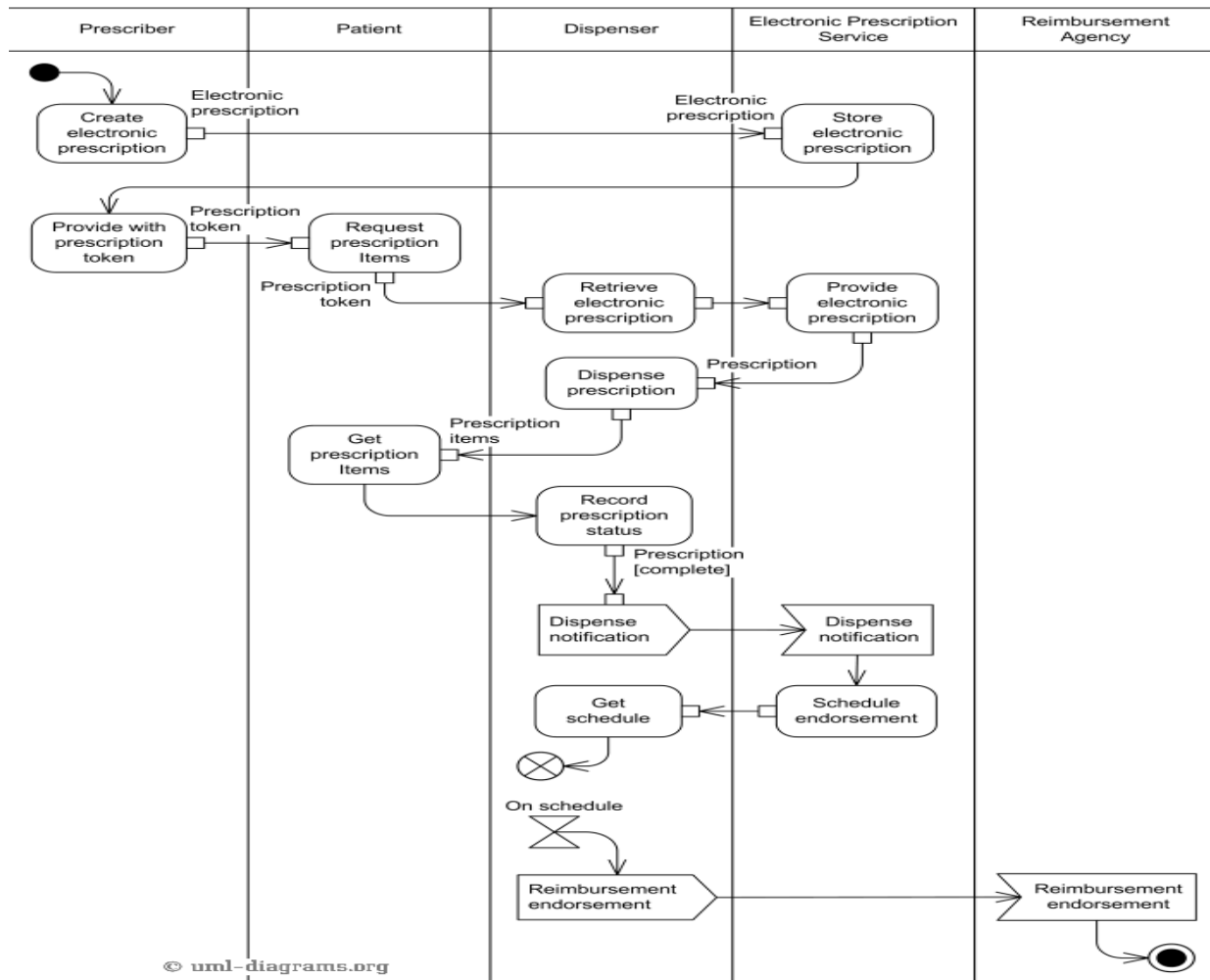


Activity Diagram:

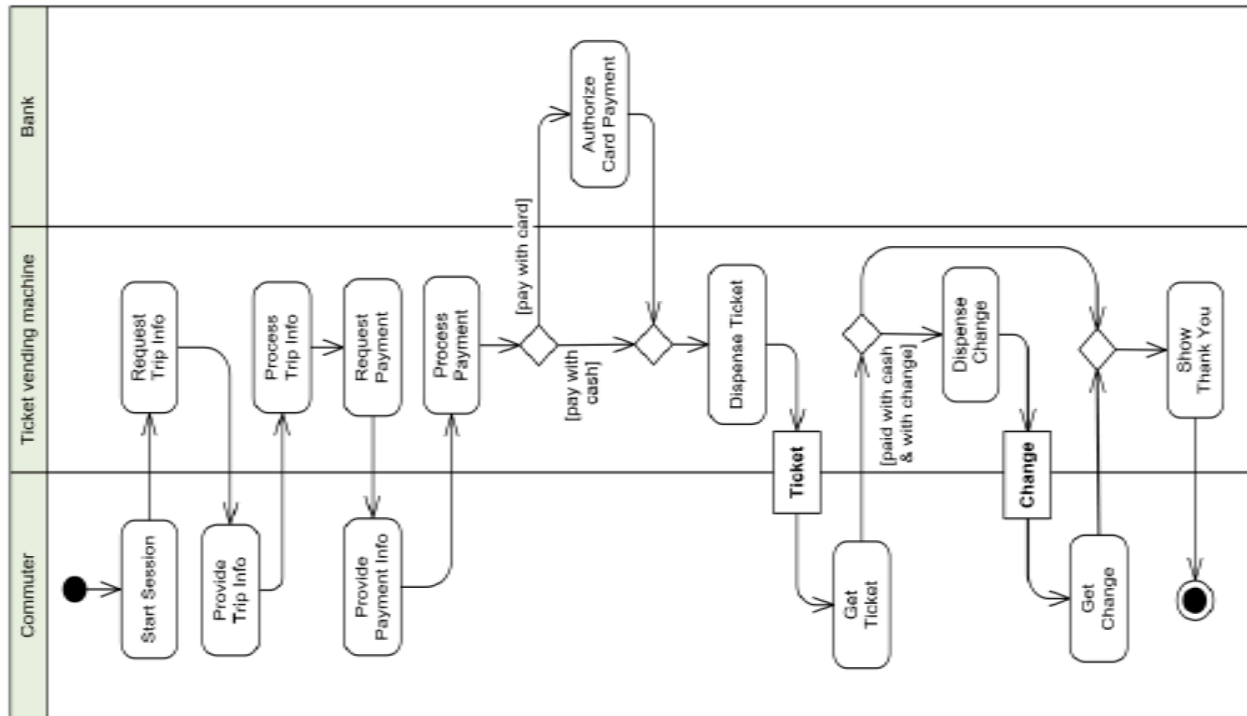
Example 1:

- This is an example of activity diagram for electronic prescriptions. The Electronic Prescription Service (EPS) enables prescribers - such as general practitioners (GPs) and practice nurses - to send prescriptions electronically to a dispenser (such as a pharmacy) of the patient's choice.
- Prescriber logs onto the clinical system using their Smartcard and passcode, chooses medication or medical appliance for the patient, adds prescribing endorsements where required, and applies electronic signature to authorize the electronic prescription. Electronic prescription is transmitted to the EPS which store it and a token is provided to the prescriber . Prescription token is printed where required. Authorized person hands prescription token to patient where necessary.
- When patient request the prescribed items, Dispenser retrieves electronic prescriptions and save a copy of electronic prescription in the EPS. Dispenser dispense the prescription and prescription items are issued to the patient.
- Dispenser should record the status of each of the prescription items. If dispensing process is complete, dispenser should send dispense notification to the Electronic Prescription Service. Upon receiving this message, the EPS will issue a schedule as to when to submit the electronic reimbursement endorsement message. Dispenser gets this scheduling information.
- To support the reimbursement, claim process, the EPS will allow dispensers to electronically submit reimbursement endorsement messages to the reimbursement agency for the dispensed electronic prescriptions so that the reimbursement agency can make a payment. The messages are sent according to the reimbursement agency scheduling.



Example 2:

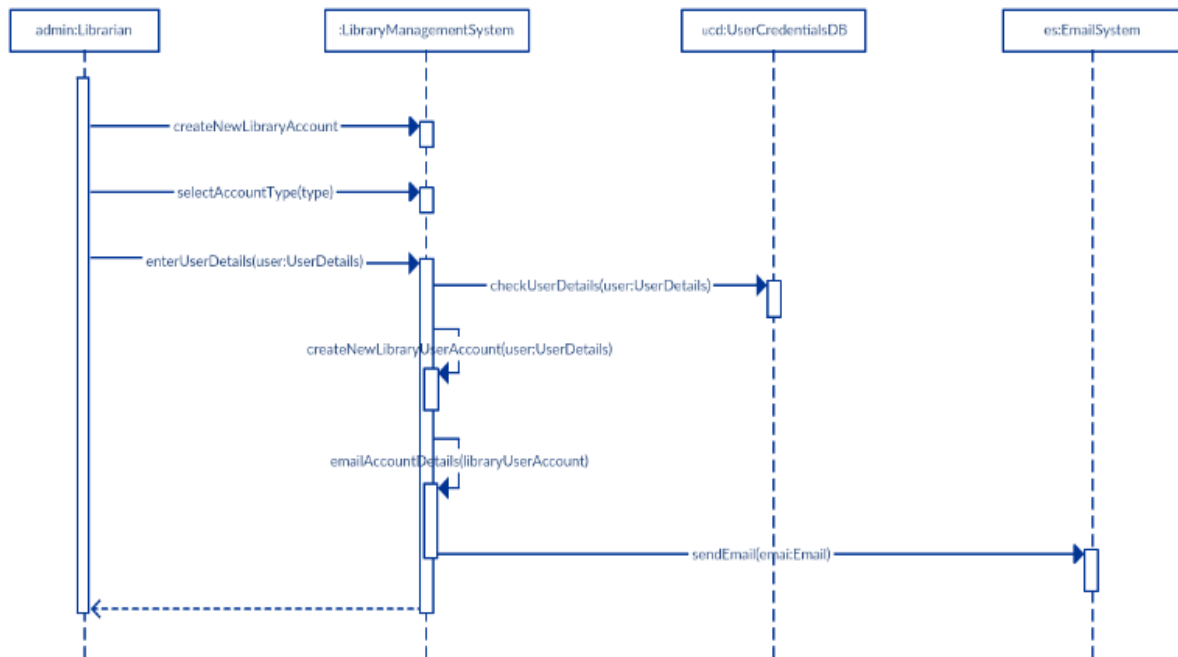
- Activity is started by Commuter actor who needs to buy a ticket. Ticket vending machine will request trip information from Commuter. This information will include number and type of tickets, e.g. whether it is a monthly pass, one way or round ticket, route number, destination or zone number, etc.
- Based on the provided trip info ticket vending machine will calculate payment due and request payment options. Those options include payment by cash, or by credit or debit card. If payment by card was selected by Commuter, another actor, Bank will participate in the activity by authorizing the payment.



Sequence Diagram:

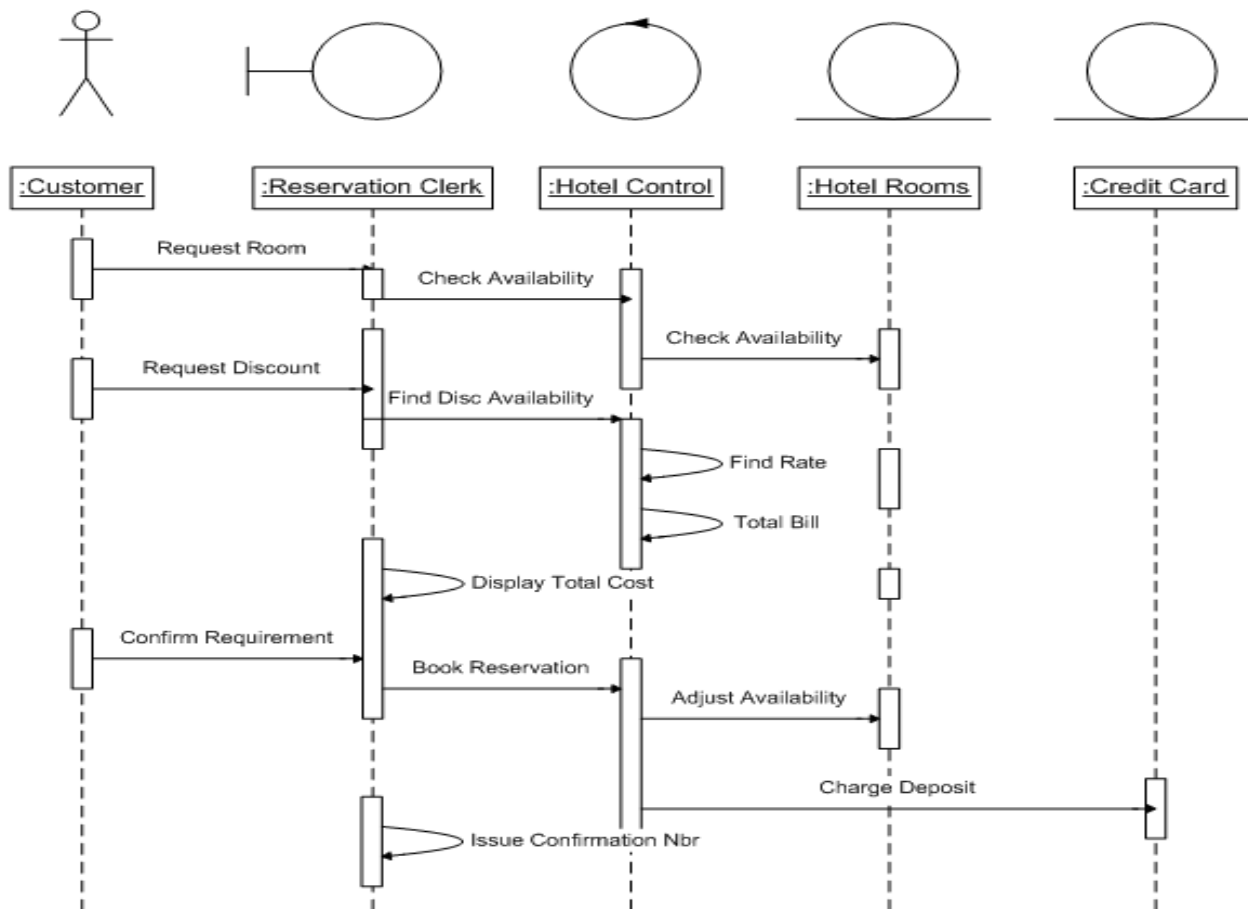
Example 1:

- Here are the steps that occur in the use case named 'Create New Library User Account'.
 - The librarian requests the system to create a new online library account
 - The librarian then selects the library user account type
 - The librarian enters the user's details
 - The user's details are checked using the user Credentials Database
 - The new library user account is created
 - A summary of the of the new account's details are then emailed to the user



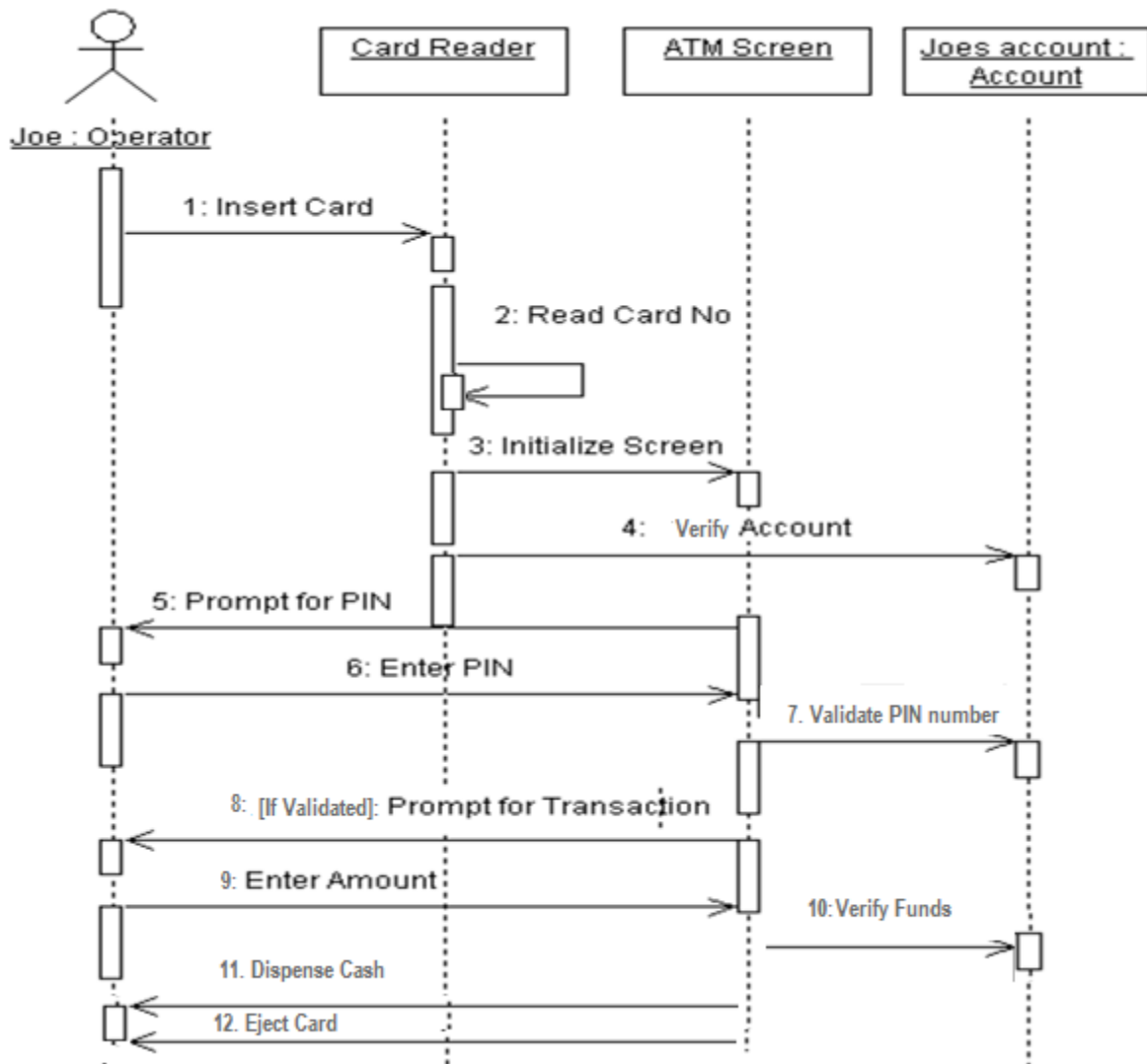
Example 2:

- Customer requests reservation clerk for the room reservation.
- Reservation clerk checks the availability of hotel rooms through hotel control system.
- Customer can also request discount.
- Reservation clerk provide information about total cost by checking the rate and bill from the hotel control system.
- Customer confirms the reservation of room and room is reserved.
- Customer is charged by the hotel control system through the credit card.



Example 3:

- Joe withdraws \$20 from the ATM (flow of events)
 - The process begins when Joe inserts his card into the card reader. The card reader reads the number on Joe's card, then tells the ATM screen to initialize itself
 - The ATM verifies the card against account and prompts Joe for his PIN.
 - Joe enters PIN.
 - Joe's PIN is validated and the ATM prompts him for a transaction
 - Joe selects Withdraw Money
 - The ATM prompts Joe for an amount.
 - Joe enters \$ 20.
 - The ATM verifies that Joe's account has sufficient funds and subtracts \$ 20 from his account.
 - The ATM dispenses \$ 20 and ejects Joe's card

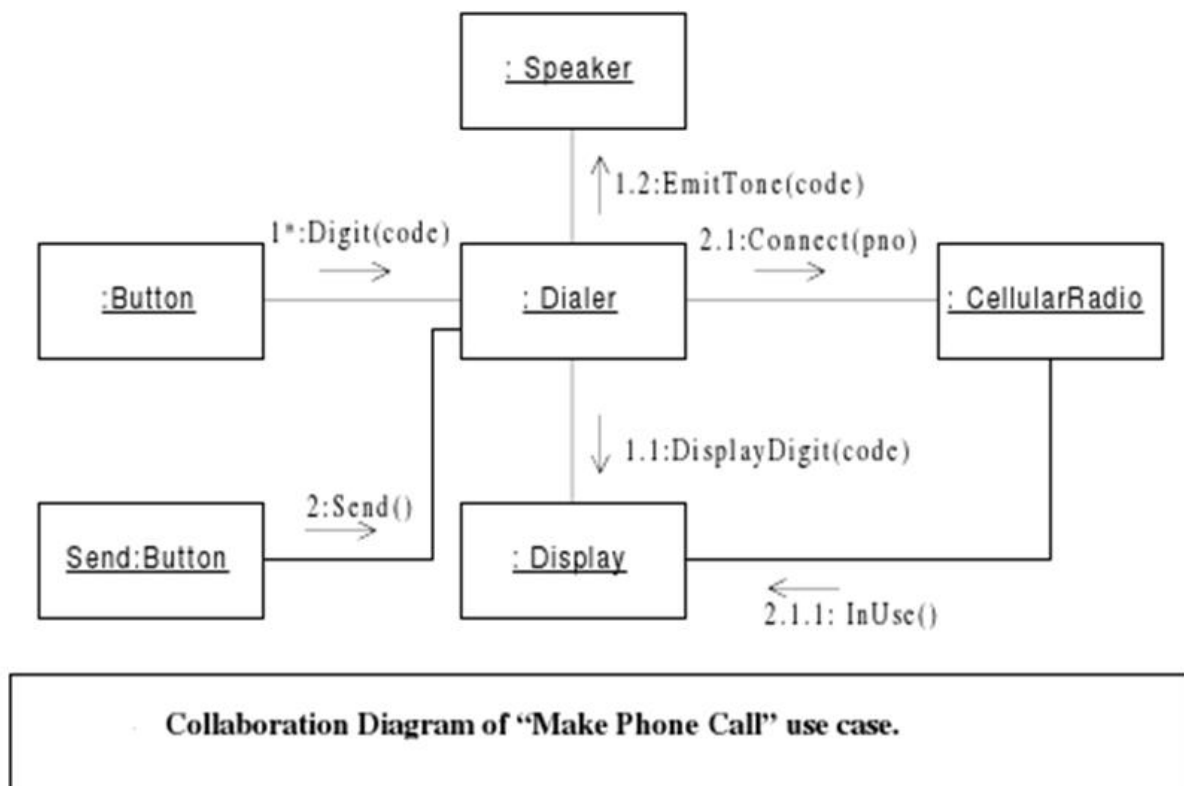


Collaboration Diagram:

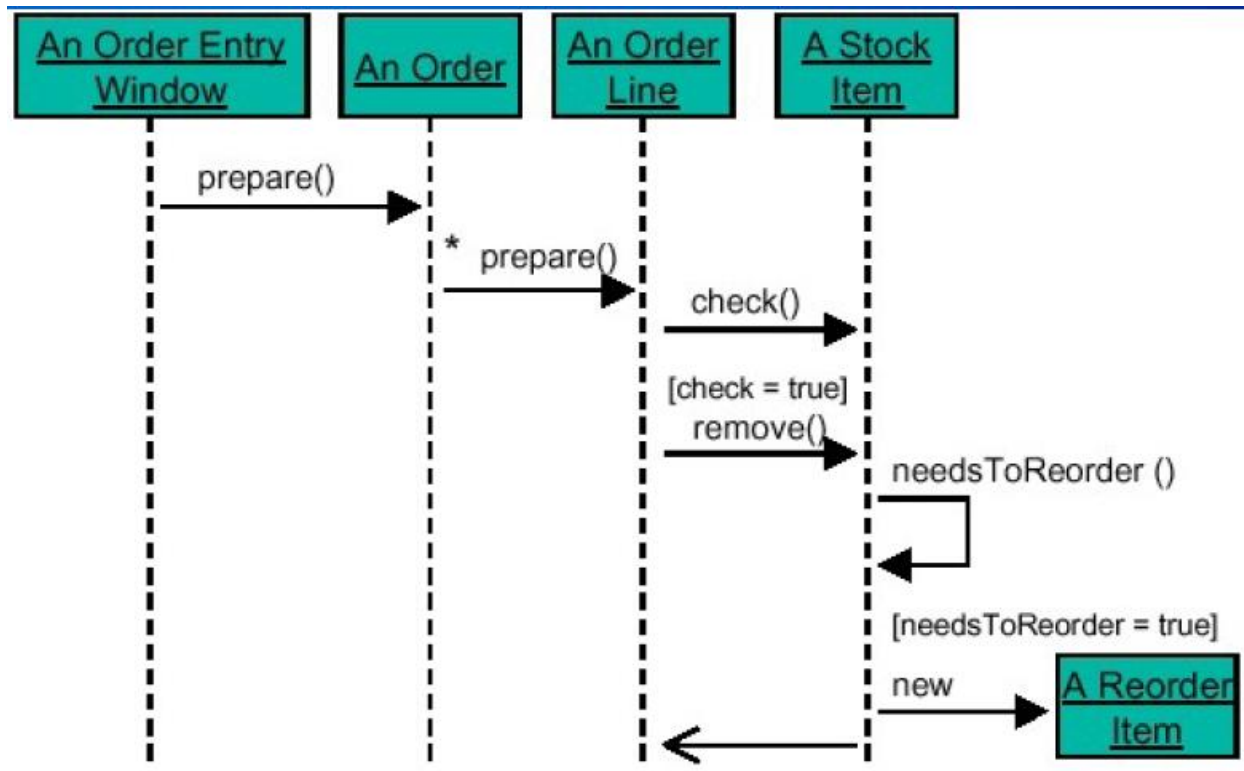
Example 1:

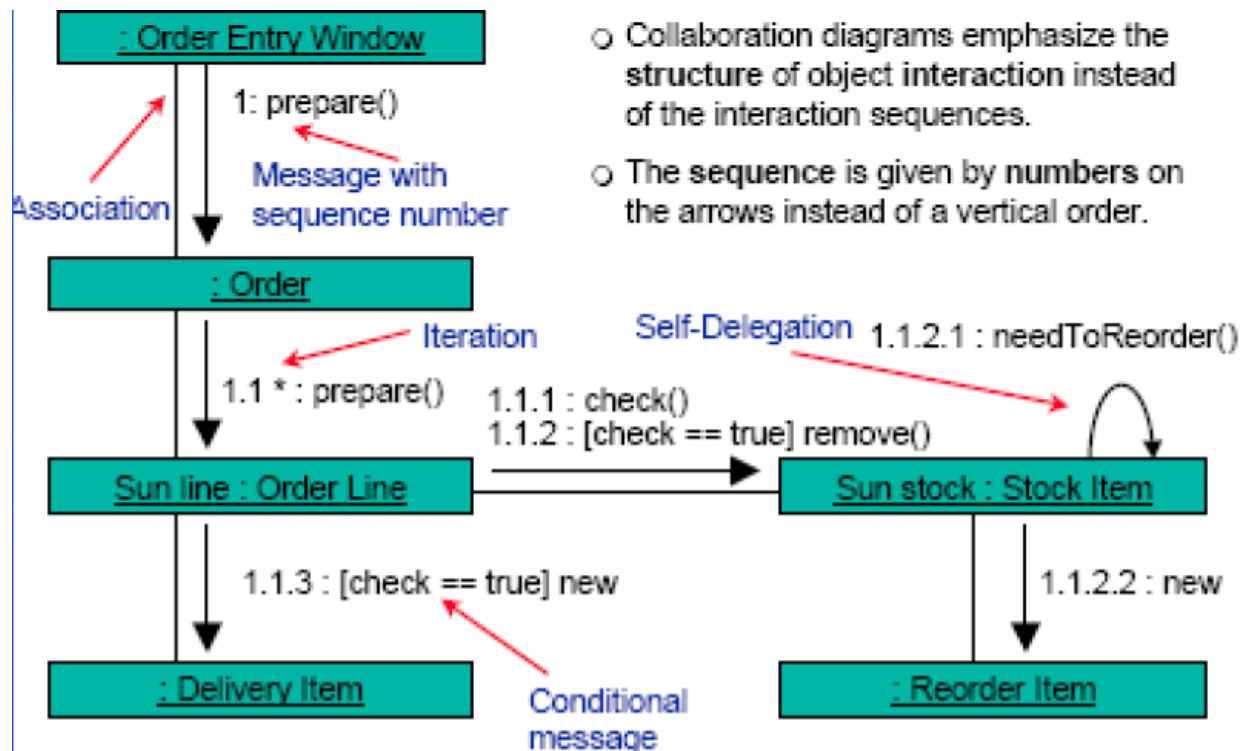
■ **Use case: Make Phone Call**

1. User presses the digit buttons to enter the phone number.
2. For each digit, the display is updated to add the digit to the phone number.
3. For each digit, the dialer generates the corresponding tone and emits it from the speaker.
4. User presses "Send" for connecting to the network. The accumulated digits are sent to the network. The cellular radio establishes a connection to the network.
5. The "in use" indicator is illuminated on the display
6. The connection is made to the called party.



Example 2:





Example 3:

```

RegisterController.java - Notepad
File Edit Format View Help
import java.util.*;

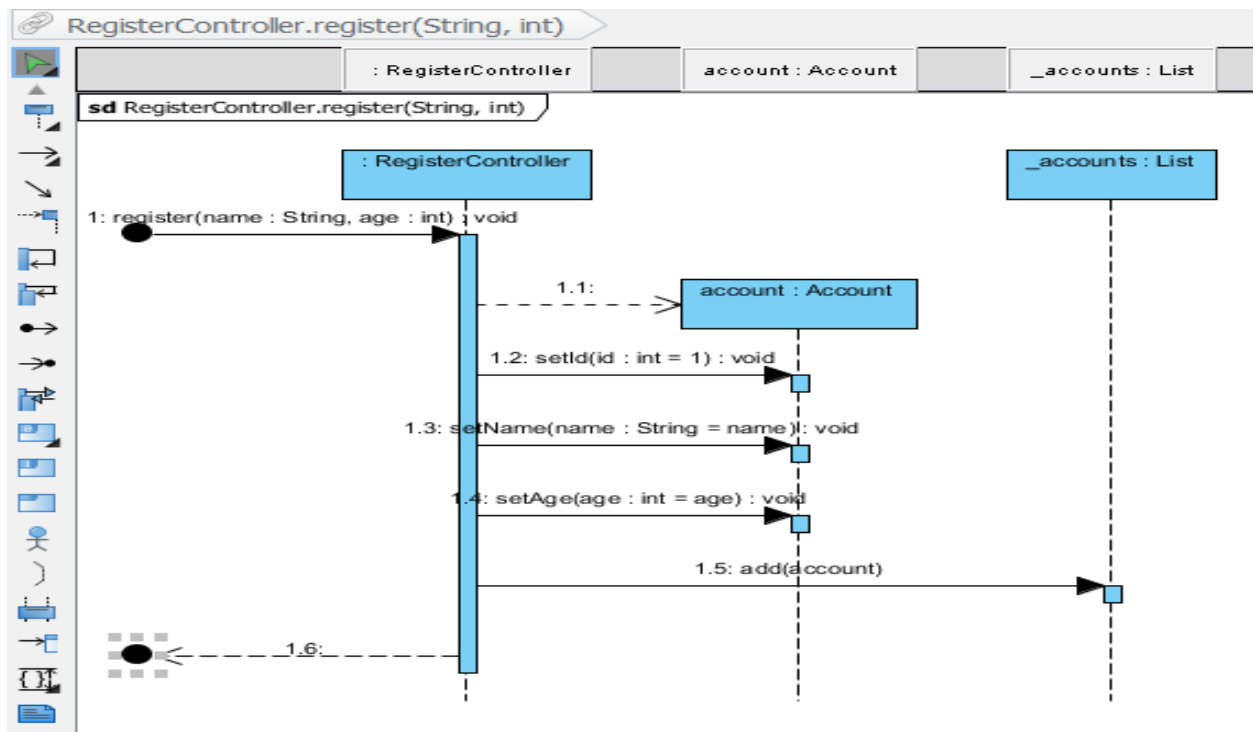
public class RegisterController {

    private List _accounts = new ArrayList();

    public void register(String name, int age) {
        Account account = new Account();
        account.setId(1);
        account.setName(name);
        account.setAge(age);
        _accounts.add(account);
    }

    public List getAccounts(){
        return _accounts;
    }
}

```

Timing Diagram:

Figure 6.19 shows a case where two active objects share a common resource. In this case, both objects show a trade that requires the execution engine for some time. One object is for a “platinum” user who is guaranteed a trade within 10 time units, and the other is a “gold” user who has no performance guarantee. The user objects have a waiting and executing state along with an idle state. The execution engine has a processing state that takes five time units for each trade and an executing state.

