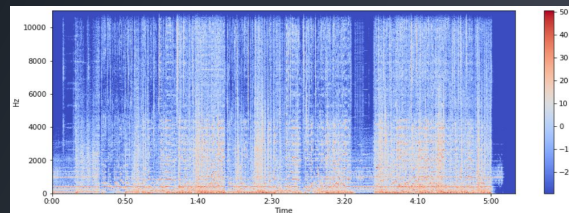


# Instrument Recognition Software

Aleks  
Aner  
Axel  
Cuong  
Joe  
Thomas

Hmm, that *might* be a guitar...



# Business Requirements Document

- We did not have any significant updates in our BRD

# Management Plan

- We have updated our **Sprint Board** and **Burndown Chart**

# Architecture and Design

- UPDATES:
  - Primary Data Source
    - Philharmonia Orchestra
      - The website was recently overhauled
      - The audio files we are working with might have been removed or updated
        - Cross-referencing the audio files can take some time
        - If the audio files are indeed updated and is of better quality
          - Then we might need to re-do our sample data
    - Side project: Mobile application



# Mobile Application

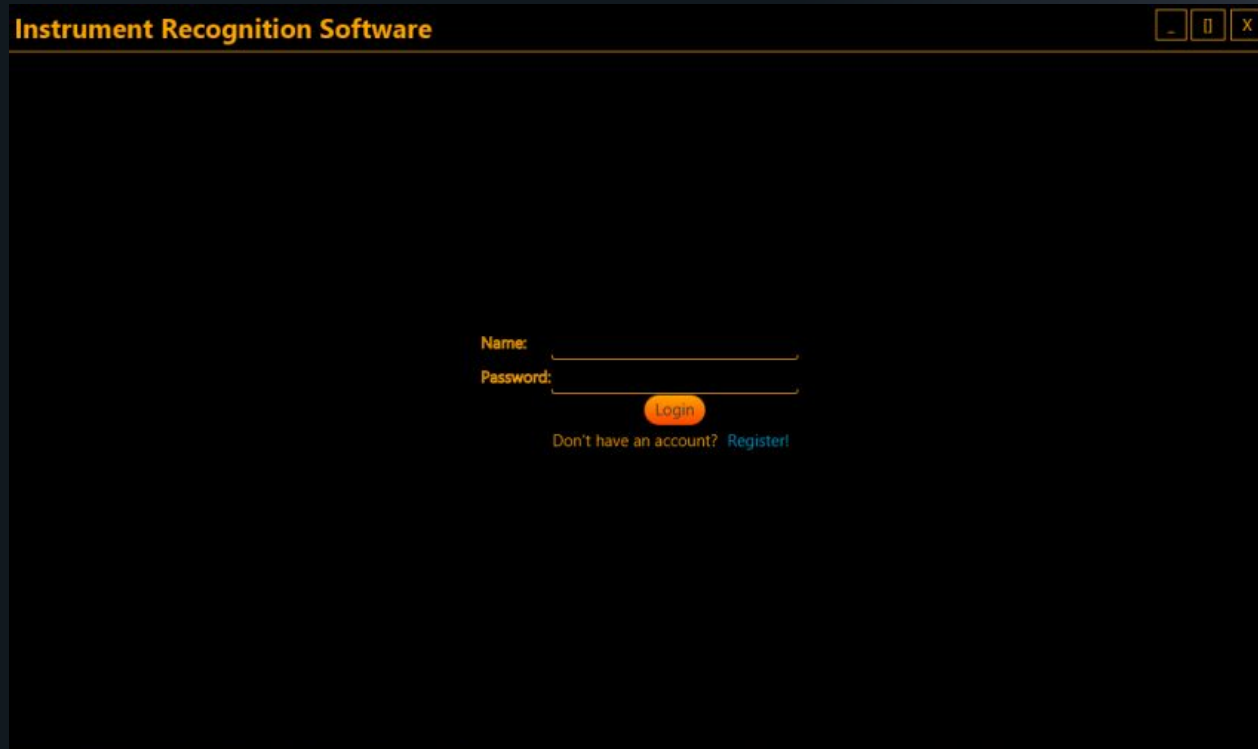
- Looking at possibilities of a Mobile (Android) Application
  - Language: Java and XML
  - Server: Firebase
  - Currently, we have a very simple Login, Registration, and Welcome page
  - Repo: <https://github.com/a-ner/irs-mobile>
- !!! SIDE PROJECT !!!
  - Full commitment on desktop application
- Download link: [bit.ly/2Tg6BrF](https://bit.ly/2Tg6BrF)



# Mobile Application Demo



# Desktop Preview



The image shows a desktop window titled "Instrument Recognition Software". The window has a dark blue background. In the center, there is a login form with two input fields: "Name:" and "Password:". Below the "Password:" field is a red "Login" button. At the bottom of the form, there is a link that says "Don't have an account? Register!".

Instrument Recognition Software

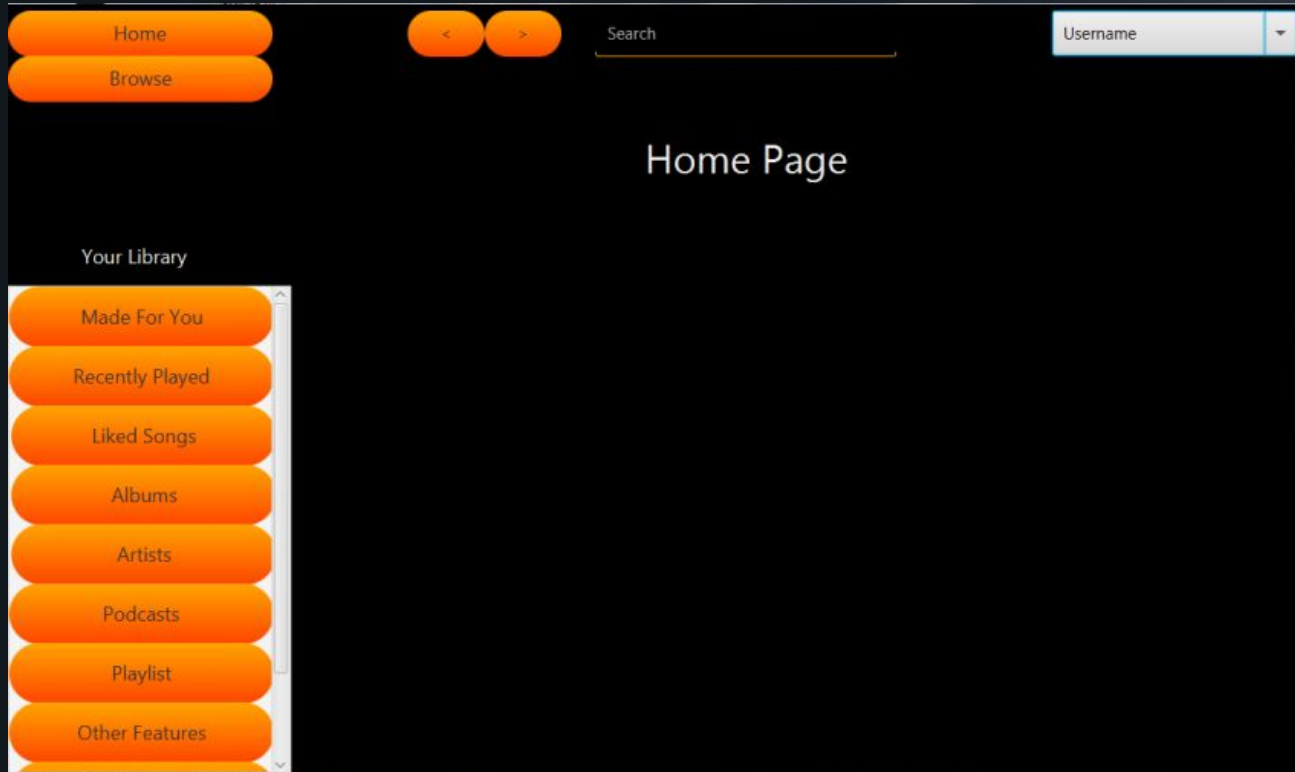
Name:

Password:

Login

Don't have an account? [Register!](#)

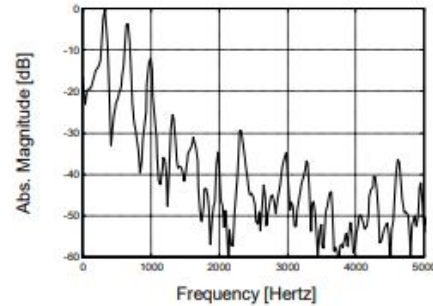
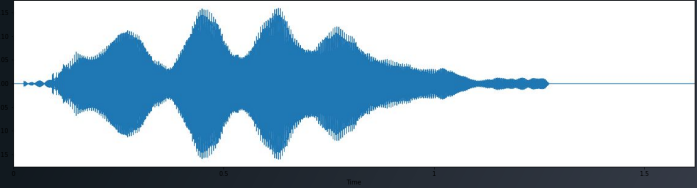
# Potential Page Layout



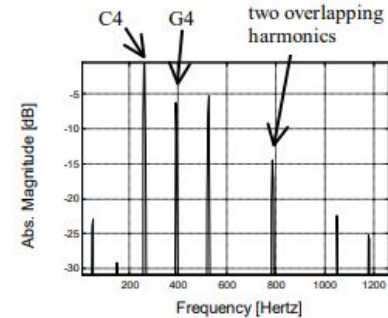


# Input Data

FFT:



**Fig.1** Power spectrum density of a single guitar note 'E4' (sampling frequency 8192 Hz, 1024-point FFT, frequency range 0 – 5000 Hz, energy normalized to zero dB)



**Fig.2** Power spectrum density of two piano keys, note C4 at 261.6 Hz and note G4 at 392.0 Hz (sampling frequency 8192 Hz, 1024-point FFT, frequency range 0 – 13000 Hz, energy normalized to zero dB)

- Power Spectral Density Graphs
  - Fast Fourier transform -> PSD
  - Divide into fundamentals (lower tones) and overtones (higher)

# Batch Construction

1. 3 labels
  - 10 samples
2. 3 labels
  - 1000 samples
3. 5 labels
  - 1000
4. 3 labels
  - 100000

# Test Cases

1. Compilation
  - a. Measures accurately
2. Accuracy improvement
  - a. Light strength test
3. Scalability
  - a. Intrafamilial differentiation
4. Pure strength test

# Sprint Board

**Sprint Board - Instrument Recognition Software** ☆ CECS 491A Free Public AD CP JF +2 Invite Butler ... Show

### Sprint Goals

Sprint #5

SIDE PROJECT: Create a Mobile Application - Login Page

SIDE PROJECT: Create a Mobile Application - Registration Page

SIDE PROJECT: Create a Mobile Application - Welcome Page

+ Add another card

### Project Backlog

Figure out how to upload custom data sets

Mobile Application: Server connection

+ Add another card

### Sprint Backlog

+ Add a card

### In Progress

Figure out how to upload custom data sets

+ Add another card

### Done

Mobile Application: Design (XML)

Mobile Application: Login (Java)

Mobile Application: Registration (Java)

Mobile Application: Welcome Page (Java)

Mobile Application: Redirections

+ Add another card

# Sprint Summary

This sprint our team was able to diversify our product presentation to showcase enterprise implementation. In addition to improving user-end devices we have mapped and scheduled white box testing of our preliminary IRS product.

## Sprint Goal

- Continue working on the ML
- Side project: Android application

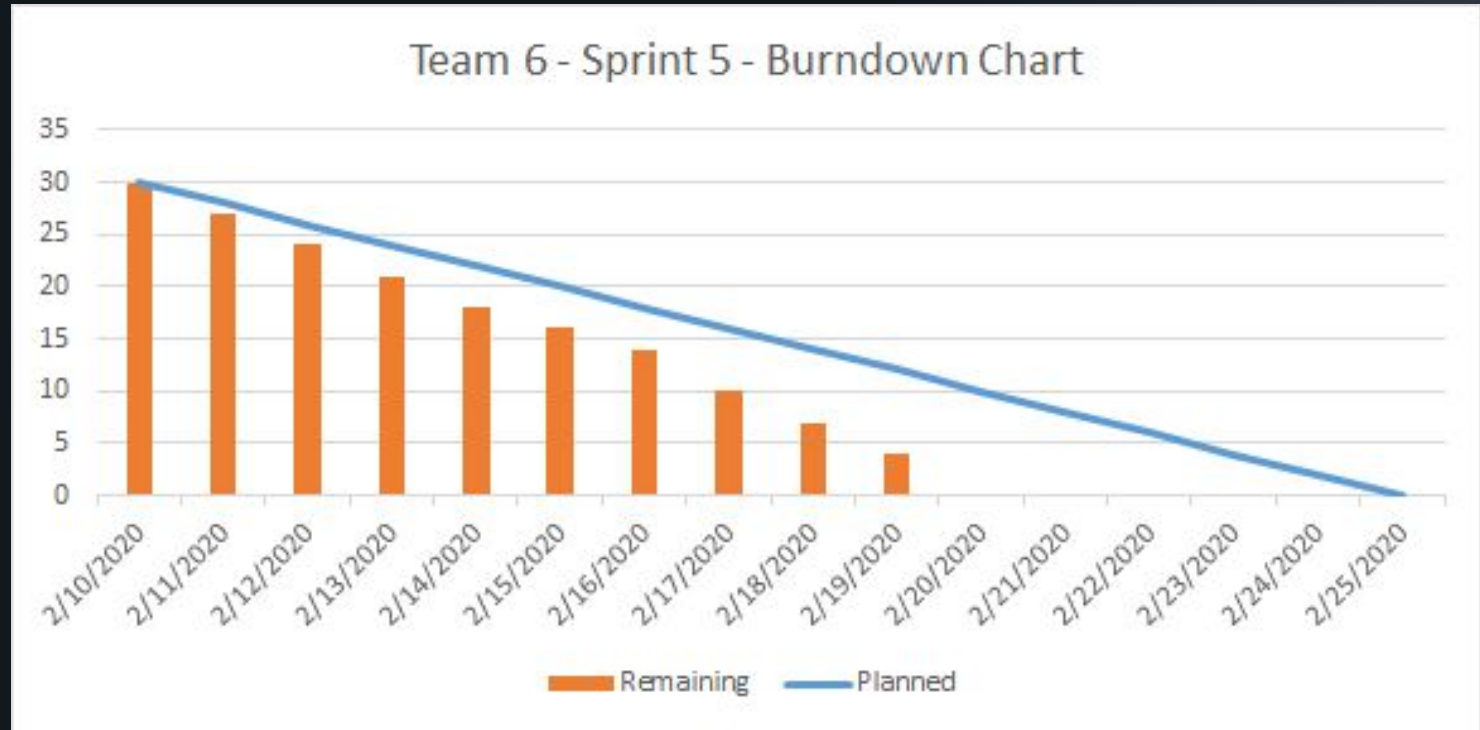
## User Story Points

- Planned: 30 hours
- Achieved: 30 hours

## Next Steps

- First IRS model with proposed tests: March 18th

# Burndown Chart



Thank **you** for listening!

