Book and Stationery Management System Database

Trần Cao Vỹ - SE160924
Tô Lý Hữu Nhân – SE160909

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Database Systems(DBI202)

IA1602

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Nguyễn Quốc Trung

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I. Introduction to the problem

1. Description of the problem

Nhân-Vỹ bookstore has a need to build a Database to manage the Bookstore. After the actual survey, the result are as follows:

- Book Store includes store name, store number, store address,
- Store employees include name, address, start date, employee number, shift, salary, bonus.
- The manager is the part of the employee that adds the date of starting as a manager and the reason for the change of manager.
- Payment invoices will be issued when customers pay including invoice number, date, item type, discount, discount code, store number and customer number.
- Customers will have a customer number, customer name, card issuance date and frequent customer classification and based on that will have their own incentives.
- Discount includes discount code, discount start date, discount reason and discount percentage.
- Sum we get the selling price and quantity of the product sold.
- The imported invoice will have the invoice number, the date of import, the type of item imported, and the store number.
- In addition, the item will have an entry ticket including the import price and the quantity imported.
- Each item will be kept in stock with quantity, discount for old product, number of days in storage, actual selling price and import price.
- Items will have stationery and books managed separately.
- Stationery will have item number, stationery type, stationery name and manufacturer.
- For books will be identified by versions including item number, language, edition, ISBN, translator, publisher number and book number.
- The publisher will include the publisher number, the publisher's name, and the start date of the partnership.
- Book number will be saved including author, book title and genre.
- Each category will be placed in separate bookshelves.

Request

- Monthly control of inventory for each item.
- Daily and monthly profit report.
- Salary report, shift table of each employee.
- Output the total of import - export invoices of the store.

2. Management goals

- Manage employees and managers in many different stores.
- Manage receipts - income in each store.
- Manage titles in the bookstore
- Managing stationery in the bookstore

Important output

- Output revenue per bookstore.
- Consumption of each item in a month.

II. Entity model – contact

1. Identify entity – attribute

Base on the problem description and management objectives, we can present several entities and attributes of the entity as follow:

Employee: **EmployeeID,** EmployeeName, Shift, StartDate, Bonus, Wage, **BookStoreID.**

BookStore: **BookStoreID,** BookStoreName, City, District, Street, StreetNumber.

Receipt: **ReceiptID**, Date, TypeOfItem, Total Price, CustomerID, SaleID, BookStoreID.

ReceiptInfo: **ReceiptID**, **IID**, Quantity, Price

ImportForm: **ImportFormID**, Date, TypeOfItem, BookstoreID.

ImportInfo: **ImportFormID**, **IID**, Quantity, Price

Customer: **CustomerID**, MembershipDate, CustomerName, Membership.

Sale: **SaleID**, SaleDate, Reason, SaleDiscountPercent.

Item: **ItemID**, OriginSellPrice.

Edition: **ItemID**, Language, Edition, ISBN, Tranlator, PublisherID, BookID.

Book: **BookID**, Author, Name, GenreID.

Genre: **GenreID**, ShelfNumber.

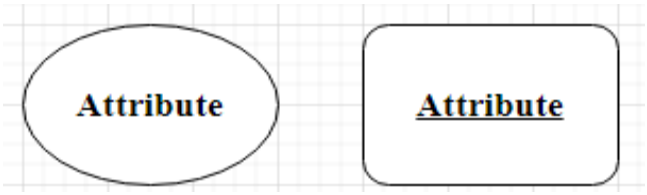
Publisher: **PublisherID**, PublisherName, Patnership, PatnershipStartDate.

Stationery: **ItemID**, StationeryName, Type, Manufactuer.

2. Entity modeling – contact

* Some symbols used in the model

- Key / identifier attribute



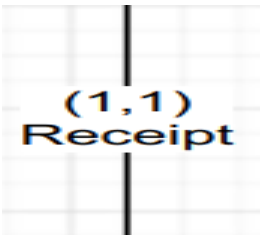
- Description/script attribute

- Entity

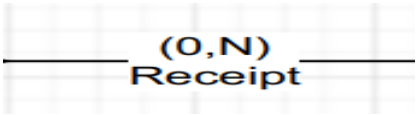
- Weak entity

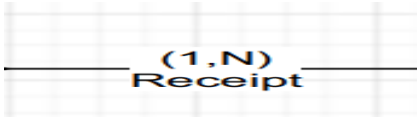
- Relationship

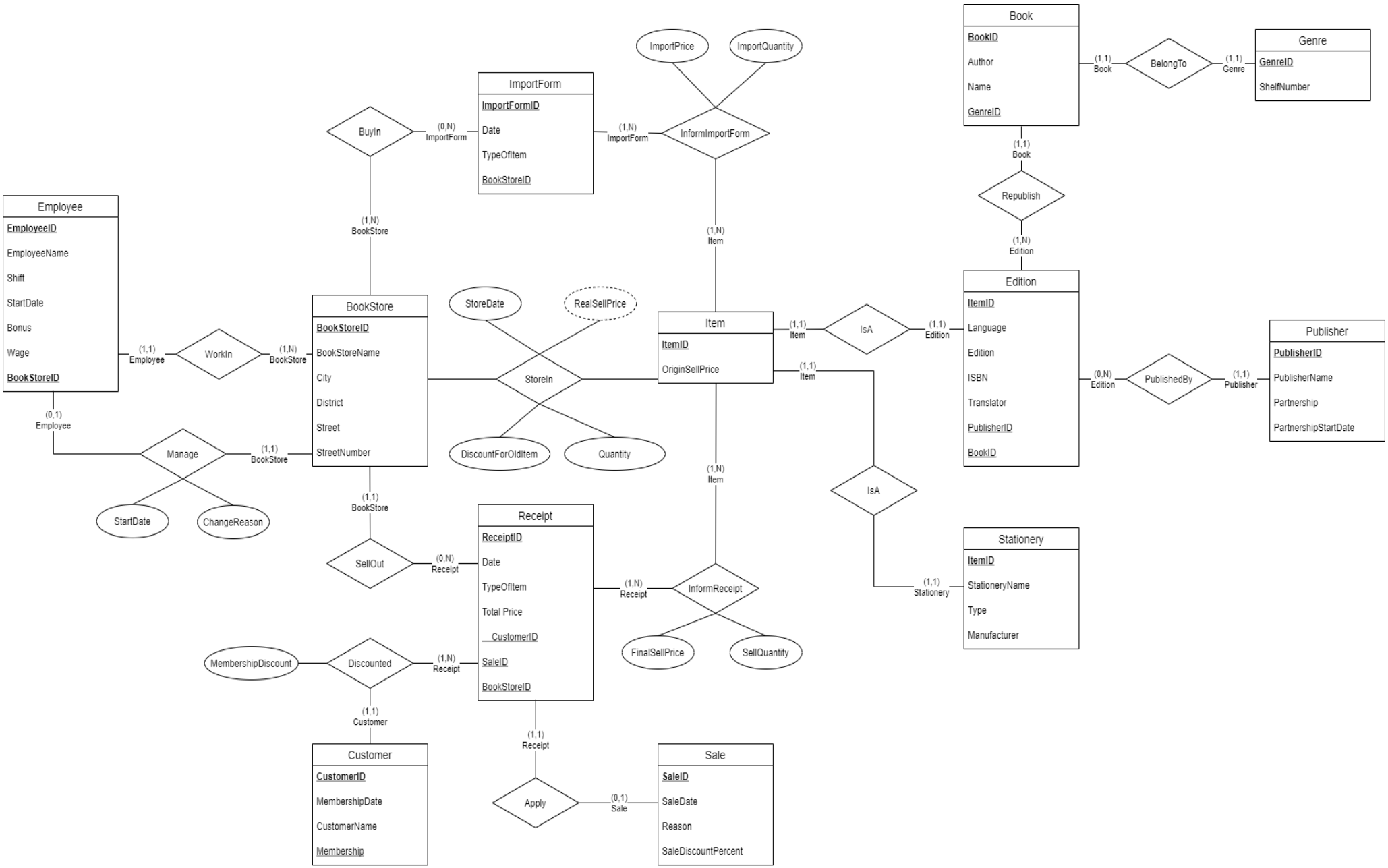
- Connectivity (force) =1

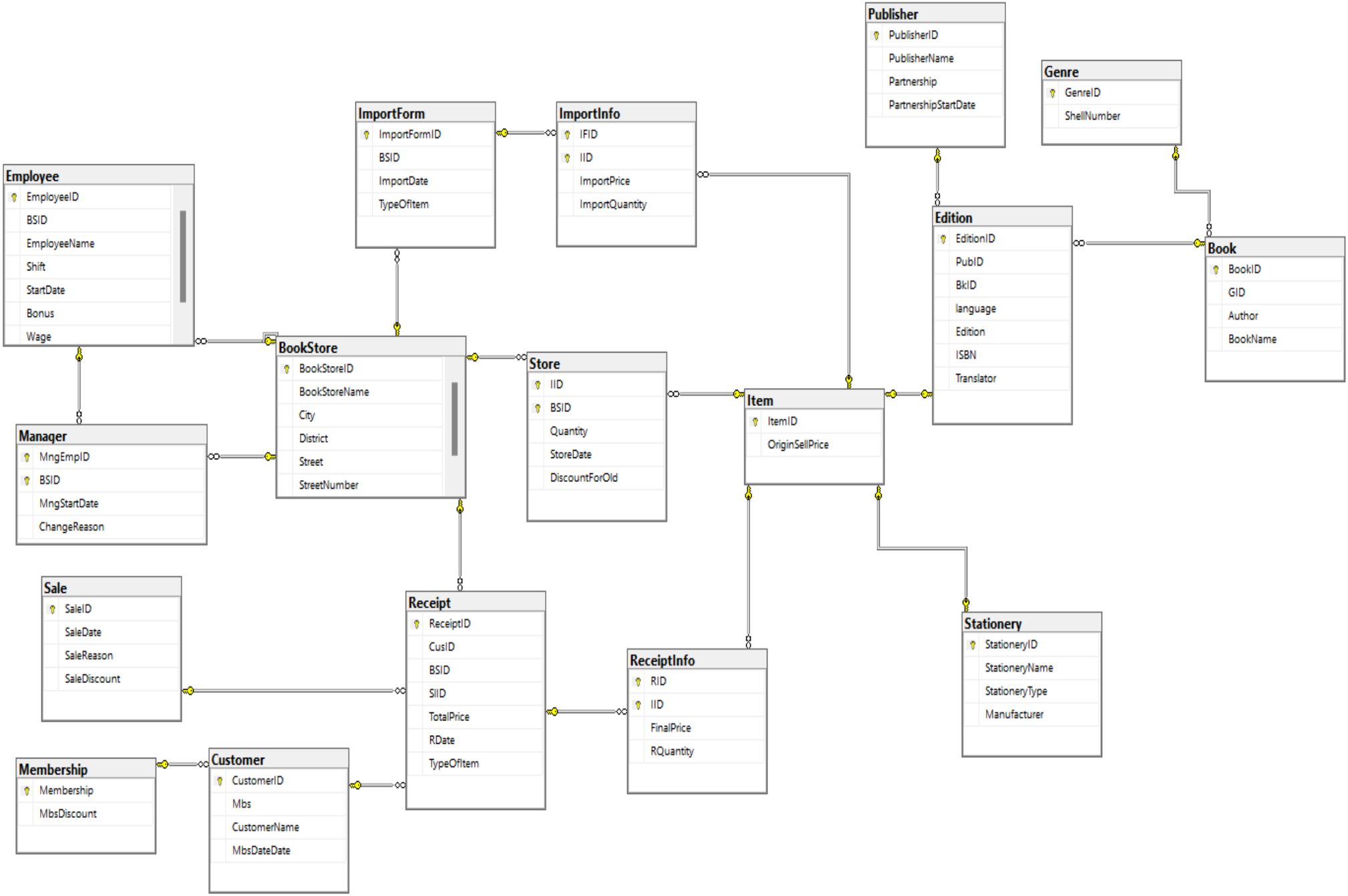


- Connectivity = N






Book
BookID
Author
Name
GenreID
(1,1) Book
BelongTo
(1,1) Genre
Genre
GenreID
ShelfNumber
(1,1) Book
Republish
(1,N) Edition
Edition
ItemID
Language
Edition
ISBN
Translator
PublisherID
BookID
(0,N) Edition
PublishedBy
(1,1) Publisher
Publisher
PublisherID
PublisherName
Partnership
PartnershipStartDate
ImportPrice
ImportQuantity
ImportForm
ImportFormID
Date
TypeOfItem
BookStoreID
BuyIn
(0,N) ImportForm
(1,N) ImportForm
InformImportForm
(1,N) BookStore
(1,N) Item
Employee
EmployeeID
EmployeeName
Shift
StartDate
Bonus
Wage
BookStoreID
(1,1) Employee
WorkIn
(1,N) BookStore
BookStore
BookStoreID
BookStoreName
City
District
Street
StreetNumber
StoreDate
RealSellPrice
StoreIn
DiscountForOldItem
Quantity
Item
ItemID
OriginSellPrice
(1,1) Item
IsA
(1,1) Edition
(1,1) Item
(0,1) Employee
Manage
(1,1) BookStore
StartDate
ChangeReason
(1,1) BookStore
(1,N) Item
IsA
Stationery
ItemID
StationeryName
Type
Manufacturer
(1,1) Stationery
Receipt
ReceiptID
Date
TypeOfItem
Total Price
CustomerID
SaleID
BookStoreID
SellOut
(0,N) Receipt
(1,N) Receipt
InformReceipt
FinalSellPrice
SellQuantity
MembershipDiscount
Discounted
(1,N) Receipt
(1,1) Customer
Customer
CustomerID
MembershipDate
CustomerName
Membership
(1,1) Receipt
Apply
(0,1) Sale
Sale
SaleID
SaleDate
Reason
SaleDiscountPercent


Publisher
PublisherID
PublisherName
Partnership
PartnershipStartDate
Genre
GenreID
ShellNumber
ImportForm
ImportFormID
BSID
ImportDate
TypeOfItem
ImportInfo
IFID
IID
ImportPrice
ImportQuantity
Employee
EmployeeID
BSID
EmployeeName
Shift
StartDate
Bonus
Wage
Edition
EditionID
PubID
BkID
language
Edition
ISBN
Translator
Book
BookID
GID
Author
BookName
BookStore
BookStoreID
BookStoreName
City
District
Street
StreetNumber
Store
IID
BSID
Quantity
StoreDate
DiscountForOld
Item
ItemID
OriginSellPrice
Manager
MngEmpID
BSID
MngStartDate
ChangeReason
Sale
SaleID
SaleDate
SaleReason
SaleDiscount
Receipt
ReceiptID
CusID
BSID
SIID
TotalPrice
RDate
TypeOfItem
ReceiptInfo
RID
IID
FinalPrice
RQuantity
Stationery
StationeryID
StationeryName
StationeryType
Manufacturer
Membership
Membership
MbsDiscount
Customer
CustomerID
Mbs
CustomerName
MbsDateDate

III. Data dictionary

Just for example on some tables (other table are similar, you have to define all the tables in your database). Note: to run the query you have to define the table 1 first then go to the side tables much

1. Definition of tables

A. Table BookStore

Column Name	Data Type	Check	Key/ Index/ Constraint
BookStoreID	nvarchar(10)		PK
BookStoreName	nvarchar(50)		
City	nvarchar(50)		
District	nvarchar(50)		
Street	nvarchar(50)		
StreetNumber	int		

Example:

BookStoreID	BookStoreName	City	District	Street	StreetNumber
NS001	Nhà Sách Phú Nhuận	Hồ Chí Minh	Phú Nhuận	Phan Đình Phùng	201
NS002	Nhà Sách Tân Bình	Hồ Chí Minh	Tân Bình	Trường Chinh	364
NS003	Nhà Sách Tân Thành	Hồ Chí Minh	Tân Phú	Âu Cơ	685
NS004	Nhà Sách Miền Đông	Hồ Chí Minh	Bình Thạnh	Lê Văn Duyệt	116

Code:

```
create table BookStore (
                BookStoreID nvarchar(10),
                BookStoreName nvarchar(50),
                City nvarchar(50),
                District nvarchar(50),
                Street nvarchar(50),
                StreetNumber int,
                constraint cBookStore_PK primary key (BookStoreID)
        )
```

Result

	BookStoreID	BookStoreName	City	District	Street	StreetNumber
1	NS001	Nhà Sách Phú Nhuận	Hồ Chí Minh	Phú Nhuận	Phan Đình Phùng	201
2	NS002	Nhà Sách Tân Bình	Hồ Chí Minh	Tân Bình	Trường Chinh	364
3	NS003	Nhà Sách Tân Thành	Hồ Chí Minh	Tân Phú	Âu Cơ	685
4	NS004	Nhà Sách Miền Đông	Hồ Chí Minh	Bình Thạnh	Lê Văn Duyệt	116

B: Table Item

Column Name	Data Type	Check	Key/ Index/ Constraint
ItemID	nvarchar(10)		PK
OriginSellPrice	int	>0	

Example:

ItemID	OriginSellPrice
B00001	20000
B00002	23000
B00003	134000
S00001	500000
S00002	50000

Code:

```
create table Item
	(
		ItemID nvarchar(10),
		OriginSellPrice int,
		constraint cItem_PK primary key(ItemID),
		constraint cItem_OriginSellPrice_Check check (OriginSellPrice > 0),
	)
```

Result

	ItemID	OriginSellPrice
1	B00001	20000
2	B00002	23000
3	B00003	134000
4	S00001	500000
5	S00002	50000

C: Table Store

Column Name	Data Type	Check	Key/ Index/ Constraint
IID	nvarchar(10)		PK, FK references Item(ItemID)
BSID	nvarchar(10)		PK, FK references BookStore(BookStoreID
Quantity	int	>=0	
DiscountForOld	decimal(2,2)	>=0 & <1	
StoreDate	Date		

Example:

IID	BSID	Quantity	StoreDate	DiscountForOld
B00001	NS001	100	2021-10-15	0.00
B00002	NS002	231	2021-09-23	0.00
B00002	NS001	94	2021-03-10	0.20
S00001	NS003	45	2021-10-10	0.00
S00002	NS004	44	2021-04-15	0.23
S00002	NS003	76	2021-05-01	0.21
B00003	NS001	24	2021-05-03	0.10

Code:

```
create table Store
(
	IID nvarchar(10),
	BSID nvarchar(10),
	Quantity int,
	StoreDate date,
	DiscountForOld decimal(2,2),
	constraint cStore_PK primary key nonclustered (IID, BSID),
	constraint cStore_IID_FK foreign key (IID) references Item(ItemID),
	constraint cStore_BSID_FK foreign key (BSID) references BookStore(BookStoreID),
	constraint cStore_Quantity_Check check (Quantity >= 0),
	constraint cStore_DiscountForOld_Check check (DiscountForOld >=0 and DiscountForOld < 1)
	)
```

Result

	IID	BSID	Quantity	StoreDate	DiscountForOld
1	B00001	NS001	100	2021-10-15	0.00
2	B00002	NS002	231	2021-09-23	0.00
3	B00002	NS001	94	2021-03-10	0.20
4	S00001	NS003	45	2021-10-10	0.00
5	S00002	NS004	44	2021-04-15	0.23
6	S00002	NS003	76	2021-05-01	0.21
7	B00003	NS001	24	2021-05-03	0.10

D: Table Stationery

Column Name	Data Type	Check	Key/ Index/ Constraint
StationeryID	nvarchar(10)		PK, FK references Item(ItemID)
StationeryName	nvarchar(50)		
StationeryType	nvarchar(50)		
Manufactuer	nvarchar(50)		

Example:

StationeryID	StationeryName	StationeryType	Manufactuer
S00001	Compa	Dụng cụ học tập	ABC Company
S00002	Bút	Dụng cụ học tập	Công ty B

Code:

```
create table Stationery
	(
		StationeryID nvarchar(10),
		StationeryName nvarchar(50),
		StationeryType nvarchar(50),
		Manufacturer nvarchar(50),
		constraint cStationery_StationeryID_FK foreign key (StationeryID) references
Item(ItemID),
		constraint cStationery_PK primary key (StationeryID),
	)
```

Result

	StationeryID	StationeryName	StationeryType	Manufacturer
1	S00001	Compa	Dụng cụ học tập	ABC Company
2	S00002	Bút	Dụng cụ học tập	Công ty B

E: Table Publisher

Column Name	Data Type	Check	Key/ Index/ Constraint
PublisherID	nvarchar(10)		PK
PublisherName	nvarchar(50)		
Patnership	nvarchar(50)		
PatnershipStartDate	date		

Example:

PublisherID	PublisherName	Patnership	PatnershipStartDate
Pub01	Kim Đồng	Đối tác lâu năm	2014-04-23
Pub02	IBM	Đối tác mới	2021-02-22

Code:

```
create table Publisher
	(
		PublisherID nvarchar(10),
		PublisherName nvarchar(50),
		Partnership nvarchar(50),
		PartnershipStartDate date,
		constraint cPublisher_PK primary key (PublisherID),
	)
```

Result

	PublisherID	PublisherName	Partnership	PartnershipStartDate
1	Pub01	Kim Đồng	Đối tác lâu năm	2014-04-23
2	Pub02	IBM	Đối tác mới	2014-02-22

F: Table Genre

Column Name	Data Type	Check	Key/ Index/ Constraint
GenreID	nvarchar(10)		PK
ShelfNumber	int		

Example:

GenreID	ShelfNumber
Gen001	1
Gen002	2
Gen003	3

Code:

```
create table Genre
	(
		GenreID nvarchar(10),
		ShellNumber int,
		constraint cGenre_PK primary key (GenreID)
	)
```

Result

	GenreID	ShellNumber
1	Gen001	1
2	Gen002	2
3	Gen003	3

G: Table Book

Column Name	Data Type	Check	Key/ Index/ Constraint
BookID	nvarchar(10)		PK
Author	nvarchar(50)		
GenreID	nvarchar(10)		FK references Genre(GenreID)
Name	nvarchar(50)		

Example:

BookID	GenreID	Author	Name
Bk00001	Gen002	Dan Brown	Da Vinci's Code
Bk00002	Gen001	Murakami	1Q84
Bk00003	Gen003	Emily Bronte	Đồi gió hú

Code:

```
create table Book
	(
		BookID nvarchar(10),
		GID nvarchar(10),
		Author nvarchar(50),
		BookName nvarchar(50),
		constraint cBook_PK primary key (BookID),
		constraint cBook_GID_FK foreign key (GID) references Genre(GenreID),
	)
```

Result

	BookID	GID	Author	BookName
1	Bk00001	Gen002	Dan Brown	Da Vincis Code
2	Bk00002	Gen001	Murakami	1Q84
3	Bk00003	Gen003	Emily Bronte	Đồi Gió Hú

H: Table Edition

Column Name	Data Type	Check	Key/ Index/ Constraint
EditionID	nvarchar(10)		PK, FK references Item(ItemID)
PubID	nvarchar(10)		FK references Publisher(PublisherID)
BkID	nvarchar(10)		FK references Book(BookID)
Language	nvarchar(50)		
Edition	int	>=1	
ISBN	nvarchar(50)		
Translator	nvarchar(50)		

Example:

EditionID	PubID	BkID	Language	Edition	ISBN	Translator
B00001	Pub01	Bk00001	Tiếng Anh	3	0-385-50420-9	Hà Mai Anh
B00002	Pub01	Bk00002	Tiếng Việt	7	0-593-05244-7	Hàn Giang Nhạn
B00003	Pub02	Bk00003	Tiếng Việt	4	1-4000-7917-9	Hoàng Hữu Đản

Code:

```
create table Edition
	(
		EditionID nvarchar(10),
		PubID nvarchar(10),
		BkID nvarchar(10),
		language nvarchar(50),
		Edition int,
		ISBN nvarchar(50),
		Translator nvarchar(50),
		constraint cEdition_PK primary key (EditionID),
		constraint cEdition_EditionID_FK foreign key (EditionID) references Item(ItemID),
		constraint cEdition_PubID_FK foreign key (PubID) references Publisher(PublisherID),
		constraint cEdition_BkID_FK foreign key (BkID) references Book(BookID),
		constraint cEdition_Edition_check check (Edition >= 1)
	)
```

Result

	EditionID	PubID	BkID	language	Edition	ISBN	Translator
1	B00001	Pub01	Bk00001	Tiếng Anh	3	0-385-50420-9	Hà Mai Anh
2	B00002	Pub01	Bk00002	Tiếng Việt	7	0-593-05244-7	Hàn Giang Nhạn
3	B00003	Pub02	Bk00003	Tiếng Việt	4	1-4000-7917-9	Hoàng Hữu Đản

I: Table Employee

Column Name	Data Type	Check	Key/ Index/ Constraint
EmployeeID	nvarchar(10)		PK
BSID	nvarchar(10)		FK references BookStore(BookStoreID)
EmployeeName	nvarchar(50)		
Shift	nvarchar(11)		
StartDate	date		
Bonus	decimal(2,2)		
Wage	int	>=0	

Example:

EmployeeID	BSID	EmployeeName	Shift	StartDate	Bonus	Wage
Emp001	NS001	Nguyen Van Tinh	7h00 – 17h00	2020-10-21	0.1	630000
Emp002	NS001	Dao Khac Nhien	7h00 – 17h00	2019-10-21	0.1	840000
Emp003	NS002	Ha Dat Tung	12h00 – 21h00	2018-08-22	0.3	840000
Emp004	NS003	Vo Quoc Anh	12h00 – 21h00	2017-01-11	0.3	630000
Emp005	NS003	Pham Duy Khang	12h00 – 18h00	2018-10-21	NULL	420000
Emp006	NS003	Dương Quá	17h00 – 21h00	2017-01-11	NULL	420000
Emp007	NS004	Nguyen Van A	7h00 – 17h00	2017-01-11	0.2	1050000

Code:

```
create table Employee	(
		EmployeeID nvarchar(10),
		BSID nvarchar(10),
		EmployeeName nvarchar(50),
		Shift nvarchar(11),
		StartDate date,
		Bonus int,
		Wage decimal(2,2),
		constraint cEmployee_PK primary key (EmployeeID),
		constraint cEmployee_BSID_FK foreign key (BSID) references
BookStore(BookStoreID),
		constraint cEmployee_Wage_Check check (Wage >= 0)
	)
```

Result

	EmployeeID	BSID	EmployeeName	Shift	StartDate	Bonus	Wage
1	Emp001	NS001	Nguyen Van Tinh	7h00-17h00	2020-10-21	0.10	630000
2	Emp002	NS001	Dao Khac Nhien	7h00-17h00	2019-10-21	0.10	840000
3	Emp003	NS002	Ha Dat Tung	12h00-21h00	2018-08-22	0.30	840000
4	Emp004	NS002	Vo Quoc Anh	12h00-21h00	2017-01-11	0.30	840000
5	Emp005	NS003	Pham Duy Khang	12h00-21h00	2018-10-21	NULL	420000
6	Emp006	NS003	Duong Qua	17h00-21h00	2017-01-11	NULL	420000
7	Emp007	NS004	Nguyen Van A	7h00-17h00	2017-01-11	0.20	1050000

J: Table Manager

Column Name	Data Type	Check	Key/ Index/ Constraint
MngEmpID	nvarchar(10)		PK, FK references Employee(EmployeeID)
BSID	nvarchar(10)		PK, references BookStore(BookStoreID)
MngStartDate	date		
ChangeReason	nvarchar(100)		

Example:

MngEmpID	BSID	MngStartDate	ChangeReason
Emp002	NS001	2021-10-21	Về hưu
Emp003	NS002	2019-03-07	Nghỉ việc
Emp005	NS003	2020-05-15	Về hưu
Emp007	NS004	2021-07-07	Giáng chức

Code:

```
create table Manager
	(
		MngEmpID nvarchar(10),
		BSID nvarchar(10),
		MngStartDate date,
		ChangeReason nvarchar(100),
		constraint cManager_PK primary key nonclustered (MngEmpID, BSID),
		constraint cManager_MngEmpID_FK foreign key (MngEmpID) references
Employee(EmployeeID),
		constraint cManager_BSIDID_FK foreign key (BSID) references
BookStore(BookStoreID),
	)
```

Result

	MngEmpID	BSID	MngStartDate	ChangeReason
1	Emp002	NS001	2021-10-21	Về hưu
2	Emp003	NS002	2019-03-07	Nghỉ việc
3	Emp005	NS003	2020-05-15	Về hưu
4	Emp007	NS004	2021-07-07	Giáng chức

K: Table ImportForm

Column Name	Data Type	Check	Key/ Index/ Constraint
ImportFormID	nvarchar(10)		PK
BSID	nvarchar(10)		FK references BookStore(BookStoreID)
ImportDate	date		
TypeOfItem	nvarchar(10)	"Book" or "Stationery"	

Example:

ImportFormID	BSID	ImportDate	TypeOfItem
IF00001	NS002	2021-08-15	Book
IF00002	NS004	2020-09-17	Book
IF00003	NS003	2021-09-09	Stationery
IF00004	NS001	2018-02-14	Book

Code:

```
create table ImportForm
	(
		ImportFormID nvarchar(10),
		BSID nvarchar(10),
		ImportDate date,
		TypeOfItem nvarchar(10),
		constraint cImportForm_PK primary key (ImportFormID),
		constraint cImportForm_BSID_FK foreign key (BSID) references
BookStore(BookStoreID),
		constraint cImportForm_TypeOfItem_Check check (TypeOfItem = N'Book' or
TypeOfItem = N'Stationery')
	)
```

Result

	ImportFormID	BSID	ImportDate	TypeOfItem
1	IF00001	NS002	2021-08-15	Book
2	IF00002	NS004	2020-09-17	Book
3	IF00003	NS003	2021-09-09	Stationery
4	IF00004	NS001	2018-02-14	Book

L: Table ImportInfo

Column Name	Data Type	Check	Key/ Index/ Constraint
IFID	nvarchar(10)		PK, FK references ImportForm(ImportFormID)
IID	nvarchar(10		PK, FK references Item(ItemID)
ImportPrice	int	>0	
ImportQuantity	int	>0	

Example:

IFID	IID	ImportPrice	ImportQuantity
IF00001	B00001	34000	10
IF00001	B00003	45000	24
IF00002	B00002	50000	7
IF00003	S00001	7000	40
IF00003	S00002	40000	40
IF00004	B00001	34000	10
IF00004	B00002	90000	30
IF00004	B00003	45000	12

Code:

```
create table ImportInfo
	(
		IFID nvarchar(10),
		IID nvarchar(10),
		ImportPrice int,
		ImportQuantity int,
		constraint cImportInfo_PK primary key nonclusterred (IFID, IID),
		constraint cImportInfo_IFID_FK foreign key (IFID) references ImportForm(ImportFormID),
		constraint cImportInfo_IID_FK foreign key (IID) references Item(IID),
		constraint cImportInfo_ImportPrice_Check check (ImportPrice > 0),
		constraint cImportInfo_ImportQuantity_Check check (ImportQuantity > 0)
	)
```

Result

	IFID	IID	ImportPrice	ImportQuantity
1	IF00001	B00001	34000	10
2	IF00001	B00003	45000	24
3	IF00002	B00002	50000	7
4	IF00003	S00001	7000	40
5	IF00003	S00002	40000	40
6	IF00004	B00001	34000	10
7	IF00004	B00002	90000	30
8	IF00004	B00003	45000	12

M: Table Membership

Column Name	Data Type	Check	Key/ Index/ Constraint
Membership	nvarchar(10)		PK
MbsDiscoun	decimal(2,2)	>=0 & <1	

Example:

Membership	MbsDiscoun
Bronze	0.05
Silver	0.07
Gold	0.10
Platinum	0.15

Code:

```
create table Membership
	(
		Membership nvarchar(10),
		MbsDiscount decimal(2,2),
		constraint cMembership_PK primary key (Membership),
		constraint cMembership_MbsDiscount_Check check (MbsDiscount >= 0 and
MbsDiscount < 1),
	)
```

Result

	Membership	MbsDiscount
1	Bronze	0.05
2	Gold	0.10
3	Platinum	0.15
4	Silver	0.07

N: Table Customer

Column Name	Data Type	Check	Key/ Index/ Constraint
CustomerID	nvarchar(10)		PK
Mbs	nvarchar(10)		FK references Membership(Membership)
CustomerName	nvarchar(50)		
MbsDateDate	date		

Example:

CustomerID	Mbs	CustomerName	MbsDateDate
Cus00001	Gold	Nguyen Van A	2015-10-23
Cus00002	Silver	Tran Van B	2014-03-23
Cus00003	Platinum	Nguyen Thi C	2019-01-01

Code:

```
create table Customer
	(
		CustomerID nvarchar(10),
		Mbs nvarchar(10),
		CustomerName nvarchar(50),
		MbsDateDate date,
		constraint cCustomer_PK primary key (CustomerID),
		constraint cCustomer_Mbs_FK foreign key (Mbs) references Membership(Membership),
	)
```

Result

	CustomerID	Mbs	CustomerName	MbsDateDate
1	Cus00001	Gold	Nguyen Van A	2015-10-23
2	Cus00002	Silver	Tran Van B	2014-03-23
3	Cus00003	Platinum	Nguyen Thi C	2019-01-01

O: Table Sale

Column Name	Data Type	Check	Key/ Index/ Constraint
SaleID	nvarchar(10)		PK
SaleDate	date		
SaleReason	nvarchar(100)		
SaleDiscount	decimal(2,2)	>=0 & <1	

Example:

SaleID	SaleDate	SaleReason	SaleDiscount
Sa001	2021-11-21	Vietnamese Teacher's Day	0.30
Sa002	2021-10-20	Vietnamese Women's Day	0.24
Sa003	2021-10-31	Halloween	0.50

Code:

```
create table Sale
	(
		SaleID nvarchar(10),
		SaleDate date,
		SaleReason nvarchar(100),
		SaleDiscount decimal(2,2),
		constraint cSale_PK primary key (SaleID),
		constraint cSale_SaleDiscount_Check check (SaleDiscount >= 0 and SaleDiscount < 1)
	)
```

Result

	SaleID	SaleDate	SaleReason	SaleDiscount
1	Sa001	2021-11-21	Vietnamese Teachers Day	0.30
2	Sa002	2021-10-20	Vietnamese Womens Day	0.24
3	Sa003	2021-10-31	Halloween	0.50

P: Table Receipt

Column Name	Data Type	Check	Key/ Index/ Constraint
ReceiptID	nvarchar(10)		PK
CusID	nvarchar(10)		FK references Customer(CustomerID)
BSID	nvarchar(10)		FK references BookStore(BookStoreID)
SlID	nvarchar(10)		FK references Sale(SaleID)
RDate	date		
TotalPrice	int	>0	
TypeOfItem	nvarchar(10)	"Book" or "Stationery"	

Example:

ReceiptID	CusID	BSID	SlID	TotalPrice	RDate	TypeOfItem
Rp00001	Cus00001	NS001	Sa001	1617800	2021-10-20	Book
Rp00002	Cus00001	NS004	NULL	162000	2021-10-23	Book
Rp00003	Cus00002	NS003	NULL	7692000	2021-12-01	Stationery
Rp00004	Cus00001	NS001	Sa002	3696000	2021-10-20	Stationery
Rp00005	Cus00003	NS002	NULL	85000	2021-04-16	Book

Code:

```
create table Receipt  (
        ReceiptID nvarchar(10),
        CusID nvarchar(10),
        BSID nvarchar(10),
        SlID nvarchar(10),
        TotalPrice int,
        RDate date,
        TypeOfItem nvarchar(10),
        constraint cReceipt_PK primary key (ReceiptID),
        constraint cReceipt_CusID_FK foreign key (CusID) references Customer(CustomerID),
        constraint cReceipt_BSID_FK foreign key (BSID) references BookStore(BookStoreID),
        constraint cReceipt_SlID_FK foreign key (SlID) references Sale(SaleID),
        constraint cReceipt_TotalPrice_Check check (TotalPrice > 0)
    )
```

Result

	ReceiptID	CusID	BSID	SlID	TotalPrice	RDate	TypeOfItem
1	Rp00001	Cus00001	NS001	Sa001	1617800	2021-10-20	Book
2	Rp00002	Cus00001	NS004	NULL	162000	2021-10-23	Book
3	Rp00003	Cus00002	NS003	NULL	7692000	2021-12-01	Stationery
4	Rp00004	Cus00001	NS001	Sa002	3696000	2021-10-20	Stationery
5	Rp00005	Cus00003	NS002	NULL	85000	2021-04-16	Book

Q: Table ReceiptInfo

Column Name	Data Type	Check	Key/ Index/ Constraint
RID	nvarchar(10)		PK, FK references Receipt(ReceiptID)
IID	nvarchar(10)		FK references Item(ItemID)
FinalPrice	int	>0	
RQuantity	int	>0	

Example:

RID	IID	FinalPrice	RQuantity
Rp00001	B00002	9200	19
Rp00001	B00003	67000	21
Rp00001	B00001	12000	3
Rp00002	B00001	18000	9
Rp00003	S00001	465000	16
Rp00003	S00002	36000	7
Rp00004	S00001	330000	11
Rp00004	S00002	33000	2
Rp00005	B00001	17000	5

Code:

```
create table ReceiptInfo
	(
		RID nvarchar(10),
		IID nvarchar(10),
		FinalPrice int,
		RQuantity int,
		constraint cReceiptInfo_PK primary key nonclustered (RID, IID),
		constraint cReceiptInfo_RID_FK foreign key (RID) references Receipt(ReceiptID),
		constraint cReceiptInfo_IID_FK foreign key (IID) references Item(ItemID),
		constraint cReceiptInfo_FinalPrice_Check check (FinalPrice > 0),
		constraint cReceiptInfo_RQuantity_Check check (RQuantity > 0),
	)
```

Result

	RID	IID	FinalPrice	RQuantity
1	Rp00001	B00002	9200	19
2	Rp00001	B00003	67000	21
3	Rp00001	B00001	12000	3
4	Rp00002	B00001	18000	9
5	Rp00003	S00001	465000	16
6	Rp00003	S00002	36000	7
7	Rp00004	S00001	330000	11
8	Rp00004	S00002	33000	2
9	Rp00005	B00001	17000	5