CS6392018 - Summer Team 2

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What is/are the problem/s you want to solve?

We would like to support the deaf community by increasing the amount of people who know sign language. This is to make sign language a common language.

- 17% of American adults (36 million) deal with a degree of hearing loss. *(360 Translations)*
- For every 1000 newborns, 2 out of 3 are determined to have hearing loss. *(Vohr, Betty)*
- 48% of deaf people are employed compared to 72% of hearing people. This is a contrasting difference in employment rate as it is very challenging in the workplace and career based education.

**Chart on following slide*

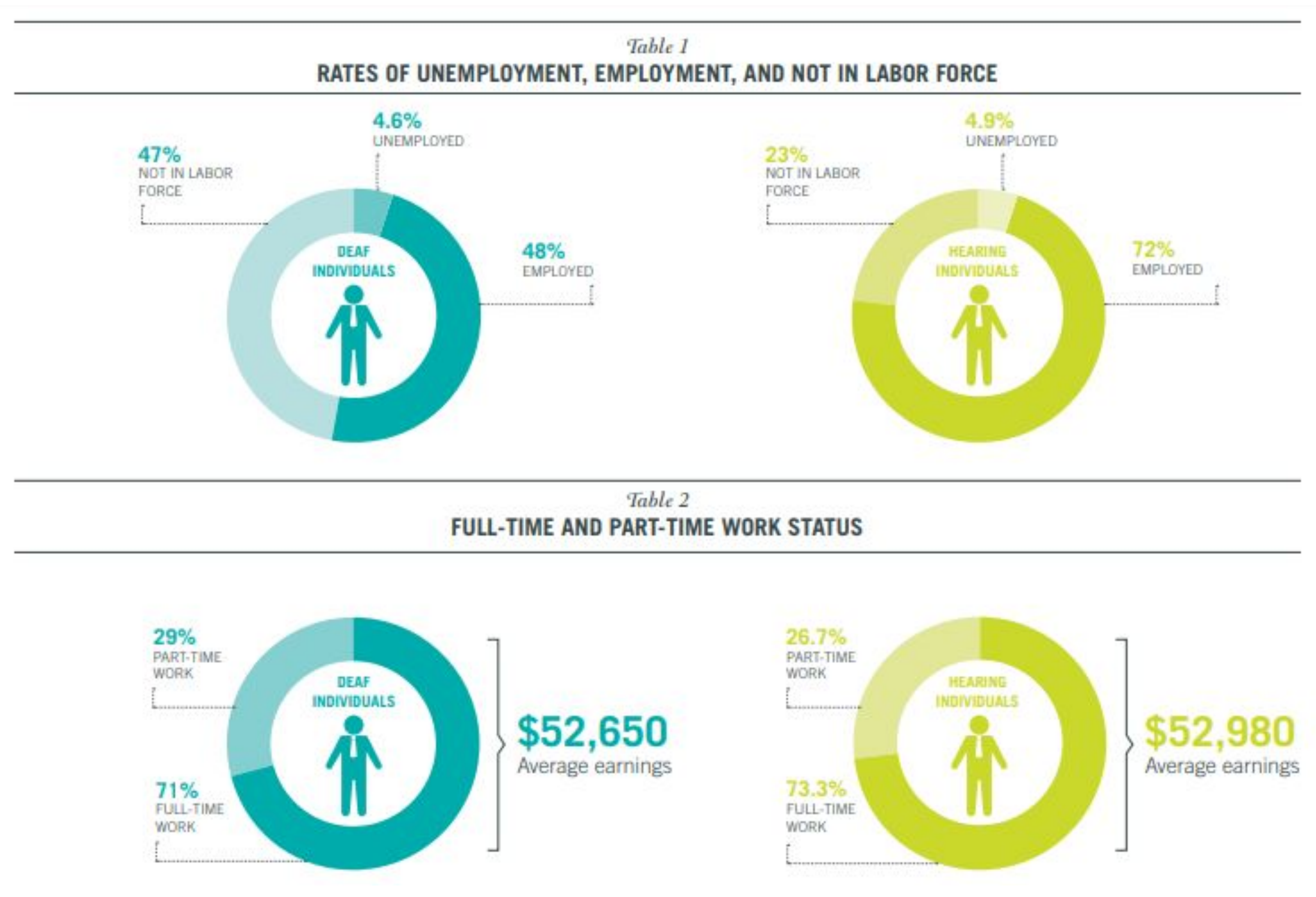


Table 1

RATES OF UNEMPLOYMENT, EMPLOYMENT, AND NOT IN LABOR FORCE

Table 2

FULL-TIME AND PART-TIME WORK STATUS

https://www.nationaldeafcenter.org/sites/default/files/Deaf%20Employment%20Report_final.pdf

Who are the users you are targeting?

- **K-12 Educators**
- **State/City/County Education Departments and Communities**
- **Students**

State/City/County Education Departments and Communities These are individuals that have control over subjects and materials allowed in the classroom. These individuals also provide training to educators and funding for employment of specific educators.

K-12 Educators Provide the knowledge to educators that can bring the same lessons to their students. Principals and teachers have a big influence in voicing and encouraging lesson materials. Private education institutions also have their own funding to train their teachers on professional development courses. The app will be developed to teach students and adults. We will also create a suggested lesson plan for the different levels of education.

How is this solution unique? How does it relate to existing solutions on the market?

This application is unique as we are also targeting educators to promote technology integration in the education system and provide support in the 504 Accommodation Area for students. We also allow integration into the curriculum by providing educators with sample lesson plans. Overall, the application contains many similar features to other applications as it follows the same principles and ideas of visual learning. Basic education includes letters and words with the sign language displayed. Some applications also include gaming elements to promote retention of learning, and would also be an approach to consider.

What’s included in the Android Project

Uses Fragments

1 main activity

3 new activities

- Letters
- Words
- Numbers

Images are in different formats

6 images on the opened page

26 images for each letter of the alphabet in Letters activity

11 images from 0-10 in Numbers activity

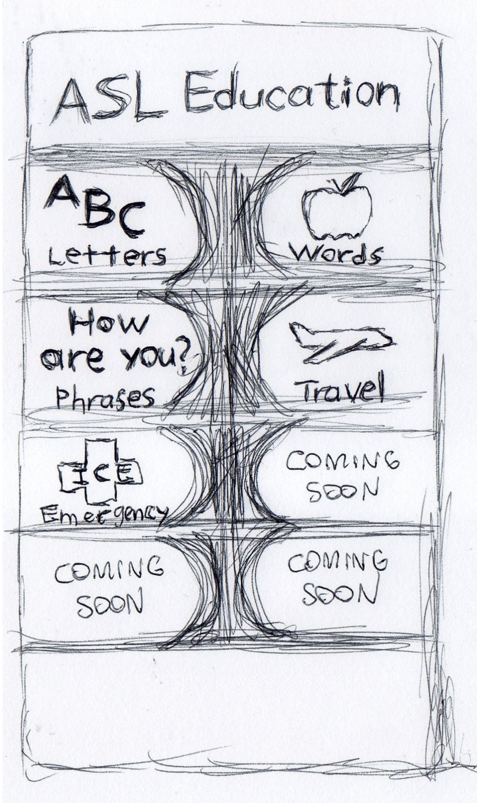
7 images in Words activity

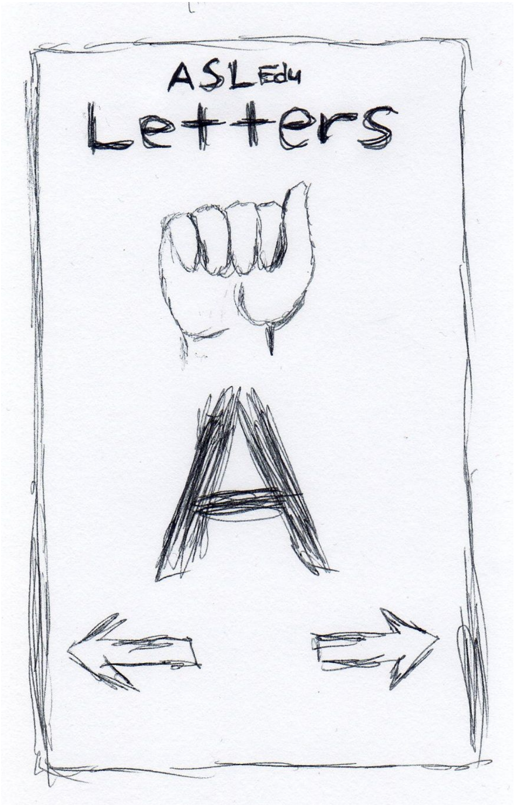
GitHub Repository Link: https://github.com/kd90693n/ASLEducation

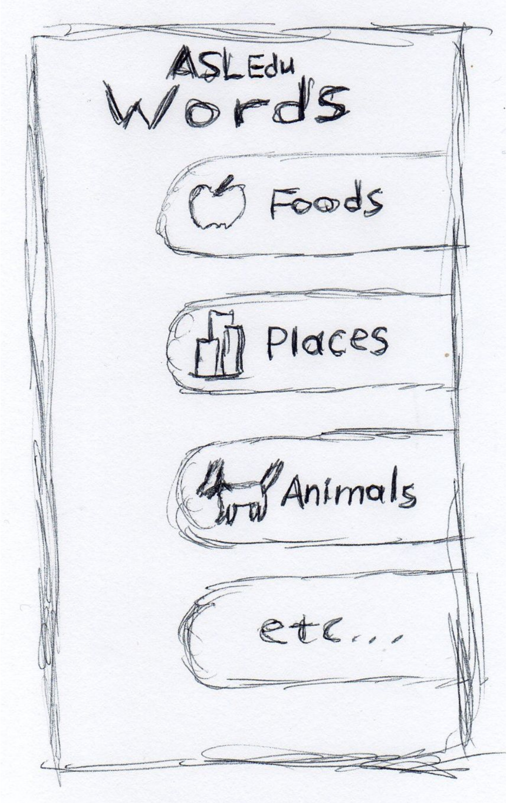
GitHub Project Folder: https://github.com/kd90693n/ASLEducation/tree/master/ASLProject

Video Link: https://youtu.be/QkqMWfJrEv0

Pen and Paper UI







Overview of the app

- We used originally used activities to open up each letter, word, number using intent. But this became inconvenient and not sustainable.
- We then moved to if else statements in JAVA to read the current value displayed, if its a show b, else if b show c, and so on. Same process for the back button, just vice versa. It worked well but was also not sustainable.
- We ended up with String arrays, hold all the images and string values as arrays and have an Integer contain the current position it is in and move back and forth by calling a function.

Code Preview

Part 1

```
public String getNextLetter(){
        TextView textView = findViewById(R.id.textView);
        String currentLetter = (String)
textView.getText().toString();


        if(currentLetter.equalsIgnoreCase("a")){
            currentLetter = "b";
        }else if(currentLetter.equalsIgnoreCase("b")){
            currentLetter = "c";
        }else if(currentLetter.equalsIgnoreCase("c")){
            currentLetter = "d";
        } //...and so on

return currentLetter;

}
```

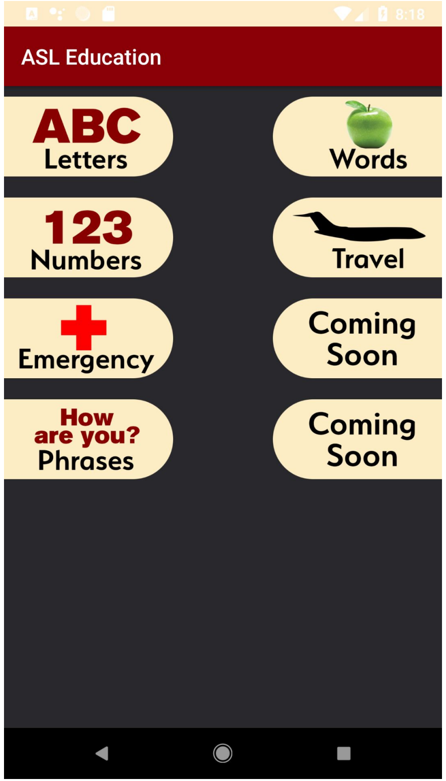
Code Preview

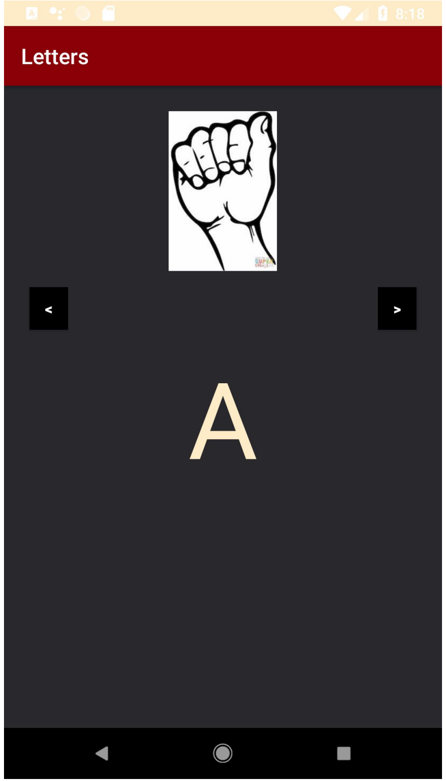
Part 2

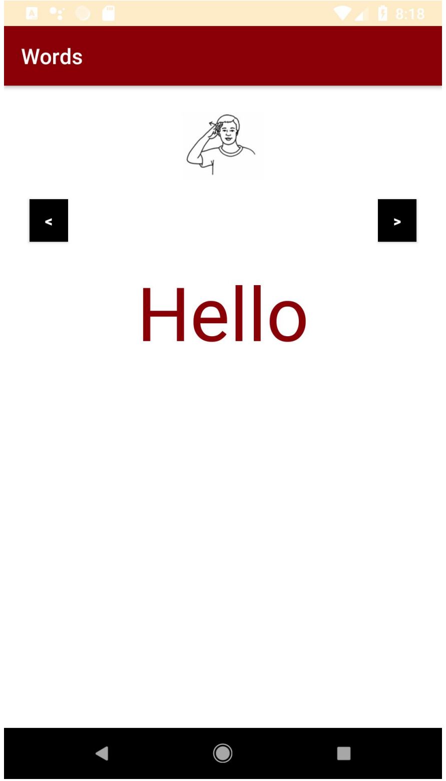
```
String[] alphabet = {
        "a",
        "b",
        "c"
}
```

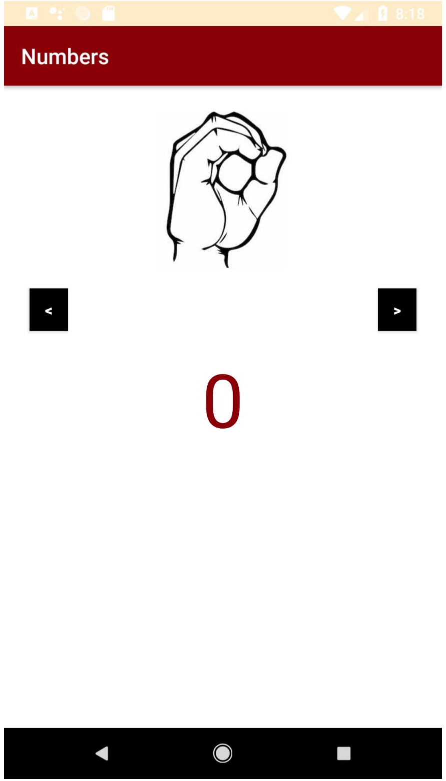
```
Integer[] alphabet_images = {
        R.drawable.letters_a,
        R.drawable.letters_b,
        R.drawable.letters_c
}
```

```
public void viewNextLetter(View view) {
    TextView textView = findViewById(R.id.textView);
    ImageView img = (ImageView) findViewById(R.id.imageView);
    if(currentLoc == alphabet.length-1){
      String nextL = alphabet[0];
      textView.setText(nextL);
      img.setImageResource(alphabet_images[0]);
      currentLoc = 0;
    }else {
      String nextL = alphabet[currentLoc + 1];
      textView.setText(nextL);
      img.setImageResource(alphabet_images[currentLoc + 1]);
      currentLoc = currentLoc + 1;
    }
}
```

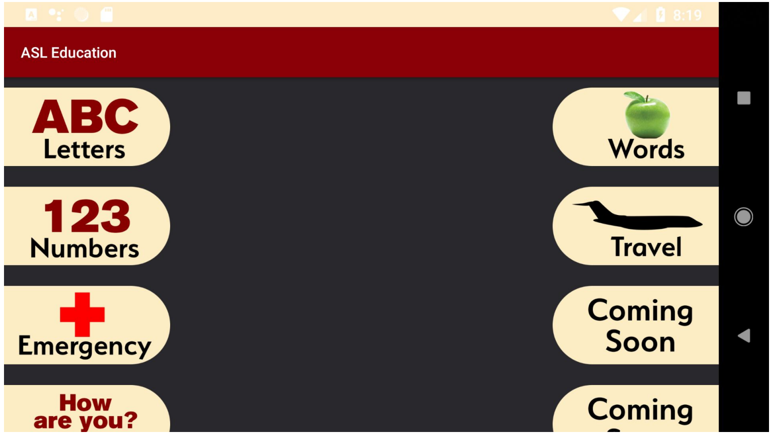


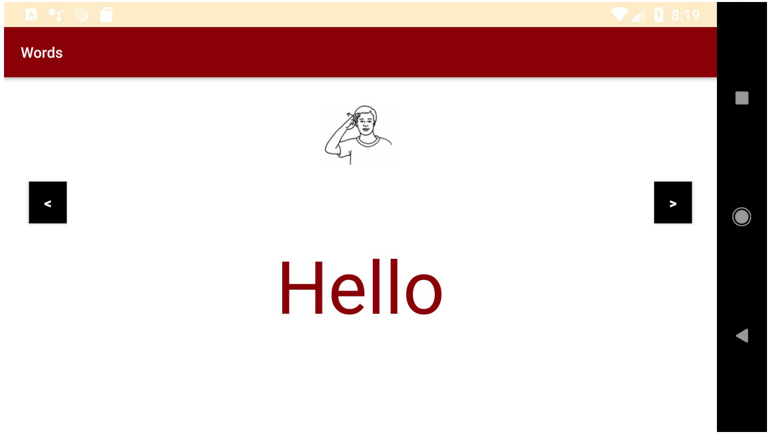


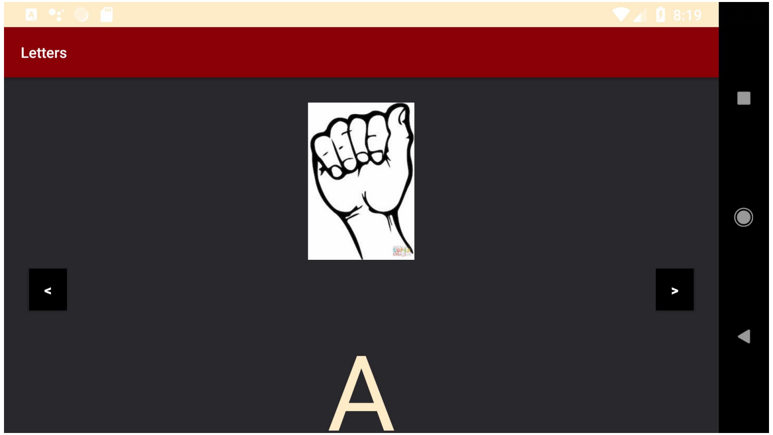


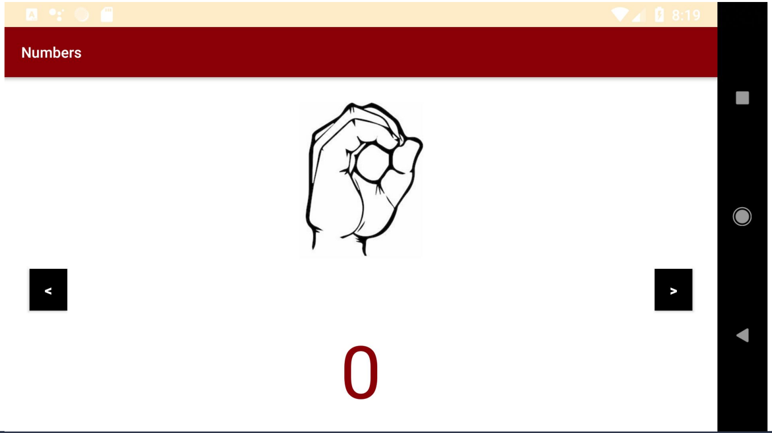


Portrait Preview

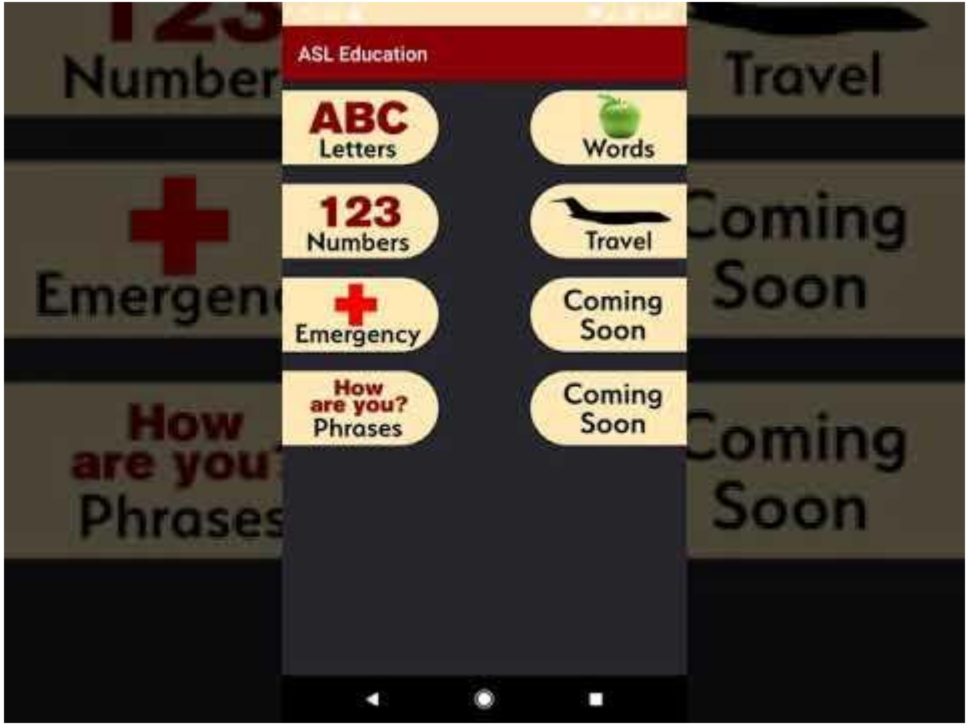








Landscape Preview


ASL Education
ABC Letters
Words
123 Numbers
Travel
Emergency
Coming Soon
How are you? Phrases
Coming Soon

Video

What can be improved

- Database to hold the images and pull in the array.
    - Too many images held in the app, pulling from the web would make it run faster
- Use a list array to hold images and text grouped together.
- Words images are too small, need better resolution images.
- Tested a darker background(letter activities) and a lighter background(words and numbers activities). A lighter background is easier to read.
- A recycle/card view to select a letter instead of needing to run through each letter to get to “O”.

Thank you