Title: Sound analyzer

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Abstract: The goal is to program a utility that would conduct the spectral analysis of the audio signal. Special attention will be given that the analysis was carried out in real time (here it is necessary to optimize data flows depending on the computational power of machines) and to allow the user to specify the width and the density of each frequency band. The work can be extended to the preparation of spectral filters, which would carry out the downstream signal conditioning.

Keywords: spectral analysis, Fourier transformation, digital band-pass filter, feedback