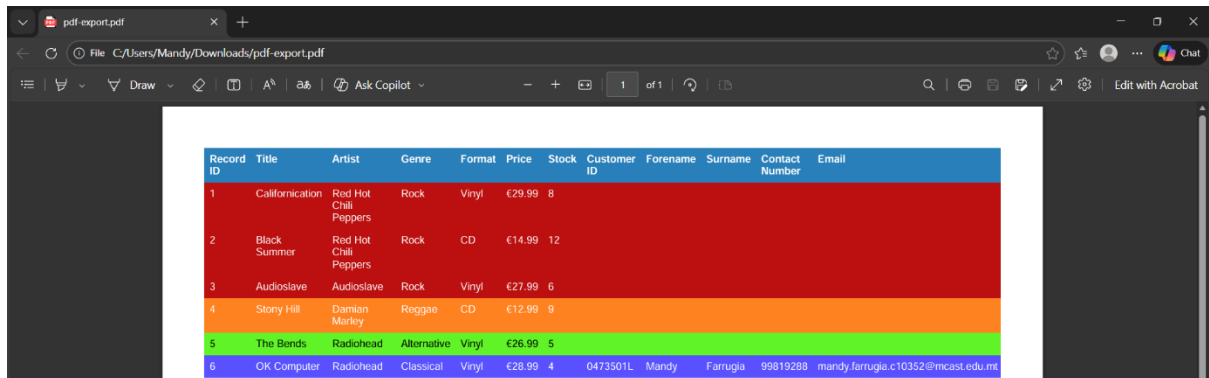
Customer Contact Number

9981928

A valid contact number is required.

SE2.1 – Exporting records

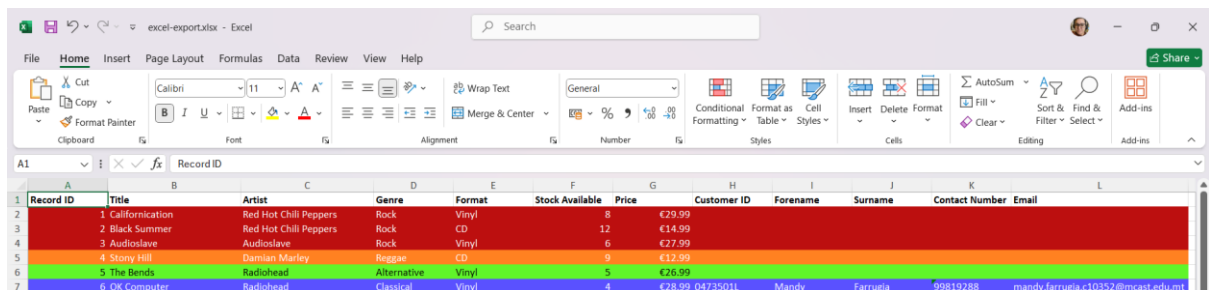
PDF



A screenshot of a PDF viewer window displaying a table of music records. The table has 12 columns: Record ID, Title, Artist, Genre, Format, Price, Stock, Customer ID, Forename, Surname, Contact Number, and Email. The records are color-coded by genre: Red for Rock, Orange for Reggae, Green for Alternative, and Blue for Classical.

Record ID	Title	Artist	Genre	Format	Price	Stock	Customer ID	Forename	Surname	Contact Number	Email
1	Californication	Red Hot Chili Peppers	Rock	Vinyl	€29.99	8					
2	Black Summer	Red Hot Chili Peppers	Rock	CD	€14.99	12					
3	Audioslave	Audioslave	Rock	Vinyl	€27.99	6					
4	Stony Hill	Damian Marley	Reggae	CD	€12.99	9					
5	The Bends	Radiohead	Alternative	Vinyl	€26.99	5					
6	OK Computer	Radiohead	Classical	Vinyl	€28.99	4	0473501L	Mandy	Farrugia	99819288	mandy.farrugia.c10352@mcast.edu.mt

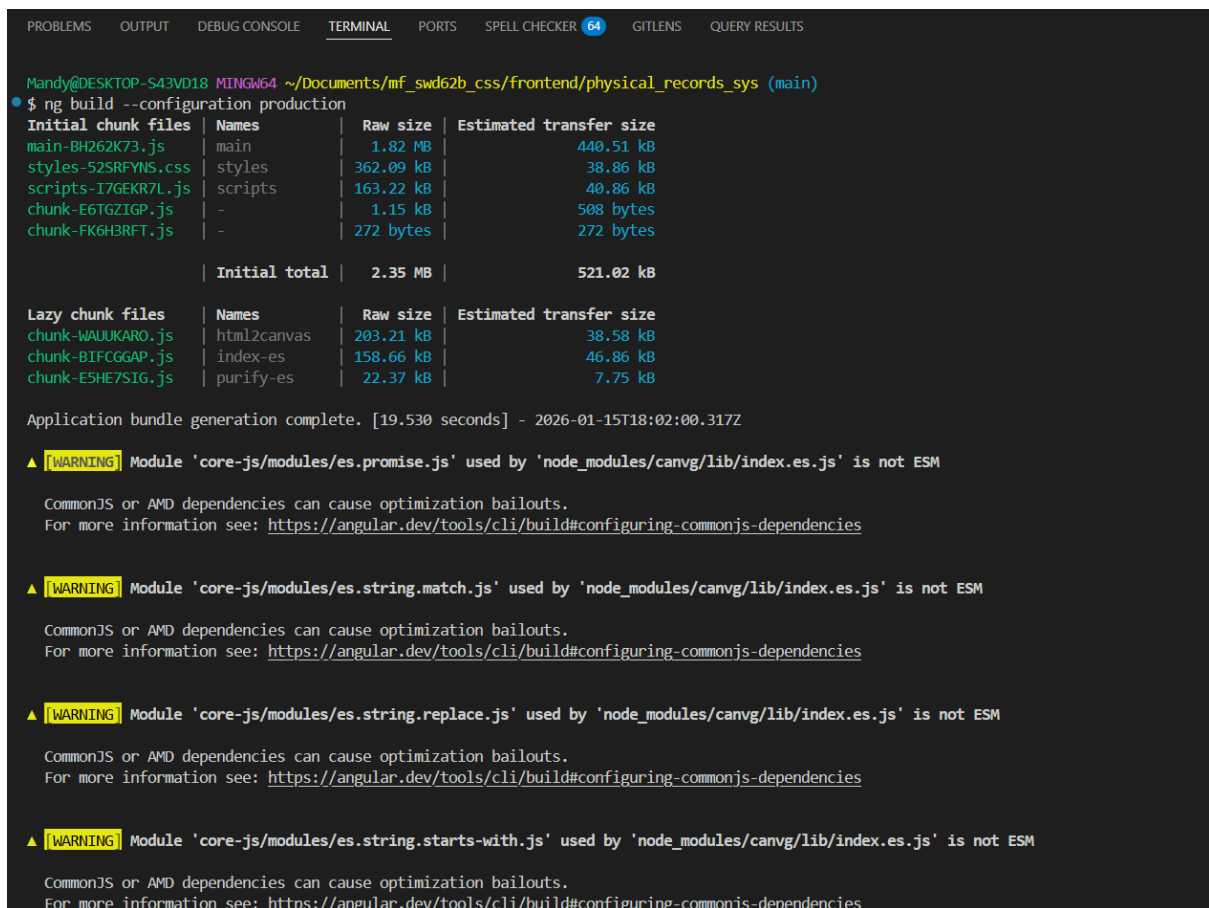
Excel



A screenshot of an Excel spreadsheet showing the same music records table. The data is organized into columns: Record ID, Title, Artist, Genre, Format, Stock Available, Price, Customer ID, Forename, Surname, Contact Number, and Email. The records are color-coded by genre: Red for Rock, Orange for Reggae, Green for Alternative, and Blue for Classical.

Record ID	Title	Artist	Genre	Format	Stock Available	Price	Customer ID	Forename	Surname	Contact Number	Email
1	Californication	Red Hot Chili Peppers	Rock	Vinyl	8	€29.99					
2	Black Summer	Red Hot Chili Peppers	Rock	CD	12	€14.99					
3	Audioslave	Audioslave	Rock	Vinyl	6	€27.99					
4	Stony Hill	Damian Marley	Reggae	CD	9	€12.99					
5	The Bends	Radiohead	Alternative	Vinyl	5	€26.99					
6	OK Computer	Radiohead	Classical	Vinyl	4	€28.99	0473501L	Mandy	Farrugia	99819288	mandy.farrugia.c10352@mcast.edu.mt

KU4.3 - Build the app optimized for production



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 64 GITLENS QUERY RESULTS

Mandy@DESKTOP-S43VD18 MINGW64 ~/Documents/mf_swd62b_css/frontend/physical_records_sys (main)
$ ng build --configuration production

Initial chunk files | Names | Raw size | Estimated transfer size
main-BH262K73.js | main | 1.82 MB | 440.51 kB
styles-52SRFYNS.css | styles | 362.09 kB | 38.86 kB
scripts-I7GEKR7L.js | scripts | 163.22 kB | 40.86 kB
chunk-E6TGZIGP.js | - | 1.15 kB | 508 bytes
chunk-FK6H3RFT.js | - | 272 bytes | 272 bytes

Initial total | 2.35 MB | 521.02 kB

Lazy chunk files | Names | Raw size | Estimated transfer size
chunk-WAUUKARO.js | html2canvas | 203.21 kB | 38.58 kB
chunk-BIFCGGAP.js | index-es | 158.66 kB | 46.86 kB
chunk-E5HE7STG.js | purify-es | 22.37 kB | 7.75 kB

Application bundle generation complete. [19.530 seconds] - 2026-01-15T18:02:00.317Z

▲ [WARNING] Module 'core-js/modules/es.promise.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: https://angular.dev/tools/cli/build#configuring-commonjs-dependencies

▲ [WARNING] Module 'core-js/modules/es.string.match.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: https://angular.dev/tools/cli/build#configuring-commonjs-dependencies

▲ [WARNING] Module 'core-js/modules/es.string.replace.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: https://angular.dev/tools/cli/build#configuring-commonjs-dependencies

▲ [WARNING] Module 'core-js/modules/es.string.starts-with.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: https://angular.dev/tools/cli/build#configuring-commonjs-dependencies
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 64 GITLENS QUERY RESULTS

▲ [WARNING] Module 'core-js/modules/es.string.starts-with.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.array.iterator.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/web.dom-collections.iterator.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.array.reduce.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.string.ends-with.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.string.split.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'raf' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 64 GITLENS QUERY RESULTS

▲ [WARNING] Module 'core-js/modules/es.string.trim.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'rgbcolor' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.array.index-of.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.string.includes.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.array.reverse.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'core-js/modules/es.regexp.to-string.js' used by 'node_modules/canvg/lib/index.es.js' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

▲ [WARNING] Module 'exceljs' used by 'src/components/records-list-component/records-list-component.ts' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: <https://angular.dev/tools/cli/build#configuring-commonjs-dependencies>

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  SPELL CHECKER 64  GITLENS  QUERY RESULTS

▲ [WARNING] Module 'file-saver' used by 'src/components/records-list-component/records-list-component.ts' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: https://angular.dev/tools/cli/build#configuring-commonjs-dependencies

▲ [WARNING] Module 'html2canvas' used by 'node_modules/jspdf/dist/jspdf.es.min.js' is not ESM


CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: https://angular.dev/tools/cli/build#configuring-commonjs-dependencies

▲ [WARNING] Module 'sweetalert2' used by 'src/services/alert-service.ts' is not ESM

CommonJS or AMD dependencies can cause optimization bailouts.
For more information see: https://angular.dev/tools/cli/build#configuring-commonjs-dependencies

Output location: C:\Users\Mandy\Documents\mf_swd62b_css\frontend\physical_records_sys\dist\physical_records_sys
```


KU4.3 – Use a free hosting service to host the Angular application



 WEB SERVICE

mf_swd62b_css Node Free [Upgrade your instance →](#)

Connect ▼

Manual Deploy ▼

Service ID: `srv-d5ienkd6ubrc738jto0` 

 `mandyfarrugia / mf_swd62b_css`  `main`

<https://mf-swd62b-css.onrender.com> 