Exercise 2

The initial table **is already in 1NF** because it has single(atomic) valued attributes, stores values in the same domain and no some repeating in the column's names.

For moving to 2NF I notice that some columns have **Partial Dependency** such as *school & teacher & room & grade* (info about teacher); teacher *& course & book & loanDate* (info about course); *book & publisher* (info about book).

Therefore, I decided to separate initial table into four tables for **2NF**:

Teacher *(school, teacher, room, grade)*

Course *(teacher, course, book, loanDate)*

Book *(book, publisher)*

In order for the table to become 3NF, shouldn't have **Transitive Dependency**. 2NF is also a 3NF because I am not found any Transitive Dependency.

Query for each of the requirements:

1. SELECT T.school as SC, B.publisher as P, COUNT(*)
   FROM Course as C
         JOIN Book as B on C.book = B.book
         JOIN Teacher as T on C.teacher = T.teacher
   GROUP BY P, SC

2. SELECT DISTINCT T.school, C.book, C.teacher
   FROM Teacher as T, Course as C
   WHERE C.loanDate = (SELECT MIN(C2."loanDate")
                  FROM Teacher as T2, Course as C2
                  WHERE C2.teacher = T2.teacher AND T2.school =
   T.school)
   AND T.teacher = C.teacher