Programming Assignment 02: Represent!
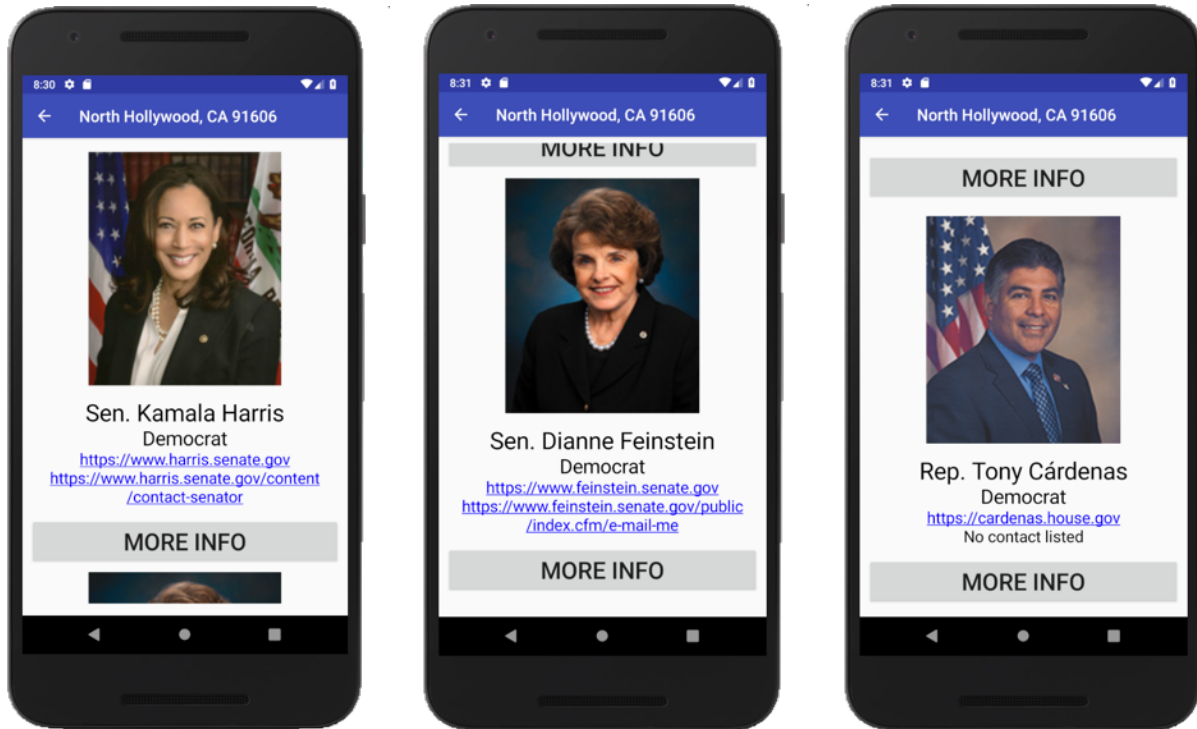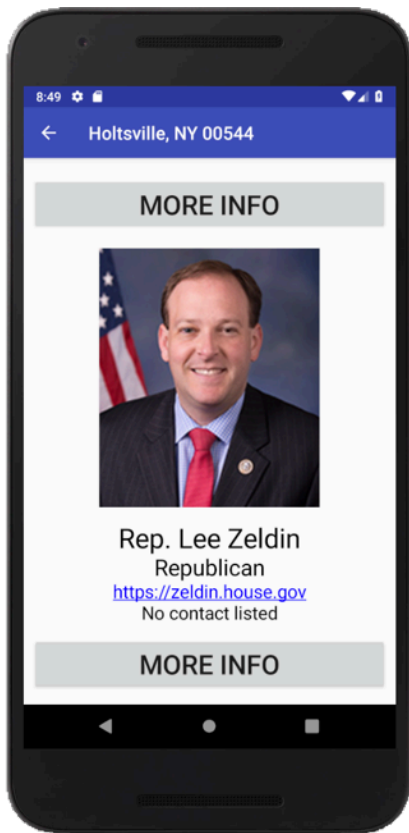## Nicholas Kriss
CS 160

       This is the homepage for my implementation of the Represent! app. The app is given a location by one of three methods, and obtains information about the congressional representatives for that location. The "Enter ZIP code" text field expects at most 5 digits, and will add leading zeros to create a potentially valid 5 digit ZIP code if not enough digits are input. Pressing the "Go" button then sends a request to Geocodio, from which we get a list of BioGuide IDs for the relevant representatives.. The "Use Current Location" button gets the last geographical location, given by latitude and longitude, stored on the phone and uses these in the request to Geocodio. The "Use Random Location" button generates ten random 5-digit numbers, possibly with leading zeros, which are sent to Geocodio. We use the last valid Geocodio response to generate the list of IDs. This generates a truly random ZIP code over the entire range of ZIP codes, but it is fairly slow since we have to stop the thread for a few seconds to reliably retrieve the information. The images were taken from the relevant Wikipedia pages.
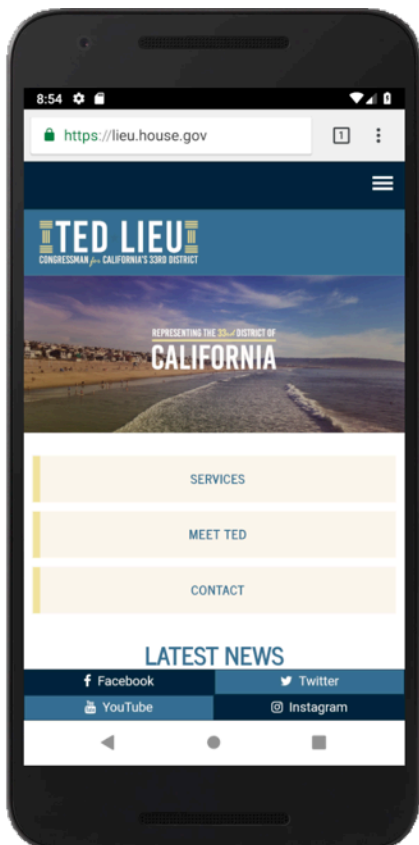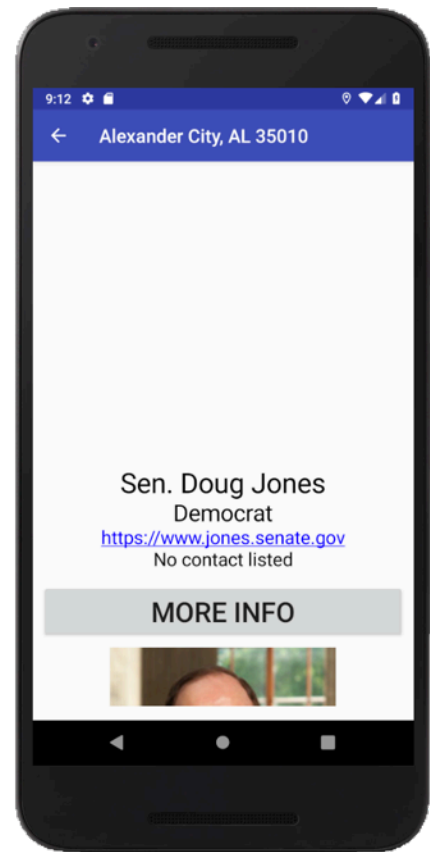
Once one of the methods on the home screen is selected, the app opens a new page listing the representatives. The photos of the representatives are taken from bioguide.congress.gov. Each representative is shown alongside their title (Sen. for Senator or Rep. for Representative), their name, their party affiliation (Democrat, Republican, or Independent), a link to their website, and a link to their contact page if available, all information acquired from ProPublica. All of this information is presented in a scrolling view, and senators are always listed first. If a ZIP code is entered, either by the user or randomly generated, there may be more than one representative for that area, all of whom are displayed. If the phone's current location is retrieved instead, exactly one representative will be returned. Pressing the back arrow returns the user to the home page, and the toolbar displays the city, state and ZIP code for all input methods, including current location. This way the display is consistent across all three methods, and we avoid being too detailed on the current location, which often produces a slightly wrong result. Any individual without a contact page listed will have "No contact listed" in its place. Also, not every representative has a photo at congress.gov, but this does not return an error that my implementation can detect, so these representatives end up with a blank photo.
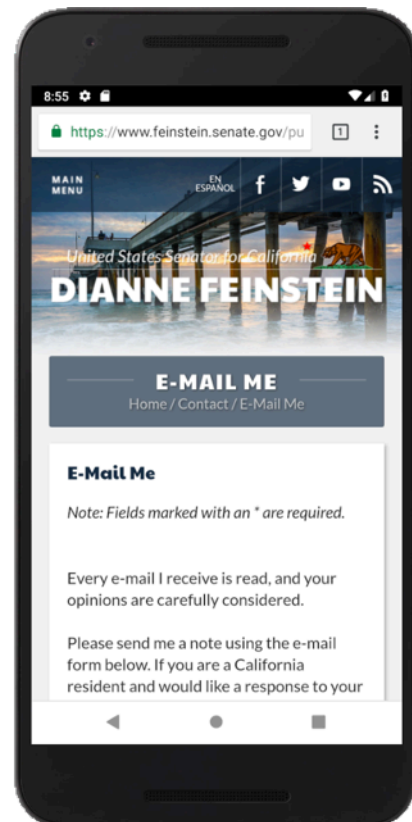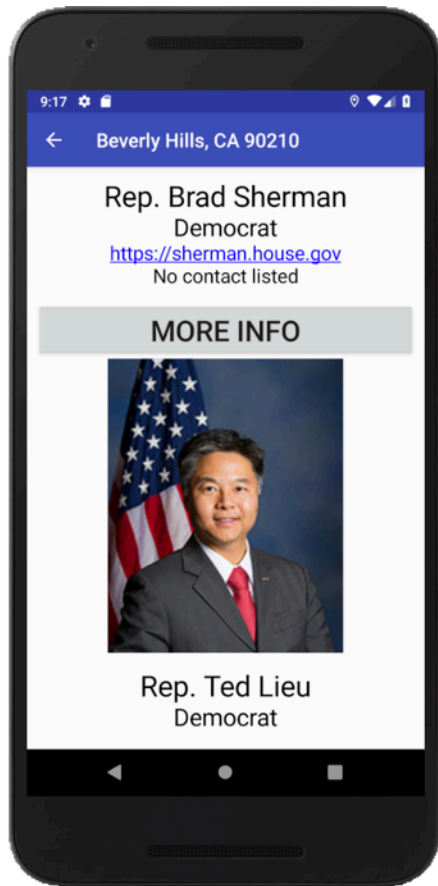
Left: Correct output given ZIP code less than 5 digits, and example of Republican congressman

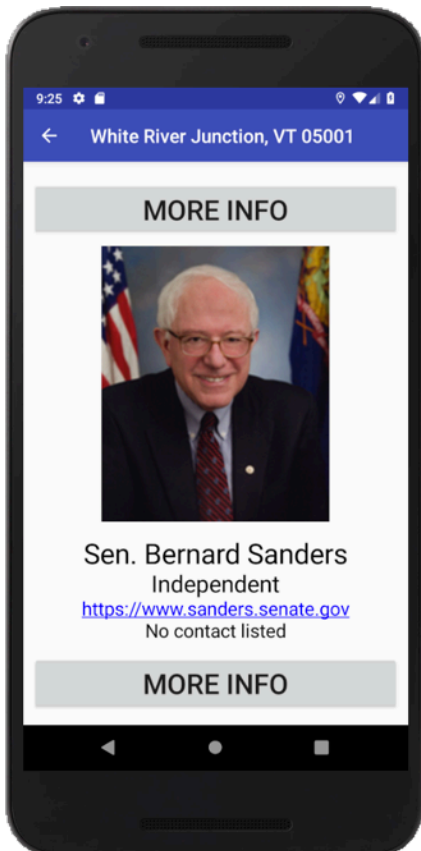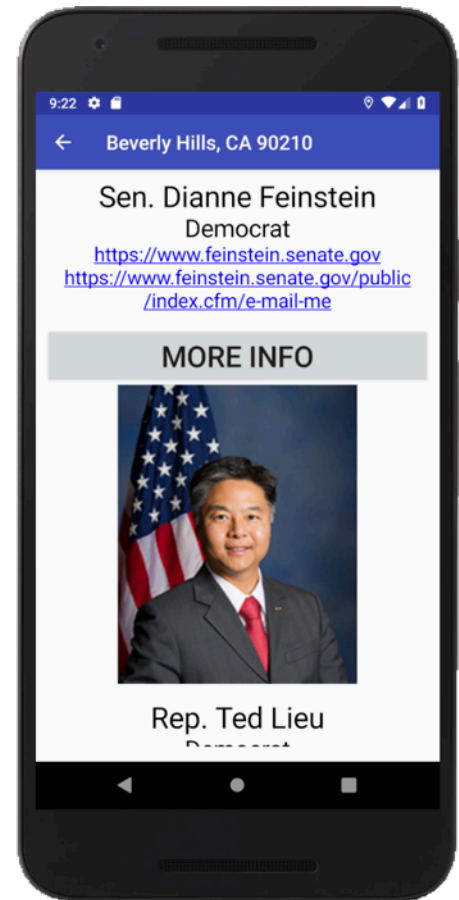Right: Example of a Senator who does not have a valid image

Left and right: Website and contact form pages reached from the relevant links
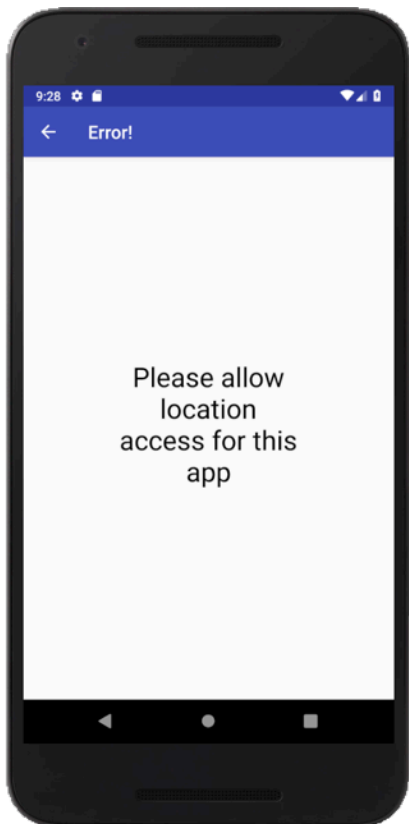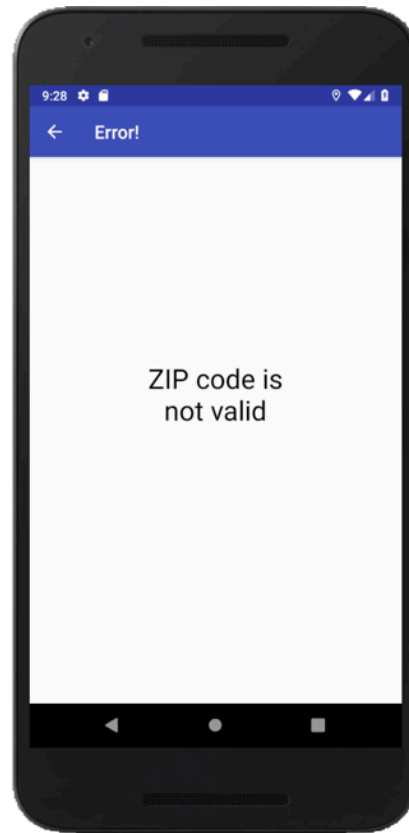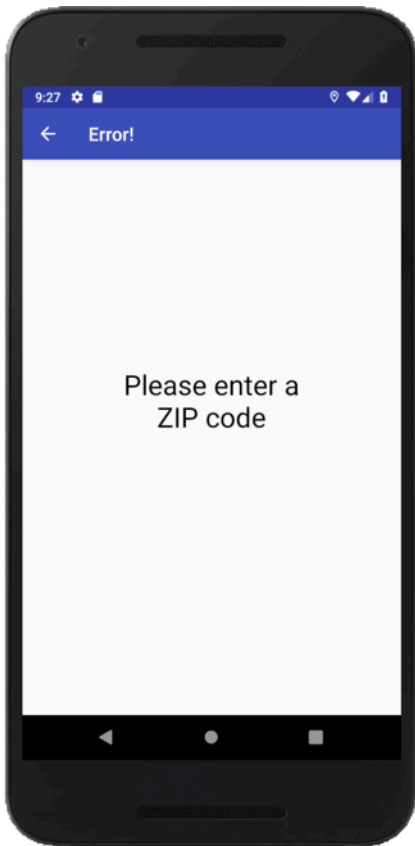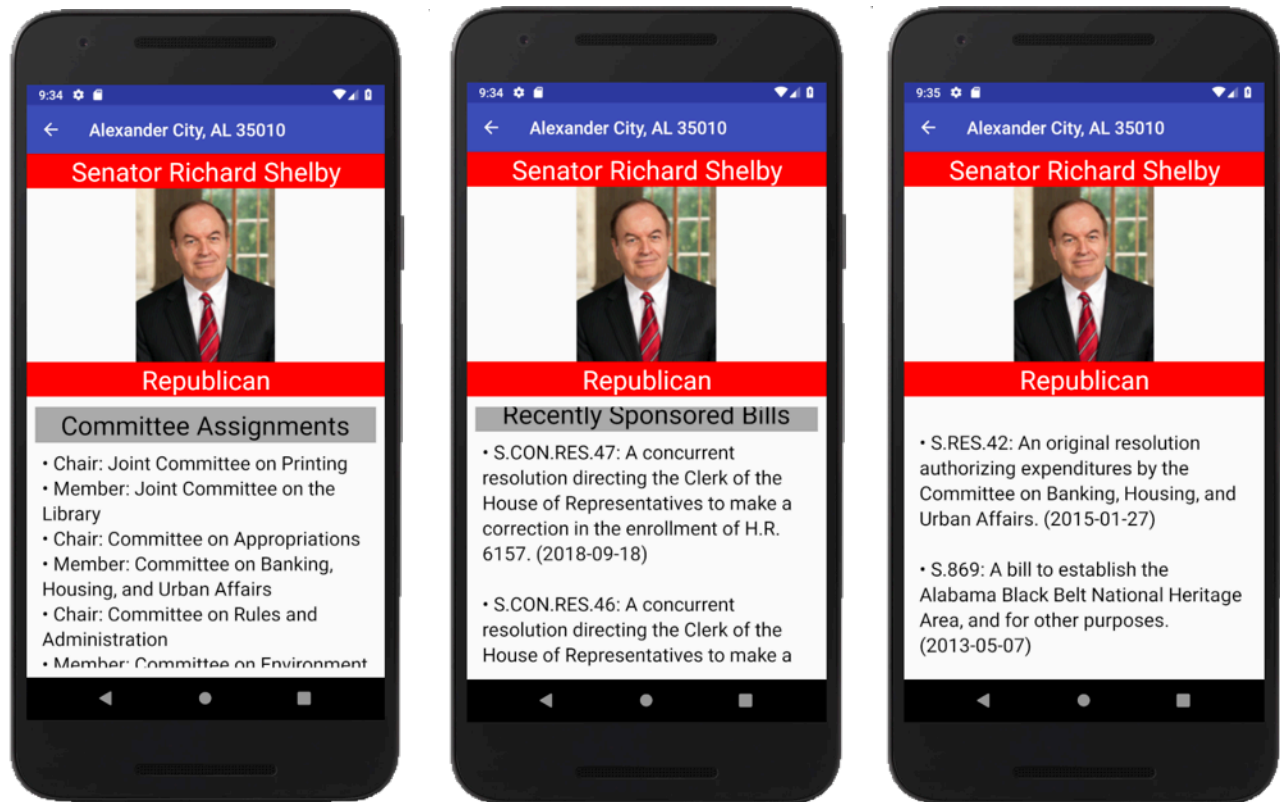
On the left is the results of entering the ZIP code 90210, which returns multiple congressmen. On the right is the results of using the current location, which returns exactly one congressman.
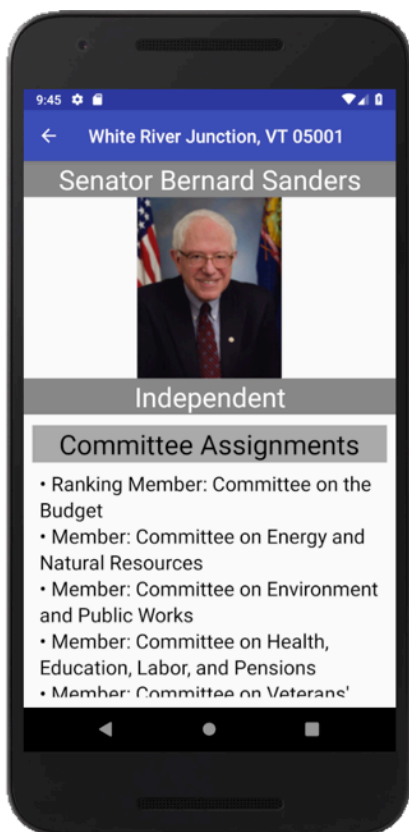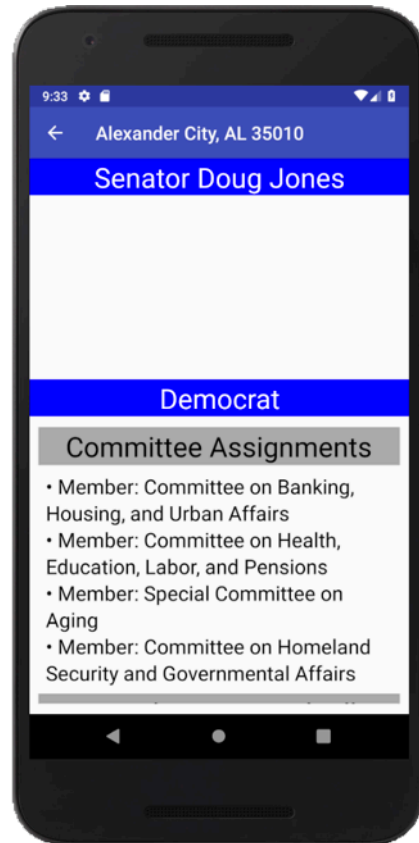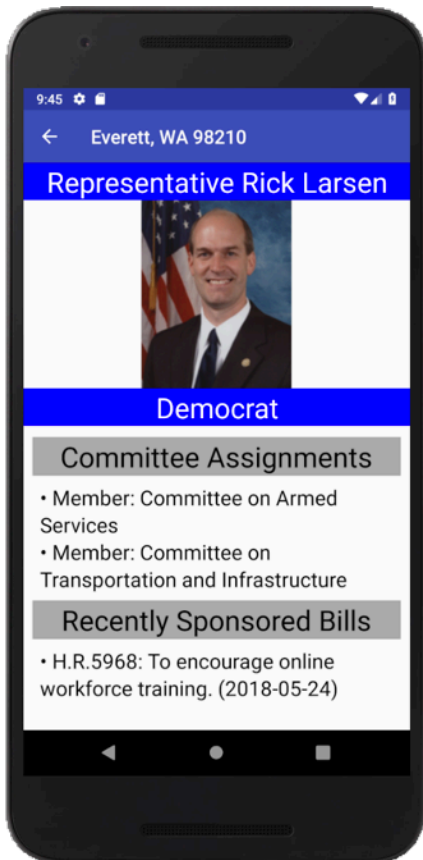

Left: Correct output for an Independent representative (all representatives are currently Democrats, Republicans, or Independents, though my app would display a hypothetical third-party representative as an Independent)

If something goes wrong, the Error page is opened. These error messages correspond to the user not inputing a ZIP code before pressing Go, inputing a ZIP code that is not valid, and trying to use the Current Location feature with location permissions turned off. Error screens also exist if any of the APIs fail, which a user should never encounter during normal use.

      Pressing the "More Info" under any representative's name opens a new screen listing that representative's committee assignments and recently sponsored bills, acquired from ProPublica. "Committee Assignments" lists the committees a representative is on, as well as their position in the committee (for example, member, ranking member, or chair). It does not list subcommittees so as not to overwhelm the user with information. "Recently Sponsored Bills" lists the last 20 bills introduced by the representative, with the bill's number, full title, and date it was introduced. Only bills sponsored by the representative are presented, not bills they co-sponsored, so that it more accurately portrays the individual representative's actions in Congress. I also chose to list the full name of each bill, since the short name given by ProPublica is usually the same as the longer version and it would be weird if the naming conventions were inconsistent. The page continues to display the location from the results page, and pressing the arrow will return the user to the results page.

 Additional "More Information" screens for a Democratic Representative and an Independent. Representatives who don't have a photo available form congress.gov still don't have a photo available for this screen, but the committee and bill information is still available.

 Video: https://youtu.be/YWH2cPJ6PVM
 Github: https://github.com/cs160-berkeley/prog02b-fa18-nkriss001