

Exercise 2

| school | teacher | course | room | grade | book | publisher | loanDate |
|--------|---------|--------|------|-------|------|-----------|----------|
| | | | | | | | |

1NF (First Normal Form) Rules :

- Each table cell should contain a single value.
- Each record needs to be unique.

Hence, the table itself is 1NF

2NF (Second Normal Form) Rules:

- Rule 1- Be in 1NF
- Rule 2- Single Column Primary Key that does not functionally dependent on any subset of candidate key relations.

Table 1:

| bookId | school | teacher | course | room | grade | publisher | loanDate |
|---------------|--------|---------|--------|------|-------|-----------|----------|
| | | | | | | | |

Table 2:

| | |
|---------------|-------------|
| bookId | book |
|---------------|-------------|

3NF (Third Normal Form) Rules:

- Rule 1- Be in 2NF
- Rule 2- Has no transitive functional dependencies

Table 1:

| bookId | schoolId | teacher | course | room | grade | publisher | loanDate |
|---------------|----------|---------|--------|------|-------|-----------|----------|
| | | | | | | | |

Table 2:

| | |
|---------------|-------------|
| bookId | book |
|---------------|-------------|

Table 3:

| | | |
|-----------------|---------------|--------|
| schoolId | bookId | school |
|-----------------|---------------|--------|

SQL Queries:

1. SELECT COUNT(bookId)
FROM table1
GROUP BY schoolId
2. SELECT MAX(loanDate), teacher, book
FROM table2
INNER JOIN table1 ON table2.bookId=table1.bookId
GROUP BY schoolId