Project: Mini-Facebook
Database Systems
Prof. Dr. A. Voisard, N. Lehmann

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Project – Deadline: **July 14, 2019, 11:59:59 pm**

General   The accompanying software project "Mini-Facebook" for the lecture database systems includes three phases: *Modeling*, *Data Processing*, and *Visualization & Data Analysis*. In each phase theoretical knowledge from the lecture and the exercises is put into practice in teamwork. For each project phase a separate description will be given at time.

Objective   The goal of the project is to use data extracted from the microblogging service Twitter[1] to model, realize, visualize and finally analyze a social network, the "Mini-Facebook". The project results are to be presented in 10-minute presentations according to each phase.

Organizational   The project is carried out in groups of three. Single contributions or contributions in groups of two will not be not considered. You must achieve at least 70% of the achievable points in each phase in order to complete the project successfully. At the end of each phase, you will give a 10-minute presentation on a specified day in which you present the results of that phase. Each group member should present at least one project phase. Please keep all presentations and send them after the final presentation to the e-mail address below:

► nicolas.lehmann@fu-berlin.de

Data   All data relevant to the project can be found in the KVV under "Resources" in the "Project" folder. Project-relevant data are stored as ".csv" files and have the prefix "prj-".

The provided data will be used to design, construct, visualize and finally analyze the social network "Mini-Facebook". You are free to supplement the data provided during the course of the project with data that you extract from the Twitter micro-blogging service.

[1]Twiter: https://twitter.com

Phase 1: Modeling $(33,\overline{3}\%)$

The first project phase deals with the modeling of a suitable database schema. On the one hand, the schema should model facts to be given later, and on the other hand provided data should be taken into account. The resulting model of the social network "Mini-Facebook" should be implemented in such a way that at least it meets all requirements and can also be adjusted by your own ideas.

As a result of this phase, the artifacts below have to be produced:

► Entity Relationship Model of the Social Network "Mini Facebook"

► Relational Model of the Social Network Mini-Facebook

► A presentation (.pdf file), which includes your design decisions and results

Phase 2: Data Processing $(33,\overline{3}\%)$

In the second project phase you will implement the theoretical models of the first project phase practically with software. You will first create a database with the relational schema conceived in Phase 1. Then you should import the provided data into the generated database in a suitable form. Since you most probably cannot import the data without preprocessing steps, such as data cleansing, you should think about the implementation of the preprocessing of the data.

As a result of this phase, the artifacts below have to be produced:

► A database with a suitable schema and import all needed data into the database

► A presentation (.pdf file), which documents your work process in a suitable form and presents the used data preprocessing steps

Phase 3: Visualization & Data Analysis $(33,\overline{3}\%)$

In the third phase, you will visualize the data of the database created in Phase 2 and analyze it. You can be inspired by already existing social networks.

As a result of this phase, the artifacts below have to be produced:

► Visualization of the data as a web service "Mini-Facebook", which fulfills all given requirements

► Results of the data analysis task

► Visualization of the results of the data analysis task as a network (mathematical graph)

► A presentation (.pdf file), which includes all results