Zurich University
of Applied Sciences

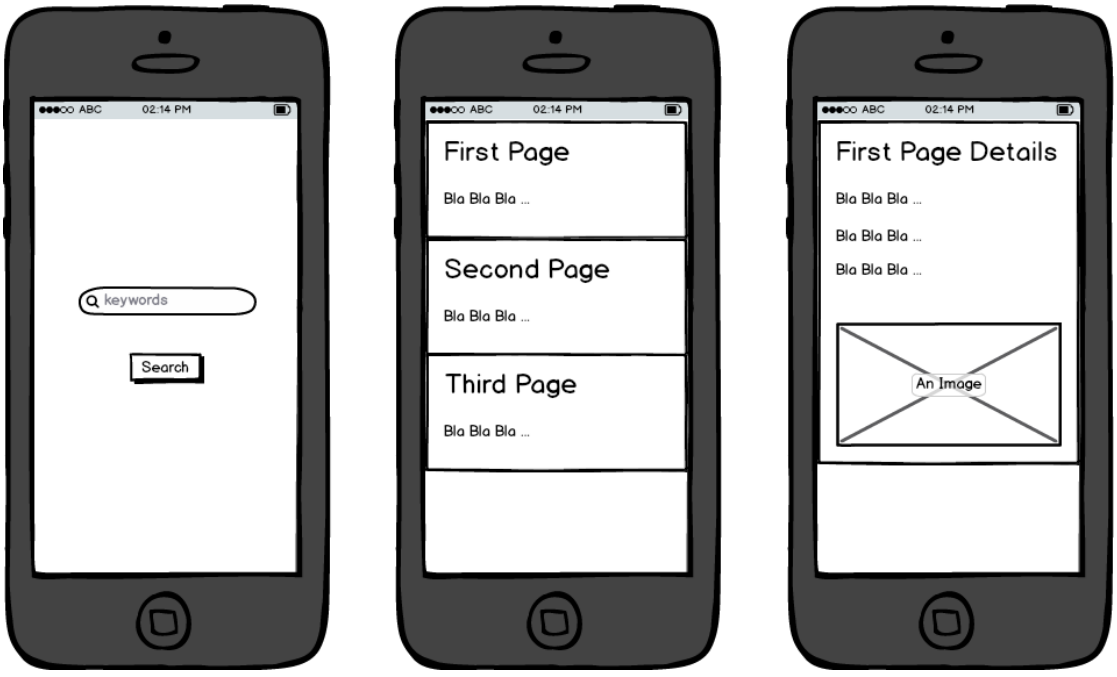
School of
Engineering

P01 Mobile Project, Web Components

1
One goal of this course is to develop a mobile app in two different technologies:

- React Native
- iOS native (XCode and SwiftUI)

The project to be developed is a *Search Application* to search for items and display the results. Generally, your app should contain three pages: One page for searching (Search Page), one for displaying the search results as a list (Result Page) and one for displaying detail information for one item (Detail Page). The next figure shows wireframes of these three pages:



Please form teams of two people and choose a service to search. Some ideas: Instagram, Flickr, Twitter, eBay, Tumblr, Pinterest, Facebook, Amazon, Spotify, OpenStreetMap, Swiss Public Transport API.

A list of public APIs is available here:
https://github.com/toddmotto/public-apis

Please note:

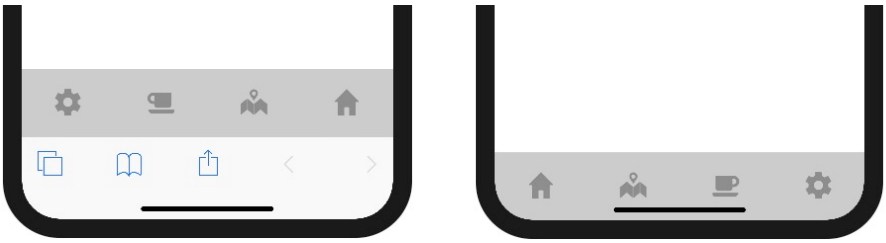
- Some services only offer the sandbox mode for free which is sufficient for this course.
- At the end of the course you do a small presentation where you describe both Search Applications for the same service using both technologies.

For today, please choose a service and register yourself as developer for this service. Try to access the service API by developing a small function that returns some data from the service.

2

Open the folder *progress* in the sample files for this assignment. The files in this folder demonstrate the use of Web Components to create a new element, *custom-progress-bar*. The example is based on an article "Introducing Custom Elements" in the WebKit Blog: https://webkit.org/blog/7027/introducing-custom-elements/

Let's try to develop a very simple custom element *navigation-bar* that encapsulates some logic and styles to create a mobile navigation bar. The result should look more or less like this:



There are already some fragments of a solution in the folder *navibar*.

- Analyze the component in the file *navibar.js*. The slot element is the target for *navigation-bar*'s children, i.e., icon images embedded in links. What does the *::slotted* pseudo element in the style rules select?
- The component in *navibar.js* needs a small update: make sure the items are evenly distributed in the navigation bar, even if one item is removed or another item is added. Use Flexbox for this purpose.
- Add a sample navigation bar and some styles to *navibar.html*.

```
The ::slotted() CSS pseudo-element represents any element that has been placed
into a slot inside an HTML template (see Using templates and slots for more
information).

This only works when used inside CSS placed within a shadow DOM. Note also that
this selector won't select a text node placed into a slot; it only targets actual
elements.
```

Links

Introducing Slot-Based Shadow DOM API
https://webkit.org/blog/4096/introducing-shadow-dom-api/

Shadow DOM v1: Self-Contained Web Components
https://developers.google.com/web/fundamentals/web-components/shadowdom