PA1_AndrApp (Conversion Calculator)

This app allows the user to choose a unit to convert from to another unit, and has the option to compute reverse unit conversions from their initial choice. Many versions of unit conversions are available and reverse-compatible (preferably this would be working and available in the complete and finished version of the application). I wrote this application because I thought it would be neat, fun, and fairly interesting to learn how to program this Android application in C#. I thought it would be a solid beginner app to start learning the basics of Android development and starting programming in C#. The purpose of this app was to provide useful and convenient conversions for users who desired a quick solution to unit conversion without having to compute it themselves. I would have liked to have added binary/hexadecimal/decimal conversions as well as unit prefixes from the metric system.

System Design

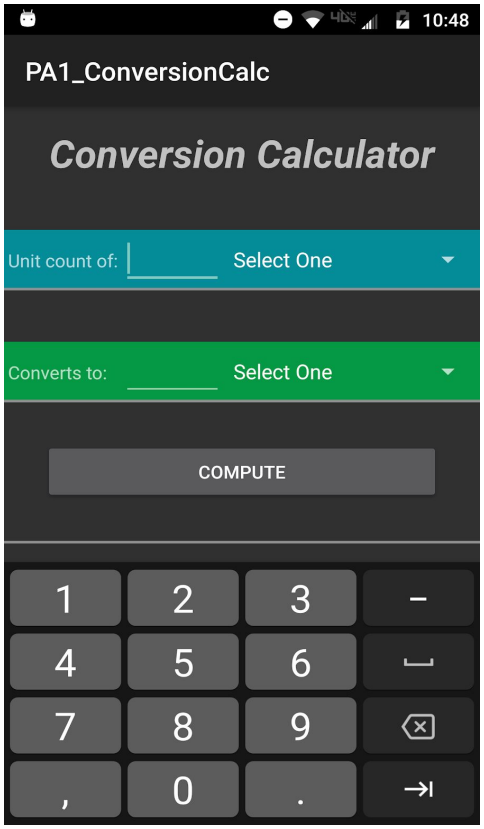
The system requirements for this app requires Android 7.1.1 (Nougat) at least, and an Android smartphone with moderate memory. The user may use this application in any scenario deemed necessary, for instance, scientific and computational assignments and formulas. The user can input a decimal value in the first text field and choose a unit from the neighboring dropdown box. The user can also choose the unit they want to convert to in the second text field; the user can input these decimal values in the text fields by utilizing the pop-up keyboard integrated into the application. There is also a ScrollView that logs and saves previous inputted unit conversions from the user. A compute button is provided to compute the inputted unit conversion, which is then displayed in the second text field.

Usage

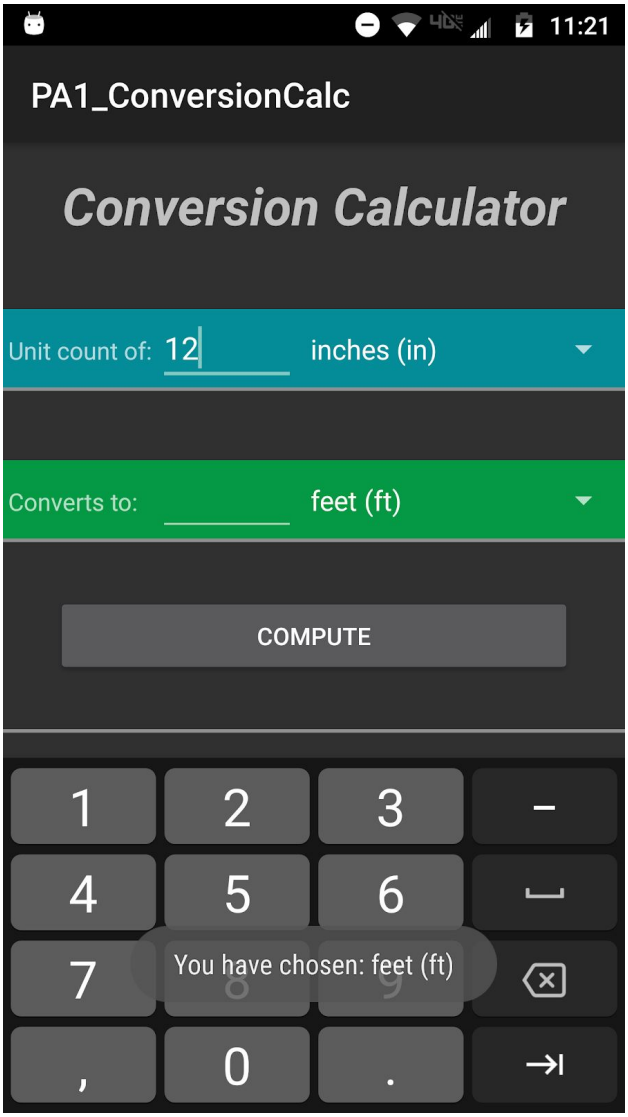
To use this application:

1. Deploy the app by tapping on the app icon.

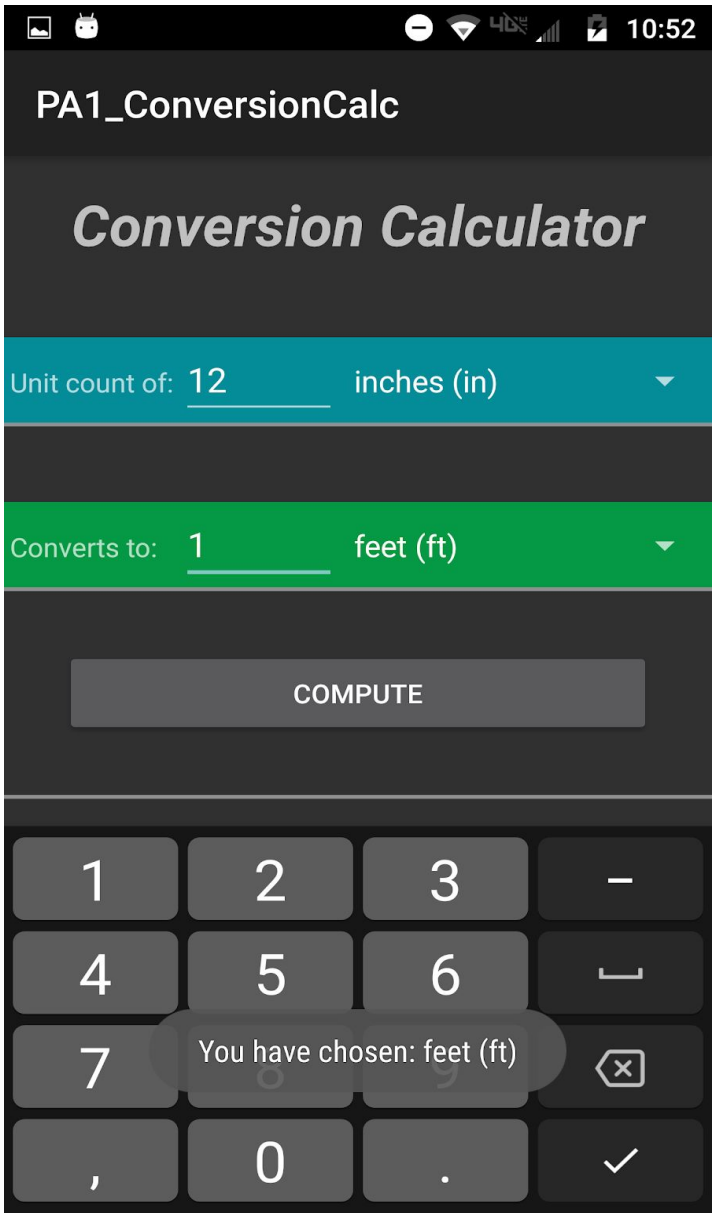
2. In the blue section reading “Unit count of:” with the underline, insert the unit amount in a numerical value, and choose the unit type in the drop down box.



3. In the green section reading “Converts to:” also with the underline, simply choose the unit type only.



4. Once you have the unit amount and type set in the blue section, and the unit type in the green section set, press the grey button reading “COMPUTE” in order to compute the unit conversion.
5. The result will display in the underlined section in the green section next to “Converts to:”.



6. You may input another conversion if you wish following the same steps, and your previous conversion will be saved and displayed under the Past Conversions section under the COMPUTE button.

PA2-MultiFuncApp

This Android application features a simple layout overview of a single button, prompting the user to take a picture. Once the user takes the picture, the picture appears in an imageview on the front page of the app. If the user is satisfied with the picture they have taken, they can then choose between different “filters” (image effects) in which they can alter their image. Then, once

that is chosen, they can then choose whether they want to record their voice, which will then convert their speech to text. The text they have recorded they can then choose to act as a title for their image, or as a descriptor/text message. The image should then be saved to their gallery directory. I wrote this application because I was assigned to create an app that utilizes two functions of an Android device, so I chose to use the microphone to record a voice to be converted to speech, on top of the camera utilization and the image manipulation we were supposed to implement. The purpose that this application is supposed to serve, is to act as an application where users can manipulate their images with fun and interesting "filters" as well as add unique text to them.

System Design

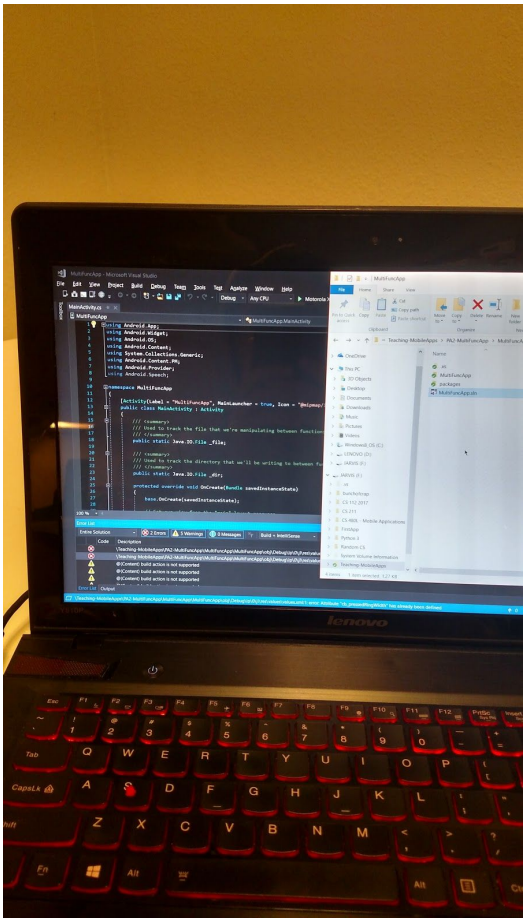
System Requirements: requires Android 7.1.1 Nougat at most, moderate amount of readable access memory, permissions to access and use the device's microphone and camera. The best scenarios in which to use this application would be to use it for personalization of photographs, for personal printing uses, for physical or digital portfolios, for sharing and sending to friends or family, or even for labeling and organizing images with a descriptive label.

Usage

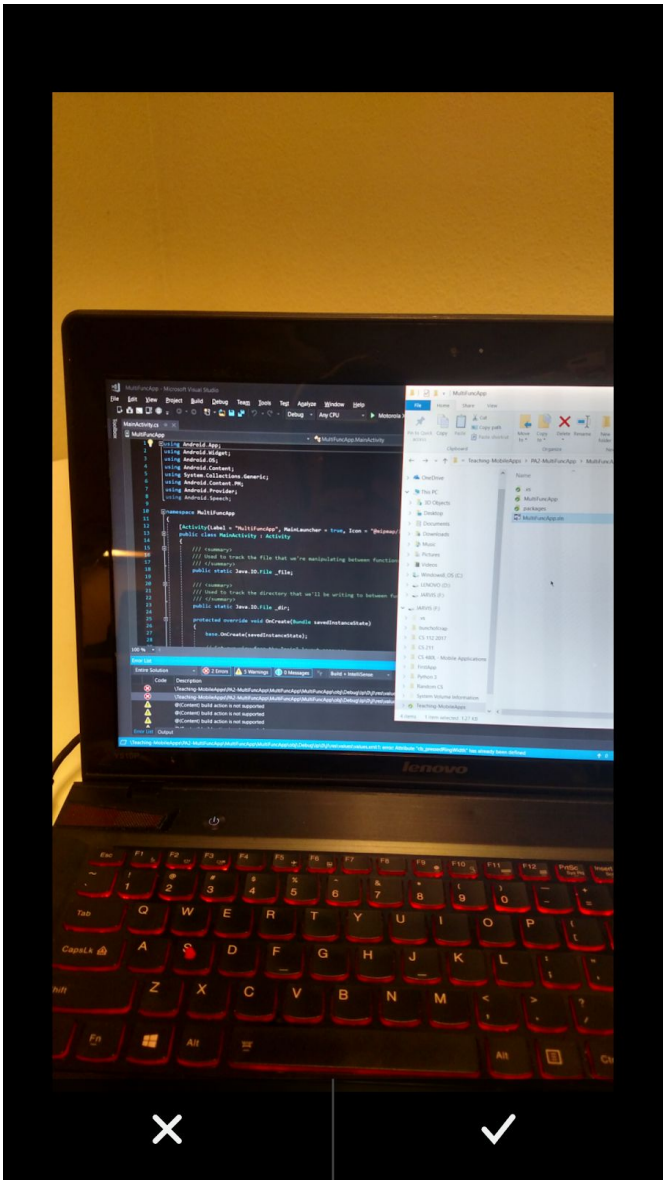
To use this application:

1. Boot up the MultiFuncApp on your device. On the front page of the Android application, you will be met with a single button prompting use to take a picture. To take a picture, press the *"Take Picture"* button. Upon pressing the button, you will be met with a pop-up notification asking for permission to use your device's camera. Please confirm that you would like to allow the app to use your device's camera. The app will not work as intended without this permission.

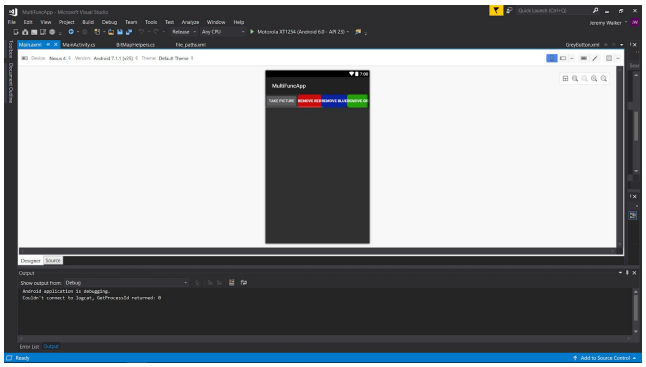
Picture taken with MultiFuncApp

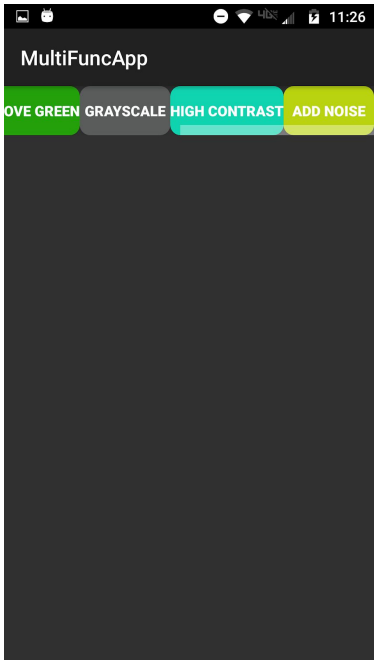


2. Once you have taken a picture, a series of buttons will pop up. If you are satisfied with the image you have taken, click on the **check** button to save the image. If you are not satisfied with the image you have taken, click on the **X** button to discard the image and to take a new one.



3. After you have confirmed the image, you will then be prompted by a series of different filters and layouts to apply to your image. Click on the layout that you desire, and then press on the pop-up **check** button to confirm. You may click on the pop-up **X** button to discard the layout you have chosen.





4. Once you are satisfied with layout/filter you have chosen, you have the option to add text to your image via a voice-recording button. If you wish to record your voice, press on the white round button. Upon pressing the button, you may start speaking to record your voice. Press the button again to end recording your voice. If you do not speak after the button has been pressed, the recording will automatically end.
5. Once you are done altering your image, and satisfied with the results, your image will be saved to your **Gallery** file on your device.

PA3-ImageGuess

ImageGuess is an Android Application that features a Google Api, *Google API Vision,* and utilizes the users Android device's camera hardware. It features a dark layout, with a horizontal scroll view that holds three different options for the user to implement an image. It also features a space reserved for the image chosen in question, and a green "yes" button as well as a red "no" button, to confirm or deny that the image has been chosen correctly. Pressing either button will result in a different result based on the outcome, but more notably, pressing the "no" button will transfer the user to another activity where they will be asked to input the correct answer. In this new view, they can navigate back to the main page, or they can submit their answer to the Google API. I wrote this application because it was assigned for me to complete, and the general purpose for this Android application was for it to be a form of entertainment and interesting to the user. A particular application that I could potentially see this Android application applied to

other than a game, is an image file organization tool, which groups images together based on image recognition compatibility.

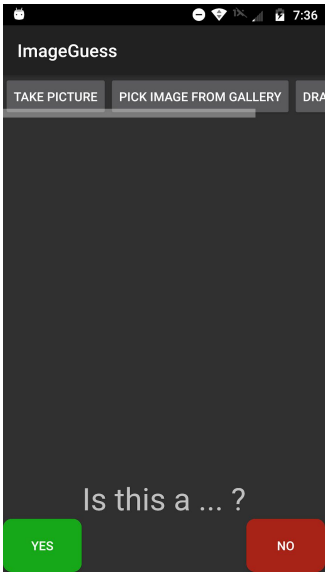
System Design

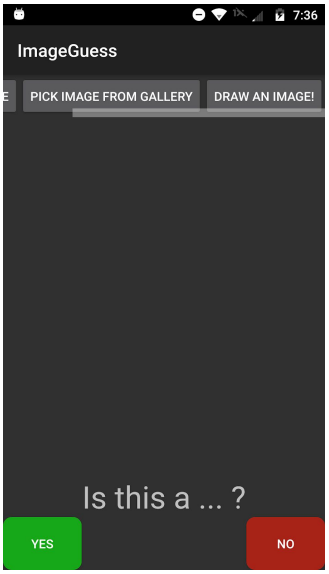
The requirements for ImageGuess are as follows: An Android device with Android 7.1.1 Nougat installed, at maximum, with functioning camera software and hardware, and enough device storage to install the app. In ImageGuess, the user is given three separate imaging options: taking a picture using their device's camera, choosing an image already saved in their device's gallery app, or to draw an image themselves. Choosing either one of these options, will initialize and utilize the integrated Google API Vision, to analyze the image and present to the user its best guess as to what is depicted in the image. The user has the option to choose whether the Google API has guessed correctly, by pressing yes, displaying that the image was guessed correctly, or the option to press no, to display an option and a query for the user to input the correct answer themselves. If the answer the user has inputted is in the Google API's library of potential answers, it will say that there was a certain percentage that that was the answer, if the answer was not in the API's library, then the API will say that that answer was not in its library, and display the percentages of other potential answers. This Android application can be used for entertainment purposes to test the accuracy of the applications ability to accurately identify the objects in the user's images.

Usage

The directions to use the ImageGuess Android app are as follows:

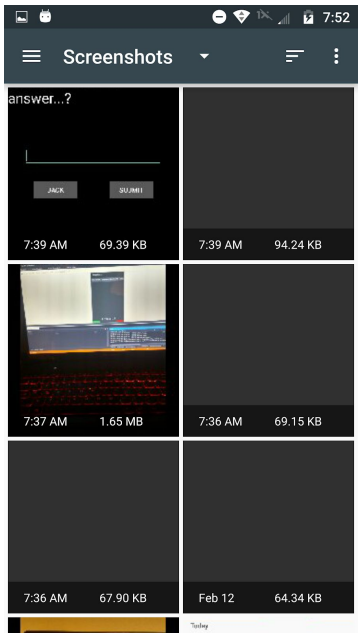
1. Open the ImageGuess Android application by pressing the app icon labeled ImageGuess.
2. Once opened, choose one of the three options presented in the horizontal scroll option wheel located at the top of the app. The options are: *Take a picture, Pick Image From Gallery,* and *Draw Image.* Note: Choosing either the *Take a picture,* or *Pick Image From Gallery* will result in a notification asking for permission to use and access your device's



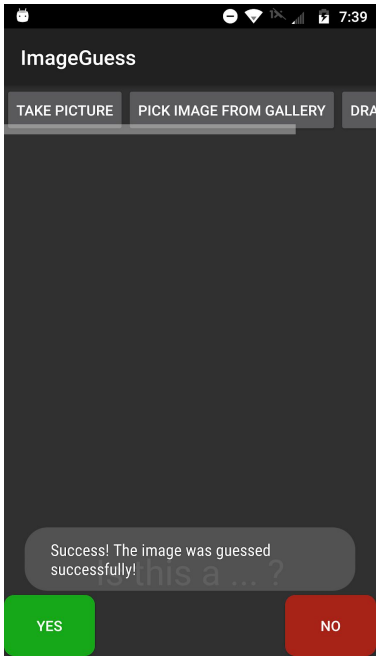


camera and/or gallery. Press Ok to allow access. The app will not work as intended if the app is not allowed access to the camera or gallery.

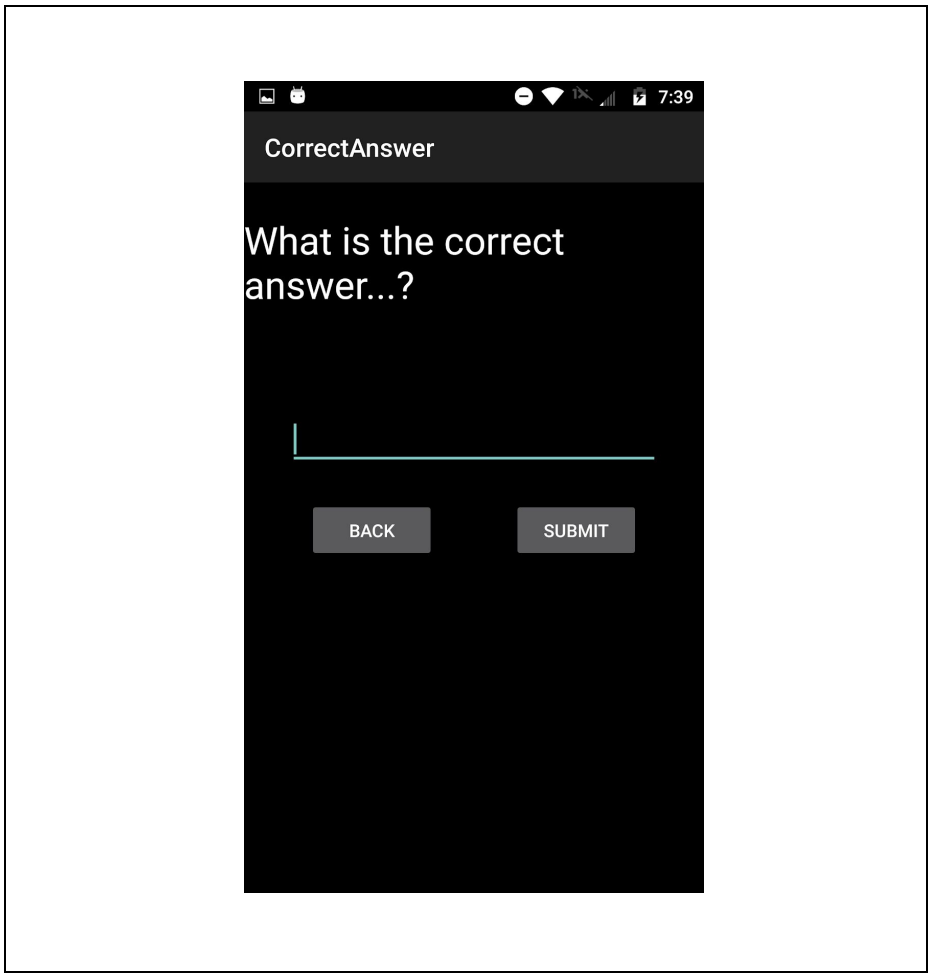
3. Once a picture has been taken, chosen from gallery, or drawn, confirm that is the image you would like to use, and that image will be set within the front page. The Google API Vision will assess the image you have chosen and display a question reading: “Is this a…(*insert image descriptor here*)?”.



4. Confirm that the app guessed the image correctly by pressing the green ‘Yes’ button, in which a notification will pop up saying the image was guessed successfully! Once this is displayed, you can choose another image option of your choosing!



5. Press the red ‘No’ button to disprove that the app answered correctly. When pressed, another window will pop up asking you to input the correct answer. Input the correct answer in the text field provided and submit when ready. There is a back button to navigate back to the front page of the app if any mistakes were made.



6. Once the submit button has been pressed, one of two screens will appear based on the answer you have inputted. One potential outcome could be if the Google API recognizes the answer you have submitted, it will display that it had no idea that that was the correct answer, and promptly display the percentage of your answer in its integrated word library. The other outcome will be that the Google API does not recognize your answer at all, and display that that particular answer is not in its word library, and then display the all the potential outcomes and their percentages that are in the API’s library. On each of these screens, the user can navigate all the way back to the front page to start again.