

Decibel Threshold Event Display

Interim Presentation

November 5, 2024

Dominic Gernert, Lukas von Allmen, Darius Degel

Table of Contents

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

Requirements

- Take Wave File and Threshold as Input



DecibelX IOS App



26.95
Voltcraft Schallpegel-Messgerät SL-10

Bewertungen:
★ ★ ★ ★ ★ 52

● Zwischen Do, 7.11. und Fr, 8.11. geliefert
Mehr als 10 Stück im Lager beim Drittelpreis

Angebot von:
Conrad.CH

In den Warenkorb
Vergleichen
Marken

Requirements

- Take Wave File and Threshold as Input
 - and additional Reference values



DecibelX IOS App



26.95
Voltcraft Schallpegel-Messgerät SL-10

Beurteilen:
★ ★ ★ ★ 5/5

● Zwischen Do, 7.11 und Fr, 8.11 geliefert
Mehr als 10 Stück im Lager beim Drittelpreis

Angebot von:
Conrad.CH

In den Warenkorb
Vergleichen
Marken

Requirements

- Take Wave File and Threshold as Input
 - and additional Reference values
- Analyze and Summarize



DecibelX IOS App



26.95
Voltcraft Schallpegel-Messgerät SL-10



Requirements

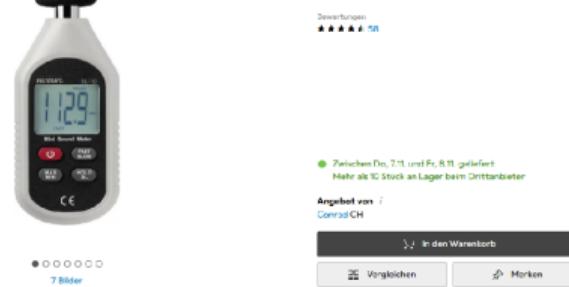
- Take Wave File and Threshold as Input
 - and additional Reference values
- Analyze and Summarize
 - Metadata



DecibelX IOS App



26.95
Voltcraft Schallpegel-Messgerät SL-10



Requirements

- Take Wave File and Threshold as Input
 - and additional Reference values
- Analyze and Summarize
 - Metadata
 - Plot



DecibelX IOS App



26.95
Voltcraft Schallpegel-Messgerät SL-10

Beurteilen:



• Zwischen Do, 7.11 und Fr, 8.11 geliefert
Mehr als 10 Stück im Lager beim Drittelpreis

Angebot von:
Conrad.CH



Requirements

- Take Wave File and Threshold as Input
 - and additional Reference values
- Analyze and Summarize
 - Metadata
 - Plot
 - Render with LaTeX



DecibelX IOS App



26.95
VOLTCRAFT Schallpegel-Messgerät SL-10

Beurteilen:

★ ★ ★ ★ 5/5

• Zwischen Do, 7.11 und Fr, 8.11 geliefert
Mehr als 10 Stück im Lager beim Drittelpreis

Angebot von:
Conrad.CH

In den Warenkorb
Vergleichen
Marken

Requirements

- Take Wave File and Threshold as Input
 - and additional Reference values
- Analyze and Summarize
 - Metadata
 - Plot
 - Render with LaTeX
- User should not need any Technical know-How



DecibelX IOS App



26.95
Volcraft Schallpegel-Messgerät SL-10

Beurteilen:
★ ★ ★ ★ ★

• Zwischen Do, 7.11 und Fr, 8.11 geliefert
Mehr als 10 Stück im Lager beim Drittelpreis

Angebot von:
Conrad.CH

In den Warenkorb
Vergleichen
Marken

Requirements

- Take Wave File and Threshold as Input
 - and additional Reference values
- Analyze and Summarize
 - Metadata
 - Plot
 - Render with LaTeX
- User should not need any Technical know-How
- Multiple Languages



DecibelX IOS App



26.95
Volcraft Schallpegel-Messgerät SL-10

Beurteilen:



• Zwischen Do, 7.11 und Fr, 8.11 geliefert
Mehr als 10 Stück im Lager beim Drittelpreis

Angebot von:
Conrad.CH

In den Warenkorb
Vergleichen
Marken

Table of Contents

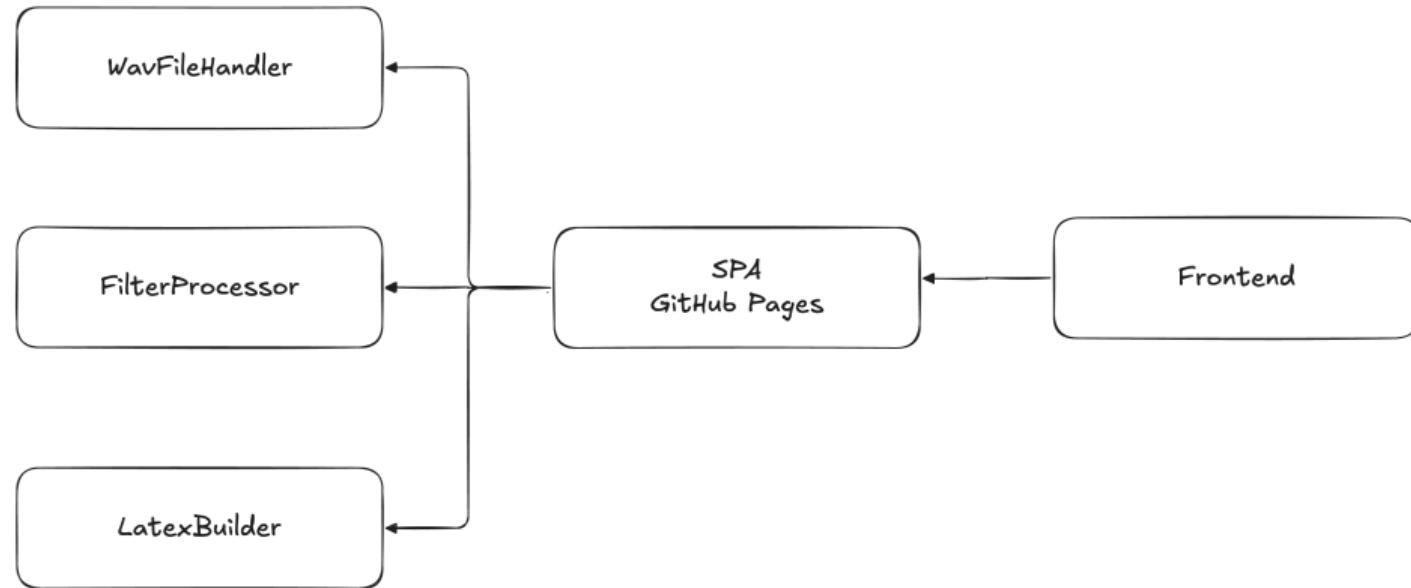
Technology evaluation

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

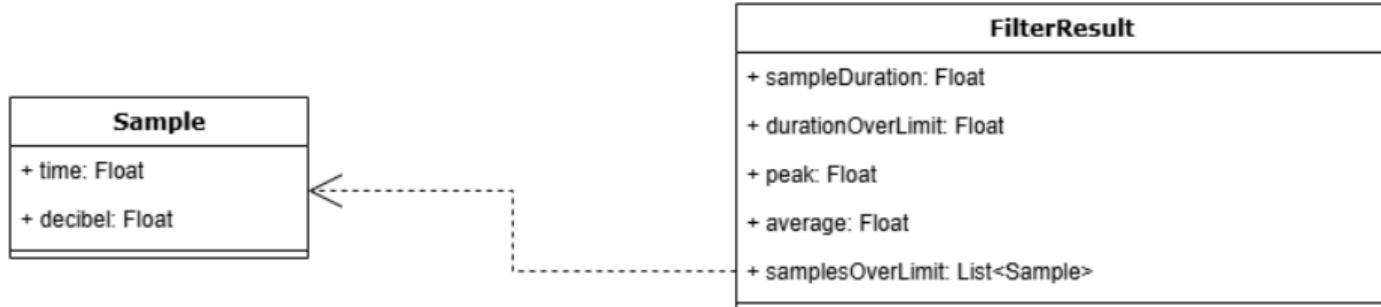
Technology	Total score
Kotlin minimal	74
Kotlin bundled	56
Web SwiftLaTeX	82

Table: Technology stack evaluation

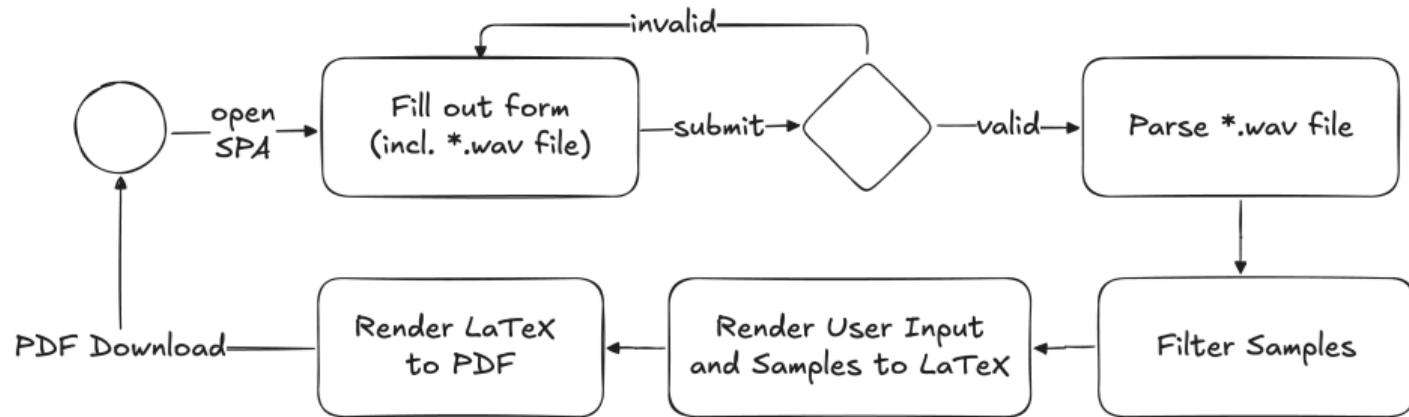
Architecture



Data Model



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
device: iPhone 14 ← user input *required
distance to noise source: 20m
applied threshold: 60dB*

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

100 dB

dB

Filtered pwfplot Graph of dB which is not in the legal limits

60dB

time

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>

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

UX Prototype - Website

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

dB threshold event displayer

This tool was built to help people to create evidence for noise pollution.

Applied threshold* ⓘ
70 dB

Location ⓘ
Musterstrasse 32, 3000 Bern

Datetime ⓘ
01.01.2024 HH:MM:SS

Device ⓘ
iPhone 14

Distance to noise source ⓘ
50 m

*.wav
File upload
Dropzone

Generate PDF

repository:
<https://github.com/decibel-threshold-event-displayer/decibel-threshold-event-displayer.github.io>

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

UX Prototype - Website Tooltips

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

dB threshold event displayer

This tool was built to help people [All samples below this value will be removed from the plot.
This could be for privacy reasons or to show only relevant data.]

Applied [The address where the recording has been taken.
70]

Location [The date and time when the recording has been taken.
Musterstrasse 1, Bern, Switzerland
01.01.2024]

Datetime [The device which was used for the recording.
01.01.2024]

Device [The distance from the recording device to the noise source.
iPhone 14]

Distance to noise source [50 m]

*.wav
File upload
Dropzone

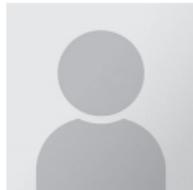
Generate PDF

repository:
<https://github.com/decibel-threshold-event-displayer/decibel-threshold-event-displayer.github.io>

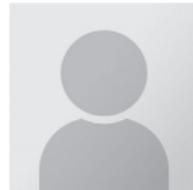
Disclaimer: The accuracy of the measurements can vary...
Technical information: We use the following calculation...

Table of Contents

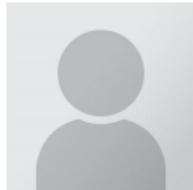
Scrum Roles



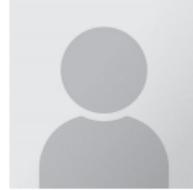
Dr. Simon Kramer
Tutor & Stakeholder



Dominic Gernert
Product Owner



Lukas von Allmen
Scrum Master



Darius Degel
Developer

Backlog

- Epics ≈ Milestones
- Impediments
- Development Board

Core Application

&6 · created 3 weeks ago by Gernert Dominic

Project 1

Project Management, Report and Presentation

&5 · created 3 weeks ago by Gernert Dominic

Project 1

Visualization

&4 · created 3 weeks ago by Gernert Dominic

Project 1

Input Handling and Processing

&3 · created 3 weeks ago by Gernert Dominic

Project 1

Prototype

&1 · created 3 weeks ago by Gernert Dominic

Project 1

Backlog

The screenshot shows a Jira backlog interface with three columns:

- priority low**: Contains tasks like "Check licenses of all dependencies", "Write report", "Prepare final presentation", etc.
- priority medium**: Contains tasks like "Define content", "Define interface", "Render LaTeX", etc.
- priority high**: Contains tasks like "Prepare intermediate presentation", "Write specification", "Calculate db(A) from relativ db values", etc.

Each task card includes a summary, ID, due date, and a user icon. A search bar and filter options are at the top.

Priority	Task Description	ID	Due Date	User
low	Check licenses of all dependencies	#2		
low	Write report	#13		
low	Prepare final presentation	#14		
low	Multiple languages	#26		
low	Create a sequence diagram for input handling and processing	#18		
low	Define default thresholds	#15		
low	Create sequence diagram whole application	#30		
low	Read default thresholds	#32		
low	Add custom thresholds	#33		
medium	Define content	#21	Oct 24 - Nov 6	
medium	Define interface	#17	Oct 24 - Nov 6	
medium	Render LaTeX	#22		
medium	Implement frontend application	#24		
medium	Prepare intermediate presentation	#28	Oct 24 - Nov 6	
medium	Write specification	#63	Oct 24 - Nov 6	
medium	Calculate db(A) from relativ db values	#55	Oct 24 - Nov 6	
medium	Read WAV file	#10		
medium	Filter data	#11		
high	Write Introduction	#71	Oct 24 - Nov 6	
high	Define content	#21	Oct 24 - Nov 6	
high	Prepare intermediate presentation	#28	Oct 24 - Nov 6	
high	Define interface	#17	Oct 24 - Nov 6	
high	Write specification	#63	Oct 24 - Nov 6	
high	Calculate db(A) from relativ db values	#55	Oct 24 - Nov 6	
high	Write Introduction	#71	Oct 24 - Nov 6	

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

Open Oct 10 - Oct 23, 2024

...

Oct 10 - Oct 23, 2024

Display by Issue count Issue weight

Completed 93% | 28 of 30

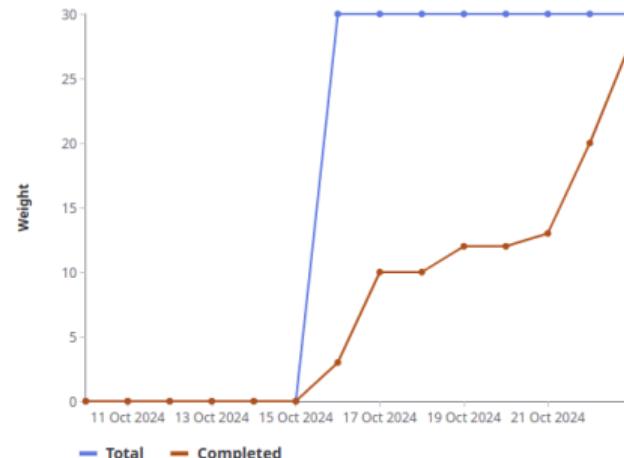
Incomplete 3% | 1 of 30

Unstarted 3% | 1 of 30

Burndown chart



Burnup chart



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 Standup
- No Release Plan
- Retro
 - Shorter first Retro
 - Successes, Problems, Improvements