An Open-Source Web Application Framework For Institutional Telecommunication

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Background

- Otolaryngologists often work in inter-professional teams across single or multiple institutions, making excellent communication a crucial component of patient care
- It can be difficult to contact relevant parties as contact information is often decentralized, difficult to obtain, and sometimes difficult to interpret
- We demonstrate an open-source framework for a cross-platform web application used to aggregate key contact information and facilitate telecommunications across an institution

Figure 1: Example of a typical incoming pager notification

Methods

- A framework static web application was developed with ability to add phonebook entries and dial numbers with pre-specified prefixes
- Languages: HTML, CSS, and JavaScript
- Libraries: Fuse.js open-source library for fuzzy searching
- Static hosting: GitHub Pages

Figure 2: Demonstration of the data.js file as an array that is easy to update

```
var data = [
    {name:"OR Control", number:"65150"},
    {name:"SICU", number:"59930"},
    {name:"Feinberg OR 1", number:"65024"},
    {name:"Feinberg OR 2", number:"66394"},
    {name:"Feinberg OR 3", number:"64179"},
    {name:"Feinberg OR 4", number:"64229"},
    {name:"Feinberg OR 5", number:"64239"},
    {name:"Feinberg OR 6", number:"60526"},
    {name:"Feinberg OR 7", number:"61779"},
    {name:"Feinberg OR 8", number:"61889"},
    {name:"Feinberg OR 9", number:"62209"},
    {name:"Feinberg OR 10", number:"60218"},
    {name:"Feinberg OR 11", number:"63819"},
    {name:"Feinberg OR 12", number:"62124"},
    {name:"Feinberg OR 14", number:"63726"},
    {name:"Feinberg OR 15", number:"61588"},
    {name:"Feinberg OR 16", number:"63930"},
    {name:"Feinberg OR 17", number:"61732"},
    {name:"Feinberg OR 18", number:"67265"},
    {name:"Feinberg OR 19", number:"67266"},
    {name:"Feinberg OR 20", number:"67267"},
    {name:"Feinberg OR 21", number:"67268"},
    {name:"Feinberg OR 22", number:"67321"},
    {name:"Feinberg OR 23", number:"67323"},
    {name:"Feinberg OR 24", number:"64930"},
    {name:"Feinberg OR 25", number:"64931"},
    {name:"Feinberg OR 26", number:"64998"},
    {name:"Feinberg OR 27", number:"64991"},
    {name:"Feinberg OR 30", number:"60891"},
    {name:"Feinberg OR 31", number:"60894"},
    {name:"Feinberg OR 32", number:"63555"},
    {name:"Feinberg OR 33", number:"63660"},
    {name:"Feinberg OR 34", number:"64155"},
    {name:"Feinberg OR 35", number:"64261"},
    {name:"Feinberg OR 36", number:"67586"},
    {name:"Feinberg Proedure Room 2", number:"68237"
```

Figure 3: Demonstration of the logic for dialing phone numbers with pre-specified prefixes

```
function makePhone(input){
 return (input.charAt(0) == "6" ?
          "+131292" : (input.charAt(0) == "2" ?
            "+131247" : "+131269")) + input;
}
```

Results

- A streamlined, reactive, static web application was deployed and made available
- The application consists of two main components
  - a page to facilitate dialing of prefix-dependent shortened telephone numbers;
  - A directoy page to facilitate access to contact information, with fuzzy search functionality to allow for inexact matching of entries relative to the user input.

Figure 4: Dialer component

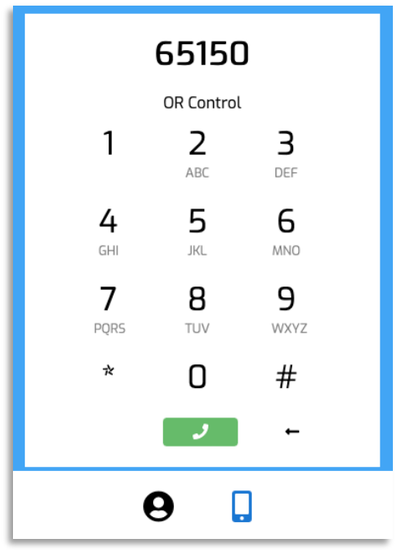
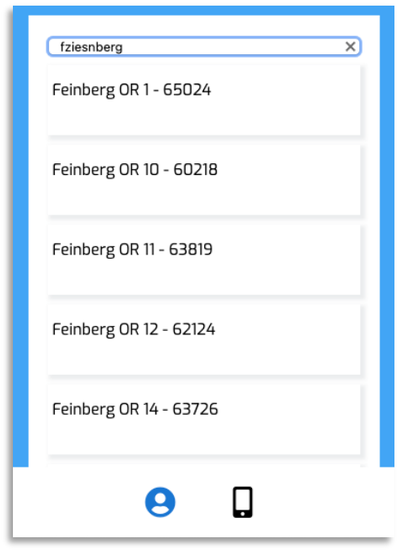


Figure 5: Directory component



Conclusions

Using free, readily accessible software development tools, we created an open-source framework to facilitate deployment of a web application to streamline telecommunication across an institution. The open-source code allows for use and modification as needed to suit users' needs.

Reference

(1) Fuse.js, [online] Available: https://www.fusejs.io
(2) GitHub, [online] Available: https://www.github.com