

LUNG SOUND RECORDER

The Quad Chips

Team 38

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**Testing the mic
module**

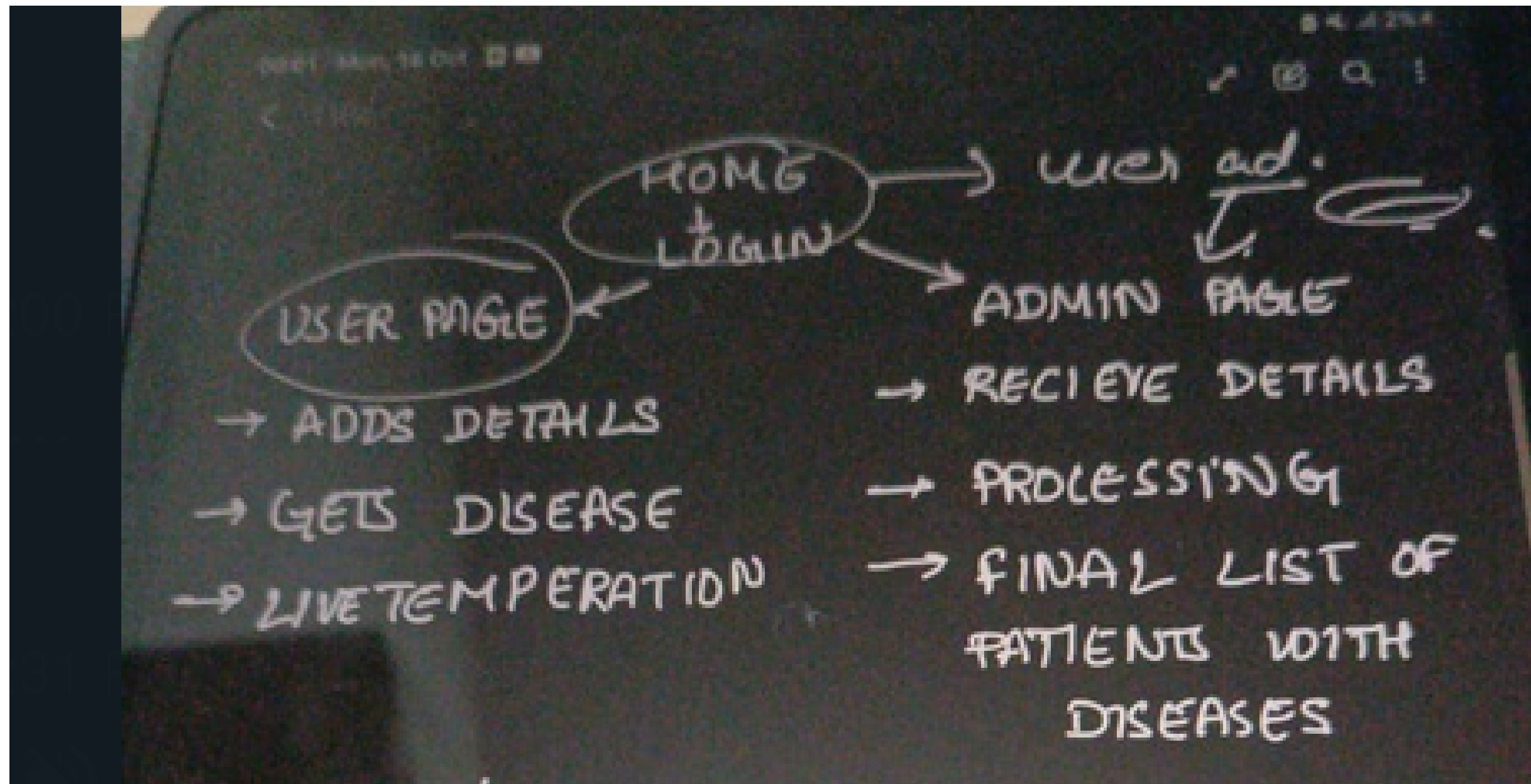
Implementation

1. Binary data is encoded into base64 using arduino library function.(`base64_encode`) using json.
2. Have to do this for chunk-wise audio.
3. Use `http.POST()` with the `uint8_t*` data type to send audio data directly without encoding or decoding. (This way we can send data to server without creating a file).
4. Increase the stack size in the `xTaskCreate` function to resolve memory errors like "Guru Meditation Error: Stack Overflow".

Challenges faced

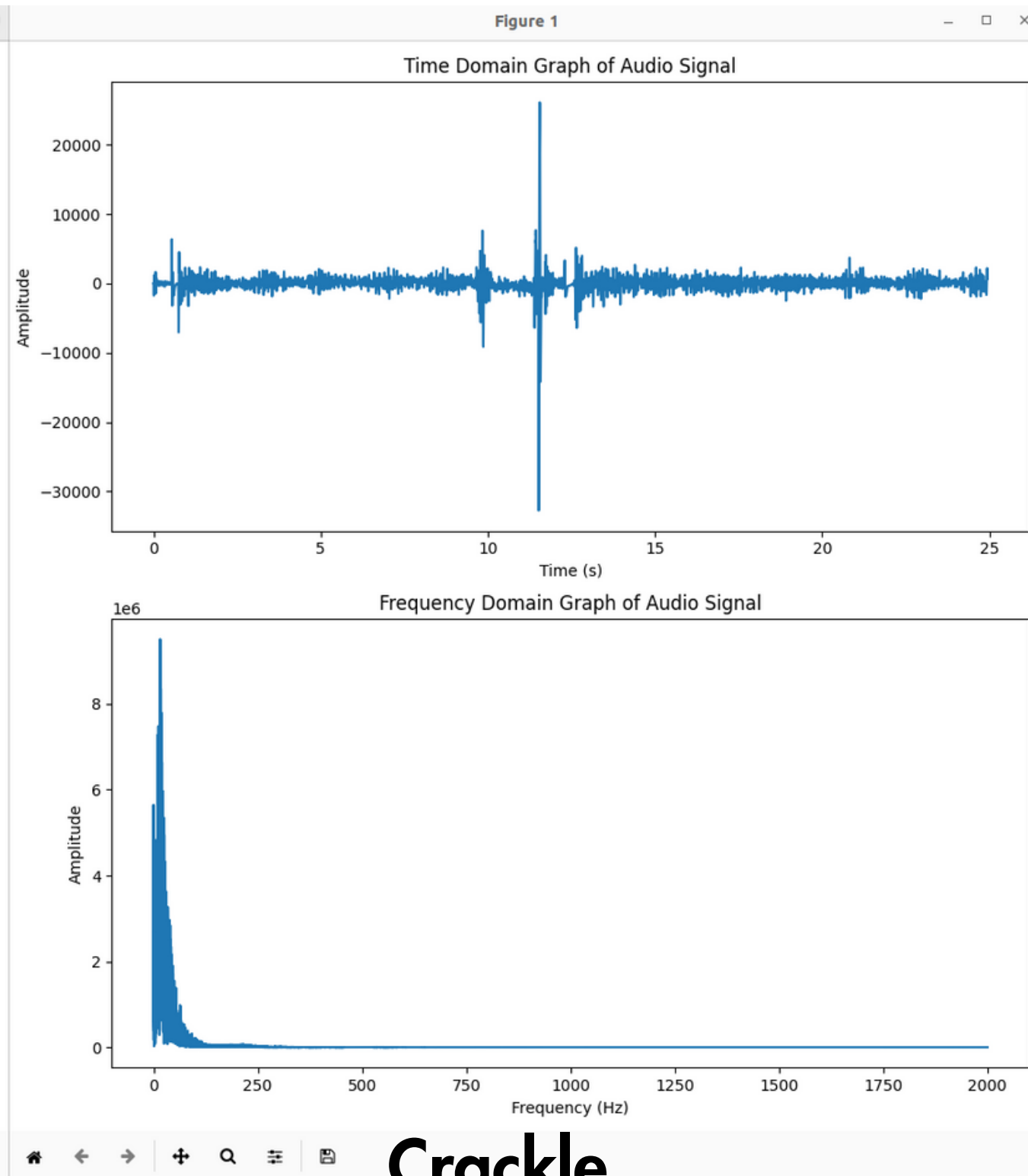
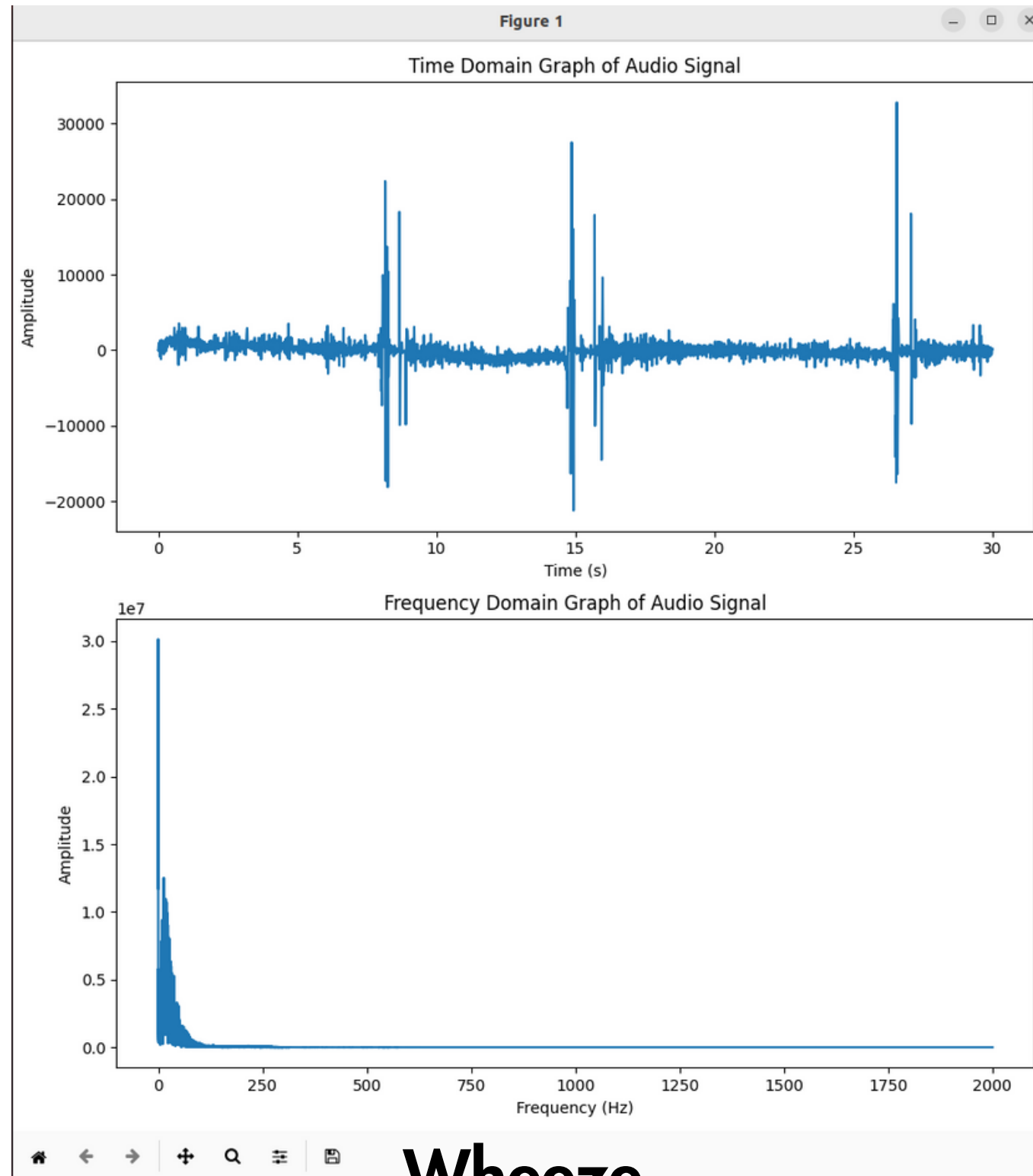
1. Our SD card module doesn't work, so, we are directly transferring the data from the esp to server via http, without any intermediary.
2. It is a challenge to send the audio data chunk-by-chunk to the server, without actually creating the file.
3. Since the data is sent chunk by chunk, overall audio is lagging.
4. Since the data recorded is binary data, we can't directly transfer because we use json.

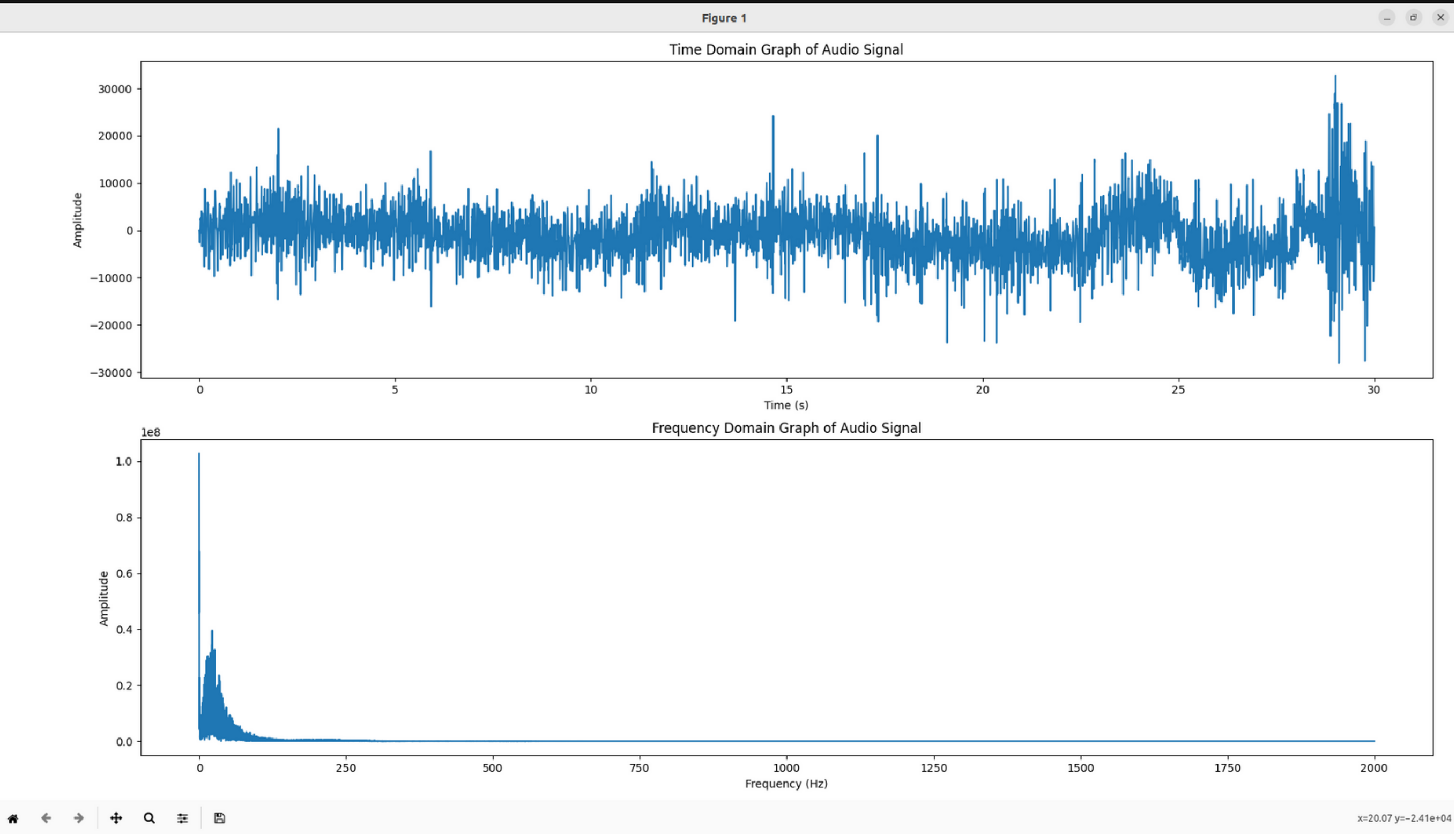
Implementation of website



Working on feature extraction

Time domain and frequency domain





Wheeze

FUTURE IMPLEMENTATIONS

We will further develop the user interface such that it will take the Lung sound and display the lung disease.

Classifying audio using basic features

Processing and receiving the details in UI.

Real-time audio integration: Currently, audio is processed on some trigger. We will try to automate that by recording audios with some delay and processing it in between (alternating). And build an alerting system based on the real-time processed data.