

# Introduction

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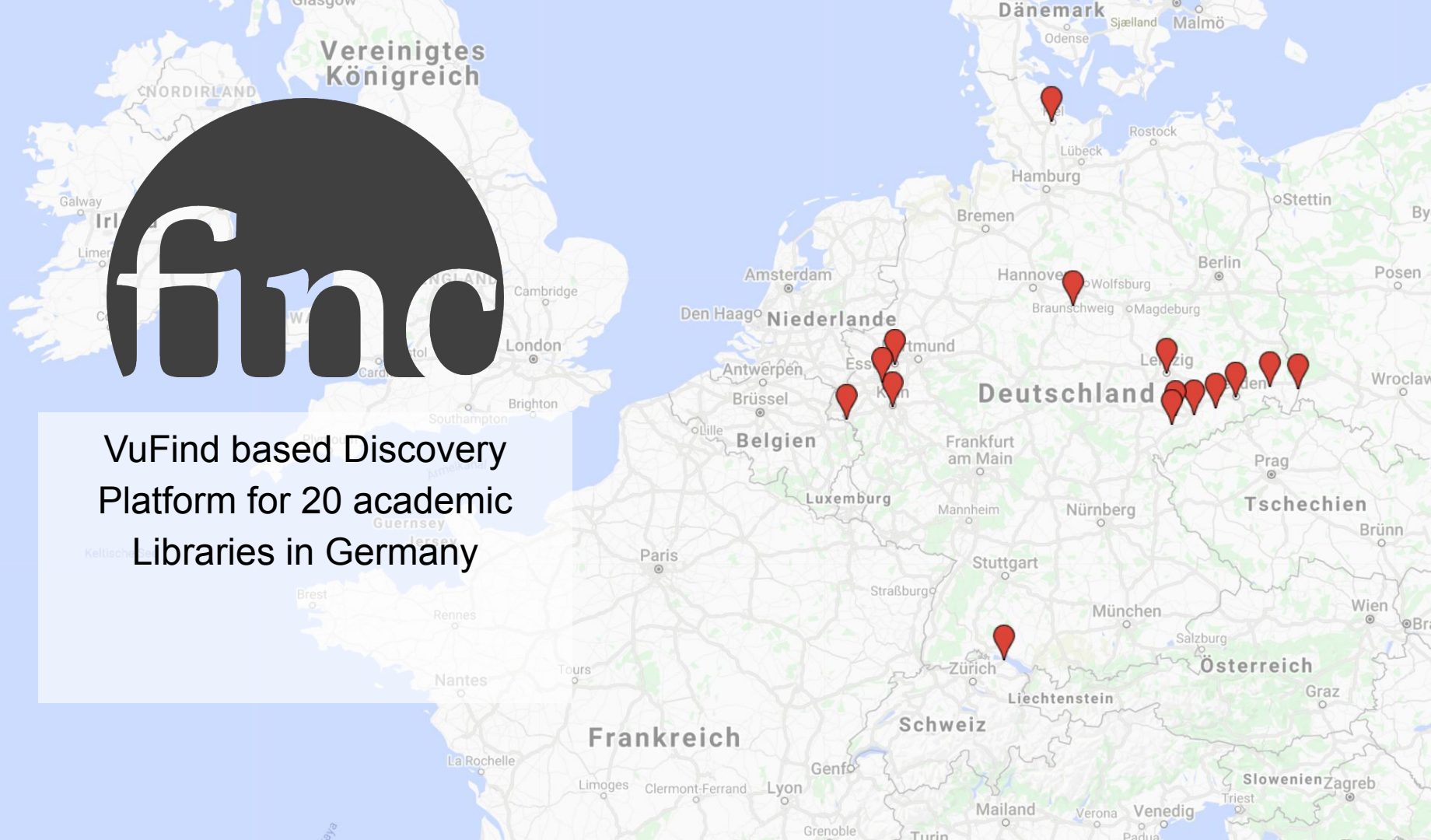
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VuFind based Discovery  
Platform for 20 academic  
Libraries in Germany



A top-down view of a spa-themed arrangement on a white surface. In the top left, there's a white towel and a bar of light-colored soap. Below the soap is a pink orchid. To the right of the orchid is a small green sprig with four leaves. In the bottom left, a dark brown bowl is filled with white Epsom salt. Scattered around these items are five tealight candles: two are light orange and three are light purple.

# A Spa for VuFind

*or – the API library*

Leander Seige, 30 September 2020  
Virtual VuFind Summit 2020



# What is a Spa?

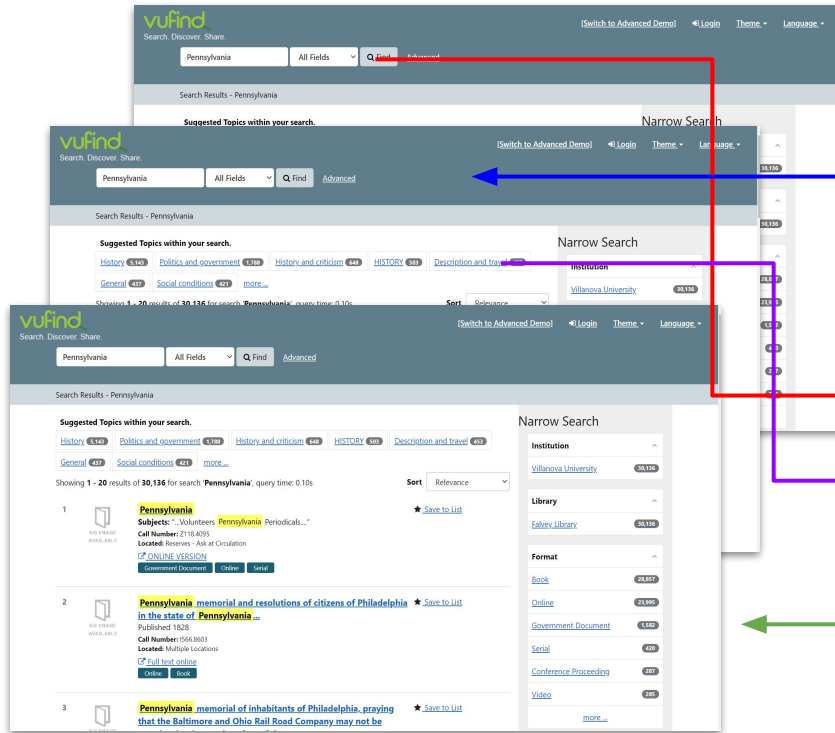
- SPA stands for **S**ingle **P**age **A**pplication
- SPA is a Javascript Web Application that is loaded just once
- No further page reloads
- all further communication happens between  
a server-side API the client-side SPA
- ... it's hopefully quite relaxing and refreshing for users and servers.

# 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



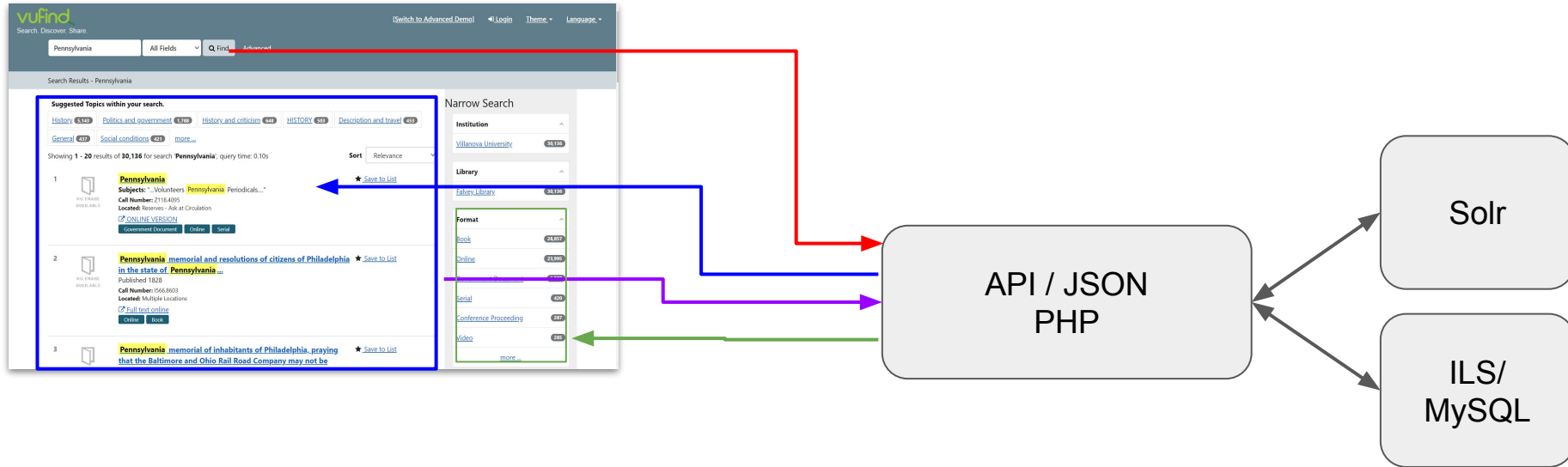
HTML  
PHP

Solr

ILS/  
MySQL

# 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



# 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

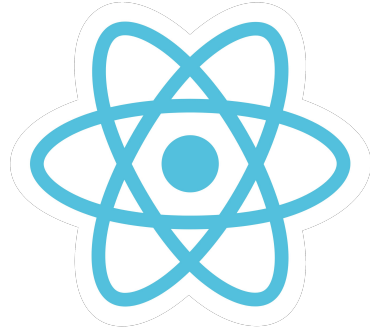
- (persistent deep links, solved)
- (browser history, solved)
- (accessibility)
- SEO might become tricky, but there are ways around it



# Typical Javascript Frameworks

- React
  - AngularJS
  - Vue.js
  - Meteor.js
- 
- often utilize NPM and other popular tools to build optimized Javascript Applications

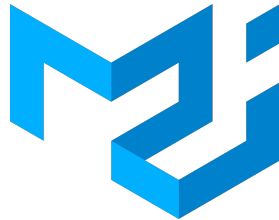
# Libraries used: React and it's ecosystem (Open Source)



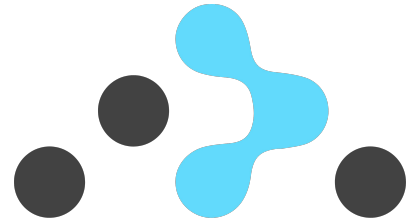
React - UI Library, great for SPAs  
(originally developed by Facebook)



Redux  
State Management



Material UI  
UI Components  
(Google)



React Router  
Routing

# Hello, {props.name}

- Components
- JSX

<https://reactjs.org/>

```
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

**VuFindSPA**

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





Results: 198



Author



Genre



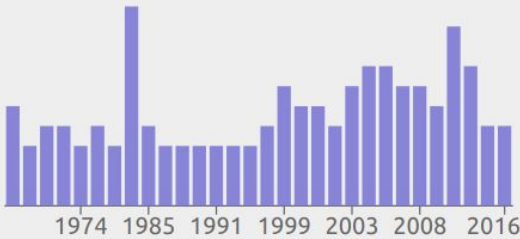
Topic



Year



Format



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.

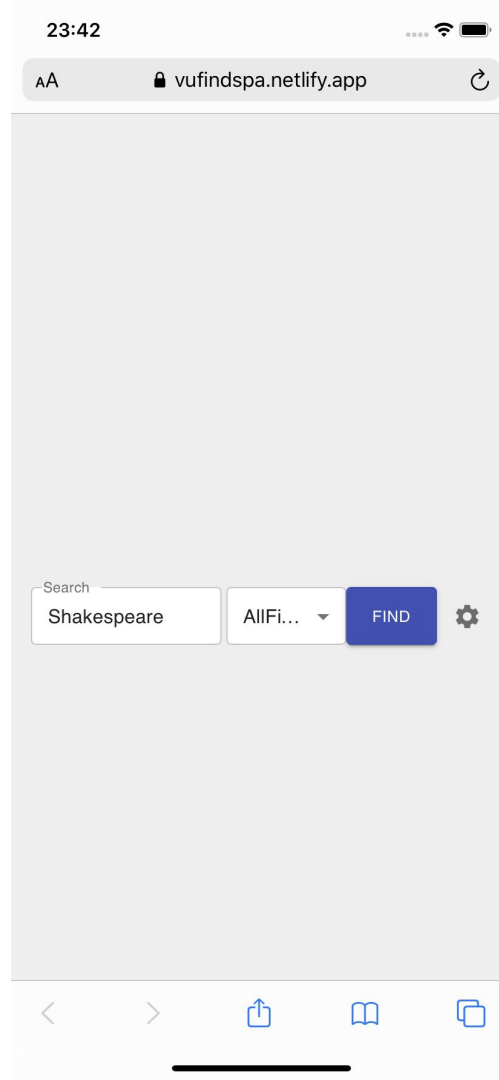


# Progressive Web App

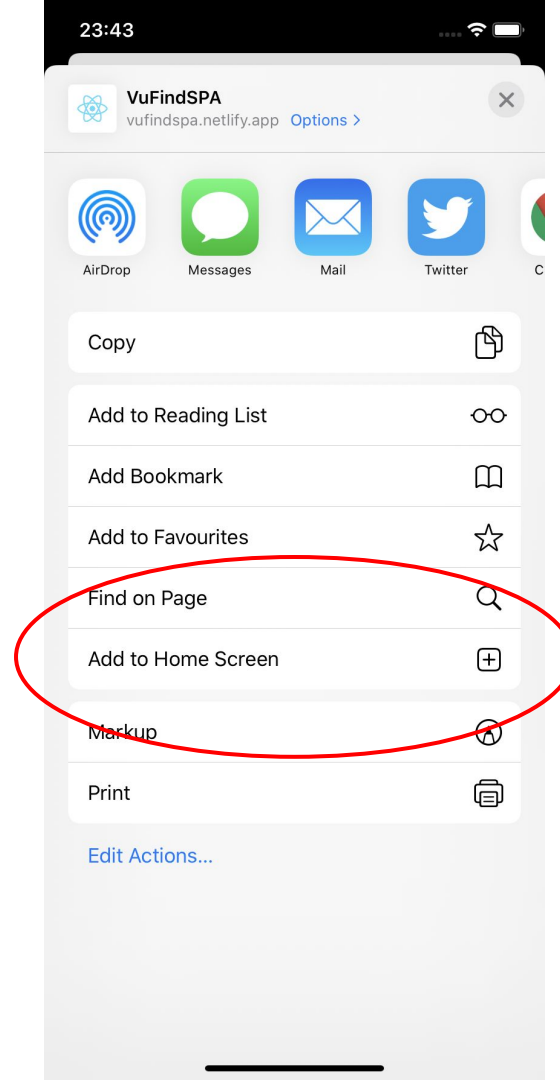
- run your Web App just like a native App on your mobile device
- works with Android and iOS
- (latest news) can be deployed in Google's and Apple's app stores!
- just add some additional information and files to your repo



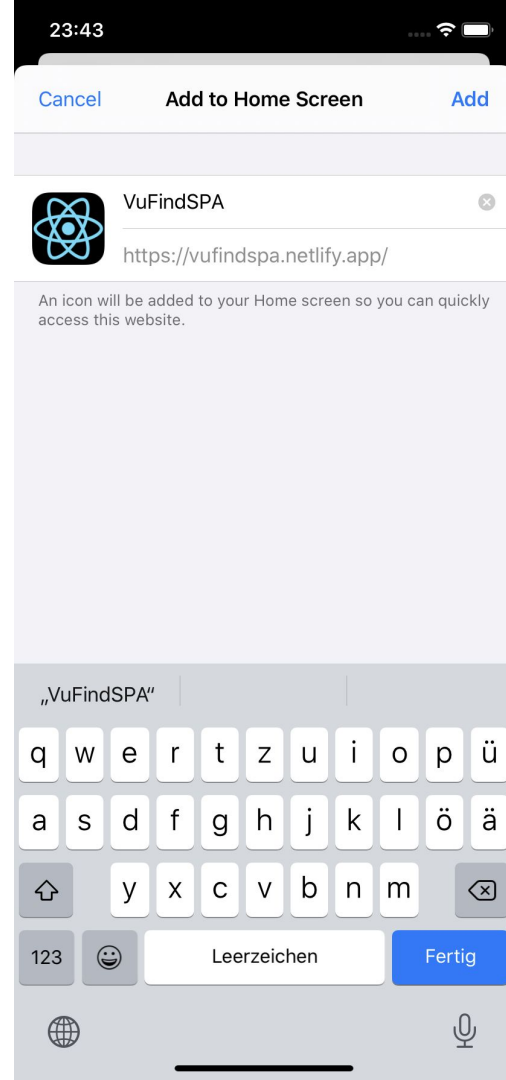
# 1. Open Website



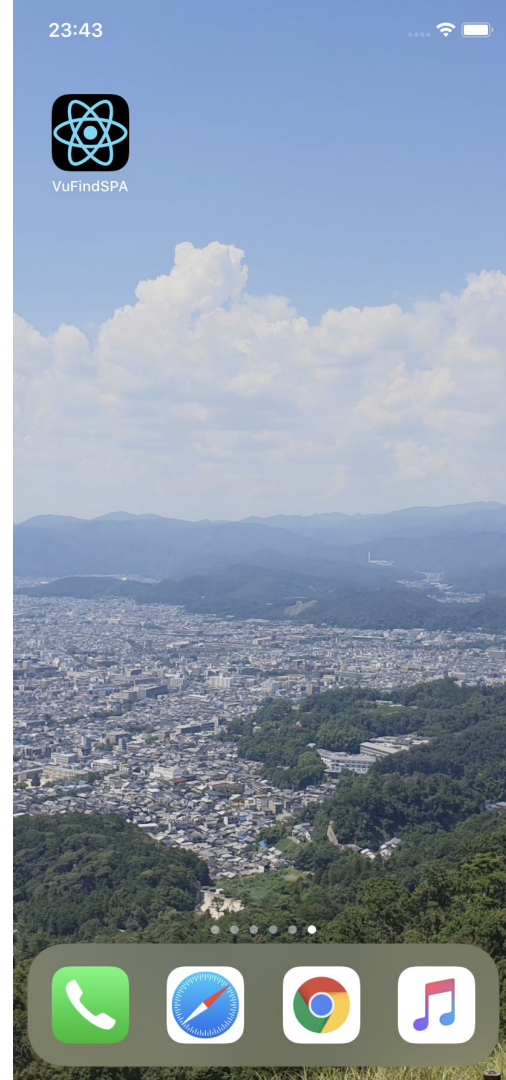
## 2. Select “Add to Home Screen”



### 3. Edit Details



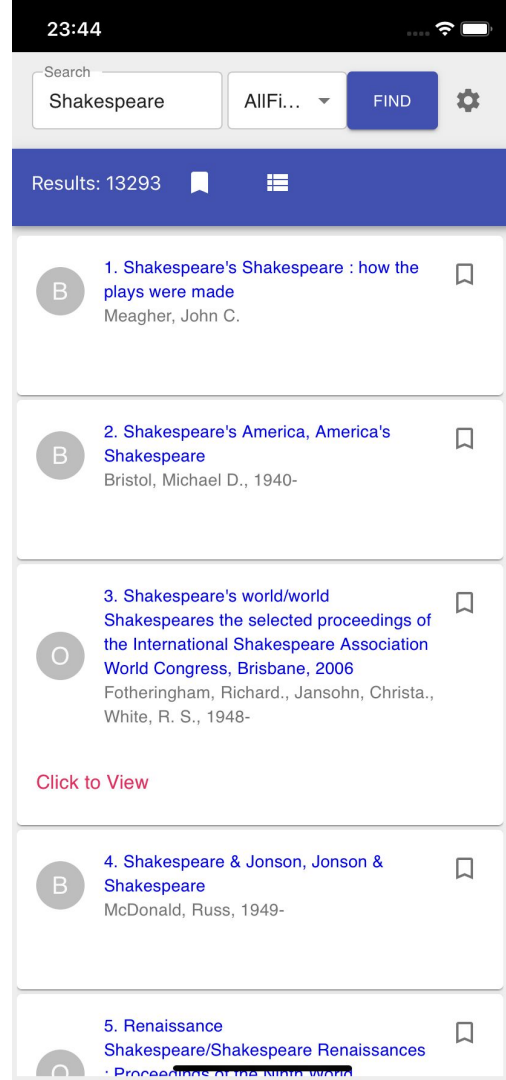
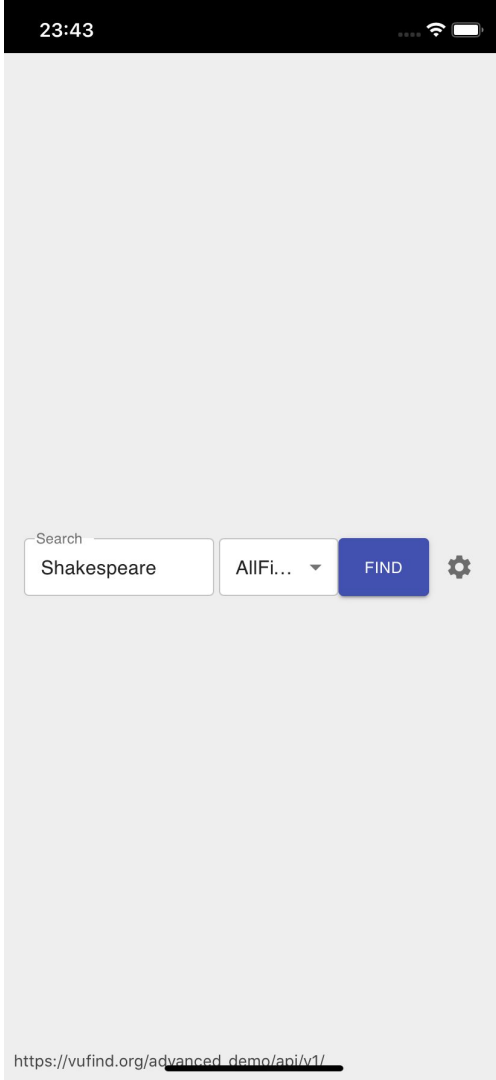
## 4. Find your PWA just like a native App





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)!



# 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/>

Code: <https://github.com/leanderseige/vufindspa>

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