Basics of databases – Course work

1 Description of the application area (Part I)

Background information: Recommender systems recommend to users items that he or she may like or may be interested in. Recommender systems are utilized in a variety of application areas, for example to recommend music, movies, restaurants, scientific articles, or various products. Recommendation may be based on user features and activities, or on features (or both) of recommended items.

In the database of a recommender system, which operates as part of an online store, information about users, products, their brands and categories, and user reviews of products is stored.

Data to be stored about users include user id, name, gender, and year of birth. User id is an artificial, integer type id that allows users to be identified. The user's name is the unique name chosen by the user itself.

Information required for products include product id (artificial, integer type unique id), name (unique), description and price. Each product always belongs to one brand. Information required for brands include brand id (artificial, integer type unique id), name (unique), and country. To the same brand can belong several products.

One product falls into one or more categories and the same category may include several products. Data to be stored from categories include category id (artificial, integer type unique identifier) and name (unique).

Users evaluate products: They give products ratings (integers) and possibly verbal reviews as well. In addition to the rating and possible verbal review, the date of the assessment is desired to be stored in the database. One user can evaluate multiple products and the same product can be evaluated by several different users. One user may evaluate the same product at different times, so evaluations are identified by user id, product id and evaluation date.

Cardinality ratios and some of the participation constraints are given in the above described. The rest of the constraints you may define yourself. The description has been simplified and covers only part of the application area so that the work can be done with skills learned in the course and a reasonable amount of work. (For example, only some information relating to products, brands, users and their activities have been included in the description and the hierarchy of product categories has been excluded.)

2 Example data to be populated into the database tables (Part II)

<mark>You can start write table creation statements and data insertion statements of Part II as soon as the diagrams in Part I are accepted, and the subsection called Table and Column names is visible on the Course work page in WETO. Sure, you can draft creation and insertion statements before, but for the automatic evaluation of queries in Part II, everyone must use the same database structure and table and column names in Part II - so be prepared to update the creation and insertion statements you make.</mark>

Example data

Some example date is given below. You have to invent the values for artificial key on your own.

User
Below are given the name, gender and year of birth of the user.

- Anni N, female, 1985
- Juuso K, male, 1990
- Eino U, male, 1940
- Aila J, female, 1953

Categories

- garden
- forest
- snow clearing

Brands and products

Below are given brand name, country, as well as brand products (product name, description, price and categories)

- McCee, United States
  - Grass trimmer TRCee, efficient 4-stroke, 179.00
    - categories: garden
  - Trimmer line Cee, high-class line, 6.99
    - categories: garden
  - Chain saw MSCee RR, robust and heavy, 559.00
    - categories: forest, garden
- KooTek, Finland
  - Trimmer line Y, all-purpose line, 3.99
    - categories: garden
  - Shovel L, light general-purpose shovel, 23.95
    - categories: garden, snow clearing

Ratings and reviews made by users

- Anni N has given on 2017-06-05 for the product Grass trimmer TRCee rating of 3.

- Anni N has given on 2017-06-13 for the product Trimmer line Cee rating of 2.

- Anni N has given on 2017-07-24 for the product Shovel L rating of 3.

- Anni N has given on 2017-08-13 for the product Trimmer line Y rating of 4.

- Anni N has given on 2017-09-12 for the product Grass trimmer TRCee rating of 5 and review " reliable and functioning gadget".

- Eino U has given on 2017-06-30 for the product Grass trimmer TRCee rating of 5 and review "excellent".

- Eino U has given on 2017-07-02 for the product Trimmer line Cee rating of 2 and review " moderately works".

- Juuso K has given on 2017-06-04 for the product Shovel L rating of 1 and review "rip-off".

- Aila J has given on 2017-08-11 for the product Shovel L rating of 1 and review "completely useless".