

## Library Database – Description

1. A book is **described** by a unique id, title, author, year of publish, and language.
2. Each book **has** a binding type. Each binding type is **described** by a unique id and a name.
3. Each book **belongs** to a category. Each category is **described** by a unique id and a name.
4. The library works with suppliers that provide books to the library based on the category. Each supplier may **supplies** more than one category of books and also each category may have more than one different suppliers. We want to **keep track** of the suppliers name and the total amount of product that the library bought from them this month.
5. Each book is **placed** into a room that is **described** with unique room id, name and floor. One room may have more than one books but a book can be stored only in one room.
6. The library has some employees that are **described** with their unique id, first and last name, gender and start date. Also we want to keep track of the supervisor of each employee. Note that an employee can have at most one (or non) supervisor but one employee may have under their supervision, more than one employees.
7. Each room is **managed** by one employee and also one employee can manage only one room.
8. All students are **described** by unique id, first and last name, gender, department, semester and phone number.
9. Students are **helped** by the employees in a way that each employee is dedicated and works with a group of students as their "contact" to the library. A student can work only with one employee but one employee can work with multiple students.
10. When a student **borrow**s a book we want to keep track of the student id, book id, start day and end day of borrowing and the status. A student can borrow many different books and also a single book can be borrowed by many students at the same time.  
\* The employee that gave the book to the student is already known as every student has a standard "link" to the library.

### NOTES

- The words with **blue** color indicate the attributes of each entity.
- The verbs with **red** color indicate the relationship between two entities.
- At the end of every statement is clearly explained the participation between the two entities.
- The cardinality is derived by the nature of the problem and the obvious relationship between two entities at each time.