All In Tuner Mobile Application

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Abstract

“All In Tuner” is the name of the mobile application that will be created for this semester. This mobile application is a cross platform that would be a essential tool for all musicians. “All In Tuner” is a tuner for any musician to tune their instruments whether they are practicing or warming-up. The project emphasizes the development of an intuitive and user-friendly interface, ensuring a seamless experience for the end user. By delivering a reliable, precise, and fully functional tuning solution, this application aims to attract a broad user base, enhancing the overall practice and performance capabilities of musicians.

Tools

Software Tools:

-VSCode

-React Native

-Git, Github

-Figma

-Audio Processing & Pitch Detection Tools

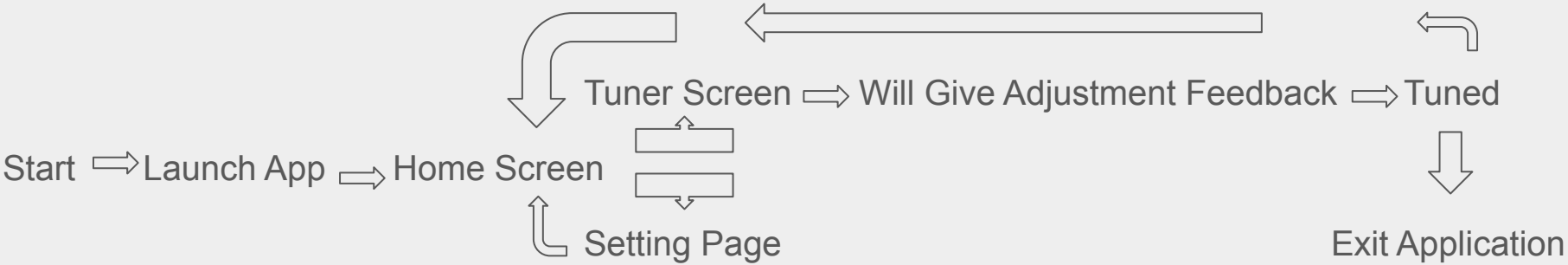
Physical Tools:

-Laptop

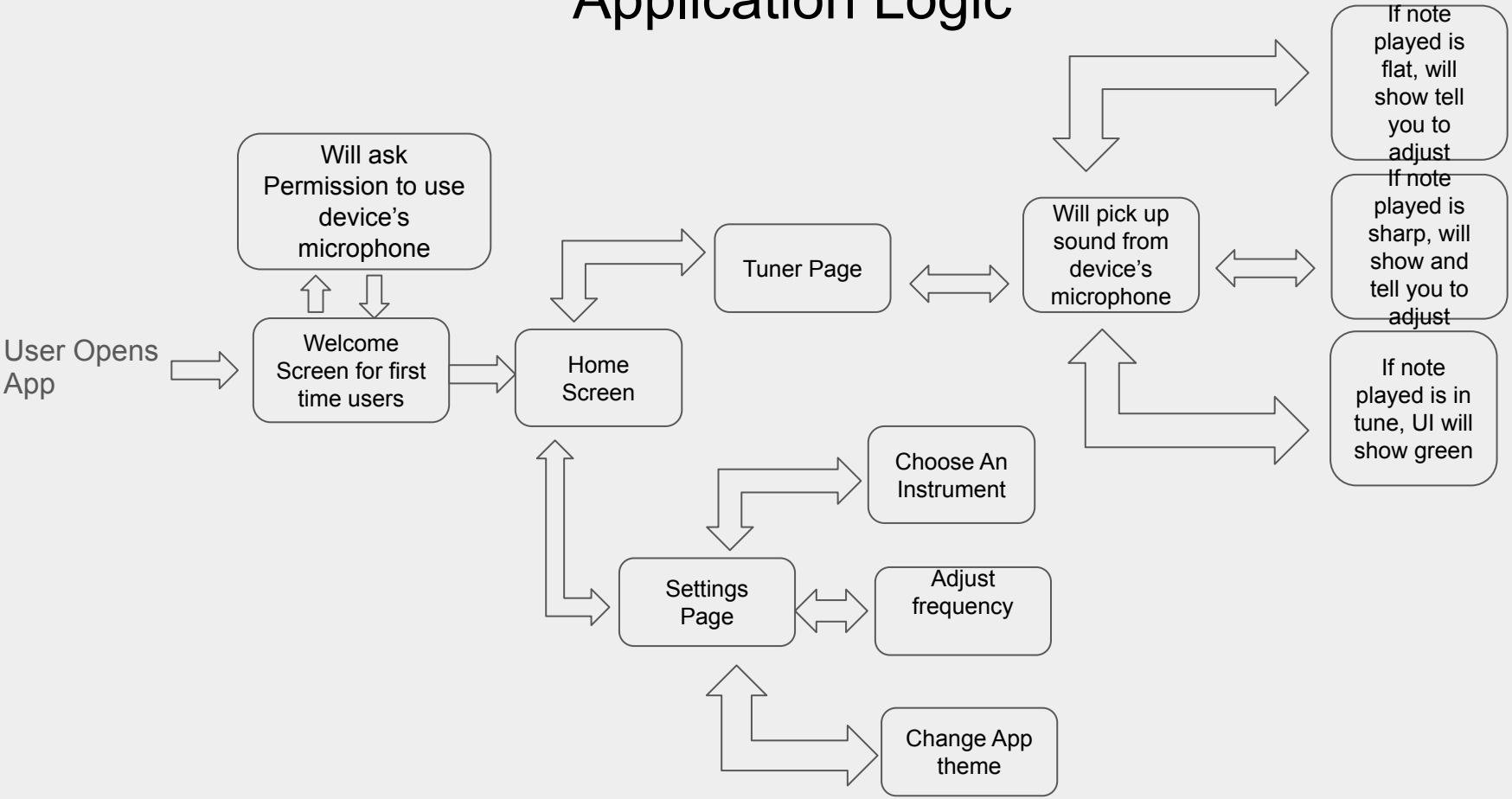
-Instrument to test mobile application

-Testing Devices(Ex. Phone)

User Flow


Start
Launch App
Home Screen
Tuner Screen
Will Give Adjustment Feedback
Tuned
Setting Page
Exit Application

Application Logic



Tentative Schedule

Table In Different Document

Due To Size

Data Source

Here are just a few sample Data Variables/Sources

Variable/ Source	**Type**	**Description**
Audio/ Mobile device microphone	Int/Floating point	Capture sound waves from musical instruments for frequency analysis
Instrument Name	String	Users will have the option to choose the instrument of their choice to tune.
Detected Frequency	Int/Float	To capture frequency detected from microphone input
Tuning Accuracy	Int/Float	To adjust/test difference between detected and reference frequency

Use Cases

Expression	**Result**	**Display In UI**
Tuning Page: The microphone picks up 432 Hz for tuning a A4 note. The A4 in tune note should be 440 Hz	The program will detect that the note played is flat.	Image of a needle pointing Flat, or down/left to indicate the note is Flat
Instrument Selection: The User changes Instrument Selection	The frequency settings will change to test the selected instrument frequency.	A UI Box with the selected Instrument
Microphone Sensitivity: The User changes microphone sensitivity to personal preference from a range of 0% - 100%	The program will adjust the microphone and what sounds it will pick up and store as data.	A UI Box with the selected microphone sensitivity

Project Repository & Project Management

Github Repository: https://github.com/PerezChris021/cisc4900-All_In_Tuner.git

Github Project: https://github.com/users/PerezChris021/projects/1/views/1