Project Report
Data Storage Paradigms, IV1351

Date

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Declaration:

By submitting this assignment, it is hereby declared that all group members listed above have contributed to the solution. It is also declared that all project members fully understand all parts of the final solution and can explain it upon request.

It is furthermore declared that the solution below is a contribution by the project members only, and specifically that no part of the solution has been copied from any other source (except for lecture slides at the course IV1351), no part of the solution has been provided by someone not listed as a project member above, and no part of the solution has been generated by a system.

1 Introduction

The task is to create a database that can store all the information required by SoundGood music school. It requires a Logical and a Physical Model. The model have to be complete enough that we can make a functional database from it. I have been working alone without help, but I did base it on the seminar one work that I did with a group.

2 Literature Study

I have used the lectures on normalization and logical and physical models. From the normalization lecture I learned about how to normalize tables and about the different normalization levels. In the lecture about logical and physical models I learned about how to construct the model so that the multivariable and many-to-many relationships work. I have also read the tips and tricks document.

3 Method

I used the model from Seminar 1 as a start. First part was to copy all the table names from the old model. Then all the variables that isn't a multivariable attribute is added to the tables. The multivariable attributes are created as their own separate tables. In this case I use surrogate primary keys for most tables. The next step is to add relations between all the tables is created. Finally, the conditions for deletion to the schema as comments. Using astah we can then generate a script that can be used to generate the database. To generate data I used `https://generatedata.com` as well as manual work.

4 Result

The model that was created is visible in figure one. The model is based on the seminar one conceptual model. It contains every bit of data that is required. Some data is stored in multivariable attributes. The sibling table is one of them. It needs to be one since a student may have multiple siblings. Every student can also have multiple contact persons, but every contact person can have multiple students. This means that it is a many-to-many relationship that requires a cross-reference table. I have chosen not to do inheritance for seminar two. The Tables are normalized to the third normal form witch means that the tables don have any dependencies that depend on attributes that isn't the key. The scripts for generating the database are https://github.com/Sailet03/IS1351-Seminar. The database creation script was generated using astah and the data script were made by combining `https://generatedata.com` with manual work.
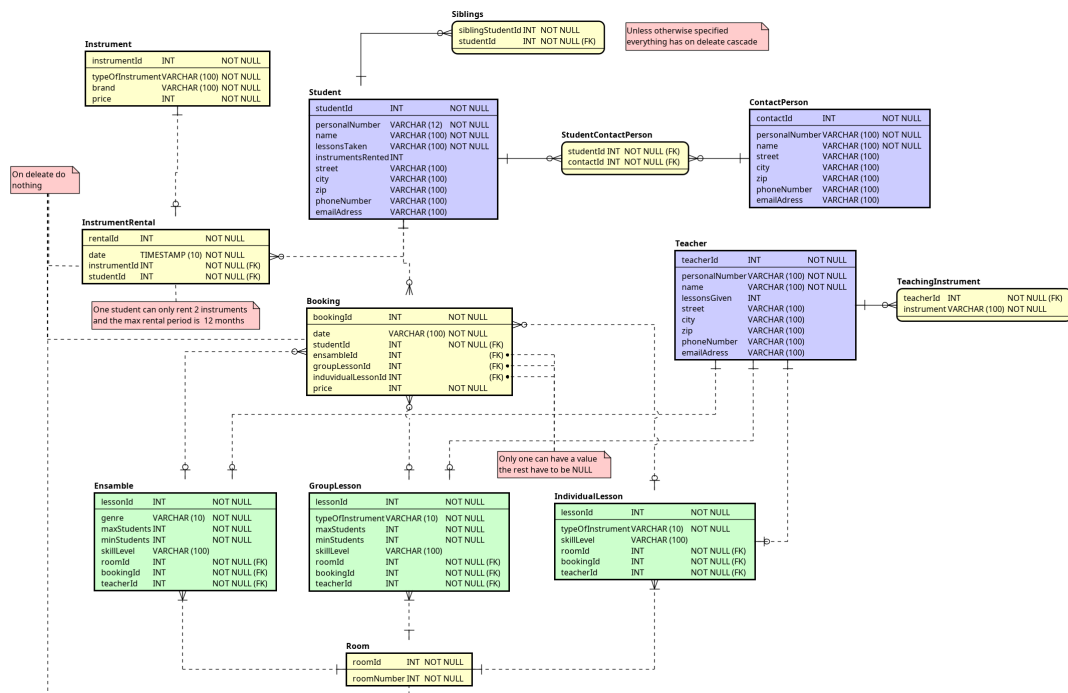
Figure 1: A sample diagram, included to illustrate caption (this text), numbering and reference in text.

5 Discussion

The naming convention is using the java naming convention and there are no attributes that break it. Since the database functions as it should the crow foots notation should also be correct. The table is in third normal form where no attributes are ever dependent on anything other than the whole key. All data that is required is either present or can be derived from the data that exits. The primary keys are all surrogate primary keys. This is simpler since most tables don't have attributes that are suitable to be a primary key. For example the person, contactPerson and teacher could have used the personal number as a primary key but since the rest couldn't the choice was made to use surrogates for everything. There shouldn't be any occurrences of duplicated derived data.