

PRACTICE PROBLEMS ON UML DIAGRAMS

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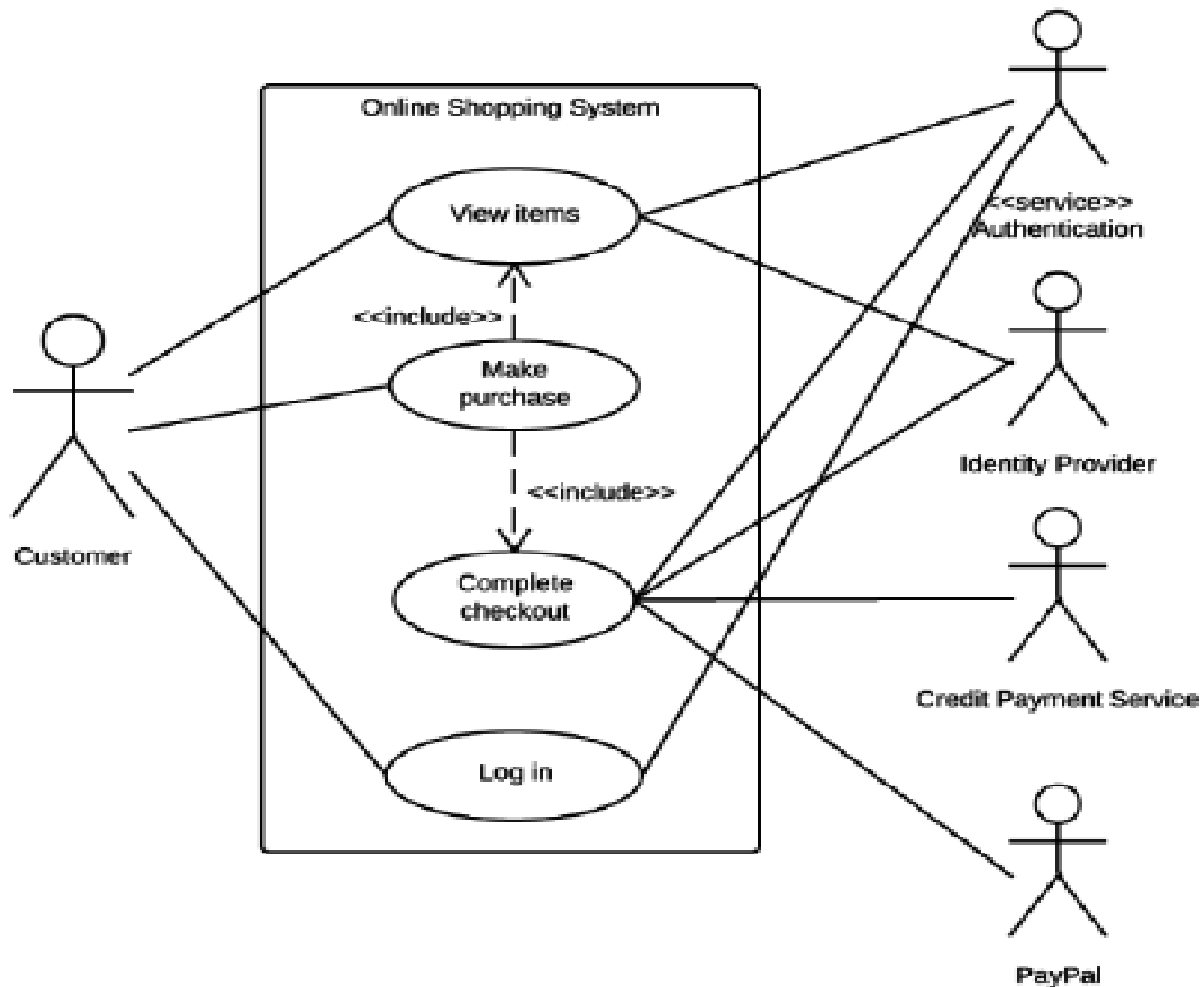


USE CASE DIAGRAM

Draw an use case diagram for an **Online Shopping System**.

Some sample use cases are: login, view items, make purchase, and complete checkout.



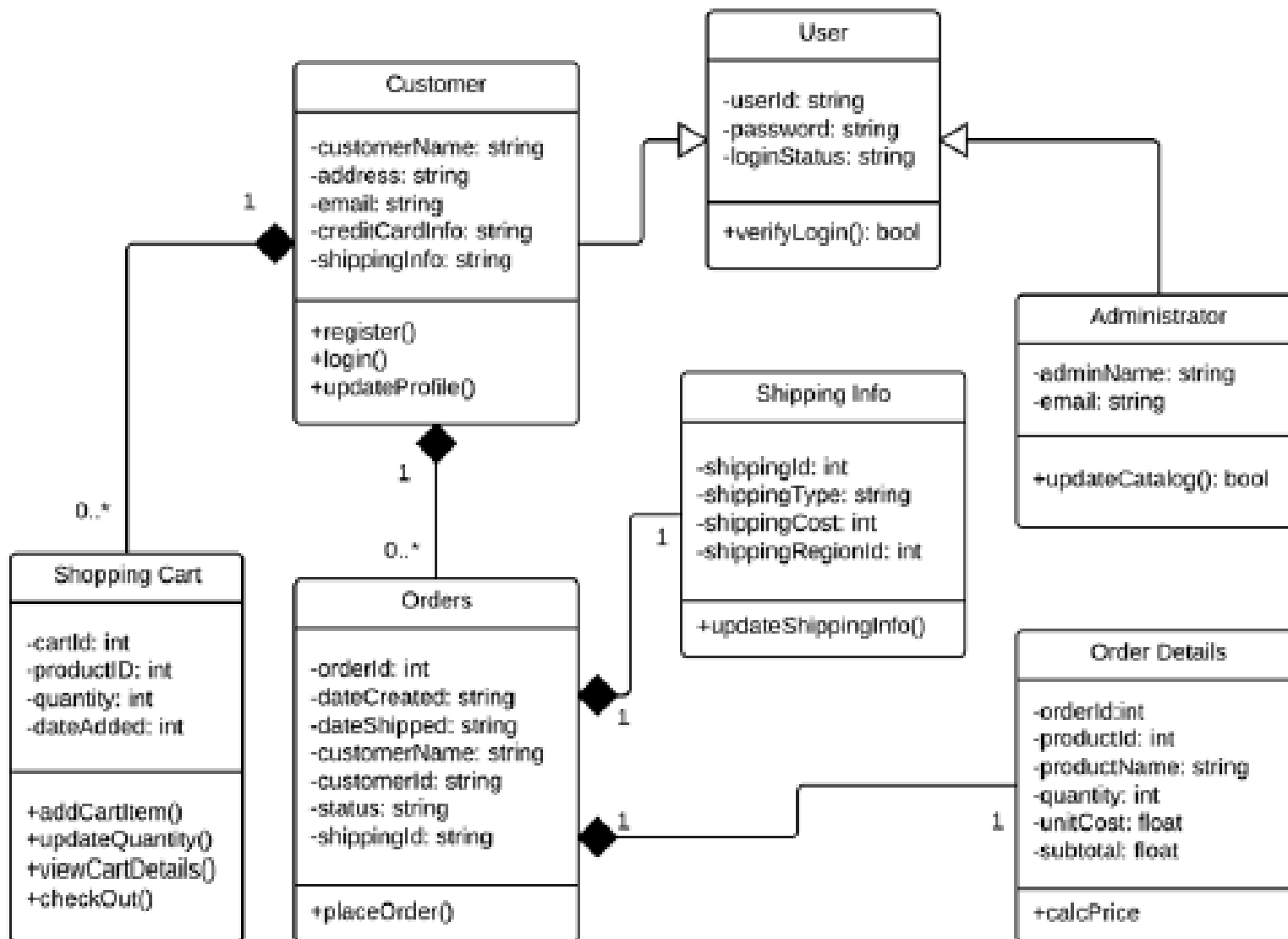


CLASS DIAGRAM

Draw a class diagram for an **Online Shopping System**.

Some sample classes are: User, Customer, Administrator, Orders, Shopping Cart, Shipping Info, and Order Details.



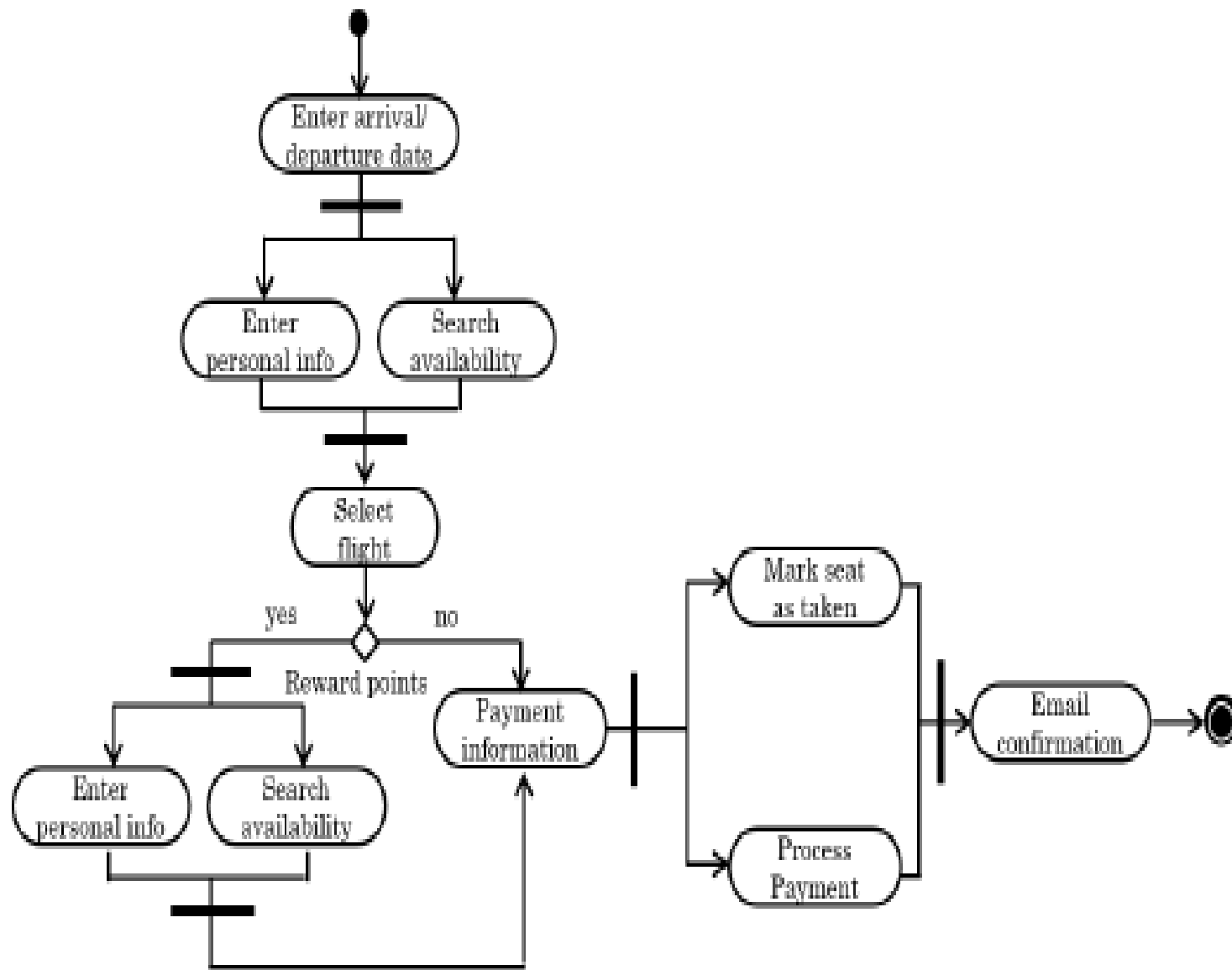


ACTIVITY DIAGRAM

Draw an activity diagram of **Air Ticket Booking System**.

Some sample activities are: Enter arrival/departure date, Enter personal info, Search availability , Select flight, Payment information, Process payment, and Email confirmation.



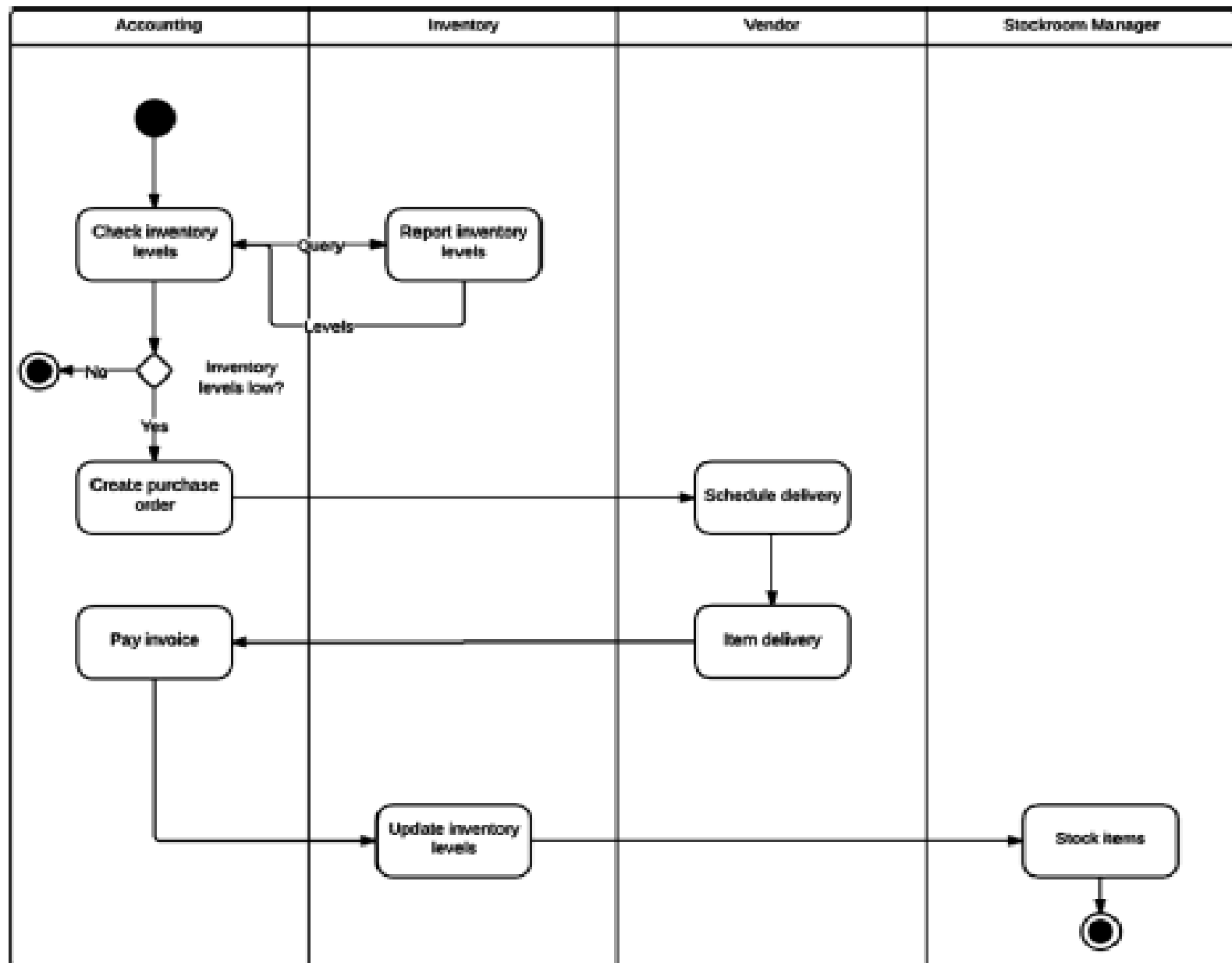


SWIMLANE DIAGRAM

Draw a swimlane diagram for **Inventory Management System**.

Some sample actors are: Accounting, Inventory, Vendor, and Stockroom Manager.



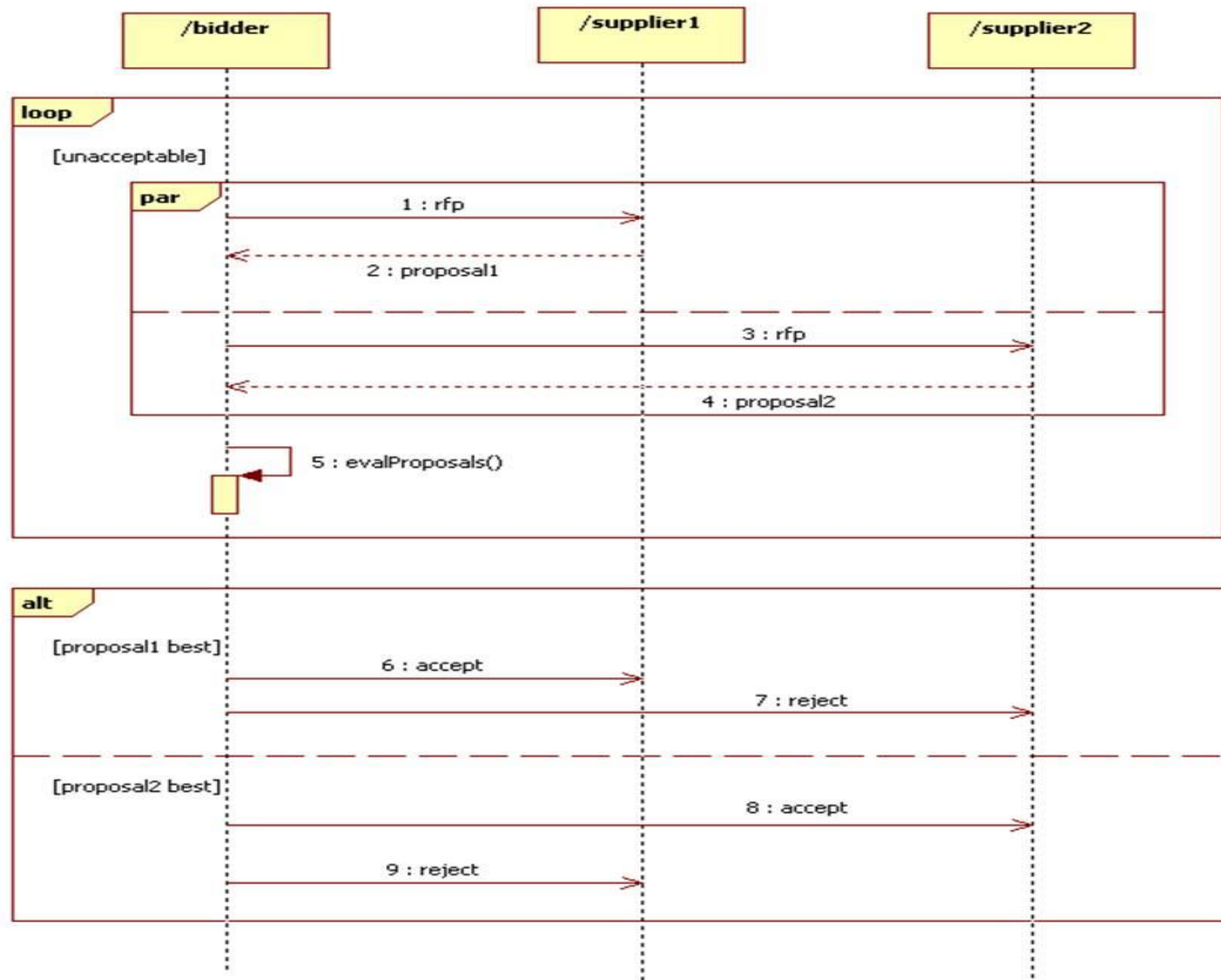


SEQUENCE DIAGRAM

Two suppliers are participating in a bidding process for a government project. The bidder sends the request for proposal (RFP) to both the suppliers concurrently. Each supplier submits a proposal to the bidder. The bidder evaluates the proposals. If any of the proposals is in unacceptable form, then the bidder resends the RFPs and re-evaluates the latest proposals. Once both the proposals are in acceptable form, the bidder accepts the best proposal and rejects the other.

Based on the details of the above scenario, draw a sequence diagram for the bidding process.



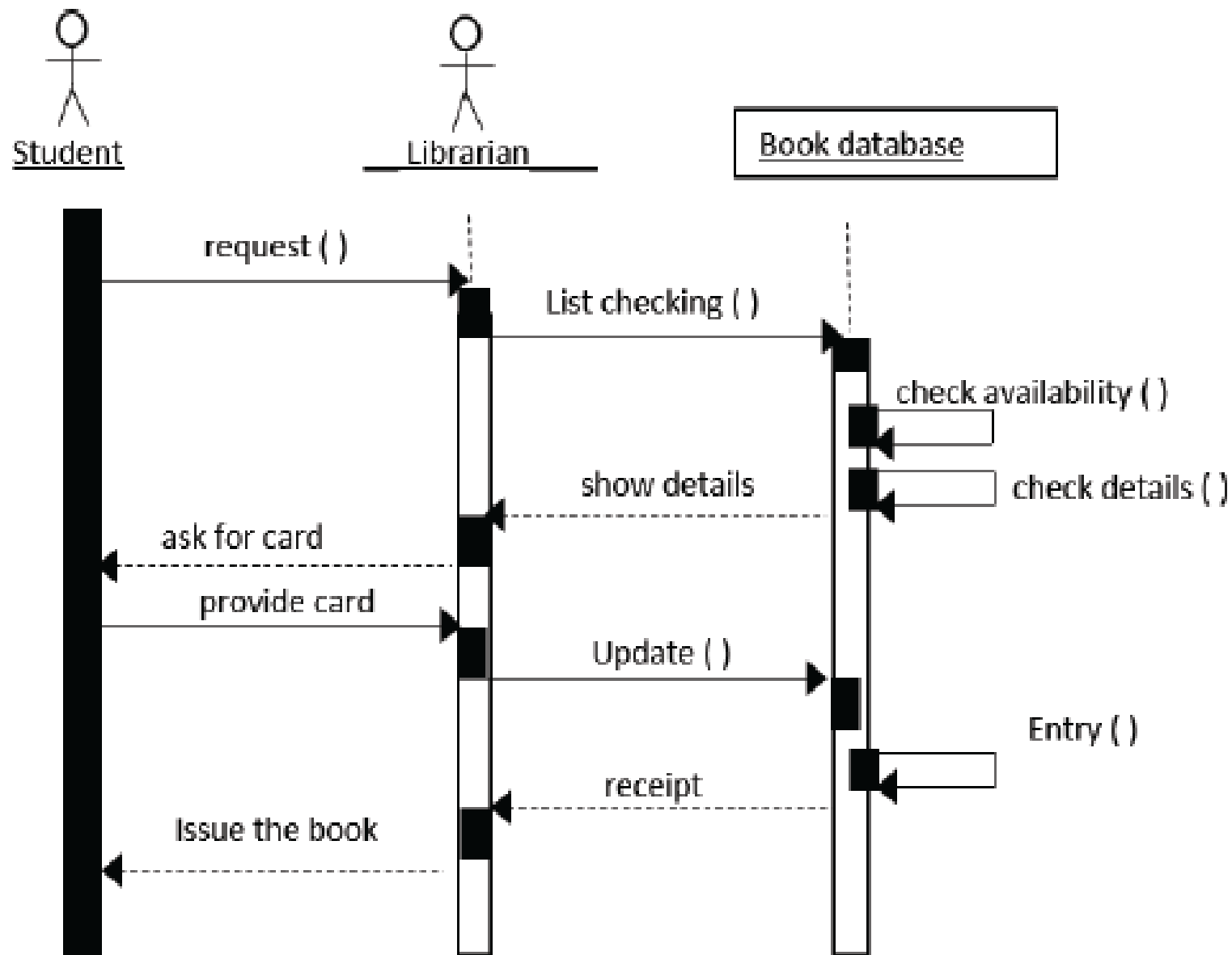


SEQUENCE DIAGRAM

A student wants to issue a book from library. At first the student requests to the librarian for the book which he/she needs. The librarian searches the requested book in the database. The book database system searches the book availability and checks the details of the book. The database system returns the details of the book to the librarian. Then the librarian requests library card from the student. The student provides the library card, and the librarian updates the details into the database. After completion of entering the details in the database, a receipt is generated for the librarian. Finally, the book is issued to the student.

Based on the details of the above scenario, draw a sequence diagram for issuing a book from library.





SEQUENCE DIAGRAM

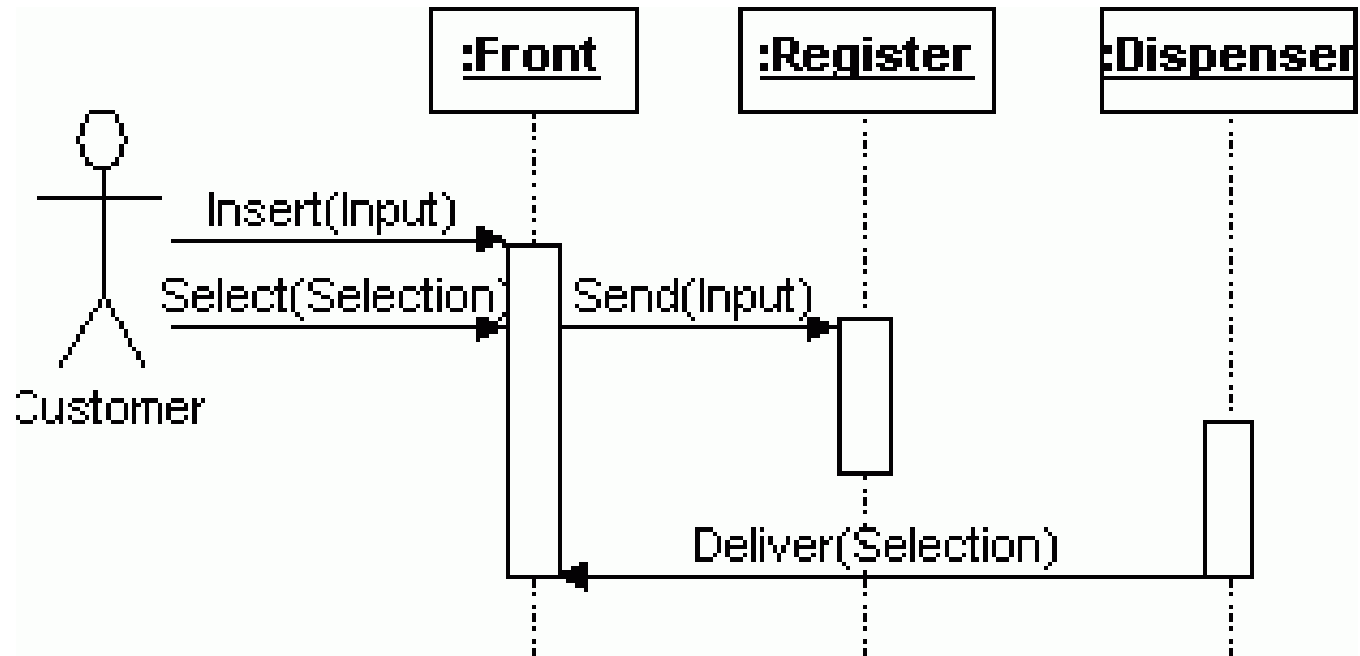
- Self-service machine:
 - the front: the interface the self-service machine presents to the customer
 - the money register :
 - part of the machine where moneys are collected
 - the dispenser:
 - which delivers the selected product to the customer



SEQUENCE DIAGRAM

- Buy product Scenario:
 - The customer inserts money in the money slot
 - The customer makes a selection
 - The money travels to the register
 - The register checks to see whether the selected product is in the dispenser
 - The register updates its cash reserve
 - The register has a dispenser deliver the product to the front of the machine

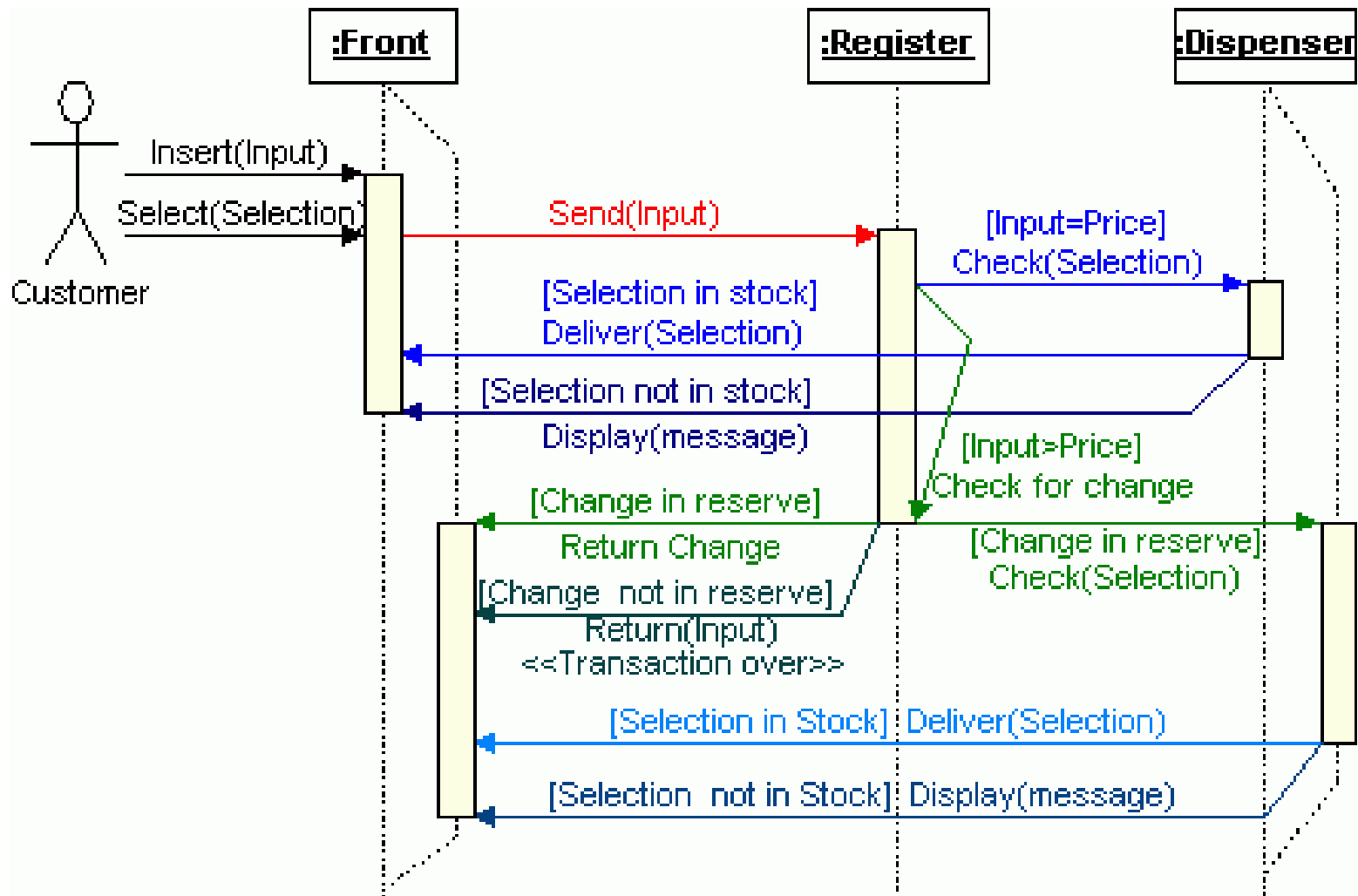




SEQUENCE DIAGRAM

- Out of product Scenario:
 - After selecting a sold-out brand, the "SOLD OUT" message flashes
 - Prompt for another selection must be displayed
 - The customer has the option of pushing a button that returns money
 - If the customer selects an in-stock brand, everything proceeds as in the best-case scenario if the input amount is correct. If not, the machine follows the incorrect-amount-of-money scenario
 - If the customer selects another sold-out brand, the process repeats until the customer selects an in-stock brand or pushes a button that returns his or her money

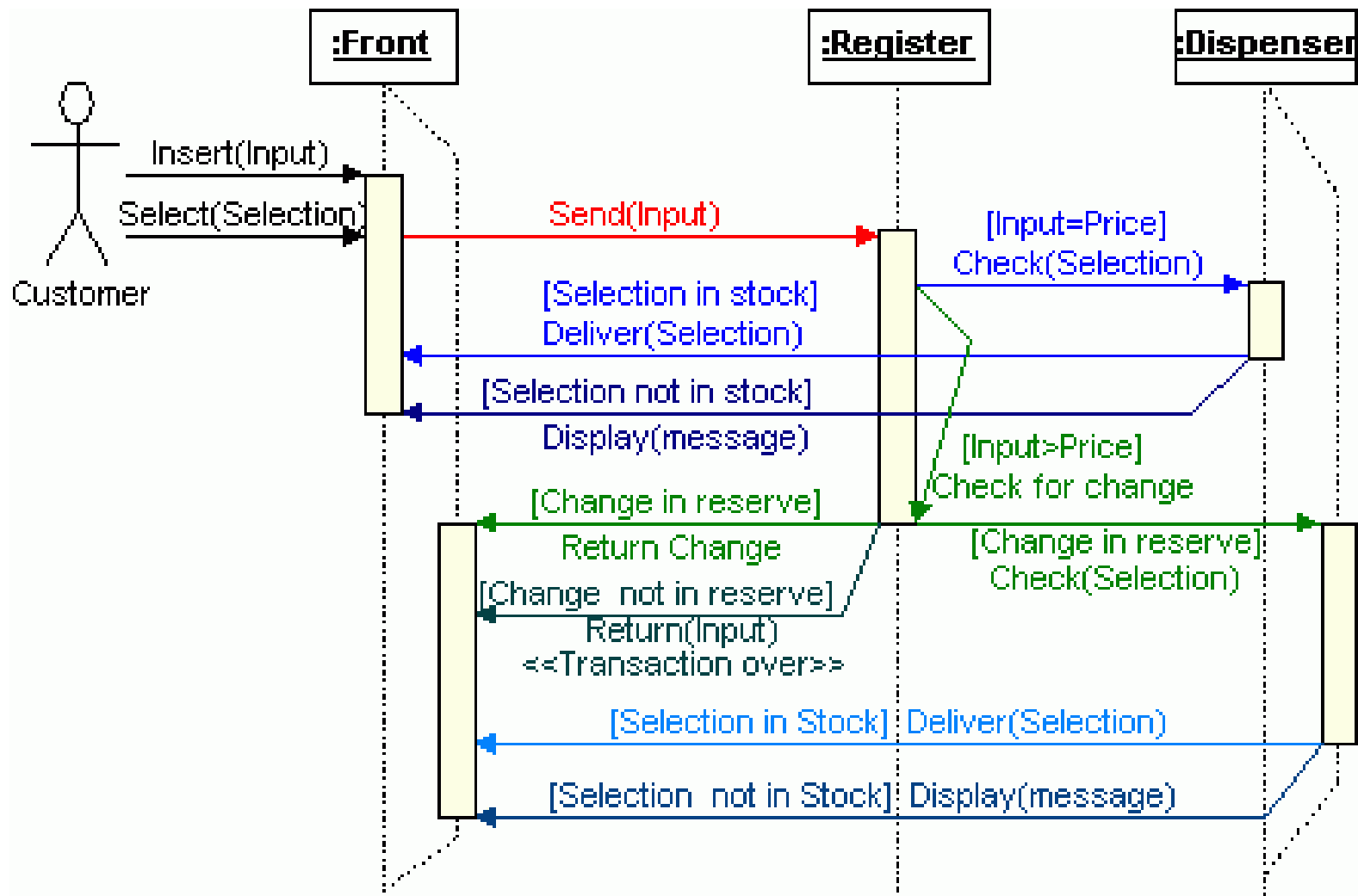




SEQUENCE DIAGRAM

- Incorrect-amount-of-money scenario:
 - The register checks customer's input with the price of the product
 - If the amount is greater than the price, the difference is calculated, and register checks its cash reserve
 - If the difference is present in the cash reserve, the register returns the change to the customer and everything proceeds as before
 - Otherway, the register returns the input amount and displays a message that prompts the customer for the correct amount
 - If the amount is less than the price, the register does nothing and the machine waits for more money



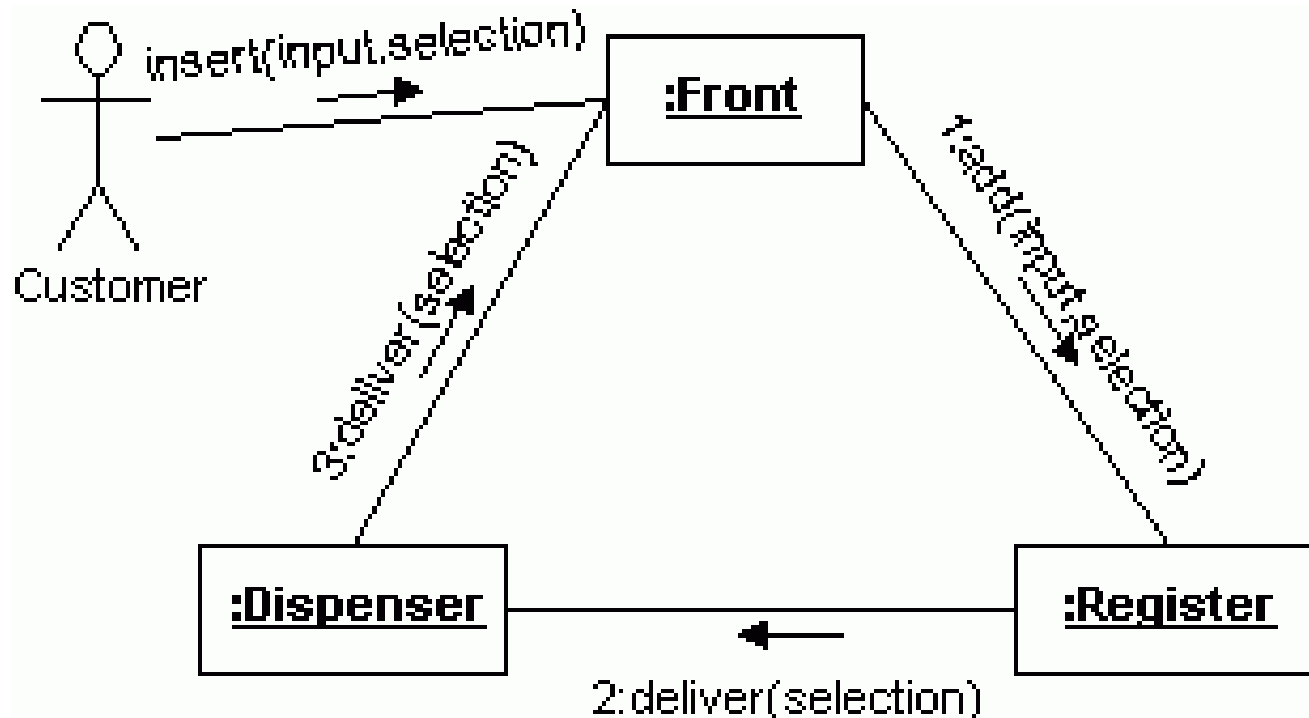


COLLABORATION DIAGRAM

- Self-service machine:
- The best-case scenario consists of several steps:
 - The customer inserts money in the machine and makes selection of one or more product(s) present in the machine.
 - When the register gets the money (in this case customer puts the correct amount of money, and there is allways a product in the selected brand), the selected product is delivered to the dispenser.
 - The dispenser delivers the product to the front of the machine, and the customer gets that product.



COLLABORATION DIAGRAM

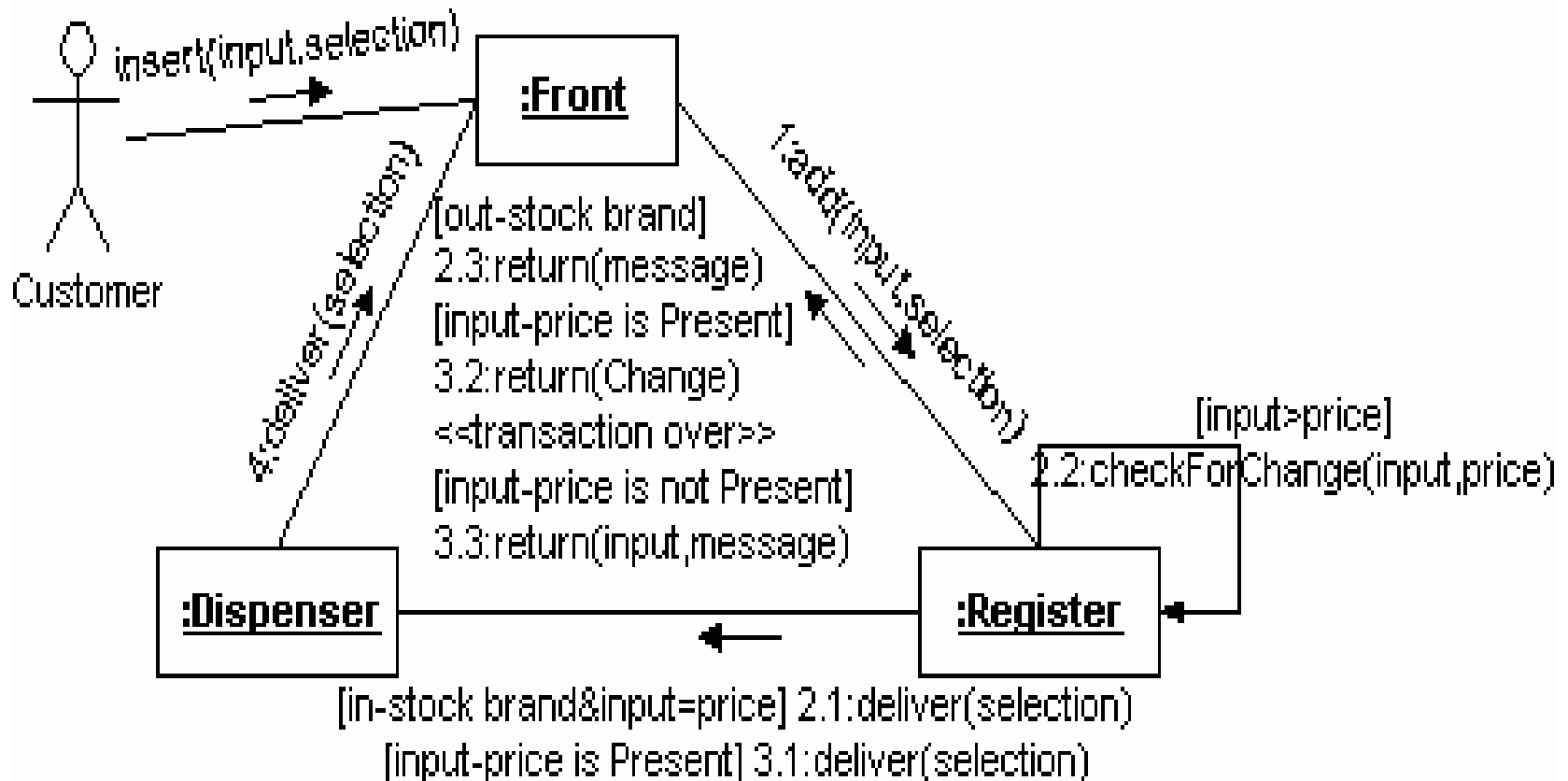


COLLABORATION DIAGRAM

- In out-of-product scenario, the machine has to display an out of product message, and prompt the customer for another product or return the money back. If customer makes another selection this process must be repeated. Also a correct-amount-of-money scenario may be introduced.



COLLABORATION DIAGRAM

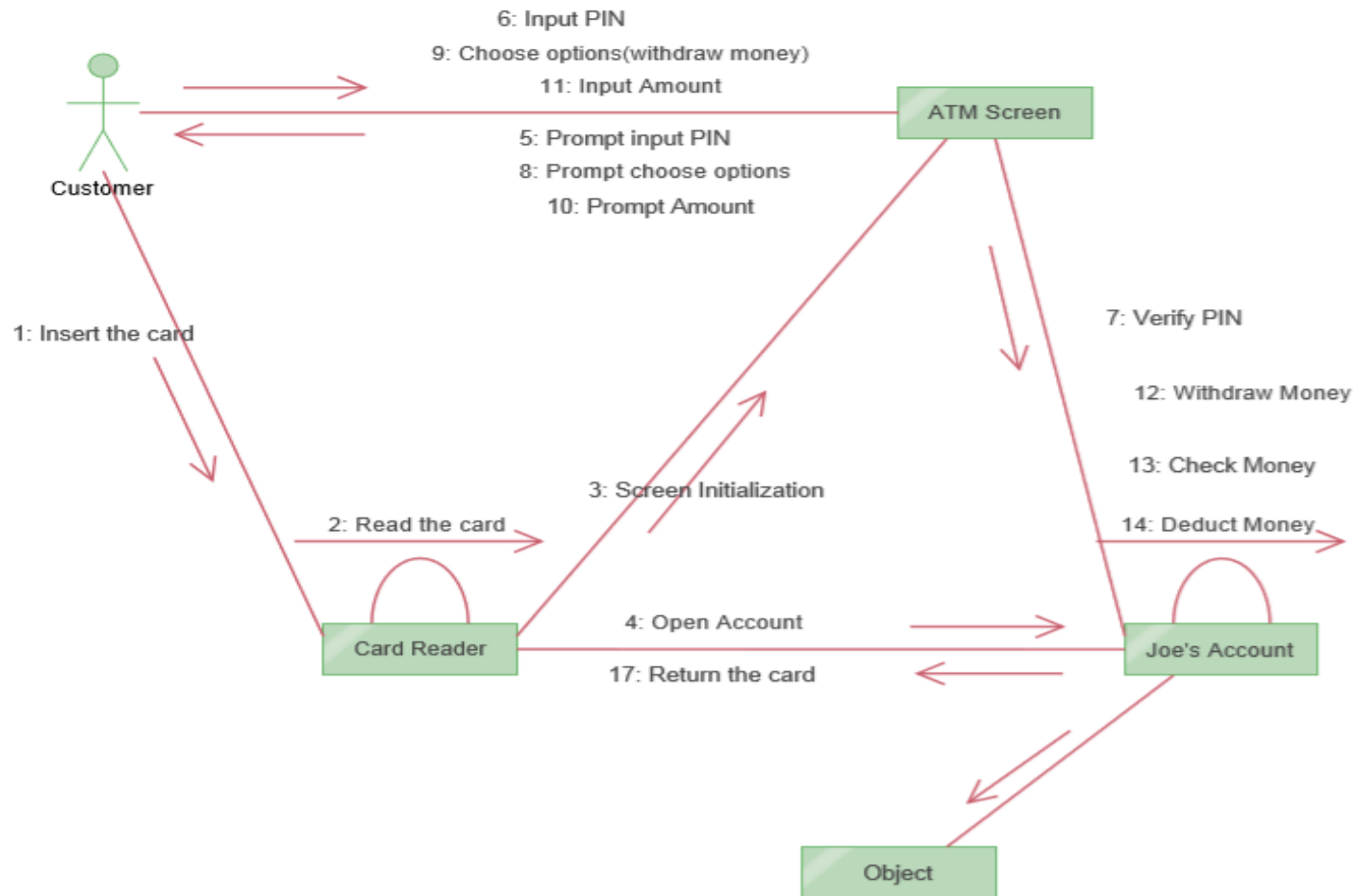


COLLABORATION DIAGRAM

- ATM system:
- In an ATM system, customer performs series of action based on the displayed instruction (refer may ATM from your daily life) after swiping the ATM card. Further, the system validates the information, and deducts from the customers account.



COLLABORATION DIAGRAM



THANK YOU

