BBC

Here I have shown a way to design the ERD of BBC. There can be other ways to do this so it is not necessary for you to come up with this exact version of the design. For example, I used aggregation twice here, which I have found a better approach to depict the scenario. In this case, you can use the ternary relationship too. But in that case, you may have to rearrange the descriptive attributes of those relationship sets. However, there are some strict rules that one has to follow no matter how the design is.

1. No foreign key will appear in the ERD(even as an attribute). The relationship set must be represented with a diamond notation.
2. Follow either line/arrow notation or min...max notation for the whole ERD to represent cardinality and participation.
3. You have to list all the attributes with their proper representation. Like composite attributes appear in the hierarchy, multivalued valued in curly braces.
4. A relationship set can only come in between two entity sets. If you ever need to bring a relation set between an entity set and a relationship set or between two relationship sets, that means any of the two things 1) You got the design wrong 2) You may have to use aggregation or ternary relationship set.
5. If you feel like you are getting too many ternary relation sets that means, you can further optimize your design. Because in most cases we can convert our ternary relationship set into two binary relationship sets. But then again please check that those binary relationship sets can really preserve all the information.
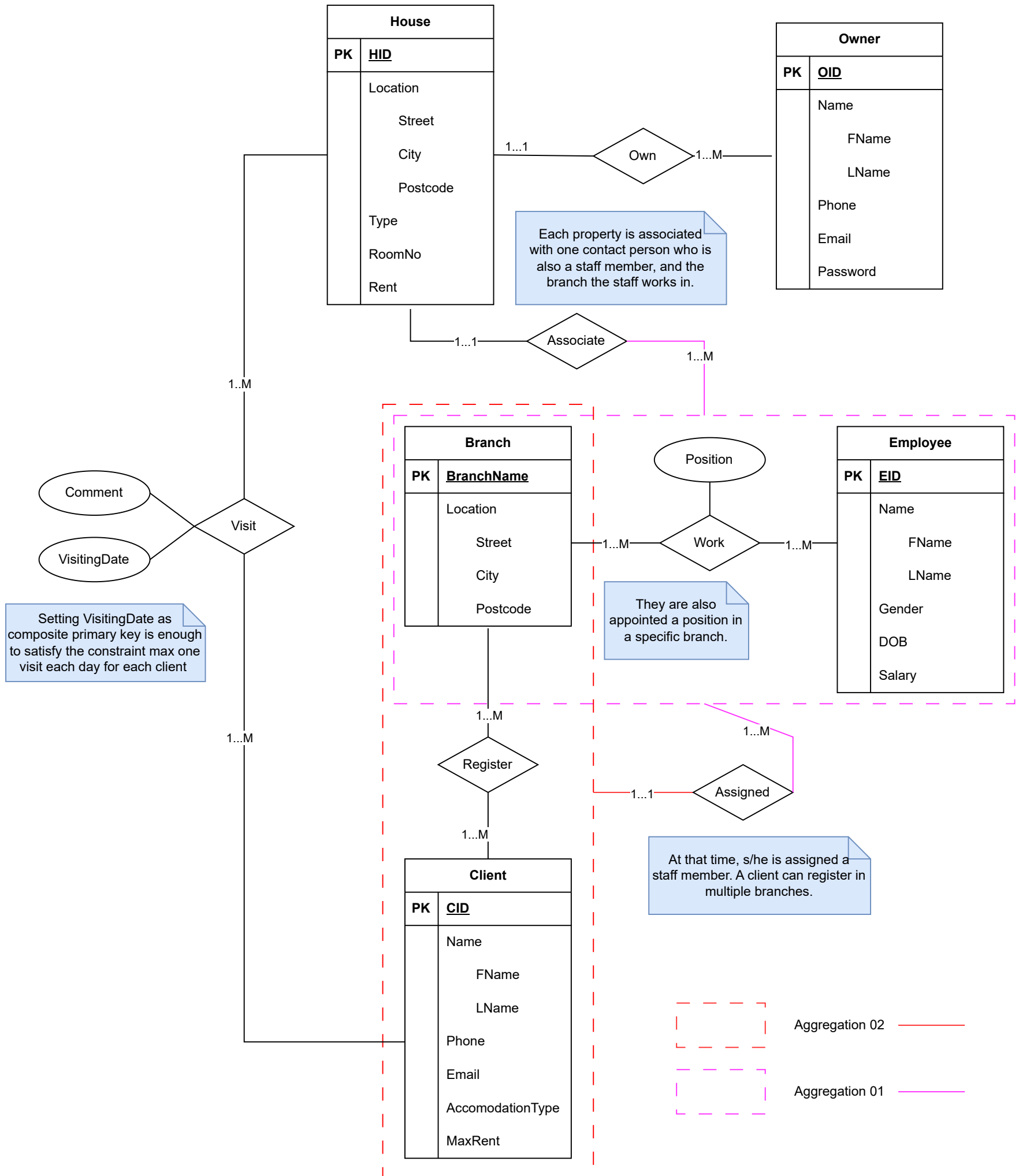
Table list

House

PK	HID
FK	OID
FK	BranchName
FK	EID
	Location
	Street
	City
	Postcode
	Type
	RoomNo

Owner

PK	OID
	Name
	FName
	LName
	Phone
	Email
	Password

Branch

PK	BranchName
	Location
	Street
	City
	Postcode

Employee

PK	EID
	Name
	FName
	LName
	Gender
	DOB
	Salary

Work

PK,FK	BranchName
PK,FK	EID
	Position

Register

PK,FK	BranchName
PK,FK	CID

Client

PK	CID
	Name
	FName
	LName
	Phone
	Email
	AccomodationType
	MaxRent

Visit

PK,FK	CID
PK,FK	HID
PK	VisitingDate
	Comment

Assigned

PK,FK	CID
PK,FK	BranchName
FK	EID

WB

Here I have shown a way to design the ERD of WB. There can be other ways to do this so it is not necessary for you to come up with this exact version of the design. For example, I used an aggregation and a ternary relationship here, which I have found a better approach to depict the scenario. In this case, you can use other approaches too. But in that case, you may have to rearrange the descriptive attributes of those relationship sets. However, there are some strict rules that one has to follow no matter how the design is.

1. No foreign key will appear in the ERD(even as an attribute). The relationship set must be represented with a diamond notation.
2. Follow either line/arrow notation or min...max notation for the whole ERD to represent cardinality and participation.
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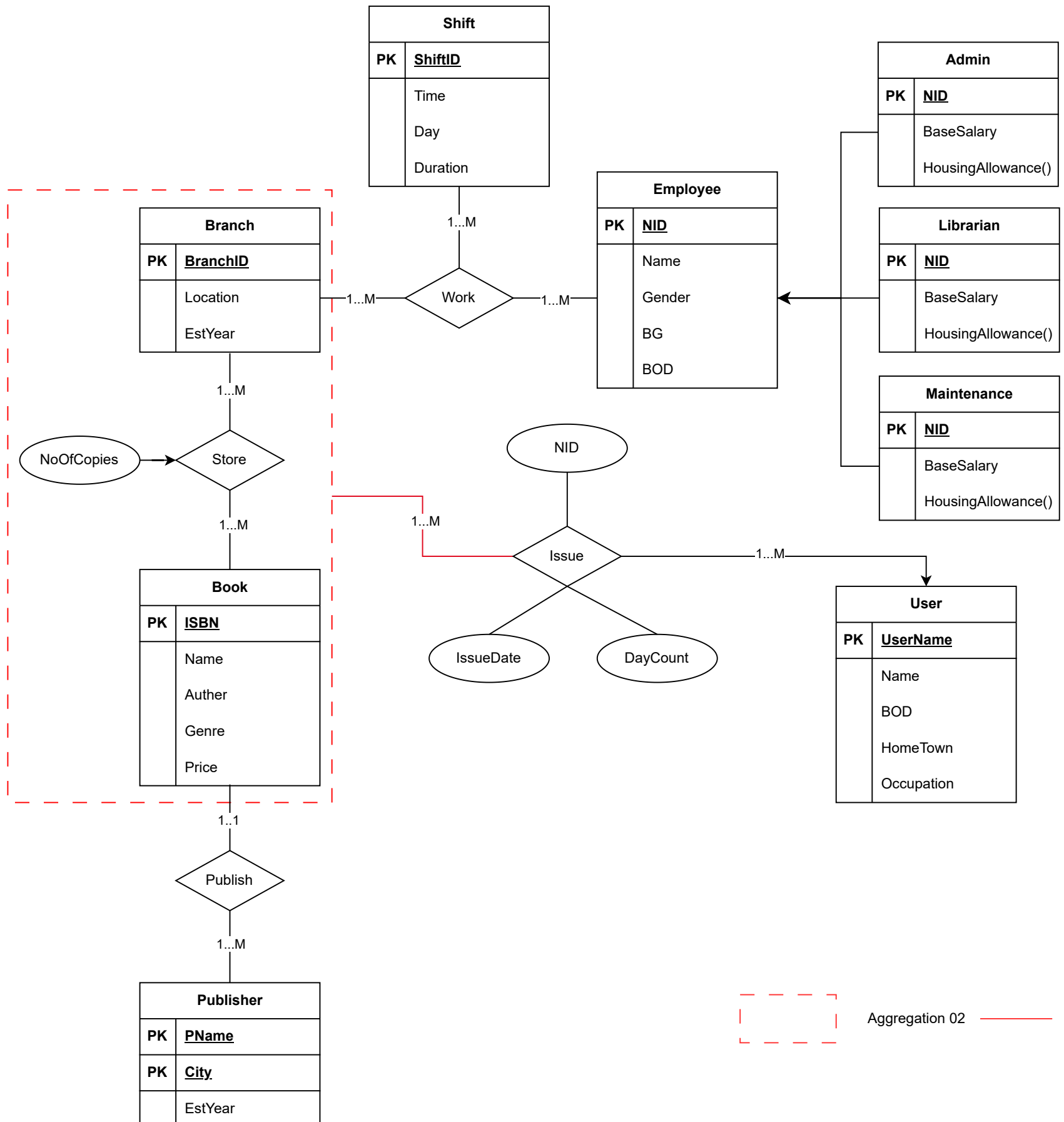
Table list

Employee

PK	NID
	Name
	Gender
	BG
	BOD

Admin

PK,FK	NID
	BaseSalary
	HousingAllowance()

Librarian

PK,FK	NID
	BaseSalary
	HousingAllowance()

Maintenance

PK,FK	NID
	BaseSalary
	HousingAllowance()

Branch

PK	BranchID
	Location
	EstYear

Shift

PK	ShiftID
	Time
	Day
	Duration

Work

PK,FK	BranchName
PK,FK	EID
Pk, FK	ShiftID

Book

PK	ISBN
FK	PName
	Name
	Auther
	Genre
	Price

Publisher

PK	PName
PK	City
	EstYear

Store

PK,FK	ISBN
PK,FK	BranchName
	NoOfCopies

User

PK	UserName
	Name
	BOD
	HomeTown
	Occupation

Issue

PK,FK	ISBN
PK,FK	BranchName
PK,FK	Username
PK	IssueDate
FK	NID
	DayCOunt