LAB – 1 REPORT

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Submission Date:

# Purpose of the Work

The main objective of this work:

* To develop a program for visualizing audio signals in the time domain
* To analyze digital audio quality parameters
  + Sampling Rate
  + Bit depth
  + Number of channels
* To implement segmentation for extraction and saving
* Comparing different audio recordings using time-domain characteristics

# Work Results

II.I Graphical Result

A screenshot of a graph

AI-generated content may be incorrect.

Figure 1: Time-domain representation of audio signal.

Information about the scanned signal:

* Sampling rate: 44100 Hz
* Number of channels: 2
* Quantization bits: PCM\_16 (16-bit depth)

# Summary and Conclusion

Developed program successful:

* Visualizes both mono and stereo recordings
* Extracts precise temporal segments
* Preserves original quality parameters when saving segments

Conclusion

1. Digital audio quality can be quantitatively assessed through its technical parameters.

2. Time-domain visualization helps identify:

* Transient events (clicks, pauses, jumps)
* Amplitude variations
* Channel differences in stereo recordings.

3. The 44.1 kHz/16-bit standard remains sufficient for most speech applications.