

Book Collection Database

Business Rules:

1. An ILLUSTRATOR draws many BOOK_ILLUSTRATORS (1,N), but BOOK_ILLUSTRATORS are drawn by only one ILLUSTRATOR (1,1).
2. A BOOK may be illustrated by many BOOK_ILLUSTRATORS (0,N), but a BOOK_ILLUSTRATORS can illustrate only one BOOK (1,1).
3. An AUTHOR creates many BOOK_AUTHORS (1,N), but BOOK_AUTHORS are written by only one AUTHOR (1,1).
4. A BOOK is written by one or more BOOK_AUTHORS (1,N), but BOOK_AUTHORS can write only one BOOK (1,1).
5. A PUBLISHER can control many BOOK_IMPRINTS (1,N), but a BOOK_IMPRINTS is controlled by only one PUBLISHER (1,1).
6. A BOOK_IMPRINTS publishes many BOOK (1,N), but a BOOK can be published by only one BOOK_IMPRINT (1,1).
7. A BOOK may have many CATALOG NUMBERS (0,N), but a CATALOG NUMBER is assigned to only one BOOK (1,1).
8. Each CLASSIFICATION generates one CATALOG NUMBER (1,1), and a CATALOG NUMBER is generated by only one CLASSIFICATION (1,1).
9. Each BOOK determines many BOOK_SUBJECTs (1,N), but a BOOK_SUBJECT is determined by only one BOOK (1,1).
10. A SUBJECT is assigned to many BOOK_SUBJECTs, (1,N), but a BOOK_SUBJECT is generated by only one SUBJECT (1,1).
11. A SERIES includes many BOOK_SERIES (1,N), but a BOOK_SERIES may be included in only one SERIES (1,1).
12. A AUTHOR may compile many SERIES (0,N), but a SERIES is compiled by only one AUTHOR (1,1).
13. A BOOK may be assigned rank in only one BOOK_SERIES (0,1), but a BOOK_SERIES ranks many BOOKs (1,N).

ERD relationship entities:

BOOK: Represents a physical book in my collection.

AUTHOR: Represents a person who authored a book in my collection.

BOOK_AUTHOR: Represents a link between books in my collection and their author(s).

ILLUSTRATOR: Represents a person who illustrated a book in my collection.

BOOK_ILLUSTRATORS: Represents a link between books in my collection and their illustrator(s).

PUBLISHER: Represents the publishing company that has published a book in my collection.

BOOK_IMPRINT: Represents a link between books in my collection and their publisher.

SUBJECT: Represents a subject that can be found in a book in my collection.

BOOK_SUBJECTS: Represents a link between books in my collection and their subject(s).

CATALOG NUMBER: Represents a link between books in my collection, their classification(s) and their unique numbers.

CLASSIFICATION: Represents entities that assign unique numbers to books in my collection.

SERIES: Represents related books that are found in my collection and their authors.

BOOK_SERIES: Represents a link between books in my collection and their series affiliation if any.

3NF Tables:

Table name: BOOK

3NF (**BOOK_NUM**, BOOK_TITLE, BOOK_PUB_DATE, BOOK_EDITION, **BOOK_PAGES**, **BOOK_PRICE**, **BOOK_BINDING**, **BOOK_COVER_COLOR**, BOOK_ILLUSTRATIONS, **IMP_NUM**)

Table name: PUBLISHER

3NF (**PUB_NUM**, **PUB_NAME**, PUB_STREET, PUB_CITY, PUB_STATE, PUB_ZIP_CODE)

Table name: BOOK_IMPRINT

3NF (**IMP_NUM**, **IMP_NAME**, **PUB_NUM**)

Table name: SERIES

3NF (**SER_NUM**, **SER_NAME**, **SER_NUM_OF_BOOKS**, **AUTH_NUM**)

Table name: BOOK_SERIES

3NF (**BOOK_NUM**, **SER_NUM**, **BOOK_SERIES_RANK**)

Table name: SUBJECT
3NF (SUB_NUM, SUB_NAME)

Table name: BOOK_SUBJECT
3NF (BOOK_NUM, SUB_NUM)

Table name: AUTHOR
3NF (AUTH_NUM, AUTH_LNAME, AUTH_FNAME, AUTH_MI)

Table name: BOOK_AUTHOR
3NF (BOOK_NUM, AUTH_NUM)

Table name: ILLUSTRATOR
3NF (ILL_NUM, ILL_LNAME, ILL_FNAME, ILL_MI)

Table name: BOOK_ILLUSTRATORS
3NF (BOOK_NUM, ILL_NUM, BOOK_ILL_MEDIA, BOOK_ILL_COLOR, BOOK_ILL_PAGES)

Table name: CLASSIFICATION
3NF (CLASS_ID, CLASS_NAME)

Table name: CATALOG NUMBER
3NF (BOOK_NUM, CLASS_ID, CAT_NUM)