1 Database terminology and writing

The purpose of this exercise is to practice the skills of understanding and explaining theoretical concepts and terminology in the area of database systems. After this exercise, the student should have increased their ability to understand and handle database terminology and to explain and exemplify those concepts in scientific writing.

Note that at least one similar question as treated in this exercise will be given in the final exam.

2 Assignment

In the following, you will find a list of concepts from the database area. Give a written explanation of each concept. Do not cite text and explanations directly from your sources, instead try to write your explanations using your own wordings as far as possible. You should be careful when introducing and using database terms such that a clear explanation is given. You should include references to your textual sources (excluding Wikipedia, web pages, etc.). Furthermore, your explanation should be accompanied by your own concrete example that illustrates the corresponding concept (relevant pictures or diagrams are allowed to be included).

2.1 Example

1. Entity type and entity (sv. entitetstyp och entitet)

Solution: An entity type represents a physical or abstract concept with some sort of identity. The individual instances of the concept are members of a set of entities that have the same set of attributes. Entity types express the intention, i.e. the meaning of the concept whereas the set of entities represents the extension (the members) of that type [EN10], [PMR05]. Examples of entity types are person, employee and vehicle. Attributes of person include name, age, social security number (can be used as identity). Examples of entities of the person entity type are individual persons such as Johan Johansson (his age is 113 and ssn is 19000101-1010) and Anna Svensson (her age is 114 and ssn is 18990101-1000).

References

2.2 Exercises

1. Logical and physical data independence
2. Primary key
3. Referential integrity
4. Normalization
5. Transaction

Hand in the answers to the questions as one report per individual by writing your answers. In order to get a feedback on time, please hand in to Sobhan’s post-box 12 (4th floor in house 1) before 8 o’clock on March 11th.