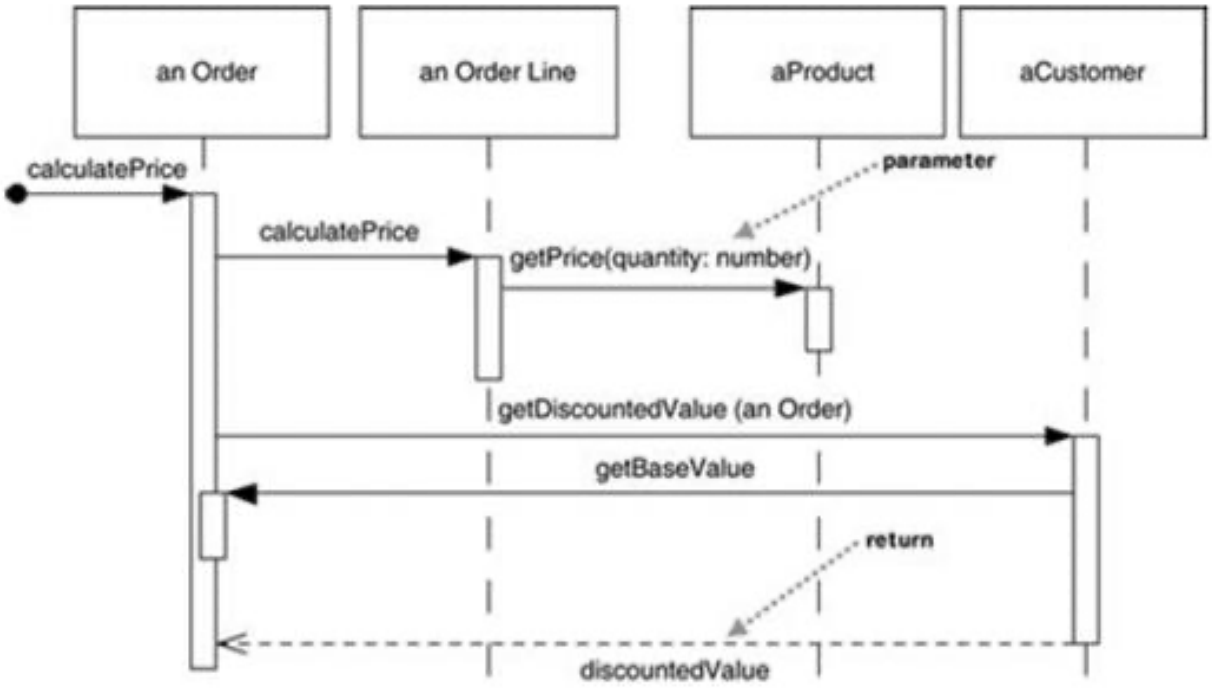
Lab4 Solutions

Problem 1

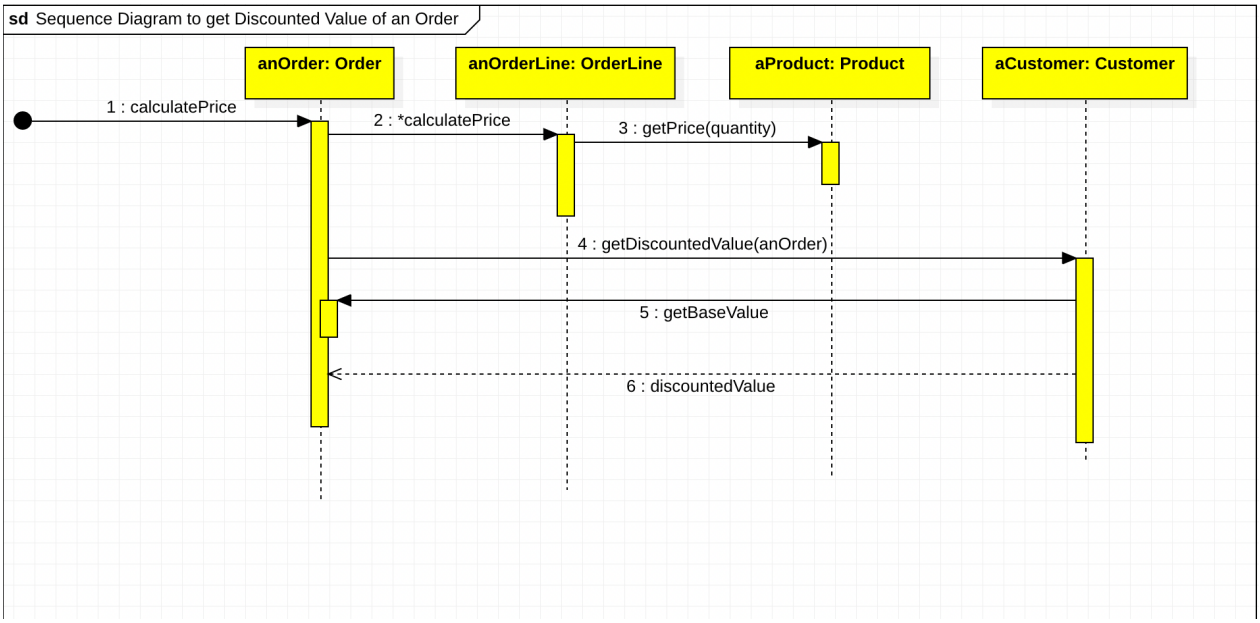
The following sequence diagram is incomplete. Re-draw the diagram so that it follows UML syntax rules.



In your diagram, do the following:

- • Include message numbering
- • Use proper UML syntax for the objects displayed at the top.
- • Indicate looping wherever it occurs with Iteration markers

Solution:

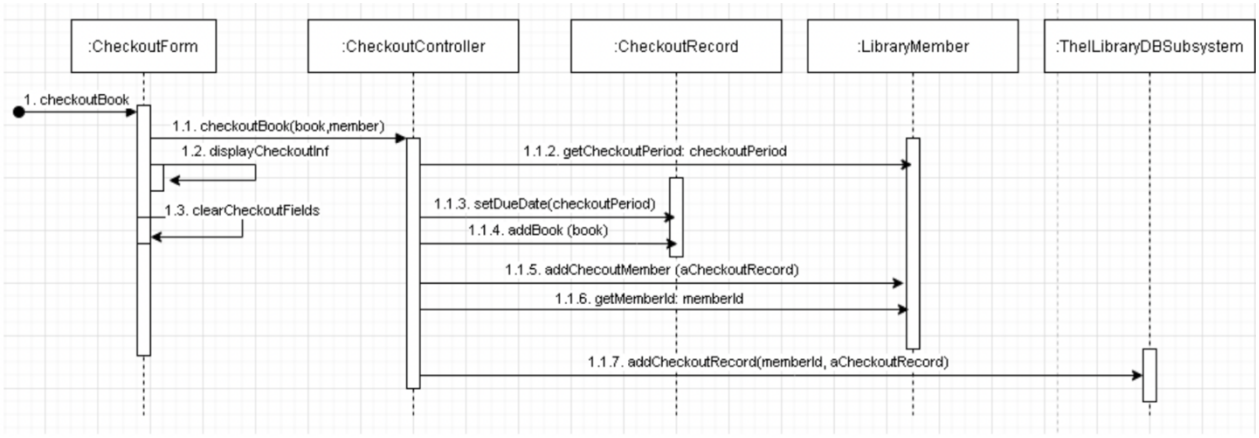

sd Sequence Diagram to get Discounted Value of an Order
anOrder: Order
anOrderLine: OrderLine
aProduct: Product
aCustomer: Customer
1 : calculatePrice
2 : *calculatePrice
3 : getPrice(quantity)
4 : getDiscountedValue(anOrder)
5 : getBaseValue
6 : discountedValue

Problem 2

Create a sequence diagram based on the flow that occurs when an actor invokes the `checkoutBook()` method on `CheckoutForm`

```
//FROM CLASS CheckoutForm
   public void checkoutBook()  {

theCheckoutController.checkoutBook(m_book, m_member);
displayCheckoutInfo();
clearCheckoutFields();

}

//FROM CLASS CheckoutController
public void checkoutBook(Book book, LibraryMember member) {

CheckoutRecord aCheckoutRecord = new CheckoutRecord();
aCheckoutRecord.setDueDate(member.getCheckoutPeriod());
aCheckoutRecord.addBook( book );
member.addCheckoutRecord( aCheckoutRecord );
theILibraryDBSubsystem.addCheckoutRecord(member.getMemberID(),
aCheckoutRecord)

}
```

Solution:


:CheckoutForm
:CheckoutController
:CheckoutRecord
:LibraryMember
:TheILibraryDBSubsystem
1. checkoutBook
1.1. checkoutBook(book,member)
1.2. displayCheckoutInf
1.3. clearCheckoutFields
1.1.2. getCheckoutPeriod: checkoutPeriod
1.1.3. setDueDate(checkoutPeriod)
1.1.4. addBook (book)
1.1.5. addChecoutMember (aCheckoutRecord)
1.1.6. getMemberId: memberId
1.1.7. addCheckoutRecord(memberId, aCheckoutRecord)

Problem 3: Payroll Calculation

Problem on Polymorphism

Solution:

Solved in eclipse file with name '***MPP-Lab4'*** under the package **'`prob4c`'**

Problem 4

Create a sequence diagram for the problem described in Lab 4, Part C. Create a distributed control solution. As you distribute control, make sure that the object that handles a step of processing really should be responsible for that behavior, based on the purpose of the class that was determined in the class diagram.

Solution: