DESIGN AND IMPLEMENTATION SONG SEARCHING USE AUDIO FINGERPRINT ON DISTRIBUTED DATA SERVER

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Abstract

Nowadays, music development in Indonesia continuously rises up. Every year there are many new singers showing up on the media. Thus, songs produced do not take long time to be accepted by public. As various kind of music available in public, people are able to sing or even memorize the lyrics easily. Problem arises when people want to download the music from the internet but they do not know the title, singer, and other information of the song.

This final assignment would like to build an Audio Fingerprint-based music finder system on desktop application. Audio Fingerprint-based music finder is built by wavelet method and utilizes Music Information Retrieval (MIR) algorithm. In the system built, MIR is implemented on the server using parallel computing. Searching result shows description about title, singer, album, genre, and year of the song.

Zang (2004) explained that wavelet-based in linear problem is the best approach in processing image. As Audio Fingerprint undergoes many stages for feature processing, it needs fast data delivery process. Speed escalation of execution process can be gained from faster processor or by implementing parallel computation (Peter, 2011).
Implementation utilizes Java Parallel Programming Framework (JPPF) and application was built on Java programming language.

In system implementation and examination, Audio Fingerprint which uses wavelet with JPPF parallel computation was successfully developed for music searching with time savings 72% and similarities of Audio Fingerprint average 34.6% for input recording songs 37-81 seconds duration.

As various kind of music quickly circulating in public, hopefully this application would make music searching easier and eventually this could simplify user to find the music they like.

Keywords: Music Information Retrieval, Audio Fingerprint, Wavelet, Parallel Computing, JPPF.