Introduction

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VuFind based Discovery Platform for 20 academic Libraries in Germany
A Spa for VuFind

or – the API library

Leander Seige, 30 September 2020
Virtual VuFind Summit 2020
What is a Spa?

- SPA stands for **Single Page Application**
- SPA is a Javascript Web Application that is loaded just once
- No further page reloads
- All further communication happens between a server-side API and the client-side SPA
- ... it’s hopefully quite relaxing and refreshing for users and servers.
Personal Experience

- I got in contact with this new Javascript world in the context of other projects
- started playing with React and it’s ecosystem just to understand what I’m talking about and… fell in love with it. But I’m really not an expert.
- created a couple of prototypes for different use cases, often in the context of the International Image Interoperability Framework (IIIF)
- a couple of weeks ago I was sick at home, needed a new fun project and then I had this vision, a Single Page Application for VuFind
usual PHP driven Websites

1. Open Website (first page)
2. Click
3. Load new Webpage
4. Click again
5. Load another Webpage
**Single Page Applications**

1. Open Website only once (single page)
2. Click
3. Replace part of Webpage
4. Click again
5. Replace part of Webpage

API / JSON

PHP

Solr

ILS/MySQL
Advantages and Drawbacks of SPAs

Advantages

- user experience
  - fast and comfortable, no page reloads
  - smooth responsiveness
- only data is transferred
- client side caching optional
- move business logic into the client

Drawbacks

- (persistent deep links, solved)
- (browser history, solved)
- (accessibility)
- SEO might become tricky, but there are ways around it
Typical Javascript Frameworks

- React
- AngularJS
- Vue.js
- Meteor.js

- often utilize NPM and other popular tools to build optimized Javascript Applications
Libraries used: React and its ecosystem (Open Source)

- React - UI Library, great for SPAs (originally developed by Facebook)
- Redux - State Management
- Material UI - UI Components (Google)
- React Router - Routing
Hello, {props.name}

- Components
- JSX

https://reactjs.org/

```javascript
function Welcome(props) {
  return <h1>Hello, {props.name}</h1>;
}

function App() {
  return (
    <div>
      <Welcome name="Sara" /><Welcome name="Cahal" /><Welcome name="Edite" />
    </div>
  );
}

ReactDOM.render(
  <App />,
  document.getElementById('root')
);```
Prototype

- SPA
- uses VuFind’s API
- Basic Search
- Facets
- Infinite Scroll
- Responsiveness
- Persistent Links
- Bookmarks
- Barchart for publication dates
Demo time!

https://vufindspa.netlify.app/
Demo

- Material UI, Servers, Search Fields
- Search Shakespeare
  - Explain Component Layout
- Search Goethe
- Use Facet
- Use another Facet
- Remove Filters
- Show infinite Scroll
- Show Bookmarking 2x
- Remove Bookmarks
- Reusing Components
  - Components
- Open Title View
  - Components
- Point out URL change
  - jump back/forth
  - copy URL to a new tab
- Close Title View
  - Search Results still there
- Switch to mobile view, repeat
  - Facets
  - infinite scroll
1. George Orwell
   Williams, Raymond.

2. George Orwell
   Kalechofsky, Roberta.

3. George Orwell: the critical heritage
   Meyers, Jeffrey.

4. George Orwell
   Gardner, Averil.

5. George Orwell: a life
   Crick, Bernard R.
Progressive Web App

- run your Web App just like a native App on your mobile device
- works with Android and iOS
- (latest news) can be deployed in Google’s and Apple’s app stores!
- just add some additional information and files to your repo
1. Open Website
2. Select “Add to Home Screen”
3. Edit Details

VuFindSPA
https://vufindspa.netlify.app/

An icon will be added to your Home screen so you can quickly access this website.
4. Find your PWA just like a native App
Now your App appears and runs just like a **native App**, not like a Website anymore!

Can even be placed in Google's and Apple's App-Stores (afaik)!

https://vufind.org/advanced-demo/app/
And Now?

- this was just an experiment
- get inspired if you want
- I would love to see VuFind moving into this direction
Thanks!

Demo: [http://vufindspa.netlify.app/](http://vufindspa.netlify.app/)

Code: [https://github.com/leanderseige/vufindspa](https://github.com/leanderseige/vufindspa)

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