

Front End Development-Research(Application Building)

Finding the right software to build a windows application for the following features:

-Making an actual app with potential click-through-ability(to not block computer usage)

- **Software**

- App must properly render
 - Launch app, make sure onscreen keyboard renders
- Ensure delay does not go above 70 ms.
 - Run fingers around keys very rapidly while running lag measuring routine, then observe the highest peaks
- Verify app functionality
 - Install the application on a different computer than the one used for development, plug in the keyboard, and check if it still works as intended. Flip contrast, change fonts, adjust transparency, and make sure changes are saved and maintained between launches
- Accessibility functions must be easily navigable and provide for a wide range of visual impairments
 - Ask potential users to work the application without prior knowledge of functionality and ask questions about ease of use and if it has sufficient features, adjusting and adding if need be based on feedback.

Special requirements:

Special requirements section is typically reserved for identifying unique skills, certifications, testing, data handling, and access requirements.

Technical Requirements

Requirement Topic	Requirement
Physical keyboard completion	Keyboard should be fully wired. All keys must be in communication with the software, and wires should be entirely under the keys.
Contrast	The user can adjust the contrast. Background and text should be adjustable between white, black, red, yellow, green, and blue.
Transparency	The user can adjust the transparency from 0-100%.
Font Types	The user can select Garamond and Sans Serif font options.
Font Size Range	10-100 point

Key Size	The user must be able to adjust the onscreen keyboard key size to fit their preference.
Preference saving	The program must save and keep all changes to accessibility options between launches.
Auditory feedback	The keyboard must provide auditory feedback to the speakers/headphones of the computer.
Touch Detection with Proximity Sensors	The capacitive sensors must detect a touch on the outer surface of a key without the user needing to touch the capacitive sensing node.
Touch Detection Functionality	Touch detection functionality will need to be given to all the keys on a 60% keyboard.
Latency	The duration between when the sensors detect a touch and when that touch is displayed on the app needs to be less than 70ms, as typically users cannot easily notice delays that short.

Software to use to build application: Visual Studio Code, Python(Tkinter)

Visual Studio 2019 will not be used:

-Unable to use visual studio to create the Desktop App, the Iron Python installer became out of support within visual studios

-Have had to switch from Visual studio 2019 to Tkinter Python desktop app development within Visual Studio Code.

Research links to aid development:

(Python Dev) (Tkinter)

<https://pythonistaplanet.com/how-to-create-a-desktop-application-using-python/> - Introduction to desktop application dev using Tkinter

<https://pythonistaplanet.com/python-oops-concepts/> - OOP Concepts to aid Code dev

<https://pythonistaplanet.com/tkinter/> - Tkinter introduction with three applications for code guidance

<https://pythonbasics.org/tkinter/> - Tkinter GUI Programming

<https://www.geeksforgeeks.org/reading-images-with-python-tkinter/> - Loading an image to the desktop application front page(Using Tkinter)

Application Design (Draft):

Front Page (Login Page)

- (Image portraying the app?)
- Login Credentials
 - Entering a username/email
 - Entering a password
- Managing Credentials
 - Create account (For new users)
 - Forgotten password/Change password (For existing users)
- Completed registration/login information
 - Login button

Application Home page

Must contain toggleable or adjustable vertical tabs for the following:

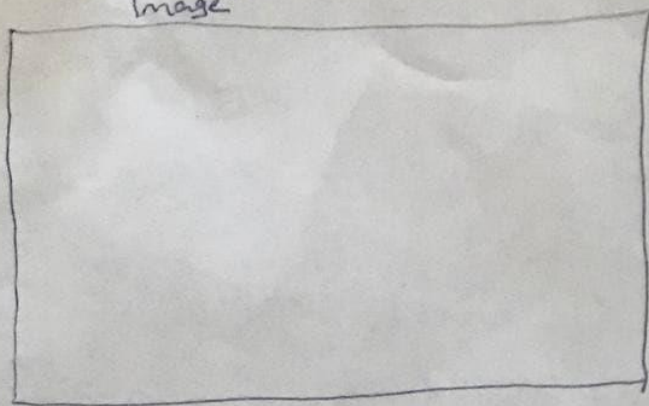
- Contrast
- Transparency
- Font Types
- Font Size Range
- Key Size
- Auditory adjustments

*(May also be organized under a 'settings' tab within the home page, pending discussion/opinions from team members)

Draft Design for front page:

Page 1

Image*



Email

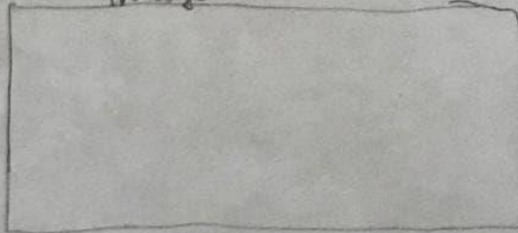
// Kindly enter your email

~~Create Account~~ Continue

Create account | Forgotten Password

Image*

Page 2



Email Account

Password

// Enter your Password

~~Create Account~~ Continue

Create account | Forgotten Password