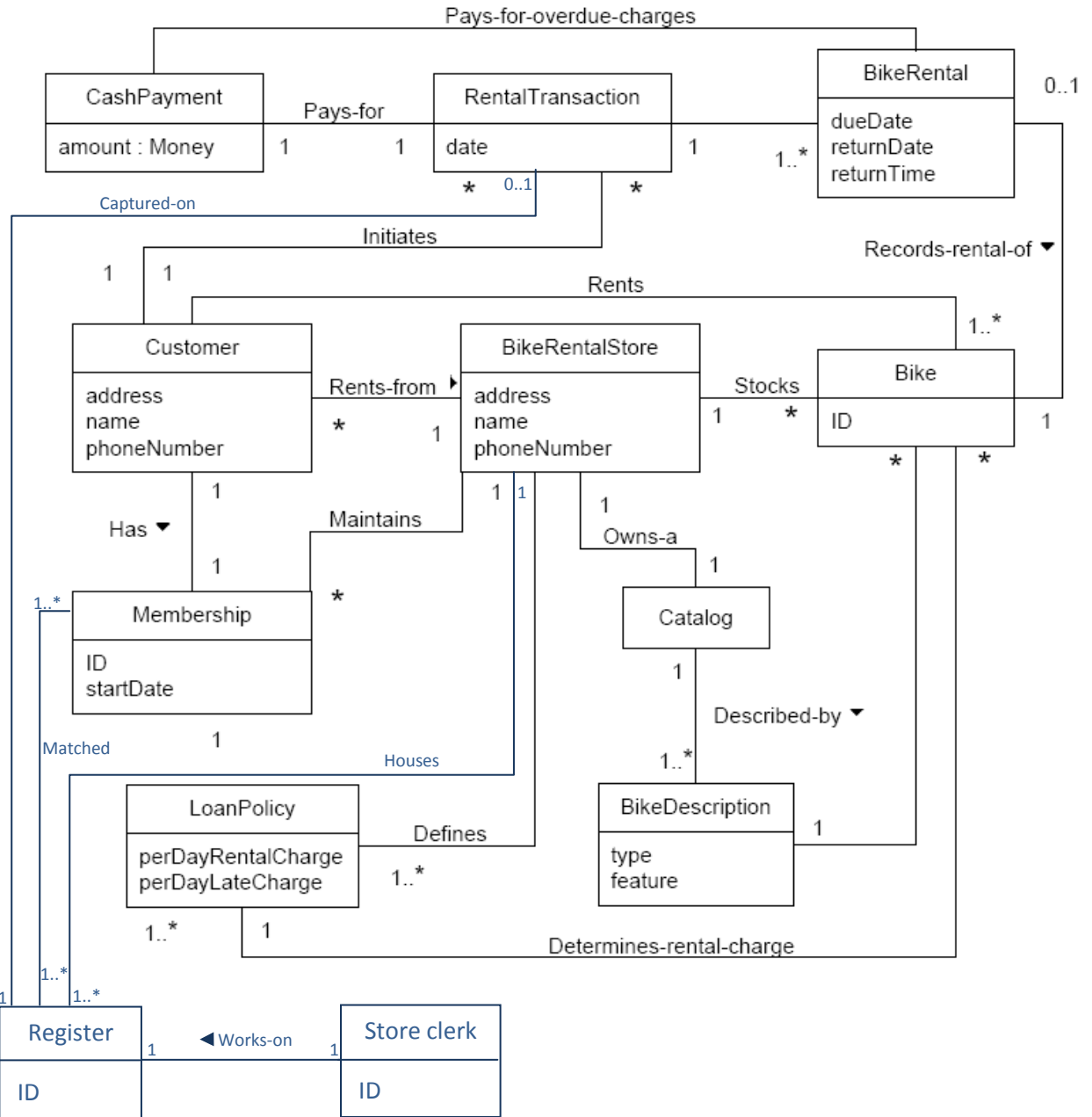Please note that answers below for question 1,2 and 3 are based on an updated domain model as follow:

1.

Contract CO1:startNewRental
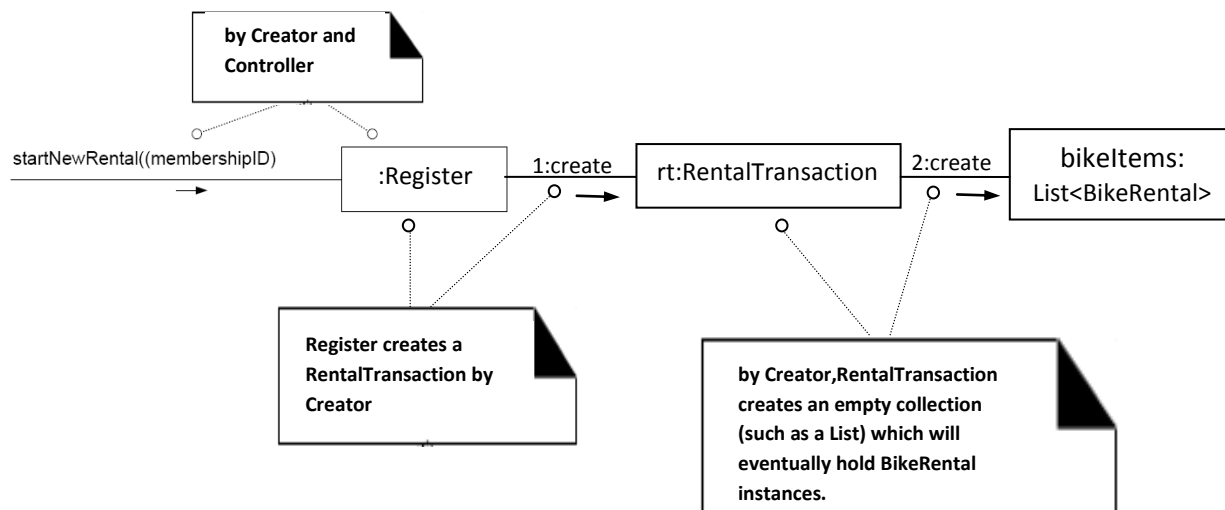
Operation:	startNewRental(memberID: memberID)
Cross References:	Use Cases: Rent Bikes
Preconditions:	Customer is a member of the store.
Postconditions:	— A RentalTransaction instance rt was created (instance creation). — rt was associated with a Register (association formed). — Attribute of rt were initialized.

by Creator and Controller

startNewRental((membershipID) → :Register — 1:create → rt:RentalTransaction — 2:create → bikeItems: List<BikeRental>

Register creates a RentalTransaction by Creator

by Creator,RentalTransaction creates an empty collection (such as a List) which will eventually hold BikeRental instances.

2.

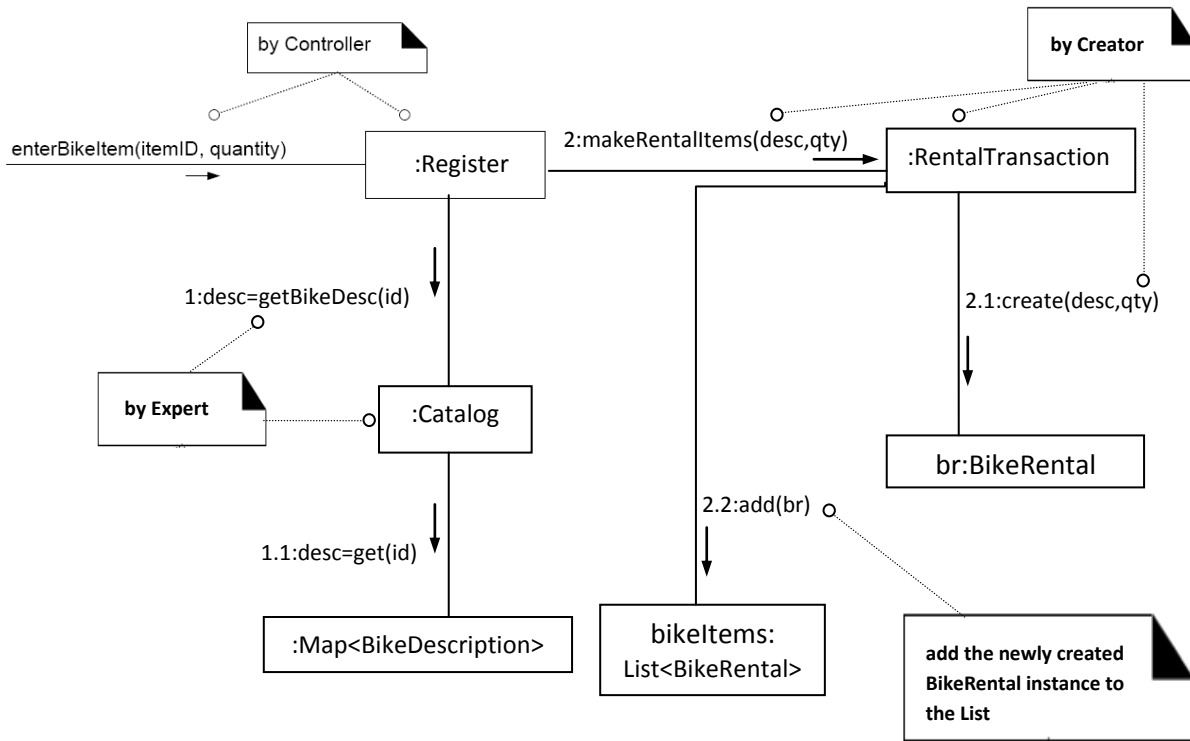## Contract CO2:enterBiketem

Operation:	enterBiketem(itemID: itemID, quantity: integer)
Cross References:	Use Cases: Rent Bikes
Preconditions:	There is an underway rental transaction.
Postconditions:	— A BikeRental instance br was created (instance creation). — br was associated with the current RentalTransaction (association formed). — br.quantity became quantity (attribute modification). — br.dueDate became due date (attribute modification). — br.returnDate became return date (attribute modification). — br.returnTime became return time (attribute modification). — br was associated with a BikeDescription based on itemID match (association formed).

by Controller

enterBikeItem(itemID, quantity) → :Register

2:makeRentalItems(desc,qty) → :RentalTransaction

by Creator

1:desc=getBikeDesc(id)

by Expert → :Catalog

2.1:create(desc,qty)

br:BikeRental

1.1:desc=get(id)

:Map<BikeDescription>

2.2:add(br)

bikeItems:
List<BikeRental>

add the newly created
BikeRental instance to
the List

3.

Catalog
...
getBikeDesc(...)

Descriptions{Map}
1..*

BikeDescription
type : Text
feature : Text
itemID : itemID
...

1
catalog

Register
matchMemberID:Boolean
enterBiketem(...)
startnewRental(...)

currentRental
1

RentalTransaction
isComplete : Boolean
date : DateTime
makeRentalItem(...)
...

description 1

bikeItem
{rented}
1..*

BikeRental
quantity : Integer
dueDate : DateTime
returnDate : Date
returnTime : Time
...

memberID
1

Membership
memberID : memberID
startDate : Date
...