Decibel Threshold Event Displayer

Intermediate Presentation

January 14, 2025

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Initial Situation

Project Goals

- Analyze Audio File

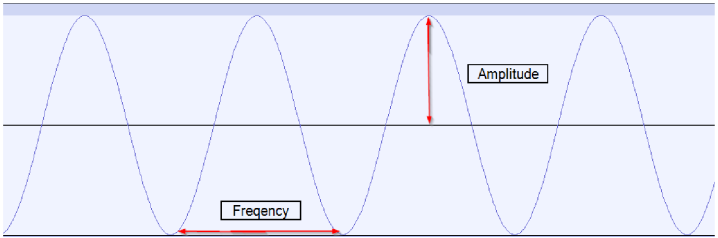
Project Goals

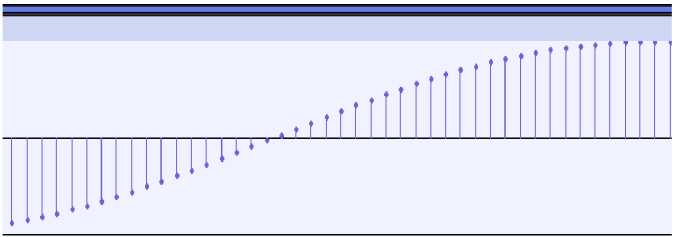
- Analyze Audio File
- Summarize findings in a PDF

Project Goals

- Analyze Audio File
- Summarize findings in a PDF
- Easy to use

Audio Files





Measuring the Sound Level

DecibelX for IOS

Sound level measuring device from Galaxus

Requirements

- Take .wav file, threshold and additional reference values as input

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- Take .wav file, threshold and additional reference values as input
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  - Metadata

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Requirements

- Take .wav file, threshold and additional reference values as input
- Analyze and Summarize
  - Metadata
  - Plot
- User should not need any Technical know-How
- Platform independent
- Multiple Languages

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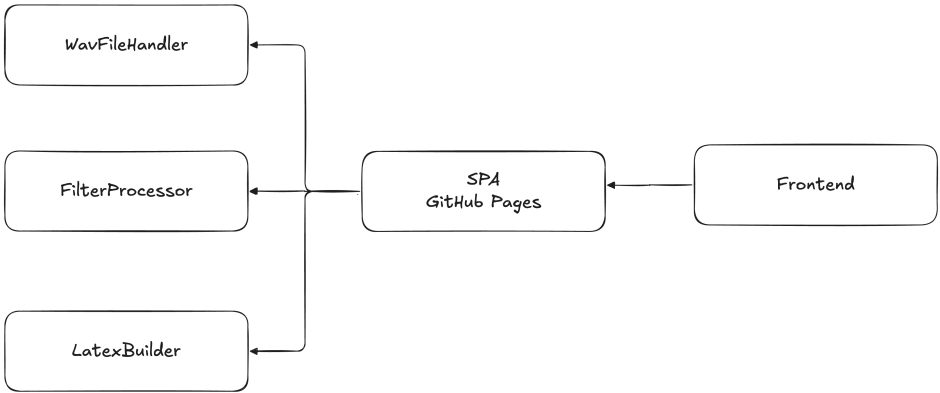
Technology evaluation

- Option 1: Kotlin
- Option 2: SwiftLaTeX (Web)

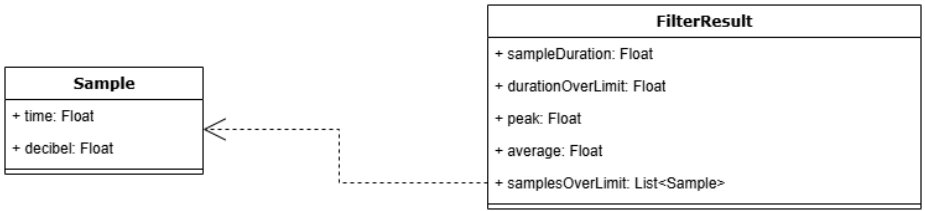
Technology	Total score
Kotlin minimal	74
Kotlin bundled	56
Web SwiftLaTeX	82

Table: Technology stack evaluation

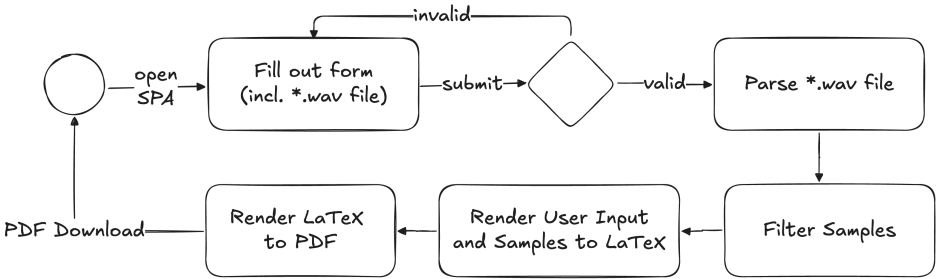
Architecture



Data Model


Sample
+ time: Float
+ decibel: Float
FilterResult
+ sampleDuration: Float
+ durationOverLimit: Float
+ peak: Float
+ average: Float
+ samplesOverLimit: List<Sample>

Process Model



UX Prototype - PDF Report

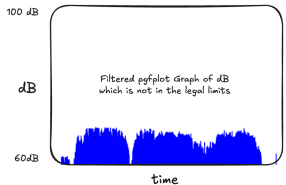
db_threshold_result_<timestamp>.pdf

dB threshold result

Recording information

location: SIPBB
datetime: 00.00.2024 00:00:00 ← user input *required
device: IPhone 14
distance to noise source: 20m
applied threshold: 60dB*

duration: 5min
duration over legal limit: 1min (20%)
peak: 70dB
averrage dB: 55dB

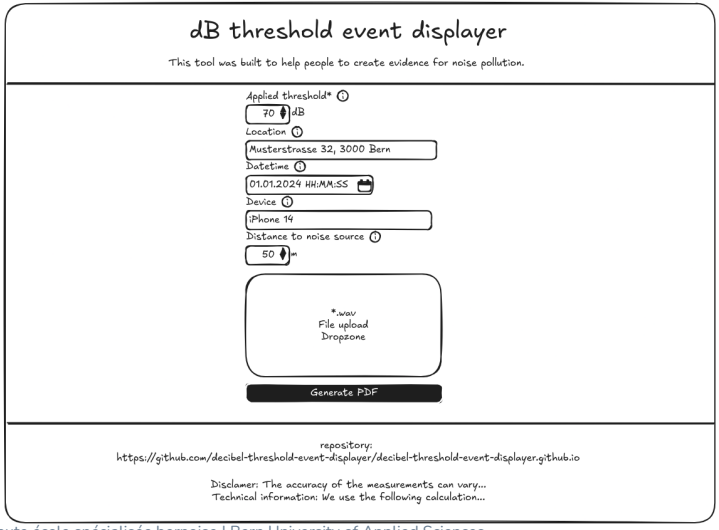


generation date: 00.00.2024
website:
https://decibel-threshold-event-displayer.github.io/
repository:
https://github.com/decibel-threshold-event-displayer/decibel-threshold-event-displayer.github.io

Disclamer: The accuracy of the measurements can vary...
Technical information: We use the following calculation...

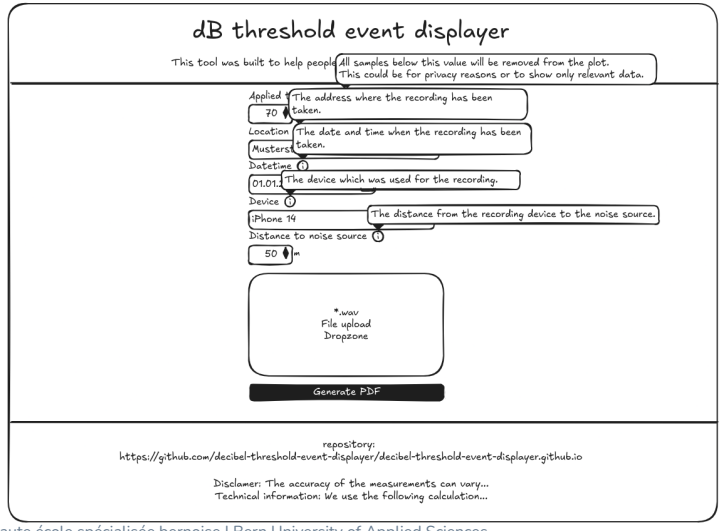
UX Prototype - Website

https://decibel-threshold-event-displayer.github.io/



UX Prototype - Website Tooltips

https://decibel-threshold-event-displayer.github.io/



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Scrum Roles

Dr. Simon Kramer
Stakeholder

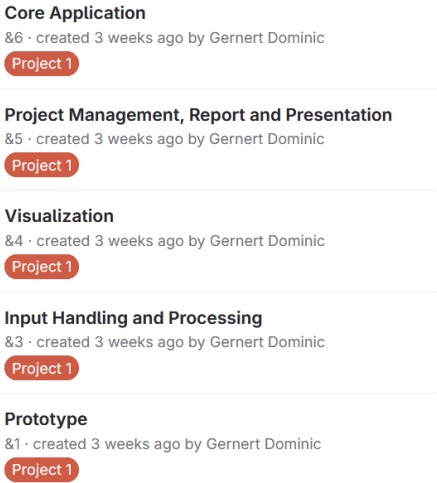
Dominic Gernert
Product Owner

Lukas von Allmen
Scrum Master

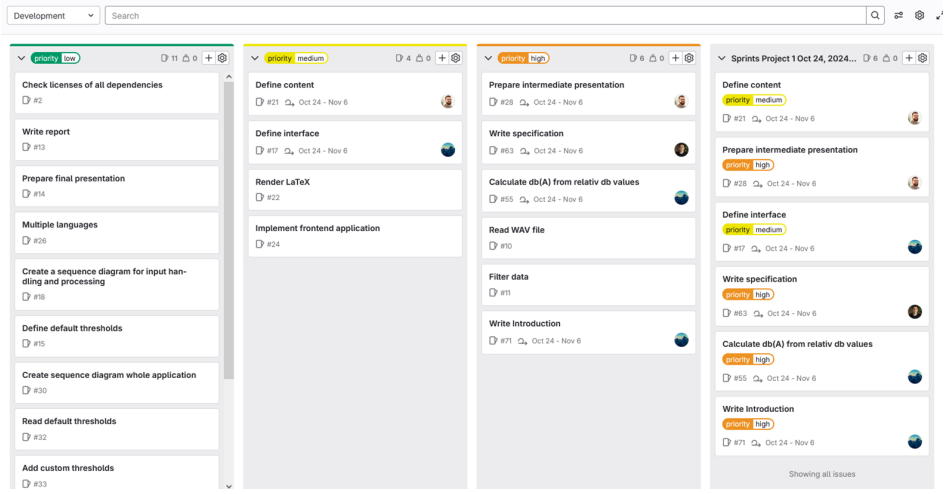
Darius Degel
Developer

Backlog

- Epics ≈ Labels
- Impediments
- Development Board



Backlog


Development
Search
priority low
11 0
Check licenses of all dependencies
#2
Write report
#13
Prepare final presentation
#14
Multiple languages
#26
Create a sequence diagram for input handling and processing
#18
Define default thresholds
#15
Create sequence diagram whole application
#30
Read default thresholds
#32
Add custom thresholds
#33
priority medium
4 0
Define content
#21 Oct 24 - Nov 6
Define interface
#17 Oct 24 - Nov 6
Render LaTeX
#22
Implement frontend application
#24
priority high
6 0
Prepare intermediate presentation
#28 Oct 24 - Nov 6
Write specification
#63 Oct 24 - Nov 6
Calculate db(A) from relativ db values
#55 Oct 24 - Nov 6
Read WAV file
#10
Filter data
#11
Write Introduction
#71 Oct 24 - Nov 6
Sprints Project 1 Oct 24, 2024...
6 0
Define content
priority medium
#21 Oct 24 - Nov 6
Prepare intermediate presentation
priority high
#28 Oct 24 - Nov 6
Define interface
priority medium
#17 Oct 24 - Nov 6
Write specification
priority high
#63 Oct 24 - Nov 6
Calculate db(A) from relativ db values
priority high
#55 Oct 24 - Nov 6
Write Introduction
priority high
#71 Oct 24 - Nov 6
Showing all issues

Sprint Goals

- S.M.A.R.T
- Product Focus

Example

Prototypes with two different technologies are implemented and their pros and cons are evaluated.

Review & Retro

Review & Retro

Review

- Demo
- Done / Not Done
- Goal Attainment

Retro

- What went well?
- What problems did we encounter?
- What are we improving in the future?

Adaptations

- Product Owner
- Daily Scrum
- No Release Plan
- Retro
  - Shorter first Retro
  - Successes, Problems, Improvements