Team: SAYAM

Final Presentation

P I A N O

R

Team Members:

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Motivation and Background - Problem

- Learning to play the piano should be simple and fun
- A novice’s piano learning experience should be intuitive and as informative as possible.
- We needed a better way of learning to play alone and without an instructor
- Making instant achievements could increase interest and prevent quitting

Motivation and Background - Improvement over existing solutions

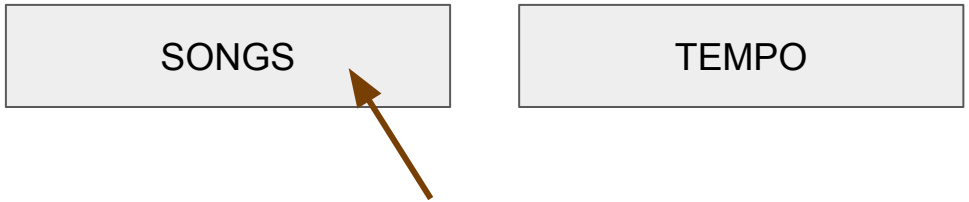
- Learning a new song can be too hard when you need to constantly gaze at web tutorials and lyrics

- Using AR apps on the phone requires the user to hold the phone in one hand and play with the other.

- Teaching finger movements to beginners is also important, but current music sheets will label fingers from 1 to 5, which can be confusing and hard to follow

Design

Minimalist design with a simple menu that follows you and a piano that can be places as an overlay



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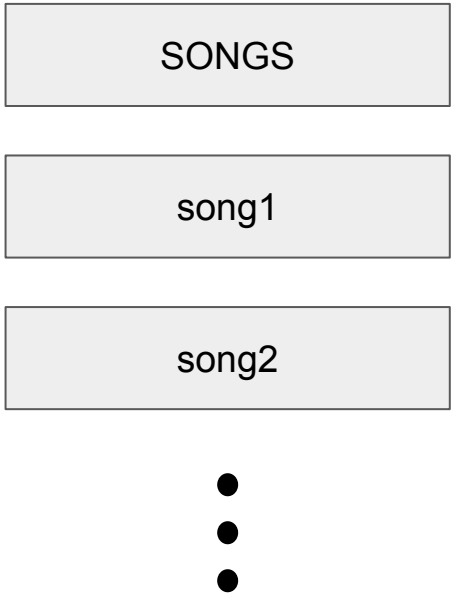

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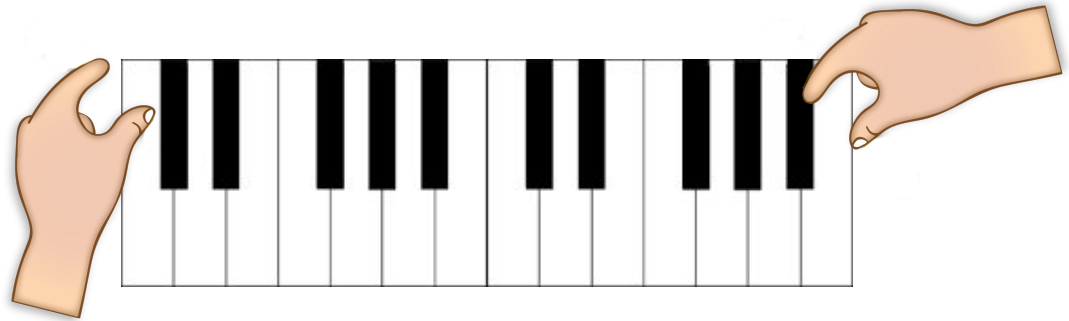
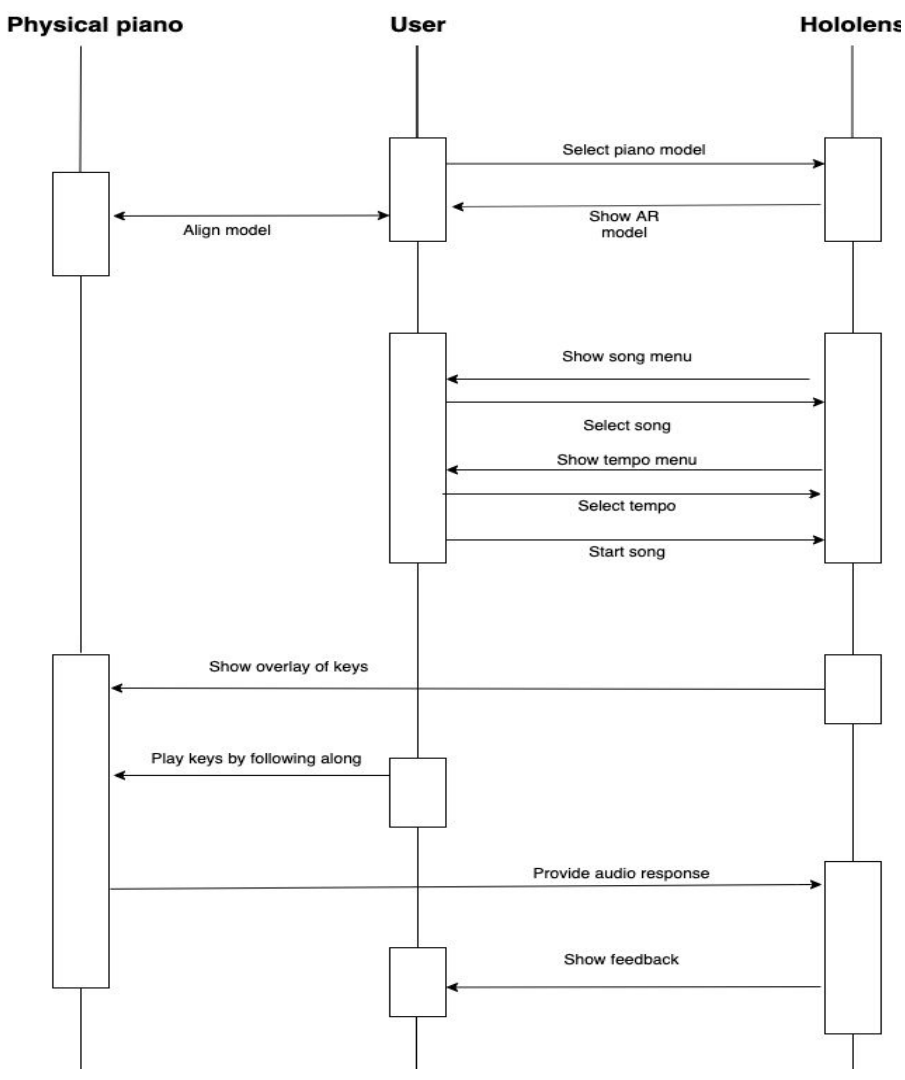


System Development

It was important to understand what was a feature of the real piano and what was the job of the HoloLens.

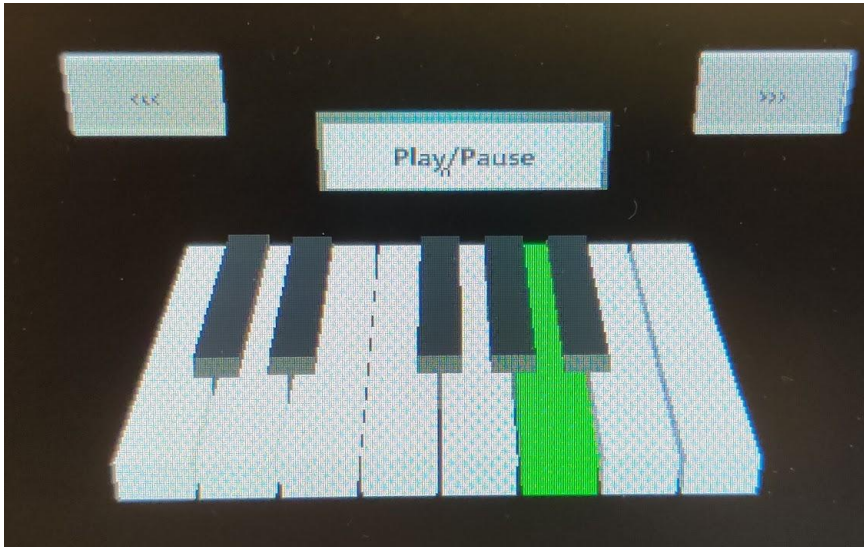
For example, the sound to be played had to come from the piano, so it would be more natural and audible for everyone (and not only the user)

On the other hand, the key overlay and menu should be virtual renderizations for only the user to see



Product Features

- Song Menu
- Song Tempo
- Piano Overlay manipulation
- Start, Pause, Rewind and Forward
- Finger Guidance
- Color Guidance



Testing and Evaluation

The User Testing Session #1 gave us some insights on what to improve, p.e.

- Song ending (feedback on song ended, not show guidance anymore)
- Menu position on world (align better with user)
- Menu interactions (clicking on song should close menu)

The final Evaluation showed us that the user can play the song properly, but no time was available to test if the knowledge of the song was kept and the user could perform again with no guidance

Agile Process: Scrum

This project used Agile methods to organize and execute tasks.

Weekly, team members decided on new tasks to work on during the week, estimated a point system to infer the difficulty or time requirement and assigned members to each task

Using tools such as ZenHub, the team integrated all the tasks with GitHub issues and attributed them ZenHub Epics

By the end of each week, the team made an Agile report stating all tasks accomplished, tasks to do next week and current problems.

Also, two ZenHub reports were filed each week (Release and Burndown)

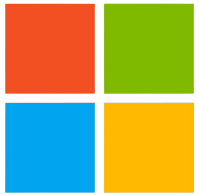
Conclusion and Future Work

[final product conclusions - wait for next iteration]

Future work that could be implemented to increase product value and features

- Detecting any keyboard layout
- Feedback on song played by the user

Technologies and Resources



Microsoft HoloLens

ZenHub + GitHub

UCSDCSE
Computer Science and Engineering

Collaboration

Thank you to the Teaching Team

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Janet Johnson (TA)

Danilo Gasques (Assistant Instructor)

Thomas Sharkey (Assistant Instructor)

And SAYAM Team