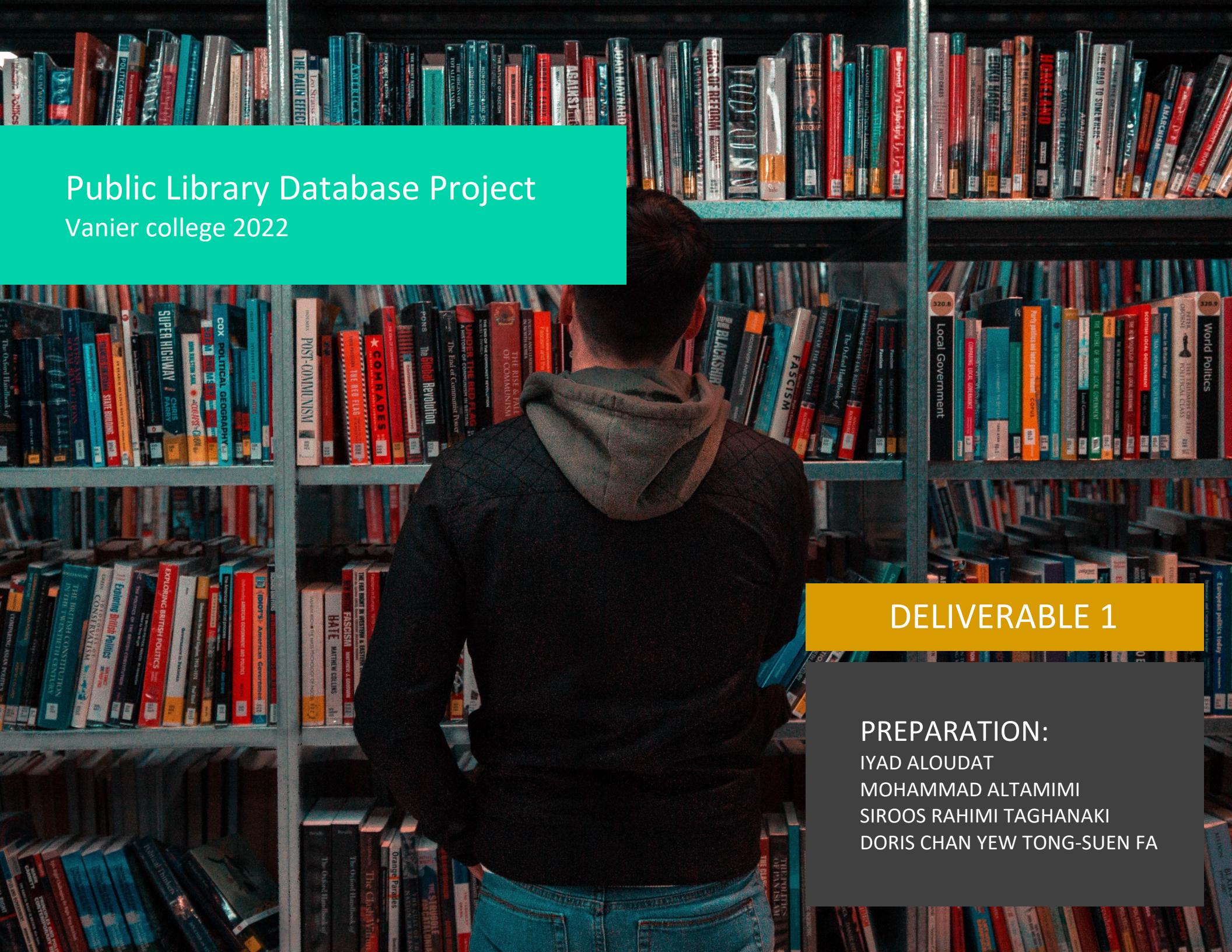


Public Library Database Project

Vanier college 2022



DELIVERABLE 1

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Introduction

The Database Library System is intended to Automate the library activities such as creating a new borrower, giving books to the borrowers, maintaining the details of all the item that were available in the books . This also helps the librarians by providing information such as total copies available each book, list of books that belong to a particular category (Short, Long Loan, Reference items, etc.).

Description of tables and columns

Customer Table		
Attribute	Attribute Name	Attributes Description
CardID [PK]	Card ID	The unique number for each customer
FirstName	First Name	First Name
LastName	Last Name	Last Name
Gender	Gender	Gender
DateOfBirth	Date of Birth	Date of Birth
Address	Full Address	Customer's full address
Phone	Phone Number	Phone or mobile Number
BranchID	Branch ID	The number of the branch in which the customer's account was created
NumBooksBorrowed	Num Books Borrowed	Number of books still borrowed by the customer

Borrow			
BorrowID	[PK]	Borrow ID	A unique number for each loan in the library
CardID	[FK]		The unique number for each customer
BookID	[FK]	Book ID	A unique number for each book in the library, even if it is a copy
BorrowDate		Borrow Date	Book borrow date
RenewedNum		Renewed Number	The number of times the borrowing period has been extended
RenewDate		Renew Date	Borrowing period extension date
ReturnDueDate		Return Due Date	The due date for returning the borrowed book

LibraryBranch			
BranchID	[PK]	Branch ID	The number of the branch in which the customer's account was created
BranchName		Branch Name	The name of the branch
BranchAddress		Branch Address	The address of the Branch

Book			
BookID	[PK]	Book ID	A unique number for each book in the library, even if it is a copy
BookISBN	[FK]	Book ISBN	A unique numeric commercial book identifier
BranchID	[FK]	Branch ID	The number of the branch in which the customer's account was created
BookStatus		Book Status	Information about book Status: Borrowed, In the Library, Lost, Damage

BookInfo			
BookISBN	[PK]	Book ISBN	A unique numeric commercial book identifier
BookTitle		Book Title	The title of the book
CategoryID	[FK]	Book Category	The category number of the book
PublisherID	[FK]	Publisher ID	The unique number of the publisher
NumberOfCopies		Number Of Copies	The number of copies the library has in stock
RackNum		Rack Number	The number of the rack

Categories			
CategoryID.	[PK]	Category ID	The category number of the book
CategoryName		Category Name	The category name of the book

Publisher			
PublisherID.	[PK]	Publisher ID	The unique number of the publisher
PublisherName		Publisher Name	The name of the publisher
PublisherAddress		Publisher Address	The address of the publisher
PublisherPhone		PublisherP hone	The phone number of the publisher

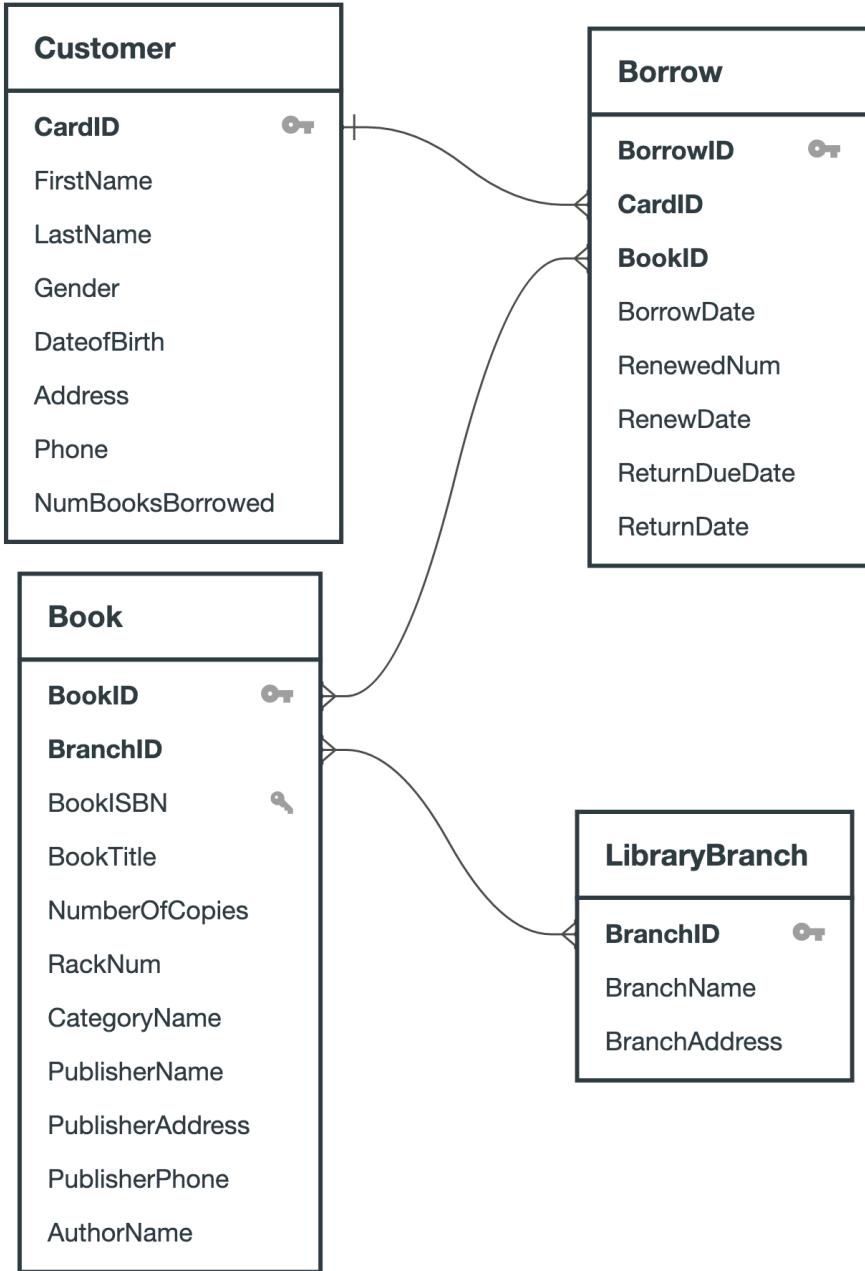
BookAuthors			
AuthorsID	[FK]	Authors ID	The number of the author
BookISBN	[FK]	Book ISBN	A unique numeric commercial book identifier

Authors			
AuthorID	[PK]	Author ID	The number of the author
AuthorName		Author Name	The name of the author

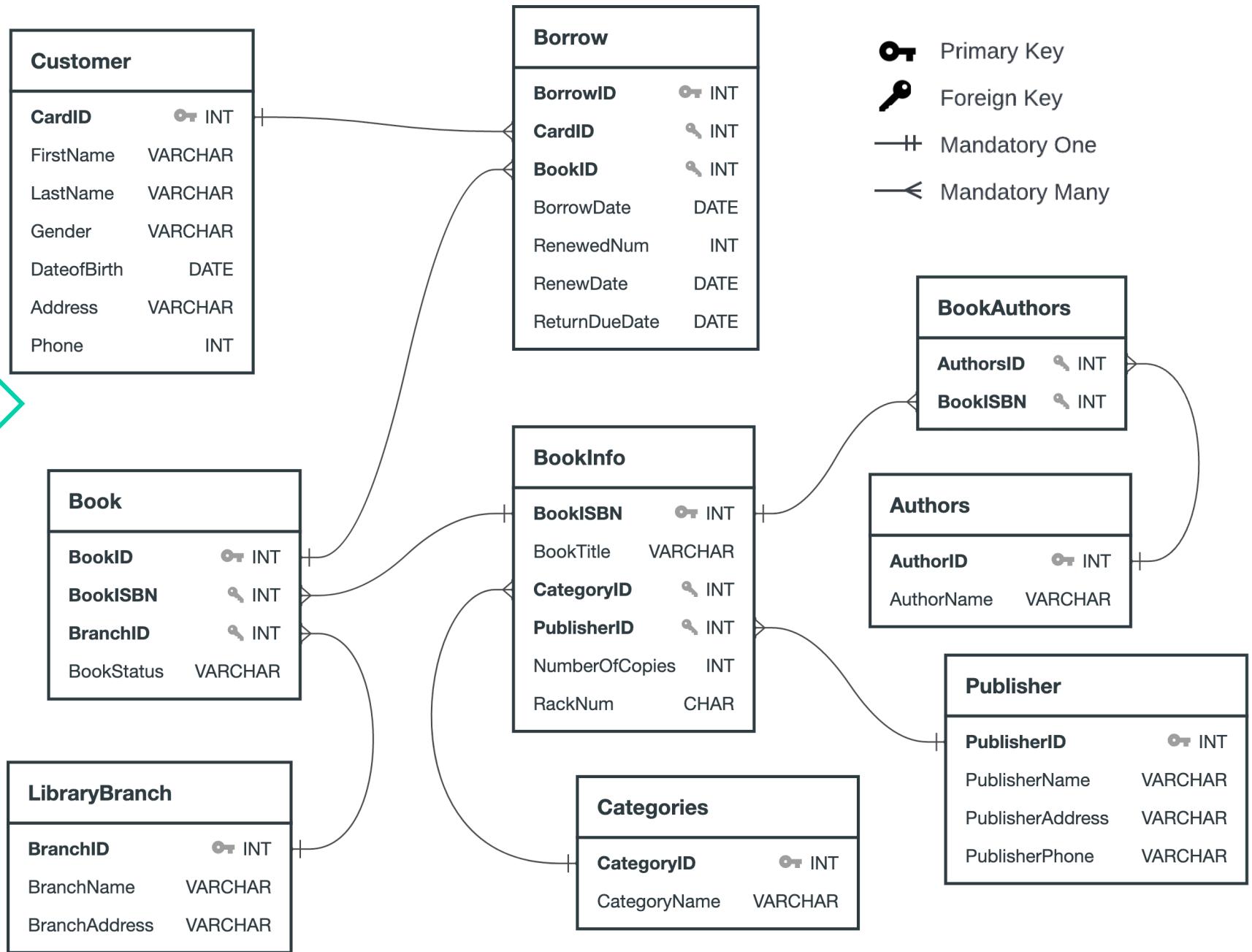
Normalization - 1NF

PublicLibrary	
CardID	key
FirstName	
LastName	
Gender	
DateOfBirth	
Address	
Phone	
NumBooksBorrowed	
BorrowDate	
RenewedNum	
RenewDate	
ReturnDueDate	
ReturnDate	
BranchName	
BranchAddress	
BookID	key
BookISBN	key
BookTitle	
NumberOfCopies	
RackNum	
CategoryName	
PublisherName	
PublisherAddress	
PublisherPhone	
AuthorName	

Normalization- 2NF



Normalization - 3NF

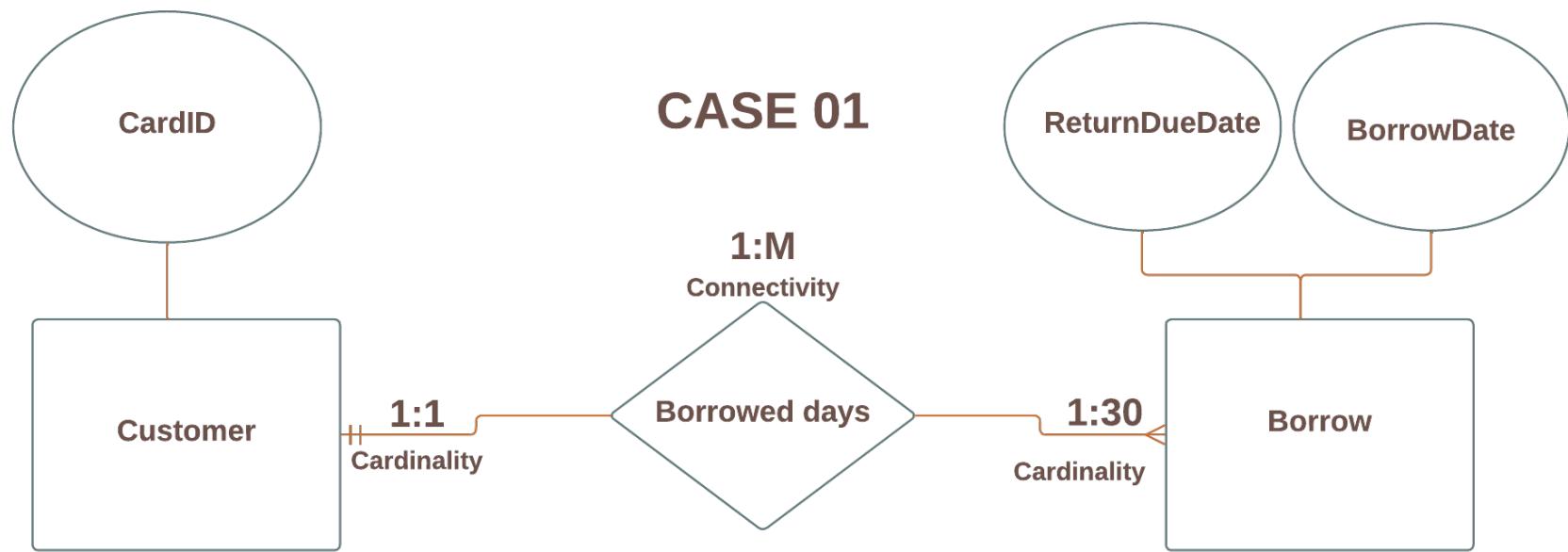


Case 01

The Maximum number of days allowed to borrow a book.

Business Rule

30 Days is the Maximum number of days allowed to borrow a book



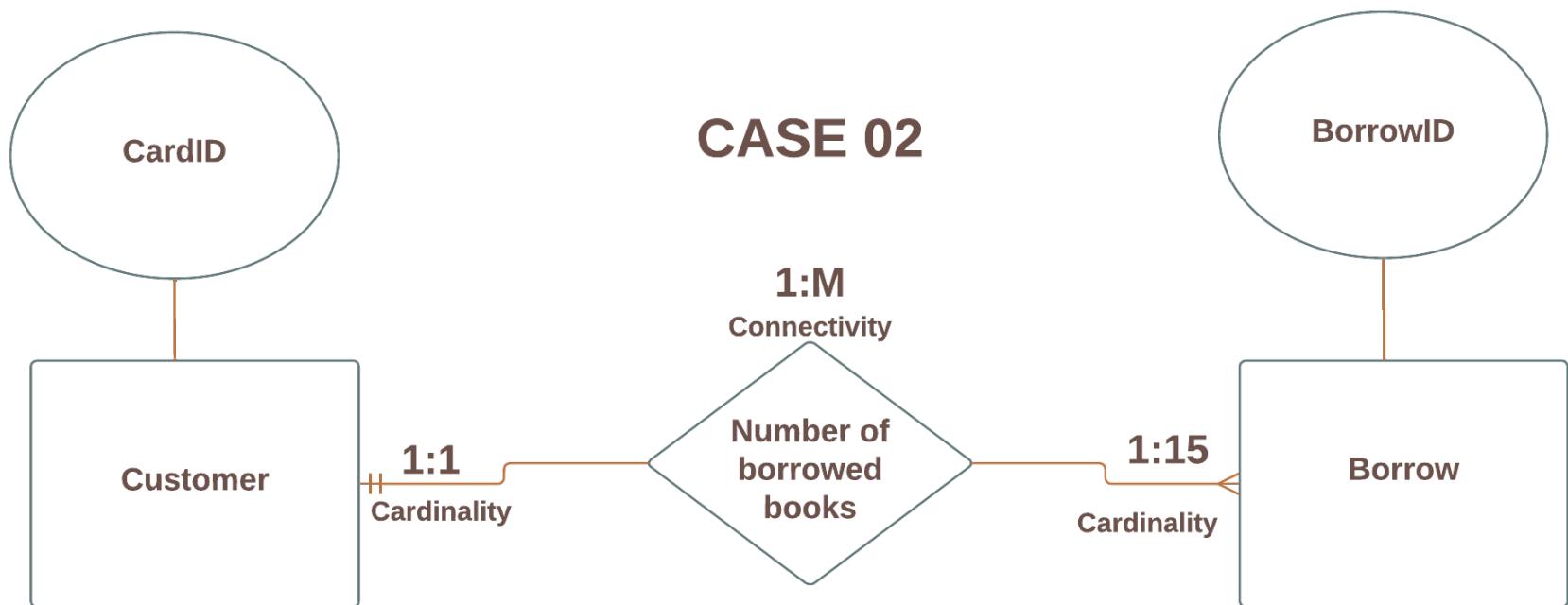
30 Days is the Maximum number of days allowed to borrow a book

Case 02

The maximum number of borrowed books.

Business Rule

15 books is The maximum number of borrowed books.



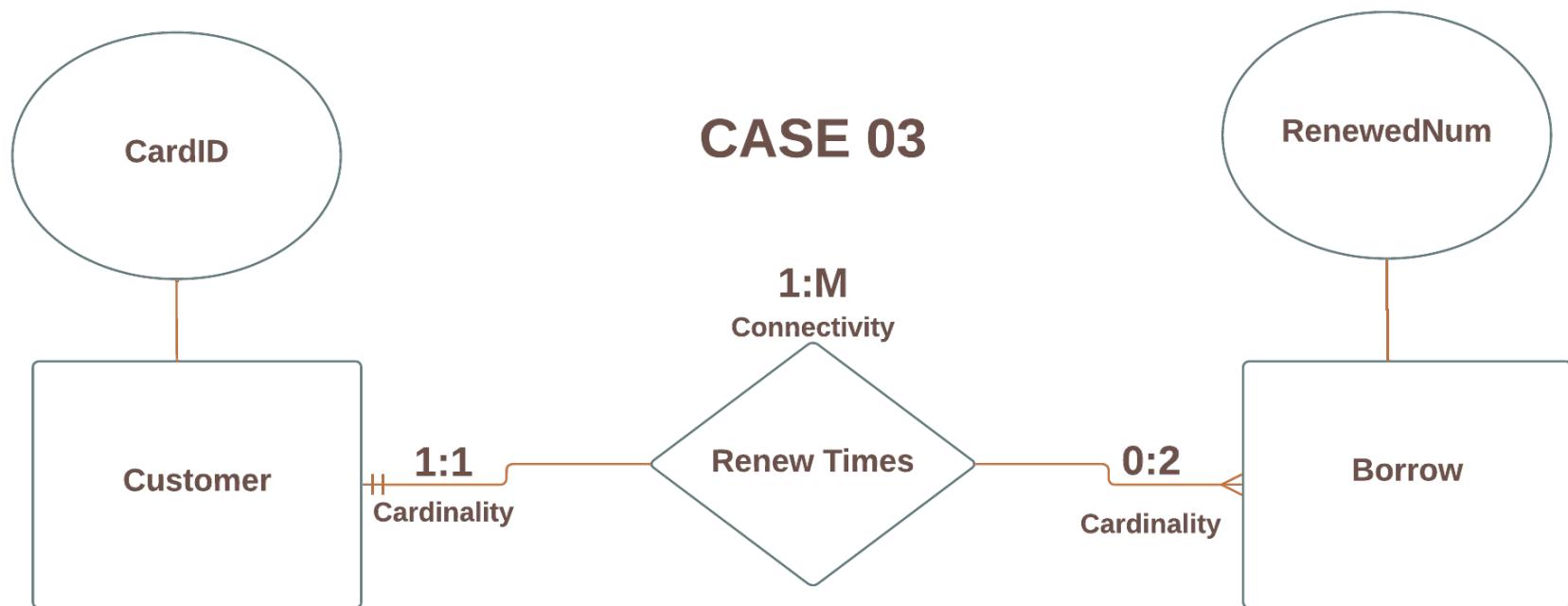
15 books is The maximum number of borrowed books.

Case 03

Renew the book return due date

Business Rule

Customers can renew the book return due date twice only



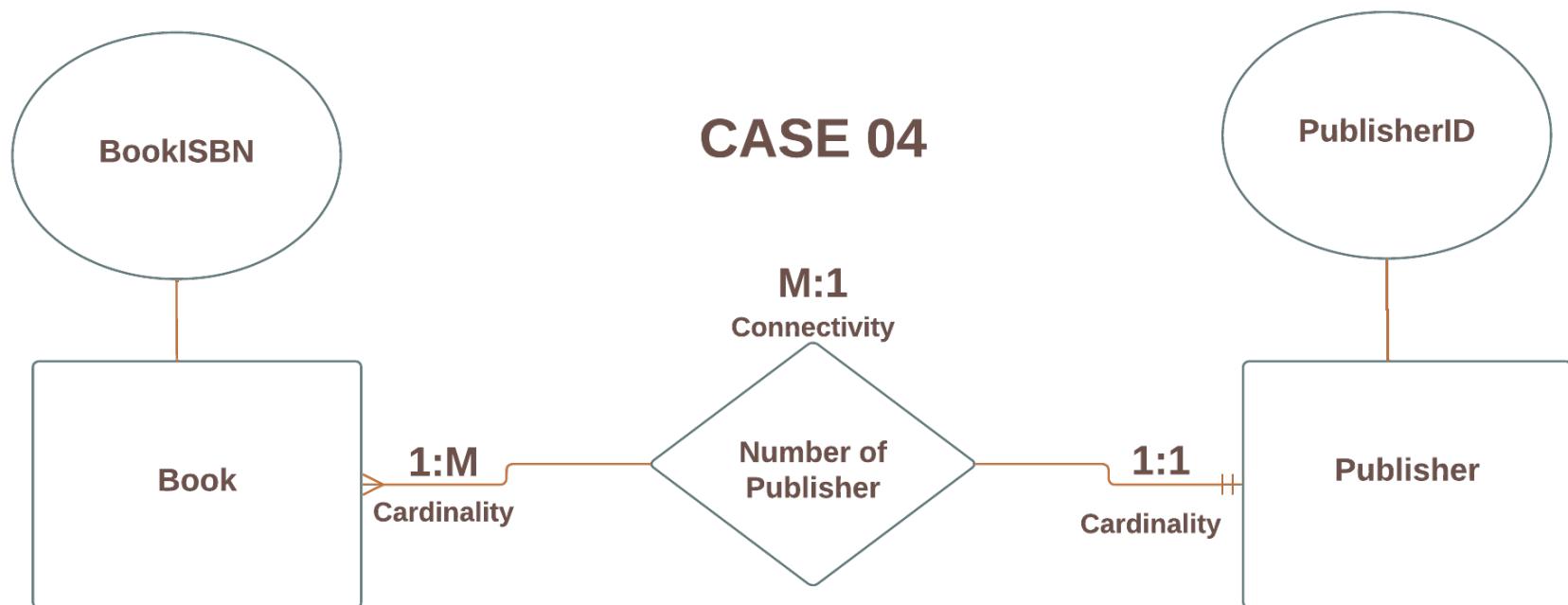
Customers can renew the book return due date twice only

Case 04

Number of Publisher for every Book

Business Rule

Every Book Should have only one Publisher



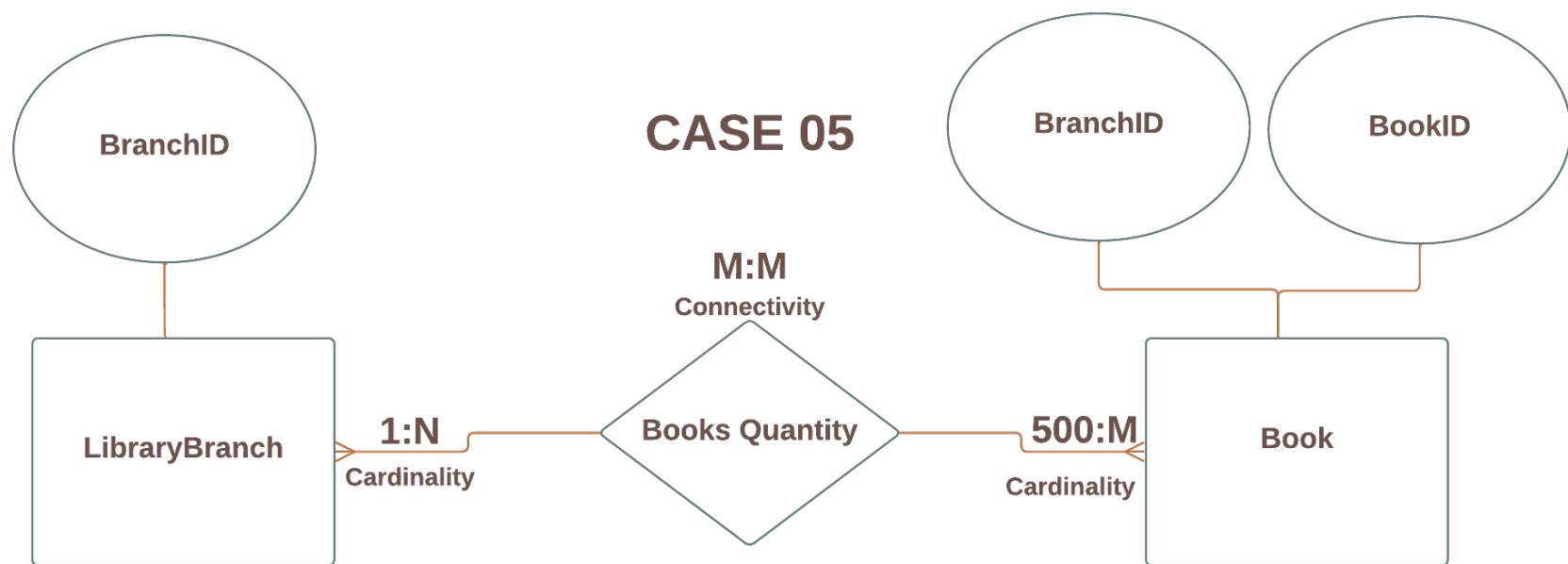
Every Book Should have only one Publisher

Case 05

Each branch must have enough books to borrow

Business Rule

Each Branch should have at least 500 Books



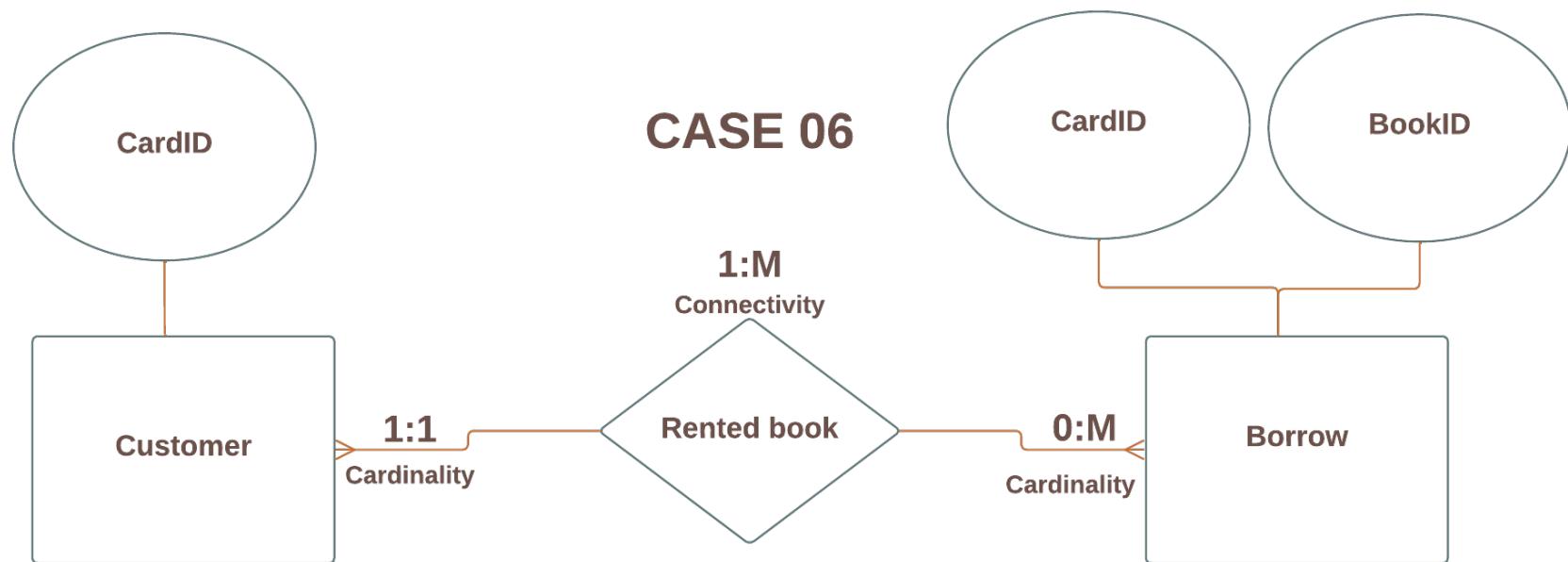
Each Branch should have at least 500 Books

Case 06

Book borrowing is available to all members

Business Rule

A bookID can be rented to one customer only.



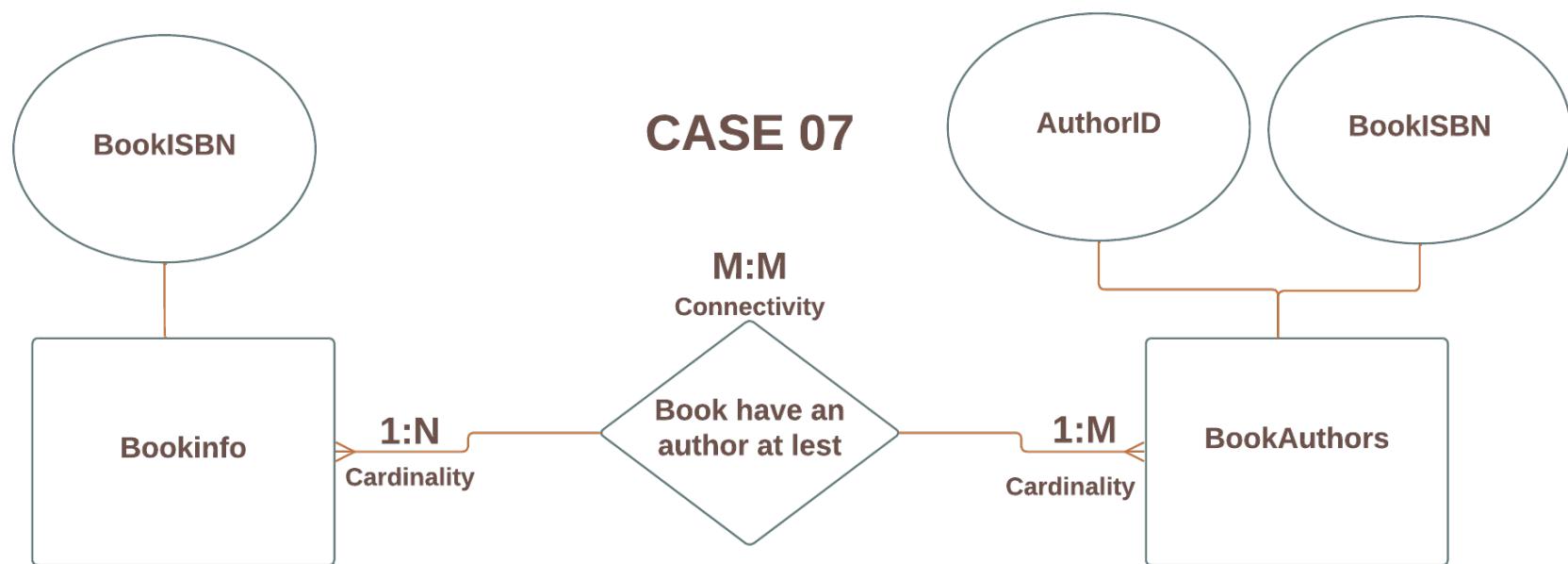
A bookID can be rented to one customer only.

Case 07

Every BookISBN should have one author at least in Book Authors Table

Business Rule

At Book Authors Table, AuthorsID and BookISBN Should not be Null



At Book Authors Table, Attributes for AuthorsID and BookISBN Should not be Null