International University of Sarajevo

Project elaboration 2

CS504

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Creator

Problem

Who should be responsible for creating a new instance of some class?

Solution

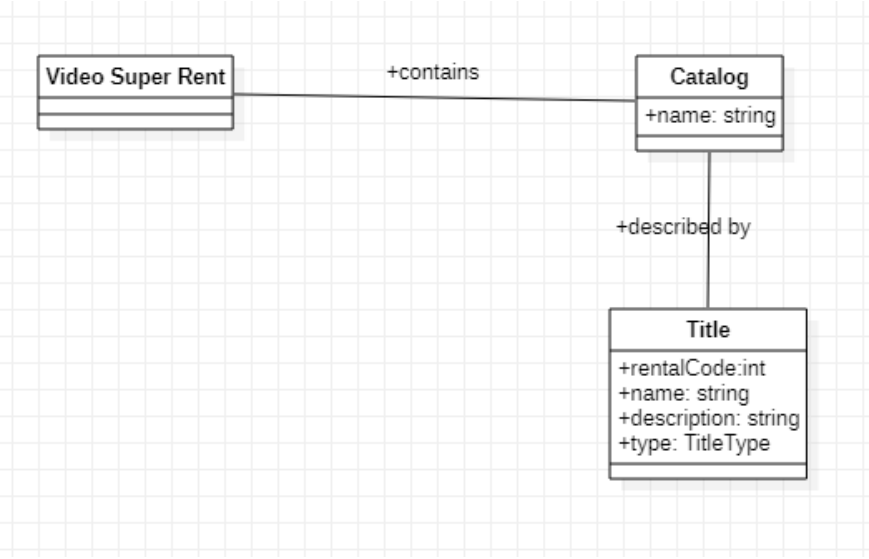
Assign class B the responsibility to create an instance of class A if one or more of the following is true:

1. B aggregates A objects.
2. B contains A objects.
3. B records instances of A objects.
4. B closely uses A objects.
5. B has the initializing data that will be passed to A when it is created (thus B is an Expert with respect to creating A).

B is a creator of A objects.

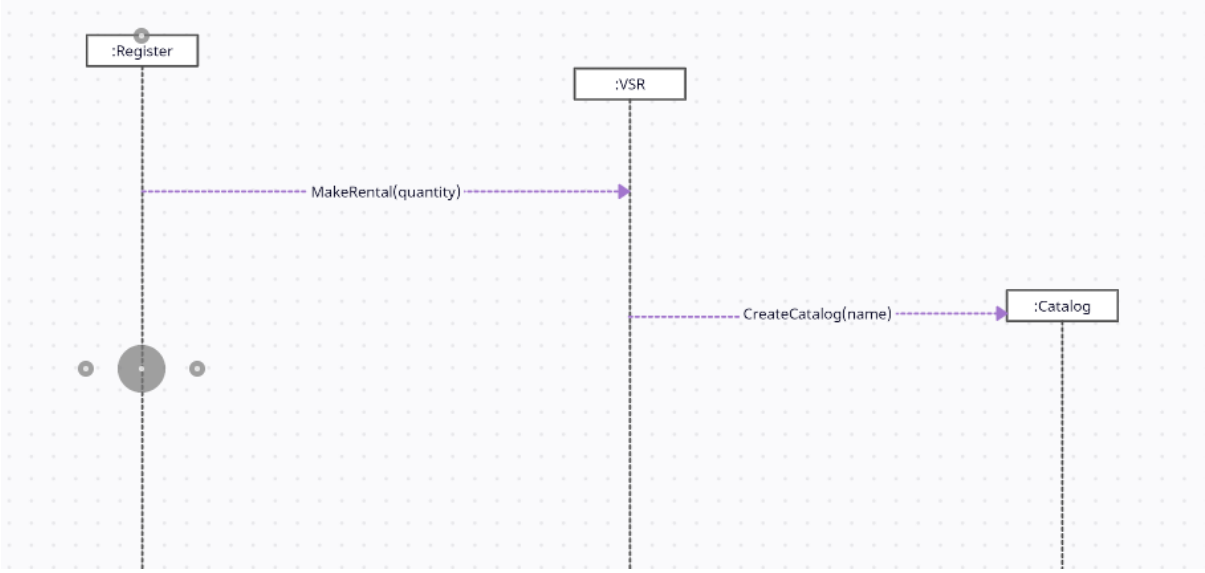
Who should be responsible for creating a Catalog instance? By Creator, we should look for a class that aggregates, contains, and so on, Catalog instances.

Since a Sate contains many Catalog objects, the Creator pattern suggests that Video Super rent is a good candidate to have the responsibility of creating Catalog instances.



1. Partial Domain Model

This leads to a design of object interactions as shown in Figure 2.



2. Creating Catalog

Information Expert (or Expert)

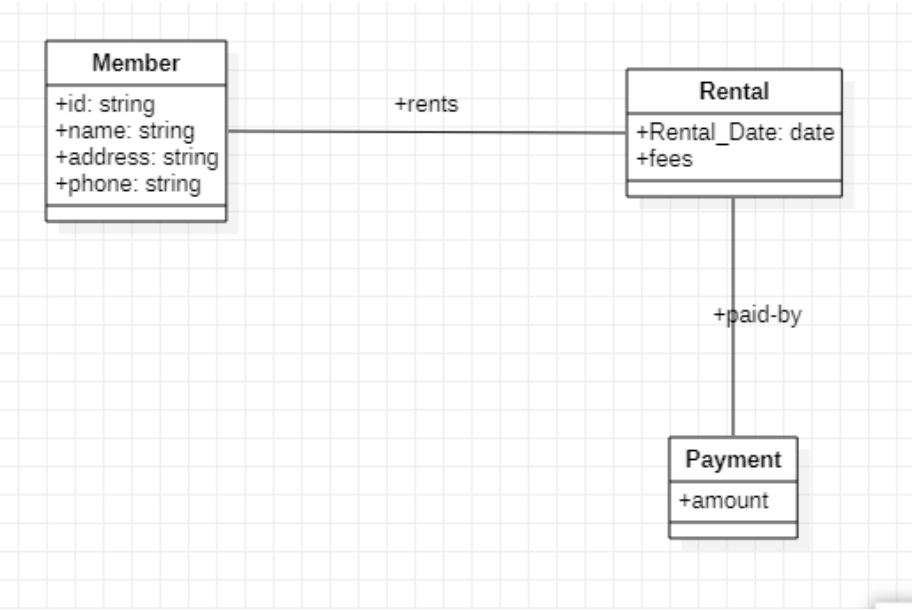
Problem

What is a general principle of assigning responsibilities to objects?

Solution

Assign a responsibility to the information expert the class that has the information necessary to fulfill the responsibility.

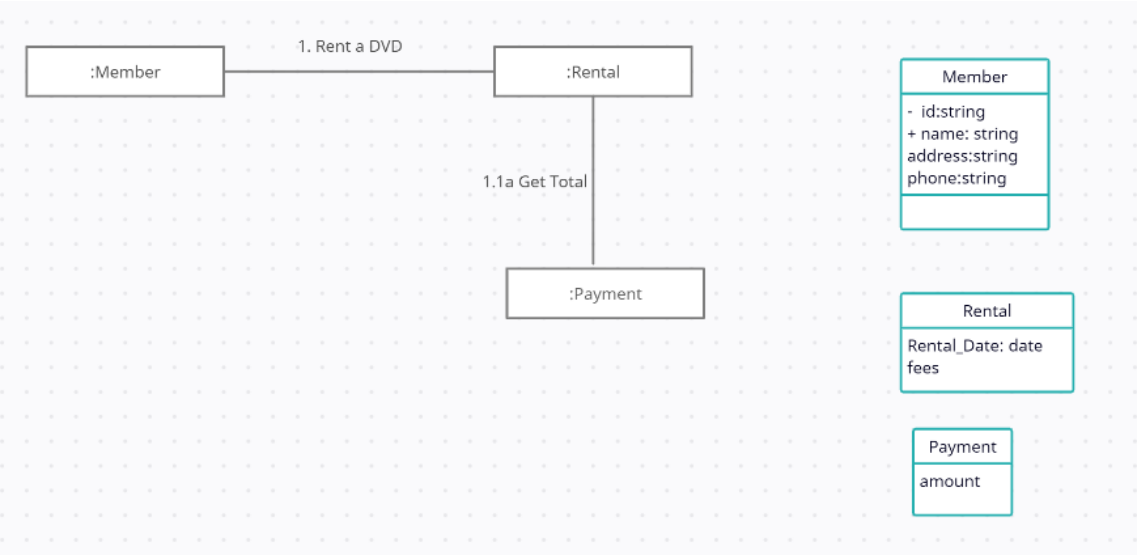
Who should be responsible for knowing the grand total of a Rental?



3. Associations of Rental

What information is required to calculate the total? It is vital to be aware of all of a rental's Rental occurrences as well as the sum of their subtotals. Because a Rental instance comprises these, it is an acceptable type of object for this duty, according to the Information Expert standard; it is an information expert for the job.

The principle by which each responsibility was assigned was Information Expert placing it with the object that had the information needed to fulfill it.



4. Calculating the Rental total.

Controller

Problem

Who should be responsible for handling an input system event?

Solution

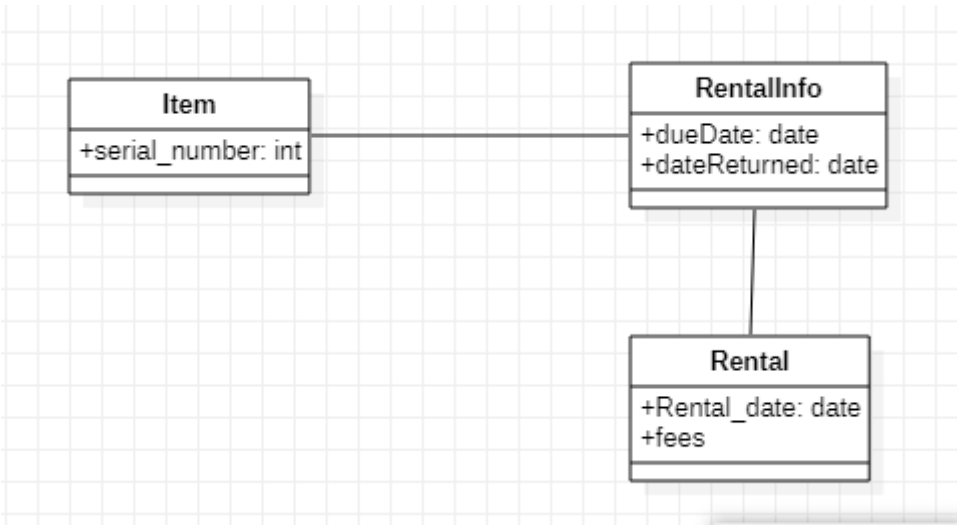
Deals with how to delegate the request from the UI layer objects to domain layer objects.

An event created by an external actor is referred to as an input system event. They have to do with how the system works. Messages and methods are connected to system operations in reaction to system events. When a cashier pushes the "End Rental" button on a POS terminal, for example, he is triggering a system event that says "the rental has finished." Similarly, when a writer selects the "spell check" button on a word processor, he is triggering a system event that says "conduct a spell check."

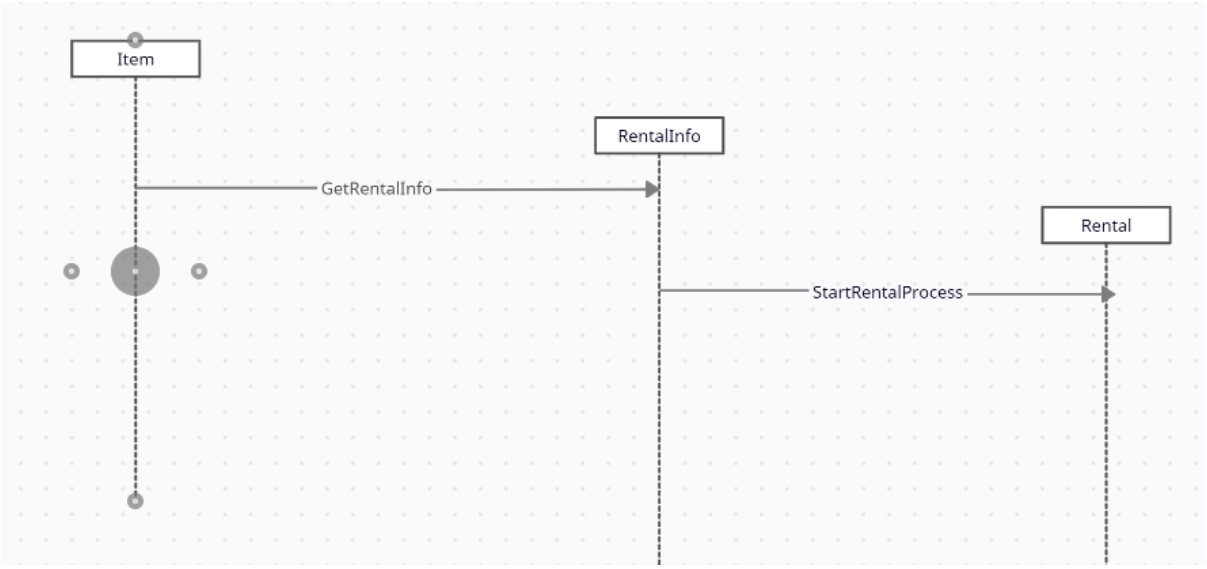
A Controller is a non-user interface entity that receives and processes system events. The technique for the system's functioning is defined by a Controller.

Operation: makeNewRental()

Creator



5. Creator for NewRental 1a



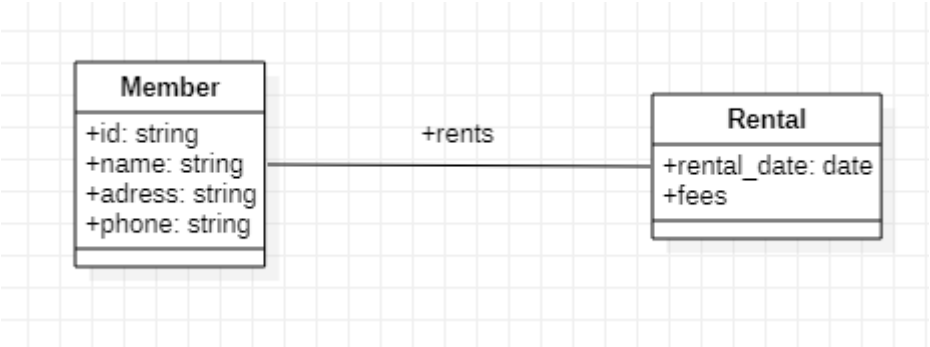
6. Creator for NewRental 1b

Who should be responsible for creating a NewRental instance? By Creator, we should look for a class that aggregates, contains, and so on, NewRental instances.

Since a Sate contains many NewRental objects, the Creator pattern suggests that Item is a good candidate to have the responsibility of creating NewRental instances.

Informational Expert

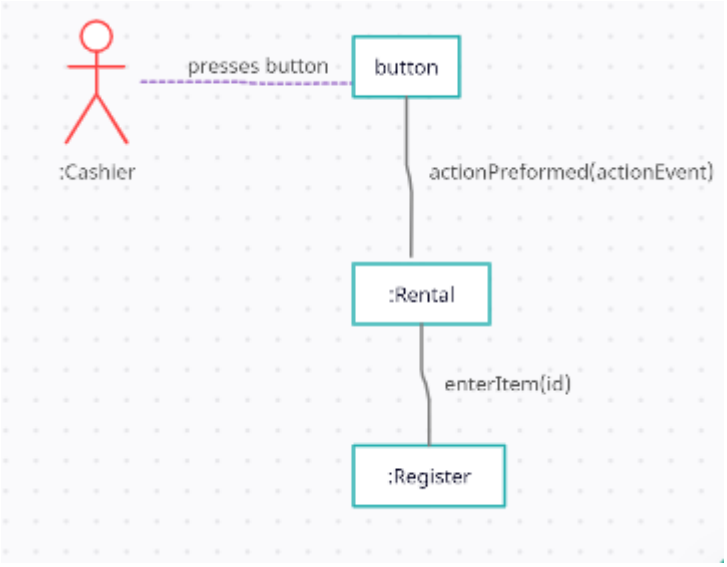
Who is responsible for starting NewRental?



7. Informational Expert for NewRental

Controller

Cashier is Controller of this operation. It handles Rental process.



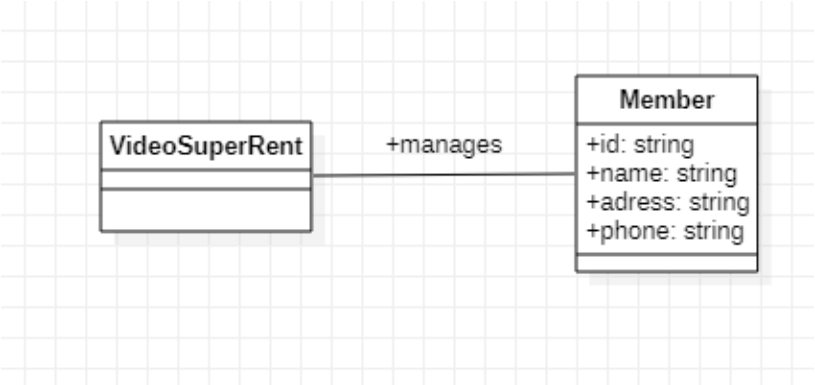
8. Controller for NewRental

Operation: enterMembershipInfo(membershipID)

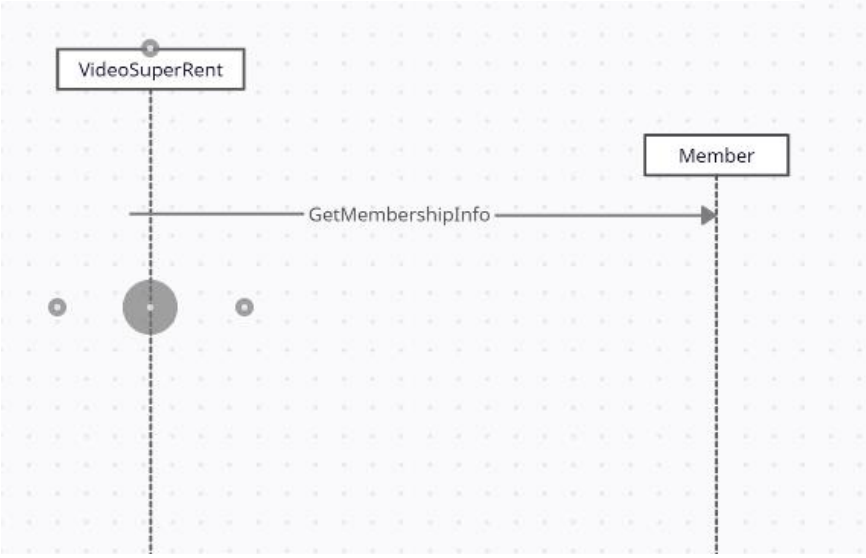
Creator

Who should be responsible for creating a enterMembershipInfo instance? By Creator, we should look for a class that aggregates, contains, and so on, enterMembershipInfo l instances.

Since a Sate contains many enterMembershipInfoobjects, the Creator pattern suggests that VideoSuperRent is a good candidate to have the responsibility of creating enterMembershipInfo instances.



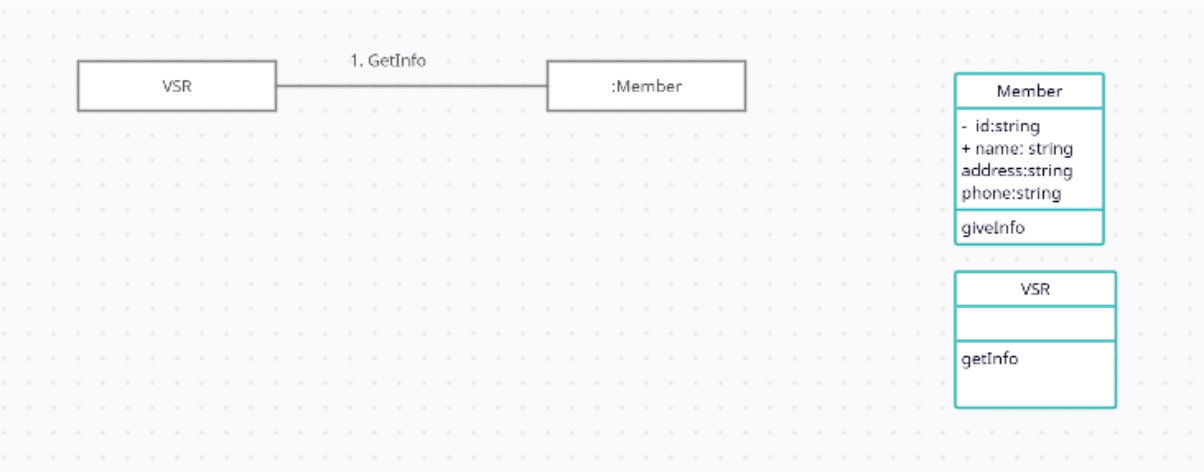
9. Creator for enterMembershipInfo(membershipID) 1a



10. Creator for enterMembershipInfo(membershipID) 1b

Informational Expert

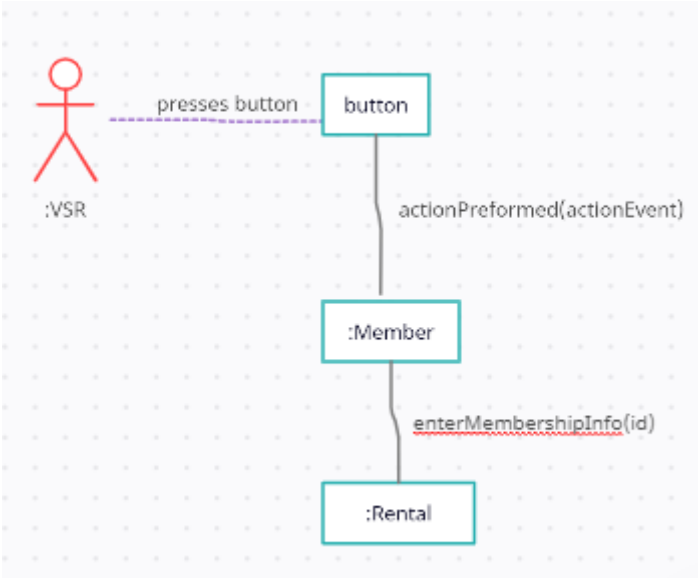
The principle by which each responsibility was assigned was Information Expert placing it with the object that had the information needed to fulfill it.



11. Informational Expert for enterMembershipInfo(membershipID)

Controller

Controller of this operation is VideoSuperRent



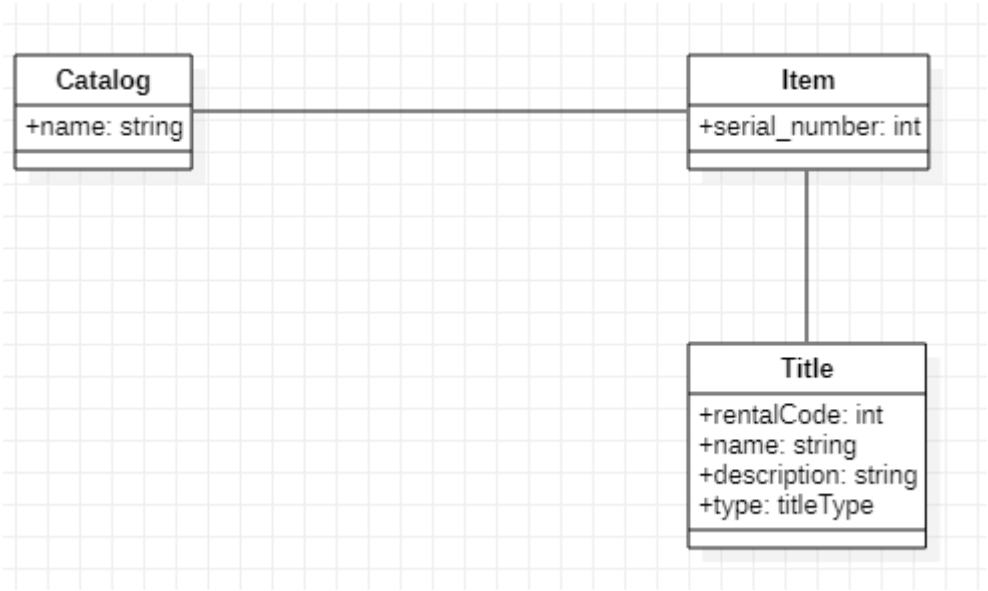
12. Controller for enterMembershipInfo(membershipID)

Operation: enterDVD(serial_number)

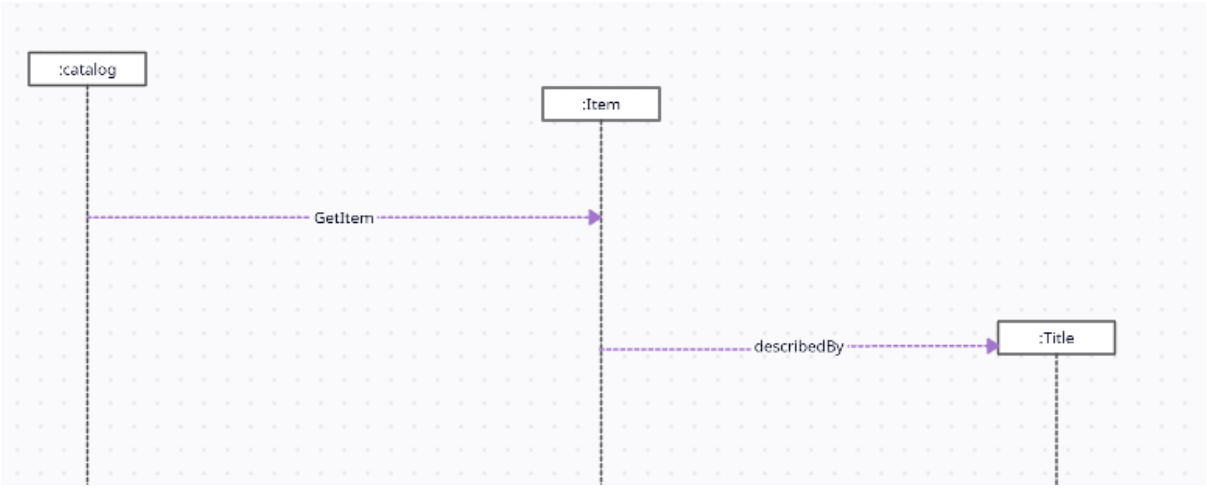
Creator

Who should be responsible for creating a enterDVD instance? By Creator, we should look for a class that aggregates, contains, and so on, enterDVD instances.

Since a Sate contains many enterDVD objects, the Creator pattern suggests that Catalog is a good candidate to have the responsibility of creating enterDVD instances.



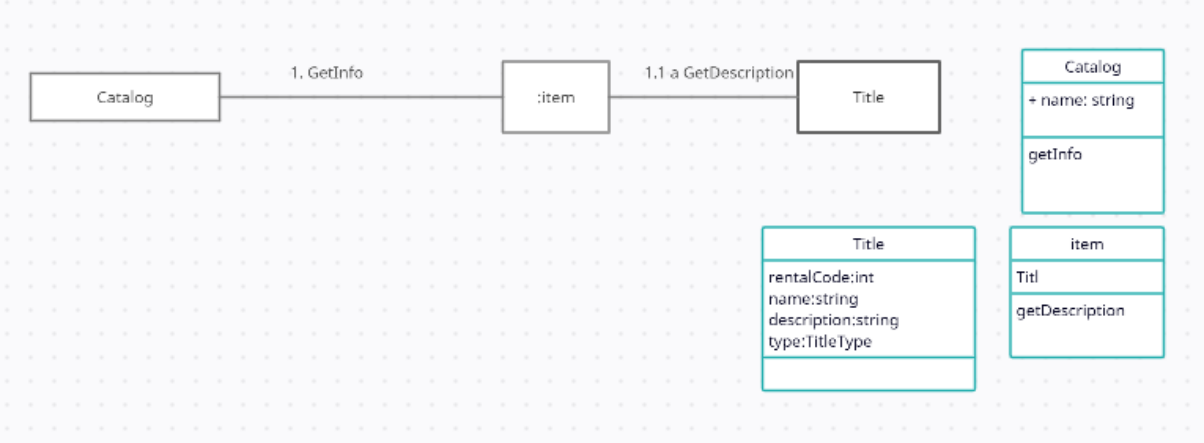
13. Creator for enterDVD(serial_number) 1a



14. Creator for enterDVD(serial_number) 1b

Informational Expert

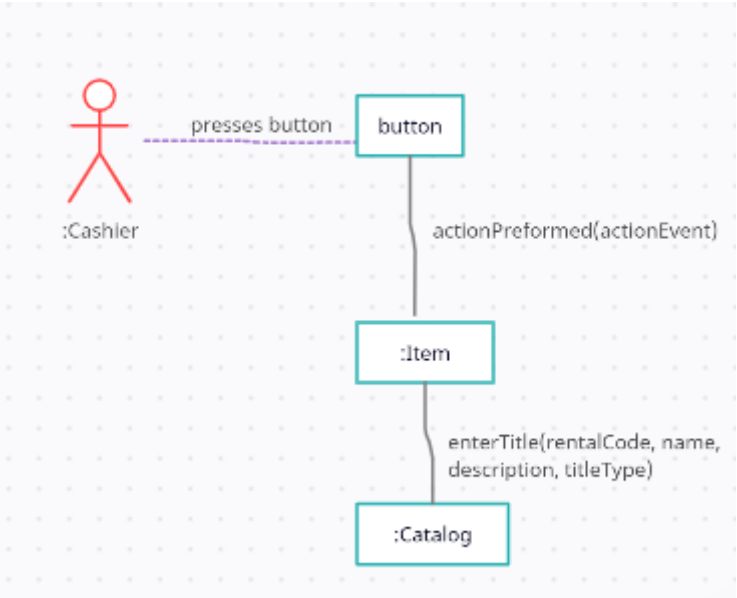
The principle by which each responsibility was assigned was Information Expert placing it with the object that had the information needed to fulfill it.



15. Informational Exper for enterDVD(serial_number)

Controller

Controller of this operation is Cashier.



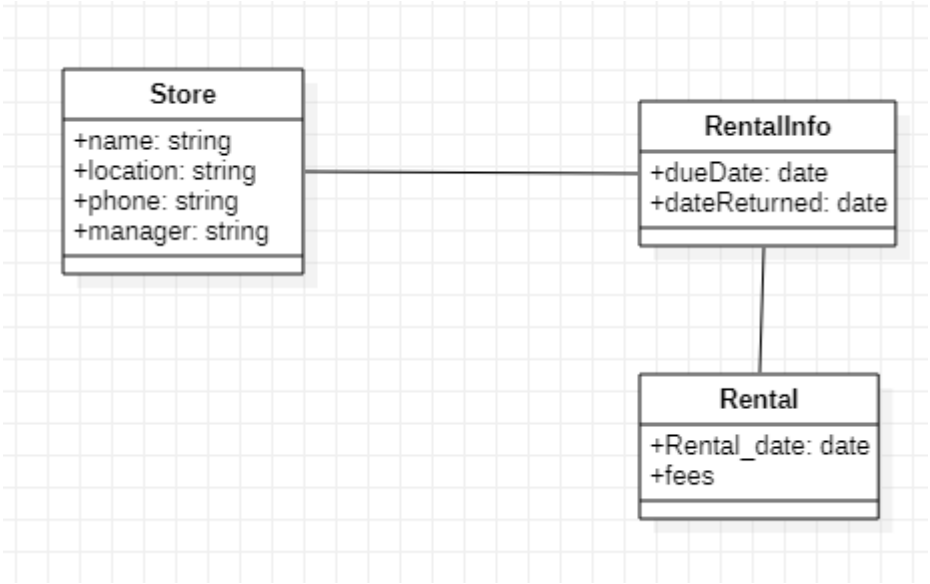
16. Controller for enterDVD(serial_number)

Operation: endRental ()

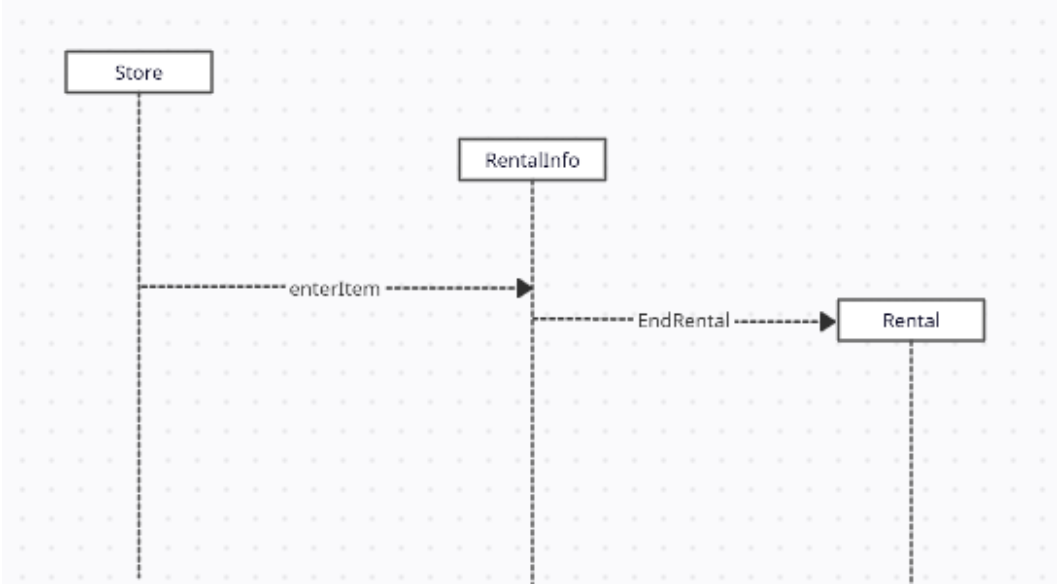
Creator

Who should be responsible for creating a endRental instance? By Creator, we should look for a class that aggregates, contains, and so on, endRental instances.

Since a Sate contains many endRental objects, the Creator pattern suggests that Store is a good candidate to have the responsibility of creating endRental instances.



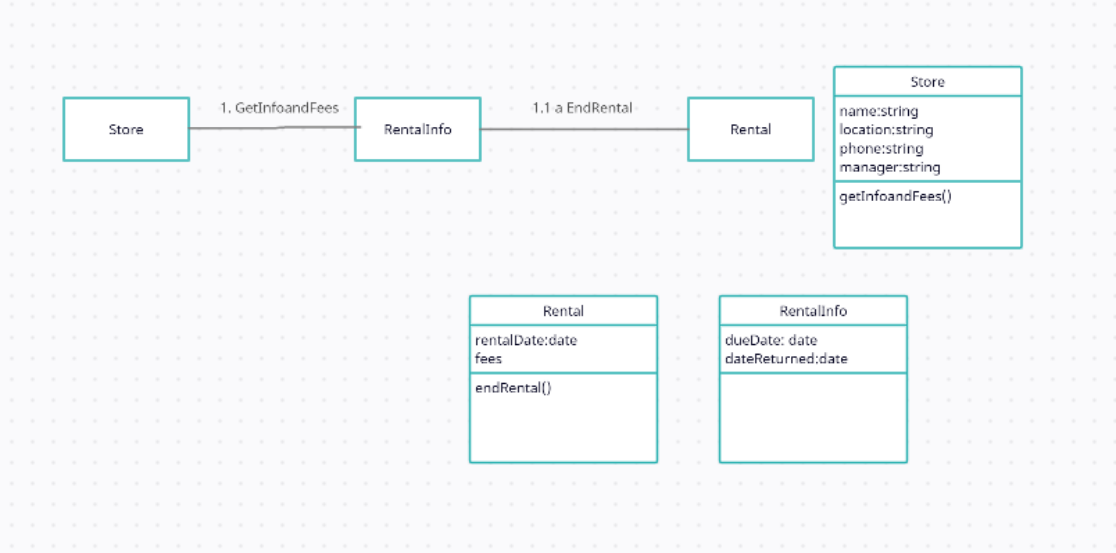
17. Creator for endRental() 1a



18. Creator for endRental() 1b

Informational Expert

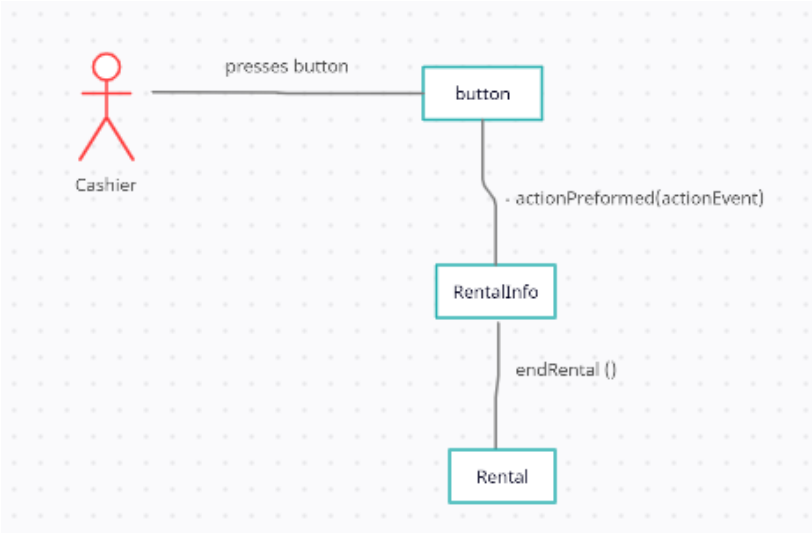
The principle by which each responsibility was assigned was Information Expert placing it with the object that had the information needed to fulfill it.



19. Informational Exper for endRental()

Controller

Controller of this operation is Cashier



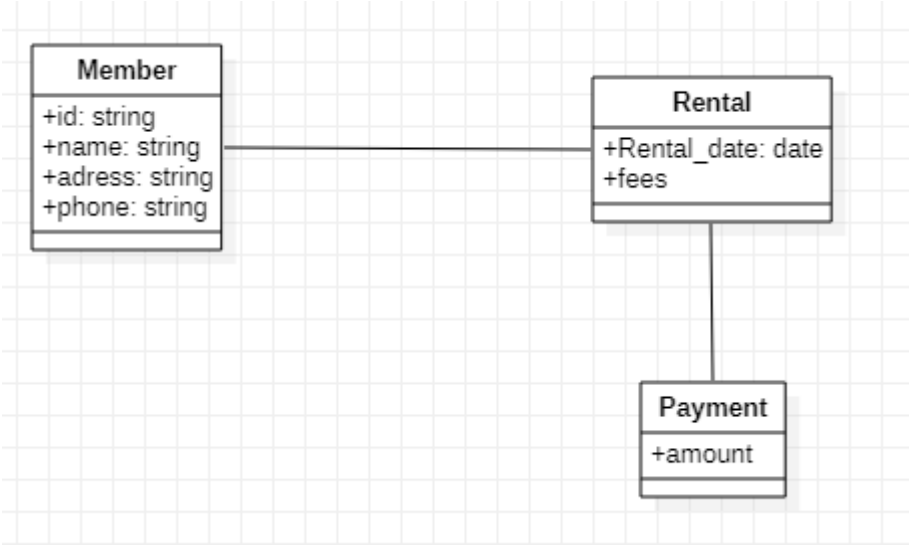
20. Controller for endRental()

Operation: makePayment(amount)

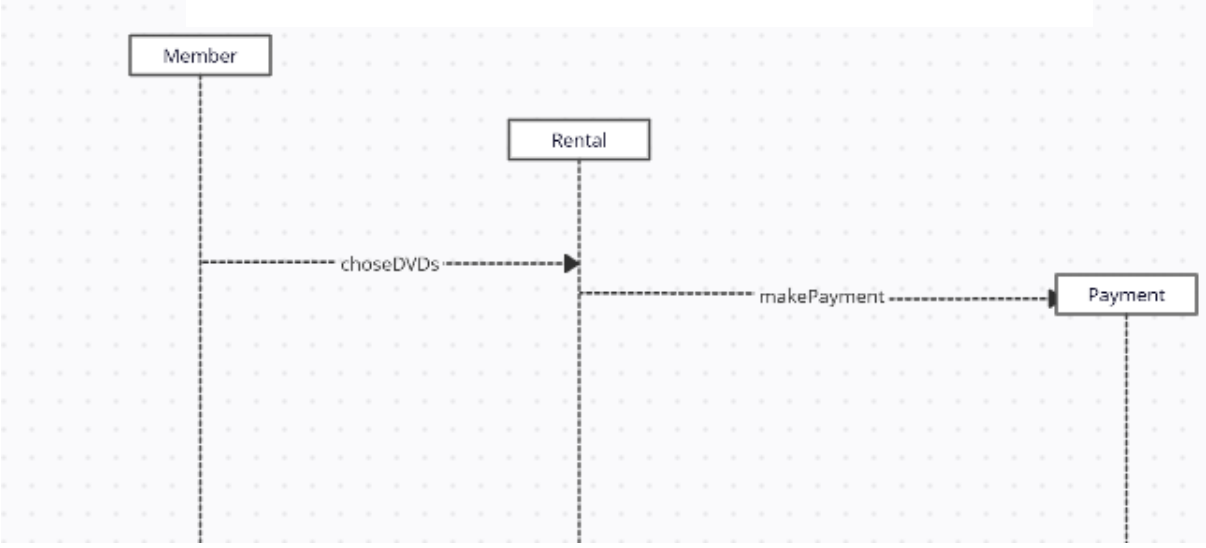
Creator

Who should be responsible for creating a makePayment instance? By Creator, we should look for a class that aggregates, contains, and so on, makePayment instances.

Since a Sate contains many makePaymentl objects, the Creator pattern suggests that Member is a good candidate to have the responsibility of creating makePayment instances.



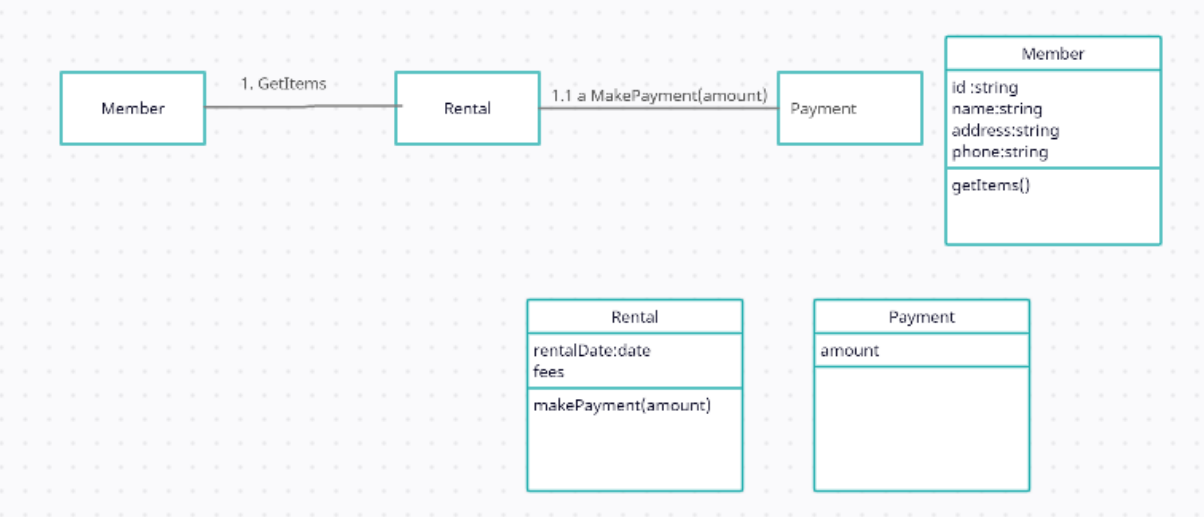
21. Creator for makePayment(amount) 1a



22. Creator for makePayment(amount) 1b

Informational Expert

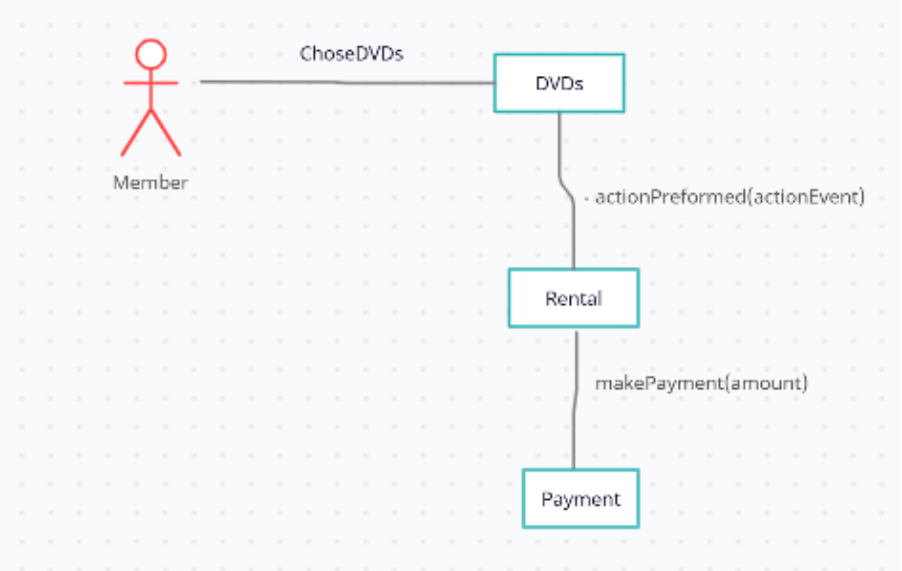
The principle by which each responsibility was assigned was Information Expert placing it with the object that had the information needed to fulfill it.



23. Informational Expert for makePayment(amount)

Controller

Controller of this operation is Member



24. Controller for makePayment(amount)