

## PRACTICE

# Single Page App using an API

## Timing

Students could take around 1 month to complete it.

## Description

In this practice you have to implement a Single Page Application (without routing) that consumes a public API through AJAX requests.

The main goal of this webapp is to search and find information about currency exchanges using [a simple and open currency API](#)<sup>1</sup>. Our application should solve the following features:

- List all available currencies.
- Filter the currencies by a code / name.
- Show a currency detailed exchange information when clicking on it.
- Show detailed exchange information from a previous date.
- Add currencies to favourites in a persistent way.
- View and manage the user's favourite list.

To help you to achieve these goals, you can find a starter kit attached below. It contains a basic folder structure and the required HTML and CSS code for search box, currency list and currency detail screen.



**In the following lines you find detailed instructions for every requested feature.**

## Currency Exchange API

You can use the required API for this practice for free (without limits), and you can find the API's documentation here:

<https://github.com/fawazahmed0/currency-api#free-currency-rates-api>

As you can see, it only has 3 endpoints and probably you don't need to use all of them:

- 1) List all available currencies (code and name). Example:

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<sup>1</sup> <https://github.com/fawazahmed0/currency-api>

<https://cdn.jsdelivr.net/gh/fawazahmed0/currency-api@1/latest/currencies.json>

- 2) List detailed exchanges for a given currency code. Example for EURO:  
<https://cdn.jsdelivr.net/gh/fawazahmed0/currency-api@1/latest/currencies/eur.json>
- 3) List specific exchange for a pair of currency codes. Example for EUR/JPY:  
<https://cdn.jsdelivr.net/gh/fawazahmed0/currency-api@1/latest/currencies/eur/jpy.json>

All these endpoints **could refer to the latest available exchange, or to a specific date if it's included** in the URL request. For example, EURO exchange detail from 2020/11/24 could be requested through:

<https://cdn.jsdelivr.net/gh/fawazahmed0/currency-api@1/2020-11-24/currencies/eur.json>

**The response format for all our requests will be JSON.**

## List currencies

We have to show a full list of latest available currencies returned by the API, this feature should solve these scenarios:

- Empty results.
- Every currency should be listed as CODE in uppercase + Full name.
- Clicking on a result item should show its detail for the latest available date.
- Clicking on every fav icon item should add/remove it to/from favourites.
- Every currency fav icon should show if it's status (already added to favs or not)

💡 Fields for the currency list item are included in the corresponding HTML component in the provided starter kit.

## Search / filter results

The search should be implemented purely in JavaScript (without querying the API), filtering the matched currencies as you are typing (as a live search). The search has the following rules:

- It only filters when the search term has 3 or more characters.
- Show feedback when a term has less than the required 3 characters.
- An empty search term should show the full currency list.
- Clear search should empty the search term and show the full currency list.
- The filter is case INsensitive.
- The search box filters the list as you type.
- Match criteria is based on code (exact match) or name (partial match)

- If there are no matches for a given search term, a message of empty results should be shown.

For example, searching for “ang” should show after typing the “g” the following list:

ANG	Netherlands Antillean Guilder
AOA	Angolan kwanza
BDT	Bangladeshi taka
SZL	Swazi lilangeni
TOP	Tongan Pa'anga

**Note.** Red marks are not required, they are included to better explain the applied filter criteria.

## Detail currency sheet

When a user clicks on a currency item, a detail sheet is shown. This detailed view should implement the following functionality:

- Close detailed view.
- Change the date **using a standard HTML input date.**
- Disallow dates for this input prior to 2020-11-22.
- Show a full exchange list for the selected currency.
- Add / remove the selected currency to user favourites.

💡 HTML structure and info for the currency detail view are included in the corresponding HTML component in the provided starter kit.

## User favourites list

Users should be able to manage their favourites currencies so the interface will have a control to switch between list screen to favourites screen.

**Favourites screen is intended to be the same as the main screen, but it shows only favourites currencies (is like a special filter).**

Favourites should be persistent between user sessions. **To implement it we are going to use cookies.**

So, favourites screen should implement the following functionality:

- Show the favourites list (reusing the main currency list structure)
- Remove a currency from favourites using its fav icon.

- Data persistence between browser sessions using cookies.
- Exit from favourites view using the “Clear search” button or entering a valid search term.

## Code requirements and organization

For this practice we **recommend** the usage of the following structures and code organization:

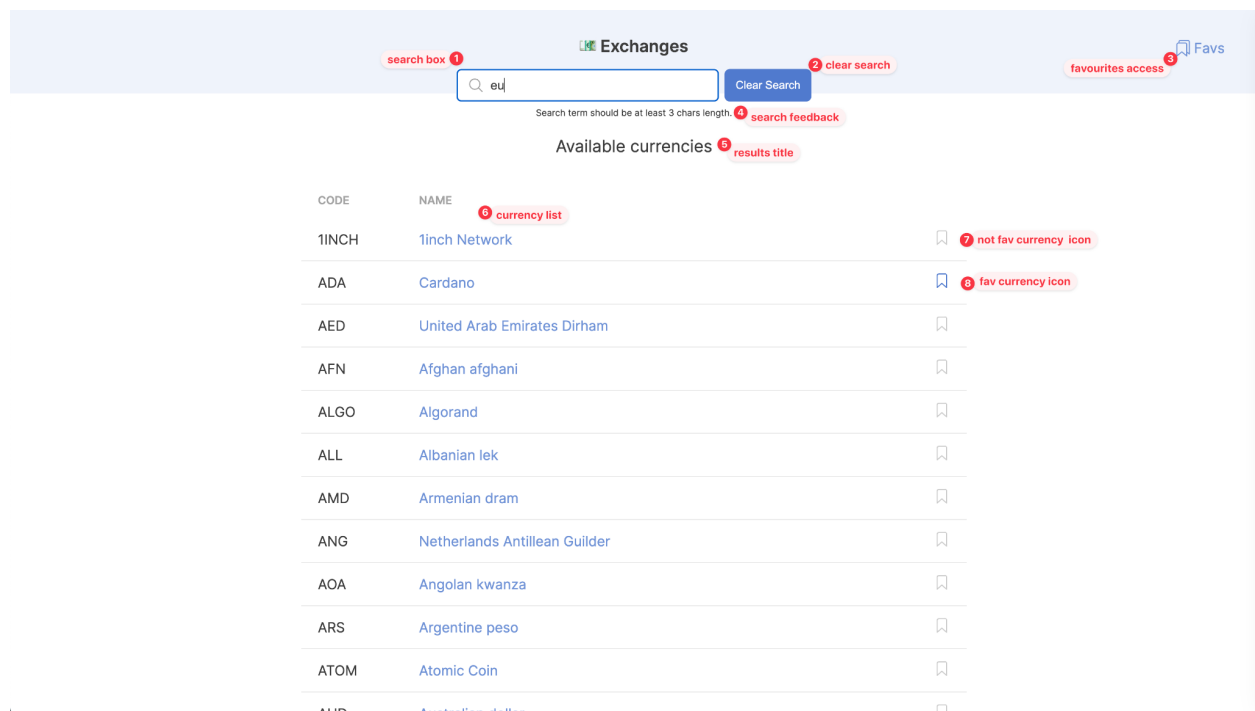
- Objects and OOP for managing lists, items, modals...
- Modules for a better code organization and management.
- Fetch API for API requests.

**Remember that you CAN NOT USE third party libraries to solve any of the features of this practice.**

## About starter kit

As we did in CAT2, we give you a starter kit with the HTML basic structure & CSS styles required for the practice. You can find a detailed overview of the main screens in the following screenshots:

### Main screen



Filtered results screen

Exchanges

Favs

ang

Clear Search

Currencies with: ang 

1 title reflects search criteria

CODE	NAME	
ANG	Netherlands Antillean Guilder	<div>2 currency list is filtered as you type</div>
AOA	Angolan kwanza	
BDT	Bangladeshi taka	
SZL	Swazi lilangeni	
TOP	Tongan Pa'anga	

Favourites screen

Exchanges

Favs

Search for currencies...

Clear Search

2 you can go back to currency list clicking on clear search or performing a search

Favourites list 

1 results title show that you are in favourites view

CODE	NAME	
ADA	Cardano	<div>3 reuse the result list to show currencies added to favourites</div>
EUR	Euro	
USD	United States dollar	

Currency detail screen

Exchanges

Close >

Search for currencies...

Clear

Available currencies

CODE	NAME
1INCH	1inch Network
ADA	Cardano
AED	United Arab Emirates Dirham
AFN	Afghan afghani
ALGO	Algorand
ALL	Albanian lek
AMD	Armenian dram
ANG	Netherlands Antillean Guilder

1 close detail view

ADA Cardano 

3 selected currency code + name

Exchange List

2022-04-21 

5 exchanges date

2 Remove fav add / remove from favs

4 exchange list

1INCH	0.607536
ADA	1
AED	3.45961
AFN	81.944982
ALGO	1.259609
ALL	104.40898
AMD	441.946998
ANG	1.698182
AOA	388.04579
ARS	107.343037
ATOM	0.038572

We have also added hints to understand which HTML nodes should be interactive or manipulated through JavaScript. Although this is our proposal, of course, you can use / add others.

The complete list of these hints are:

- ☐ js-searchbox
- ☐ js-search-input
- ☐ js-clear-btn
- ☐ js-search-feedback
  
- ☐ js-favs
  
- ☐ js-results-title
  
- ☐ js-currencylist
- ☐ js-currency-item
- ☐ js-item-fav
  
- ☐ js-currencydetail
- ☐ js-currencydetail-close
- ☐ js-currencydetail-fav
- ☐ js-currencydetail-fav-icon
- ☐ js-currencydetail-fav-label
- ☐ js-currencydetail-code
- ☐ js-currencydetail-name
- ☐ js-currencydetail-date
- ☐ js-currencydetail-list

For showing/hiding the currency detail overlay, the intended mechanism is the following:

- 1) Add/remove class "has-overlay" to the body tag.
- 2) Add/remove class "currencydetail--show" to tag article with class "currencydetail".

## Deliverables

You have to follow the main folder structure provided in the starter kit with the additional files that you will add inside their corresponding folders.

