

SAE 1.01-02 - BUT INFORMATIQUE - GROUPE 1

Comparative Study of Two Low-Pass Filters for Sound Data Playback: Analysis and Performance

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Abstract

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Chapter 1

Introduction

The objective is to examine and compare two low-pass filter designs with the end goal of enhancing the clarity of text data transmitted via audio signals. This comparison is a component of a larger project, the DosOok challenge, which involves the development of the two programs DosSend and DosRead for sending and receiving text data through sound.

The necessity for this comparison arises from the requirement to ensure that the transmitted signal is free from high-frequency interference that can degrade the quality of the received message. In this context, low-pass filters are crucial as they allow the desired signal to pass while attenuating frequencies that are not needed.

For this study, two distinct low-pass filtering techniques have been selected. The criteria for their evaluation are the speed of processing and the accuracy with which they can keep the data from the original signal after filtering.

This report will detail the theoretical concepts behind each filter, the process of their implementation in Java, and the outcomes of their performance tests. The aim is to determine which filter provides a superior solution for the problem at hand.

Chapter 2

Methodology

2.1 DosSend and DosRead usage

2.2 Monitoring the speed of the filter

2.3 Checking the filter's accuracy

Chapter 3

Results

Chapter 4

Discussion

Chapter 5

Conclusion