ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Distributed
Computing

Prof. R. Wattenhofer

BA:

My Music Statistics

This document describes the subject and the general time schedule of the bachelor thesis of Samuel Zehnder, beginning in the spring term 2012. Adaptations or changes can be agreed upon by the advisors.

Several factors, such as the growth of the Internet, peer-to-peer technologies, or the emergence of the compact media formats have changed the way people deal with music. Personal music collections have grown bigger, and, thanks to portable players and advances in storage technology, they can nowadays be accessed anywhere and anytime. The music collections accumulated by music lovers have reached sizes that make it hard to maintain an overview of the data by just browsing hierarchies of folders.

In our lab, we have developed jukefox (http://www.jukefox.org), a Music Player for the Android Mobile Platform that addresses these issues. An important ingredient of the application is a map of music that facilitates a multitude of similarity aware browsing and playlist creation interfaces.

Even though music similarity is a valueable information to recommend music, an equally important part has been ignored until now: the listening behavior. The goal of this thesis is to extend jukefox by interesting statistics that on the one hand the user can examine his own listening behavior and on the other hand playmodes can make better recommendations and act smarter. To achieve this goal, Samuel Zehnder will first define the type of statistics that should be gathered, Implement easy to use and understand visualizations for the statistics and create a playmode that incorporates the information from the skipping behavior of a user and possibly the long term statistics. At the end, he will evaluate the newly developed playmode in a users study.

Requirements: Good programming skills (preferably in Java) and some creativity are advantageous. The student(s) should be able to work independently on the topic.

Contacts

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Detailed Project Outline

We denote the following primary tasks mandatory (on the right side you find a rough estimate for the time that we allocate to the respective task):

- Get used to the music similarity measure and jukefox $(\star)$

- Adapt the statistics gathering $(\star)$

- Implement several statistic visualizations $(\star\star\star)$

- Derive two or three smart shuffle algorithms $(\star\star)$

- Implement one or two smart shuffle algorithms $(\star\star)$

- Evaluate smart shuffle algorithms in a user study $(\star\star)$

- Write a report documenting the development process and the final status of the application and discuss the findings. $(\star\star)$

- Prepare a presentation about the results of your work $(\star\star)$

The Students' Duties

- One meeting per week with the advisors to discuss current matters

- Regular check-ins into the provided *revision control system* (Subversion)

- A final presentation (15 min) of the work and results obtained in the thesis

- A final report (English or German), presenting work and results

- Independent working is expected

- A possibility to work in the ETZ is provided. It is also possible to work at home