

Database Project
Library Management System
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Business Rules & ER Diagram

ER Diagram on last pages of report

1) A short overview of the organization that you are building your database for including identification of the various types of users, administrators, etc. who will be accessing the system in various ways

The database will be for the books that are available in a library catalogue. The individuals who will need to access the catalogue include the librarians and assistant librarians and patrons of the library.

Employees: check books, return books, add members

Members: Check out books, return books, look for books by author, genre, etc

Publishers/Authors: Add and/or remove books

2) Your database's business rules (have at least 20 business rules) (50 points),

1. Each author can write 1 or more books
2. Each book can have 1 author
3. Each member can have many checkouts
4. Each checkout should only have one member
5. One librarian can work at a book register
6. Each book register can have one librarian
7. Each book can have many copies
8. Many copies can be made of one book
9. Each publisher can publish one book
10. Each book can be published by one publisher
11. Each section is located at a library
12. Each library can have one to many sections
13. Many employees can work at a library
14. Each library can employ many employees
15. Each employee has one job
16. Each job title can be held by 1 or many employees
17. Each library uses member accounts
18. Many member accounts are used by many libraries
19. Each member has a default library
20. Each library can be the default to 0 or many members

Data Dictionary

Table Name: Author			
Description: stores the author's information			
Fields	Data Type	Null / Not Null	Rules
AuthorID	Number	Not Null	PK
AuthorFirstName	VarChar(20)	Not Null	Attribute
AuthorLastName	VarChar(20)	Not Null	Attribute
DOB	Date	Not Null	Attribute

Table Name: Publisher			
Description: Stores information about a book's publisher			
Fields	Data Type	Null / Not Null	Rules
PublisherID	Number	Not Null	PK
PublisherName	VarChar(30)	Not Null	Attribute
PublisherDate	Date	Not Null	Attribute

Table Name: Books			
Description: Stores information about the books			
Fields	Data Type	Null / Not Null	Rules
ISBN	Number	Not Null	PK
Section	Number	Not Null	FK1
AuthorID	Number	Null	FK2
Title	VarChar(30)	Not Null	Attribute

Table Name: Section			
Description: Stores the information about the section a book is in			
Fields	Data Type	Null / Not Null	Rules

SectionID	Number	Not Null	PK
LibraryID	Number	Not Null	FK1
DeweyDecimal	Number	Not Null	Attribute

Table Name: Library			
Description: Stores the information of the library			
Fields	Data Type	Null / Not Null	Rules
LibraryID	Number	Not Null	PK
LibraryAddress	VarChar(30)	Not Null	Attribute
LibraryName	VarChar(30)	Not Null	Attribute

Table Name: Employee			
Description: Stores information about the employees			
Fields	Data Type	Null / Not Null	Rules
EMP_ID	Number	Not Null	PK
LibraryID	Number	Not Null	FK1
JobID	Number	Not Null	FK2
MemberID	Number	Not Null	Attribute

Table Name: Job			
Description: Stores information about the jobs			
Fields	Data Type	Null / Not Null	Rules
JobID	Number	Not Null	PK
JobType	VarChar(20)	Not Null	Attribute
JobDesc	VarChar(50)	Not Null	Attribute

Table Name: Member Accounts			
Description: Stores information about the member accounts			
Fields	Data Type	Null / Not Null	Rules
MemberID	Number	Not Null	PK
UserType	VarChar(20)	Not Null	Attribute
Password	Varchar2(20)	Not Null	Attribute
PhoneNumber	Number	Not null	Attribute

Table Name: Member			
Description: Stores information about the member			
Fields	Data Type	Null / Not Null	Rules
MemberID	Number	Not Null	PK
MemberName	VarChar(20)	Not Null	Attribute
DOB	Date	Not Null	Attribute
PhoneNumber	Number	Not Null	Attribute

Table Name: Book Checkout			
Description: Stores information about the book checkout			
Fields	Data Type	Null / Not Null	Rules
CheckoutID	Num	Not Null	PK
MemberID	Num	Not Null	FK1
ISBN	Num	Not Null	Attribute
AvailableCopy	Num	Not Null	Attribute
TotalCopy	Num	Not Null	Attribute
BorrowedDate	Date	Not Null	Attribute
ReturnDate	Date	Not Null	Attribute

