

- o The book relation includes at least title, author, ISDN number, date of publication, and cost along with the data types that are appropriate to the data

BOOK RELATION		
Attributes	Data Type	Description
BookID	Numeric	This field identifies the book in the library
Title	Text	This field defines the title of the book
AuthorFirstName	Text	The field defines the author's first name.
AuthorLastName	Text	The field defines the author's last name
ISDN	Numeric	The field defines the International Standard Book Number of the book.
PublicationDate	Date	The field defines the date of publication of the book.
CostUSD	Numeric	The field defines the cost of the book to purchase.

BOOK PROPERTIES	
Degree	7
Candidate Keys	BookID ISBN firstName, lastName, PublicationDate
Primary Key	BookID

o The borrower relation includes at least library card #, name, address, postal code, phone number, and date of membership along with the data types that are appropriate to the data

BORROWER RELATION		
Attributes	Data Type	Description
LibraryCardID	Numeric	This field identifies the borrower in the library database
BorrowerFirstName	Text	The field defines the borrower's first name
BorrowerLastName	Text	The field defines the borrower's last name
AddressStreetNumber	Numeric	The field defines the borrower's street number portion of their address.
AddressHouseNumber	Numeric	The field defines the borrower's house number portion of their address
PostalCode	Alphanumeric	The field defines the borrower's postal code.
PhoneNumber	Numeric	The field defines the borrower's phone number.
JoinedDate	Date	The field defines the when the borrower signed up for the library card.

RELATION PROPERTIES	
Degree	8
Candidate Keys	LibraryCardID firstName, lastName
Primary Key	LibraryCardID

- o The booklended relation includes at least borrower, check out date, return date, book id, librarian

BORROWER RELATION		
Attributes	Data Type	Description
TransactionID	Numeric	This field identifies the transaction in the library database
BorrowerID	Numeric	The field defines the borrower's first name
BookID	Numeric	The field defines the borrower's last name
LibrarianID	Numeric	The field defines the borrower's street number portion of their address.
CheckoutDate	Date	The field defines the date the book was checked out of the library.
DueDate	Date	The field defines the date the book was due to be returned.
ReturnDate	Date	The field defines the date the book was actually returned.
PaymentMethod	Text	The field defines the borrower's method of payment eg. paypal, cash, etc.
OverdueFeesCharged	Numeric	The field defines the fees owed if the book is returned later in USD

RELATION PROPERTIES	
Degree	9
Candidate Keys	TransactionID BorrowerID,CheckoutDate BookID, BorrowerID, CheckoutDate
Primary Key	TransactionID
Alternate Keys / Foreign Keys	BorrowerID, BookID, LibrarianID

- o The librarian relation includes at least librarian id, name, phone number

BORROWER RELATION		
Attributes	Data Type	Description
LibrarianID	Numeric	This field identifies the librarian in the library database
LibrarianFirstName	Text	The field defines the librarian's first name
LibrarianLastName	Text	The field defines the librarian's last name
PhoneNumber	Numeric	The field defines the librarian's phone number.

RELATION PROPERTIES	
Degree	4
Candidate Keys	LibrarianID LibrarianFirstName, LibrarianLastName
Primary Key	LibrarianID