

/\*\*\*\*\* Object: Database [MyBibliotheque]

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### **Purpose:**

Designing a database to create the Library database,

The Library Database provides an overview of the operations at the Library,

Describes the daily library functions and business rule for the Library.

--- If MyBibliotheque exists then drop DATABASE MyBibliotheque;

### **CREATE DATABASE MyBibliotheque**

on primary

( -- row data name

Name= 'My\_Bibliotheque',

filename='E:\database II\database-sql\My\_Bibliotheque.mdf',

-- row data sizem, growth size, maximum size

size=10MB, filegrowth=1MB, maxsize=100MB

)

log on

( --log filename

name= 'My\_Bibliotheque\_log',

```
filename='E:\database II\database-sql\My_Bibliotheque_log.ldf',
```

```
-- row data sizem, growth size, maximum size
```

```
size=1MB, filegrowth=10%, maxsize=25MB
```

```
);
```

```
go
```

```
execute sp_helpDB MyBibliotheque
```

```
;
```

```
go
```

```
USE MyBibliotheque;
```

```
GO
```

```
/***** Object: Schema [items] *****/
```

```
CREATE SCHEMA items;
```

```
go
```

```
/***** Object: Schema [loans] *****/
```

```
CREATE SCHEMA lease;
```

```
go
```

```
/***** Object: Schema [members] *****/
```

```
CREATE SCHEMA members;
```

```
go
```

```
/***** Object: Schema [staffs] *****/
```

```
CREATE SCHEMA staffs;
```

```
go
```

```
/***** Object: Table [items].[authors]
```

```
*****/
```

```

CREATE TABLE items.Authors(
    AuthorID [int] NOT NULL identity(1,1),
    /** the names use nchar since it might be international language book
    for instance, chinese characters **/
    LastName nchar(20) NOT NULL,
    FirstName nchar(20) NOT NULL,
    CONSTRAINT PK_authors PRIMARY KEY CLUSTERED (AuthorID ));
go

```

```

/***** Object: Table [items].[Categories] *****/

```

```

CREATE TABLE [items].[Categories](
    [CategoryID] [int] NOT NULL,
    [name] [varchar](50) not NULL,
    CONSTRAINT [PK_categories] PRIMARY KEY CLUSTERED ([CategoryID] ASC));
GO

```

```

/***** Object: Table [items].[copy] *****/

```

```

CREATE TABLE [items].[Copy](
    [ISBN] [int] NOT NULL,
    [CopyID] [int] NOT NULL,
    [LoanAvailability] [tinyint] NOT NULL,
    CONSTRAINT [pk_copy] PRIMARY KEY CLUSTERED ([ISBN] ASC,[CopyID] ASC));
GO

```

```

/***** Object: Table [items].[item] *****/

```

```

CREATE TABLE [items].[Book](
    [ISBN] [int] NOT NULL,
    [CopyID] [int] NOT NULL,
    [titleID] [int] NOT NULL,
    [themeID] [int] NULL,
    [publisherID] [int] NULL,
    AuthorID [int] NOT NULL,
    [ReservationID] [int],
    [Language] [varchar](15) not null,
    [Translation] [varchar](200) NULL,
    [cover] [image] NULL,
    [loanable] [varchar](200) NULL,
    CONSTRAINT [pk_book] PRIMARY KEY CLUSTERED ([ISBN] ASC));
GO

```

/\*\*\*\*\* Object: Table [items].[publishers] \*\*\*\*\*/

```

CREATE TABLE [items].[publishers](
    [publisherID] [int] NOT NULL,
    [name] [varchar](50) not NULL,
    [url] [varchar](50) NULL,
    CONSTRAINT [PK_publishers] PRIMARY KEY CLUSTERED ([publisherID] ASC));
GO

```

/\*\*\*\*\* Object: Table [items].[themes] \*\*\*\*\*/

```

CREATE TABLE [items].[themes](

```

```
        [themeID] [int] NOT NULL IDENTITY(1,1),  
        [name] [varchar](50) NOT NULL,  
CONSTRAINT [PK_themes] PRIMARY KEY CLUSTERED ([themeID] ASC));  
GO
```

```
/***** Object: Table [items].[title] *****/
```

```
CREATE TABLE [items].[title](  
        [titleID] [int] NOT NULL IDENTITY(1,1),  
        [title] [varchar](200) NOT NULL,  
        [authorID] [int] NULL,  
        [categoryID] [int] NULL,  
        [synopsis] [varchar](400) NULL,  
CONSTRAINT [pk_title] PRIMARY KEY CLUSTERED ([titleID] ASC));  
GO
```

```
/***** Object: Table [staffs].[Librarian] *****/
```

```
CREATE TABLE [staffs].[Librarian](  
        [LibrarianID] [int] NOT NULL IDENTITY(1,1),  
        [EmpID] [int] NOT NULL,  
CONSTRAINT [PK_Librarian] PRIMARY KEY CLUSTERED ([LibrarianID] ASC));  
GO
```

```
/***** Object: Table [lease].[loan] *****/
```

```
CREATE TABLE [lease].[loan](  
        [loanID] [int] identity(1,1) not null,
```

```
        [memberID][int] NOT NULL,

        [LibrarianID] [int] NOT NULL,

CONSTRAINT [PK_loan] PRIMARY KEY CLUSTERED ([loanID] ASC));

GO
```

```
/***** Object: Table [lease].[LoanDetails] *****/
```

```
CREATE TABLE [lease].[LoanDetails](

        [loanID] [int] unique not null,

        [ISBN] [int] NOT NULL,

        [copyID] [int] NOT NULL,

        [out_date] [datetime] NOT NULL,

        [due_date] [datetime] not NULL,

        [in_date] [datetime] NULL,

        [fine_assessed] [money] NULL,

        [fine_paid] [money] NULL,

        [fine_waived] [money] NULL,

        [remarks] [varchar](200) NULL,

CONSTRAINT [PK_LoanDetails] PRIMARY KEY CLUSTERED ([loanID],[out_date]))

;

GO
```

```
/***** Object: Table [lease].[Reservation] *****/
```

```
-- drop table [lease].[reservation];
```

```
CREATE TABLE [lease].[reservation](

        [ReservationID] [int] identity(1,1),

        [ISBN] [int] NOT NULL,

        [memberID] [int] NOT NULL,
```

```
[Res_date] [datetime] not NULL,  
[LoanID] [int] unique not null,  
[Notes] [varchar](200) NOT NULL,  
CONSTRAINT [pk_reservation] PRIMARY KEY CLUSTERED ([ReservationID] ASC);  
GO
```

```
/***** Object: Table [members].[member] *****/
```

```
CREATE TABLE [members].[member](  
    [memberID] [int] identity(1,1),  
    [lastname] [varchar](20) NOT NULL,  
    [firstname] [varchar](20) NOT NULL,  
    [middleinitial] [varchar](4) NULL,  
    [photograph] [varbinary](max) NULL,  
    [AdultID] [int] NULL,  
    [JuvenileID] [int] NULL,  
    CONSTRAINT [pk_member] PRIMARY KEY CLUSTERED ([memberID] ASC));  
go
```

```
/***** Object: Table [members].[adult] *****/
```

```
CREATE TABLE [members].[adult](  
    [AdultID] [int] NOT NULL,  
    [street] [varchar](20) NOT NULL,  
    [city] [varchar](20) NOT NULL,  
    [state] [varchar](20) NOT NULL,  
    [zip] [varchar](20) NULL,  
    [phoneID] [varchar](20) NULL,
```

```

        [memberID] [int] not NULL,
-- RequiredID is the medical card or driver license number
        [RequireID] [varchar](20) not null,
        [birth_date] [datetime] NOT NULL,
        [expr_date] [datetime] NOT NULL,
CONSTRAINT [pk_adult] PRIMARY KEY CLUSTERED ([AdultID] ASC));
go

```

```

/***** Object: Table [members].[juvenile] *****/

```

```

CREATE TABLE [members].[juvenile](
        [JuvenileID] [int] NOT NULL,
        [AdultID] [int] NOT NULL,
        [memberID] [int] NOT NULL,
        [birth_date] [datetime] NOT NULL,
        [expr_date] [datetime] NOT NULL,
CONSTRAINT [pk_juvenile] PRIMARY KEY CLUSTERED ([JuvenileID] ASC));
GO

```

```

USE MyBibliotheque;

```

```

GO

```

```

-- apply FK for table book

```

```

ALTER TABLE [items].[Book]

```

```

ADD

```

```

CONSTRAINT [FK_book_title] FOREIGN KEY([titleID])

```

```

REFERENCES [items].[title] ([titleID]),

```



```
CONSTRAINT [FK_book_themes] FOREIGN KEY([themeID])
REFERENCES [items].[themes] ([themeID]),
```

```
CONSTRAINT [FK_book_authors] FOREIGN KEY([authorID])
REFERENCES [items].[authors] ([authorID]),
```

```
CONSTRAINT [FK_book_publishers] FOREIGN KEY([publisherID])
REFERENCES [items].[publishers] ([publisherID]);
```

```
go
```

```
ALTER TABLE [items].[Book]
```

```
ADD
```

```
CONSTRAINT [FK_book_copy] FOREIGN KEY(ISBN, copyID)
REFERENCES [items].[copy] (ISBN, copyID),
```

```
CONSTRAINT [FK_book_Reservation] FOREIGN KEY(ReservationID)
REFERENCES [lease].[reservation] (ReservationID)
```

```
;
```

```
go
```

```
-- apply FK for table title
```

```
ALTER TABLE [items].[Title]
```

```
ADD
```

```
CONSTRAINT [FK_book_Categories] FOREIGN KEY([CategoryID])
REFERENCES [items].[Categories] ([CategoryID]),
```

```
CONSTRAINT [FK_title_authors] FOREIGN KEY([authorID])
REFERENCES [items].[authors] ([authorID]);
```

```
go
```

-- apply FK for table copy

ALTER TABLE [items].[copy]

ADD

CONSTRAINT [FK\_copy\_book] FOREIGN KEY(ISBN)

REFERENCES [items].[book] (ISBN);

go

-- apply FK for table loan

ALTER TABLE [lease].[loan]

ADD

CONSTRAINT [FK\_loan\_member] FOREIGN KEY(memberID)

REFERENCES [members].[member] (memberID),

CONSTRAINT [FK\_loan\_reservation] FOREIGN KEY(loanID)

REFERENCES [lease].[reservation] (loanID),

CONSTRAINT [FK\_loan\_librarian] FOREIGN KEY(librarianID)

REFERENCES [staffs].[librarian] (librarianID);

go

-- apply FK for table loanDetails

ALTER TABLE [lease].[loanDetails]

ADD

CONSTRAINT [FK\_loanDetails\_book] FOREIGN KEY(ISBN)

REFERENCES [items].[book] (ISBN),

CONSTRAINT [FK\_loanDetails\_copy] FOREIGN KEY(ISBN, copyID)

```
REFERENCES [items].[copy] (ISBN, copyID),
```

```
CONSTRAINT [FK_loanDetails_loan] FOREIGN KEY(loanID)
```

```
REFERENCES [lease].[loan] (loanID);
```

```
go
```

```
-- apply FK for table reservation
```

```
ALTER TABLE [lease].[reservation]
```

```
ADD
```

```
CONSTRAINT [FK_reservation_member] FOREIGN KEY(memberID)
```

```
REFERENCES [members].[member] (memberID);
```

```
go
```

```
-- apply FK for table adult
```

```
ALTER TABLE [members].[adult]
```

```
ADD
```

```
CONSTRAINT [FK_adult_member] FOREIGN KEY(memberID)
```

```
REFERENCES [members].[member] (memberID);
```

```
go
```

```
-- apply FK for table juvenile
```

```
ALTER TABLE [members].[juvenile]
```

```
ADD
```

```
CONSTRAINT [FK_juvenile_member] FOREIGN KEY(memberID)
```

```
REFERENCES [members].[member] (memberID);
```

```
go
```

```
ALTER TABLE [members].[juvenile]
ADD
CONSTRAINT [FK_juvenile_adult] FOREIGN KEY(adultID)
REFERENCES [members].[adult] (adultID);
go
```