Team Name: Techblazers

Date of Submission: 02/06/22

Meeting Date & Time: 02/06/22

Meeting Location: Microsoft Teams

Meeting Duration: 3 – 5 pm (approximately 2 hours)

|  |  |  |
| --- | --- | --- |
| Team Members | X = Present | Notes |
| Chase Williams | X |  |
| Slate Jordan | X |  |
| Chief Boateng | X |  |
| Victor Siooh | X |  |
| Emmitt Brandt | X |  |

Progress:

Team accomplishments for the week: A short narrative, typically 1-2 paragraphs, should include decisions made by the team as a result of the team discussions, and how the team arrived at the decision.

Based on the research we have conducted on the available space in the keyboard we bought, we have decided that there is not enough space to route wires from the touch sensor nodes to the inside surface of each key. Consequently, we plan on building a custom keyboard to give us more flexibility. To allow multiple team members to test the touch detection accuracy, we will be meeting to give multiple people the hardware needed to conduct tests.

Individual contributions: A brief narrative (1-3 sentences) made by **each team member** summarizing their respective activity for the past week.

Emmitt Brandt: I was able to find a few functions that will be of help in getting the keyboard overlay to not interfere with using below windows. I also found Pyglet, another module for editing visuals on a Python-driven window. This should allow me to add Garamon font as well as other visually friendly fonts to switch between.

Victor Siooh: I was able to determine the spatial availability of our initial keyboard model and inform the team. I also pitched ideas for where the location of the wire could be inside the keycap to avoid conflict if a key is pressed down. I also created some designs of what the keyboard compartment may look like with our initial model, but it may be applied towards our new model.

Chase Williams: I figured out how to update the microcontroller code to increase the touch detection sensitivity. In addition, I thought about and discussed several options for where the hardware will be placed and how we will route the wires from the touch sensor nodes to the inside surface of each key. Finally, I researched how to integrate the multiplexer with the capacitive touch sensors and microcontroller.

Chief Boateng: Took the time to research into different software development tools for app development, some which included Flutter, Swift and Visual studios. I also began researching whether the tools fit the requirements of the project which we wrote down in our second semester work statement, as well as work in parallel to draft a design of what the application may look like to present to team members.

Slate Jordan: Did testing on the parts we ordered at the end of last semester. This included the small gauge wire, soldering to copper tape, and testing sensitivity of sensing copper tape under the keycaps. The conclusion from testing the microcontroller raw data output, it looks like there might be enough resolution in the capacitive sensor to distinguish a finger from copper tape under the keycap. I also did some thinking and discussing with the team about the physical layout of hardware.

NOTES:

1) A team member present at the meeting but making no contributions risks a ZERO for the weekly minutes.

2) A team member missing the meeting without providing data to the team in advance of the team meeting risks a ZERO for the weekly minutes.

3) A team member missing more than two weekly team meetings and having no significant contact with the team risks a ZERO for weekly minutes and a ZERO for any assignments completed by the team when absent.

Project Tracking (current work): Assignments and activities are to be tracked until completed.

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| --- | --- | --- | --- |
| Team Member | Assignment | Due Date | % Complete |
| Slate Jordan | Testing 30-gauge wire and copper tape under keycap for detected change in capacitance (ADC counts). | 1/30/22 | 100% |
| Slate Jordan | Testing on noise to signal ratio with copper tape under keycap setup. | 2/13/22 | 0% |
| Slate Jordan | Research viability of alternative methods to conductive keycaps. | 2/20/22 | 20% |
| Victor Siooh | Determining spatial availability for compartment with keyboard and organization of wires along with the location of copper material underneath key caps. | 01/30/22 | 70% |
| Victor Siooh | Learn about Tinkercad software through tutorials for designing compartment. | 02/13/21 | 20% |
| Victor Siooh | Research different custom keyboards to use for final product design. | 02/18/22 | 10% |
| Chase Williams | Learn how to update the microcontroller code to increase touch detection sensitivity. Sharing different versions of the code that each have different levels of sensitivity for testing. | 2/13/22 | 80% |
| Chase Williams | Learn how to integrate the capacitive touch sensors, microcontroller, and multiplexer. | 2/20/22 | 10% |
| Chief Boateng | Identify different software app dev tools which could be used to build a windows app | 1/30/22 | 100% |
| Chief Boateng | Complete Research on tools to ensure they can meet the requirements for the project | 02/08/22 | 70% |
| Chief Boateng | Create a draft design layout of the application to present to team members for discussion / opinions | 02/13/22 | 20% |
| Chief Boateng | Development for the first page (Log in page) of the app after discussion with team members | 03/06/22 | 0% |
| Emmitt Brandt | Implement “Click-through” programming for the interface to allow operating below software | 2/11/22 | 25% |
| Emmitt Brandt | Find how to add more fonts to the interface and import Garamon | 2/11/22 | 15% |

Plan (future work):

A brief description of the tasks and activities the team needs to accomplish work over the coming weeks. As team members pick up assignments, move from this table to the tracking table. Consider future work a running task-list with an expected due date for completion.

|  |  |
| --- | --- |
|  | Due Date |
| Purchase a new custom mechanical keyboard | 02/18/22 |
| Test touch detection to assess how accurate it is. | 02/27/22 |
| Design interface to change sizes of the actual keys | 2/27/22 |
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Issues:

Include a brief description of issues the team has encountered, and potential resolutions for the issues. If the team would like staff to help with the issues, this is the appropriate place to request assistance.

One issue we encountered was figuring out a way to fit the hardware in the keyboard and route wires from the capacitive sensing nodes to each key. One solution we discussed was buying another keyboard that we can customize. Another option was coating the keys with conductive paint as a backup plan if we are not able to route the wires under each key.

Include the schedule for the next meeting:

Meeting Date & Time: 2/13/22 at 3PM

Meeting Location: Teams