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1 Introduction

1.1 The Idea

A timer tracker app, that can record the spend time on an activity. To start the activity many there exists many was to activate and deactivate the time tracker. For example by simply clicking a button, clapping twice, being at an specifiy geo location, gestures by moving the smartphone around. Also a separate device (the board) can also be utilized to toggle the time tracker. Also different activity functions should be able to map to specificy activities that the user of the app can define on their own.

1.2 The Deep Dive

We want to detect double claps.

2 First Prototype (Board)

Explain the state of what we achieved with the board and what problems arised.

2.1 Setup

- show board setup
- some code we used

2.2 Analysis

- Diagrams that we had in the presentation. Explain problems.

Sample rate to low, memory problems, not so easy to debug (no way of stepping through code, no UI for giving fast feedback only LEDs)

2.3 Conclusion

move to android.

3 Second Prototype (Android)

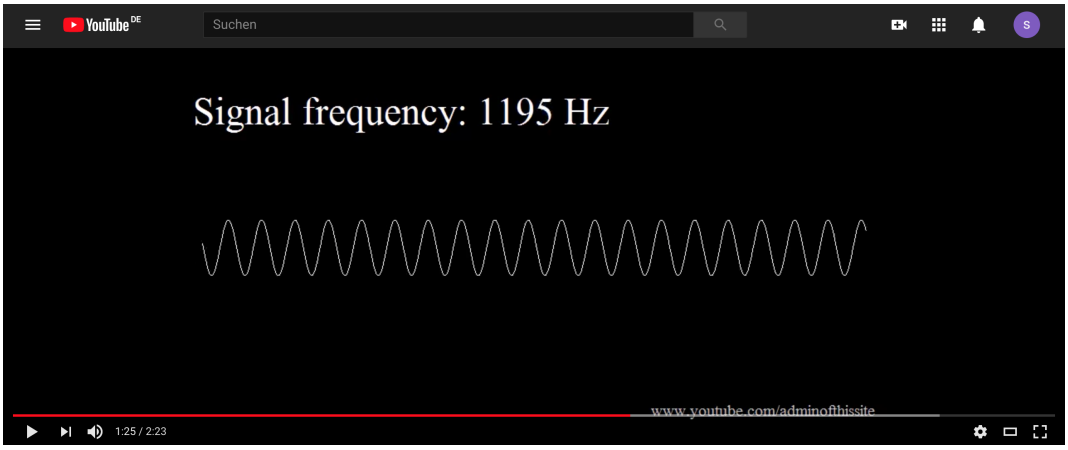
We moved to Android, used the open source Tarsos library that gives us methods to transform the audio signal from android to FFT. Higher Samplerates of 20k is not a problems.

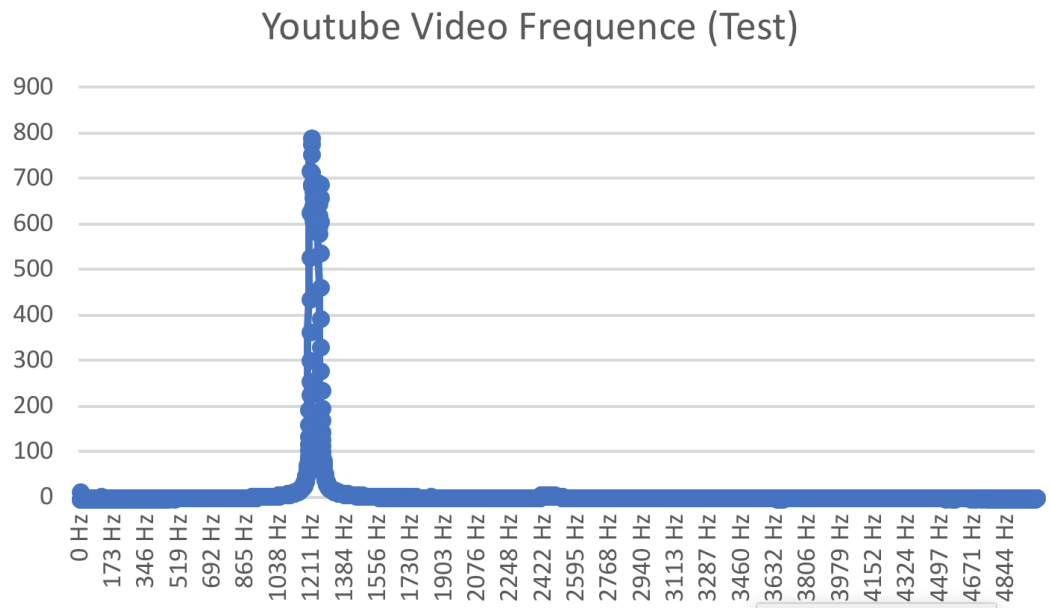
3.1 Analysis Sound

- Showing frequence diagrams of recorded tests (Claps, Husten, Schnippen, Reden)
- Explain characteristics and approaches for solving the problem of only detecting the claps.

3.1.1 Prove that our android FFT works

frequenceVonYoutube1200hz.csv





https://www.youtube.com/watch?v=qNf9nzvnd1k

4 Implementation (Android)

- UI Screenshots
- How we implemented the clap detection in the end.

4.1 Evalutation

- How reliable can our implementation detect clap.
- Show statistics by trying it out (maybe in different environments (loud, silent rooms, outdoors)

5 Conclusion

5.1 Current State

Refer to to evalution part above. State how difficult this was and the time needed to try out more advanced solutions (AI) was not enough.

5.2 Project Future

Maybe add more debug functionallity inside the App, be able to not only tweak parameters inside the code, but also with UI Controls inside the app.

6 Referernces

http://www.klangfuzzis.de/showthread.php?679817-Was-hat-in-etwa-wie-viel-hz