Q1

```
                    b: Bus          r: Reservation      p: Passenger

    printPassengers()
    ─────────────────►│
                      │
    ┌─ For each "r" in b ──────────────────────────────────────────┐
    │                 │                                             │
    │                 │  getPassengerName()                         │
    │                 ├──────────────────►│                         │
    │                 │                   │                         │
    │                 │                   │  getName()              │
    │                 │                   ├──────────────────►│     │
    │                 │                   │                   │     │
    └─────────────────┼───────────────────────────────────────────┘
                      │
                      ✕
```

Q2

Q3

b: Bus	r: Reservation	p: Passenger

reserveSeat(p)

IF ! b.isFull

Reservation(b, p, seat)

add_Reservation(r)

add_Reservation(r)

Q4

m: Main   v: Vehicle   b: Bus   h: Hostess   d: Driver
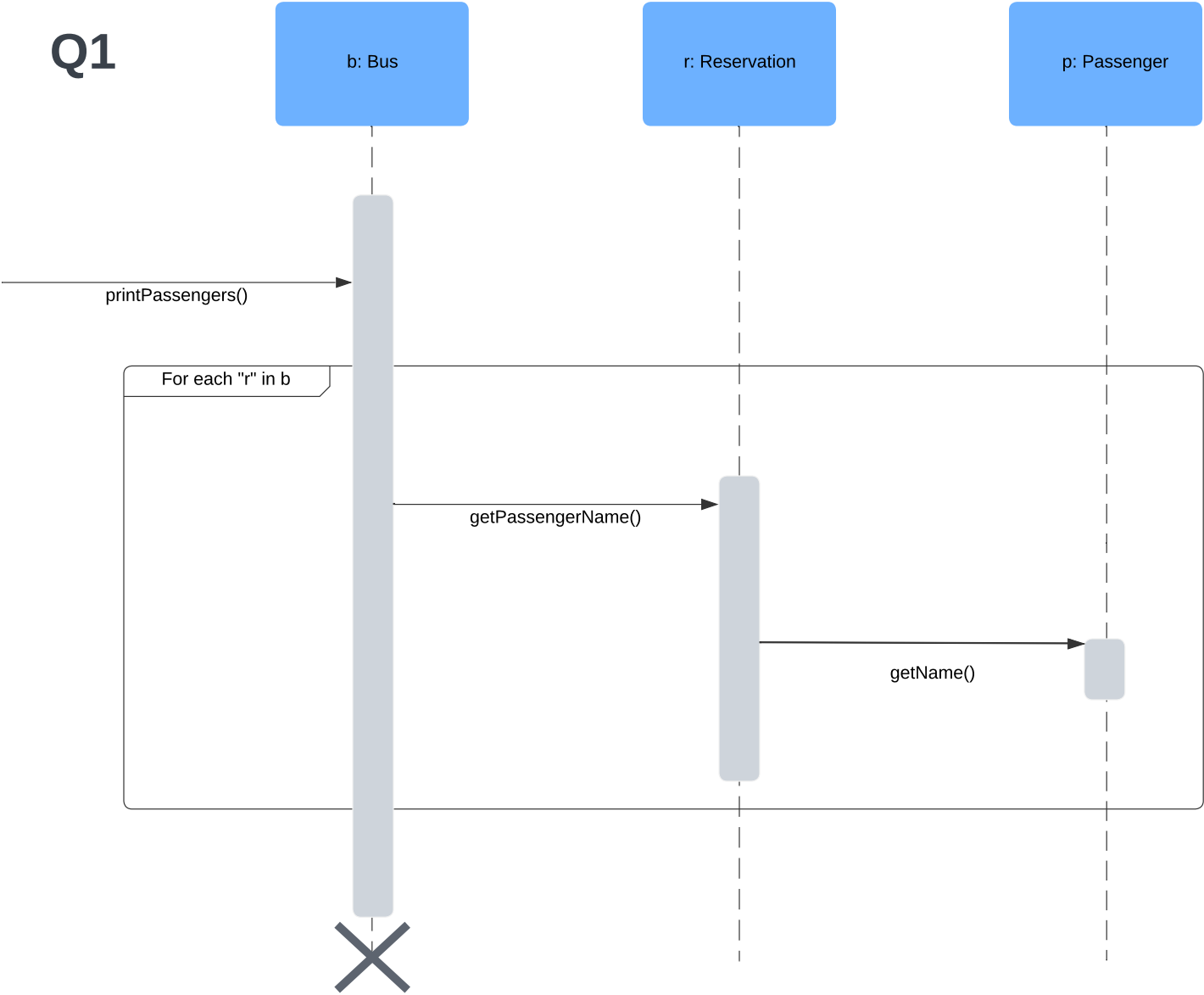
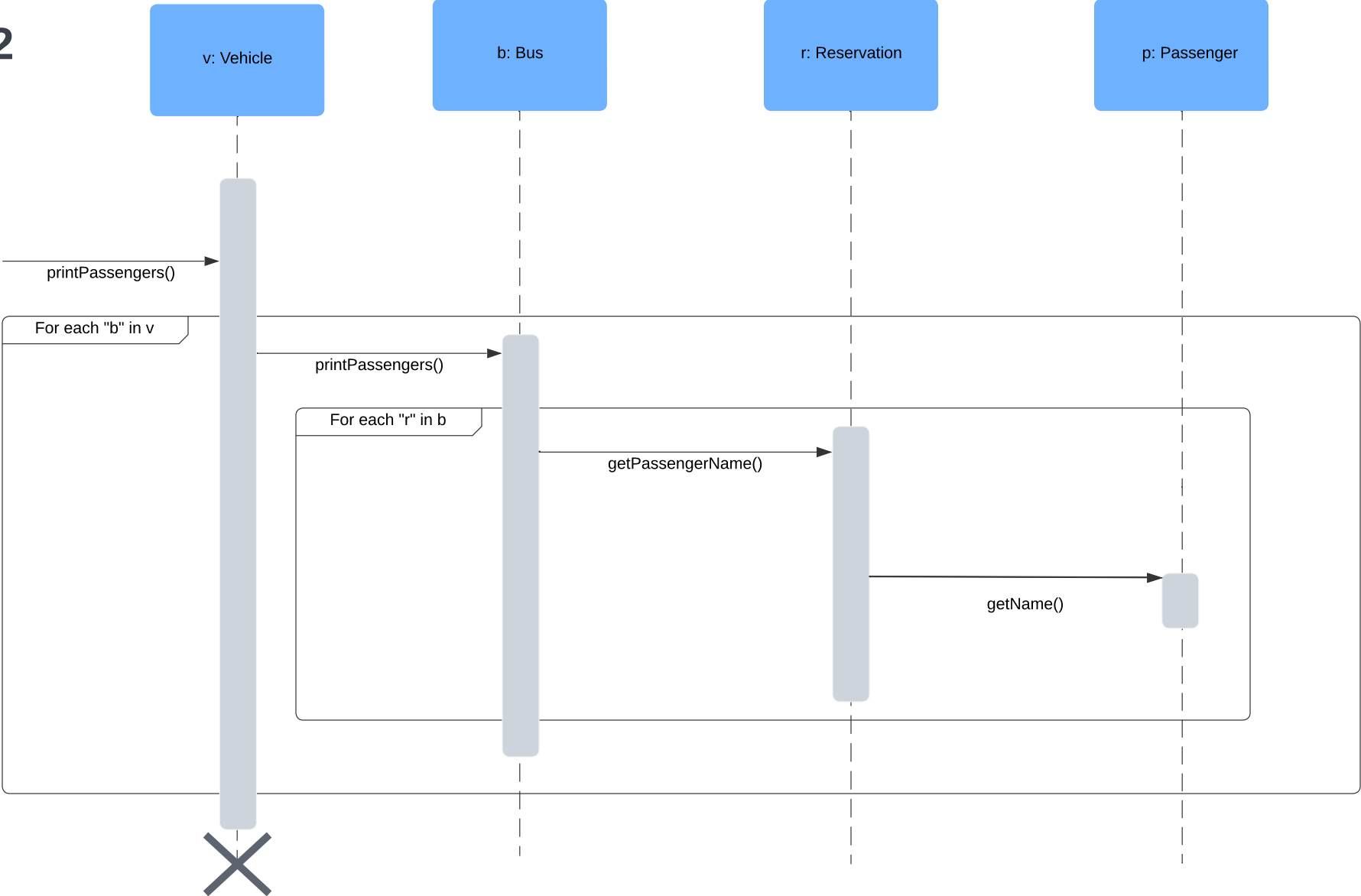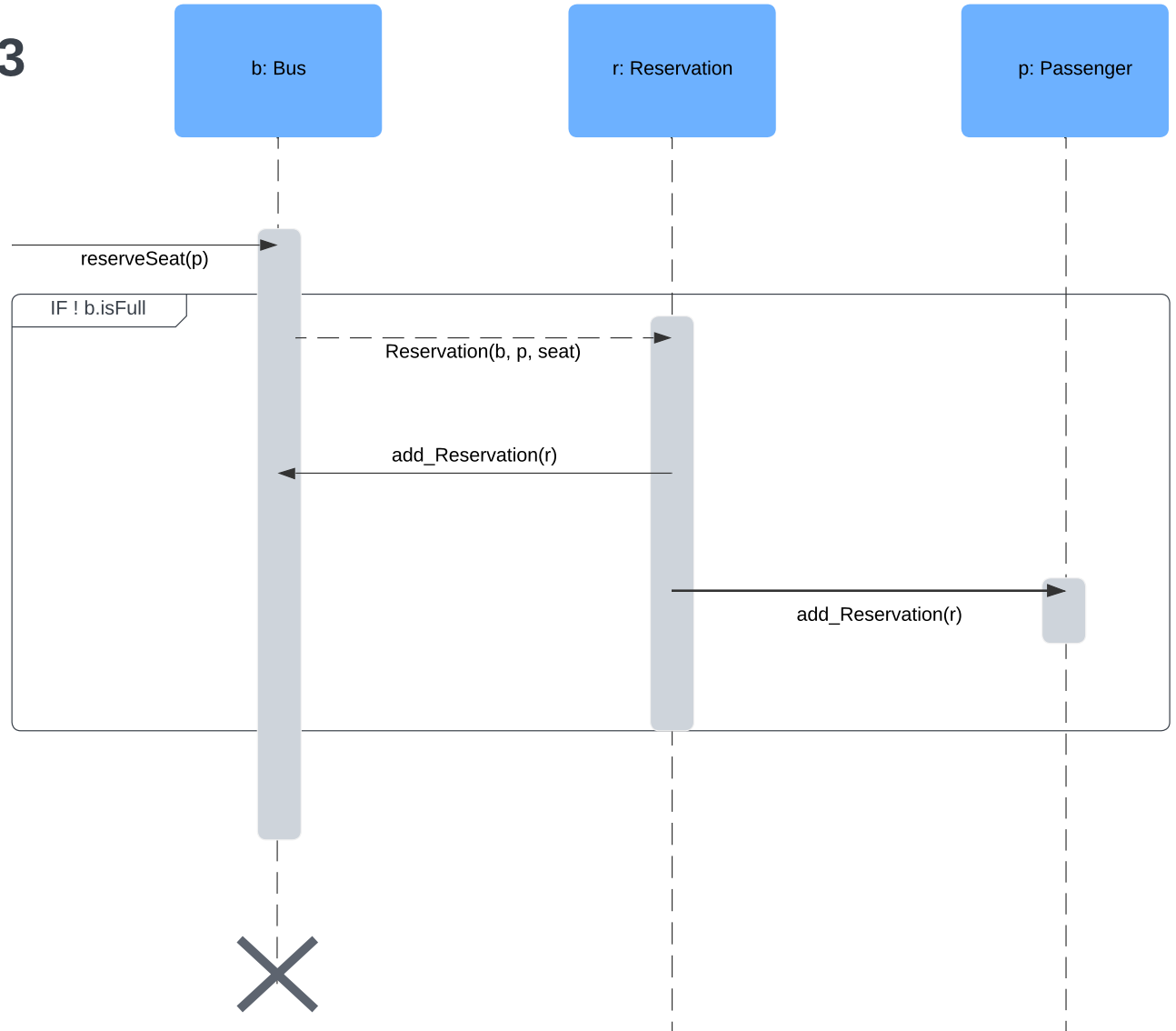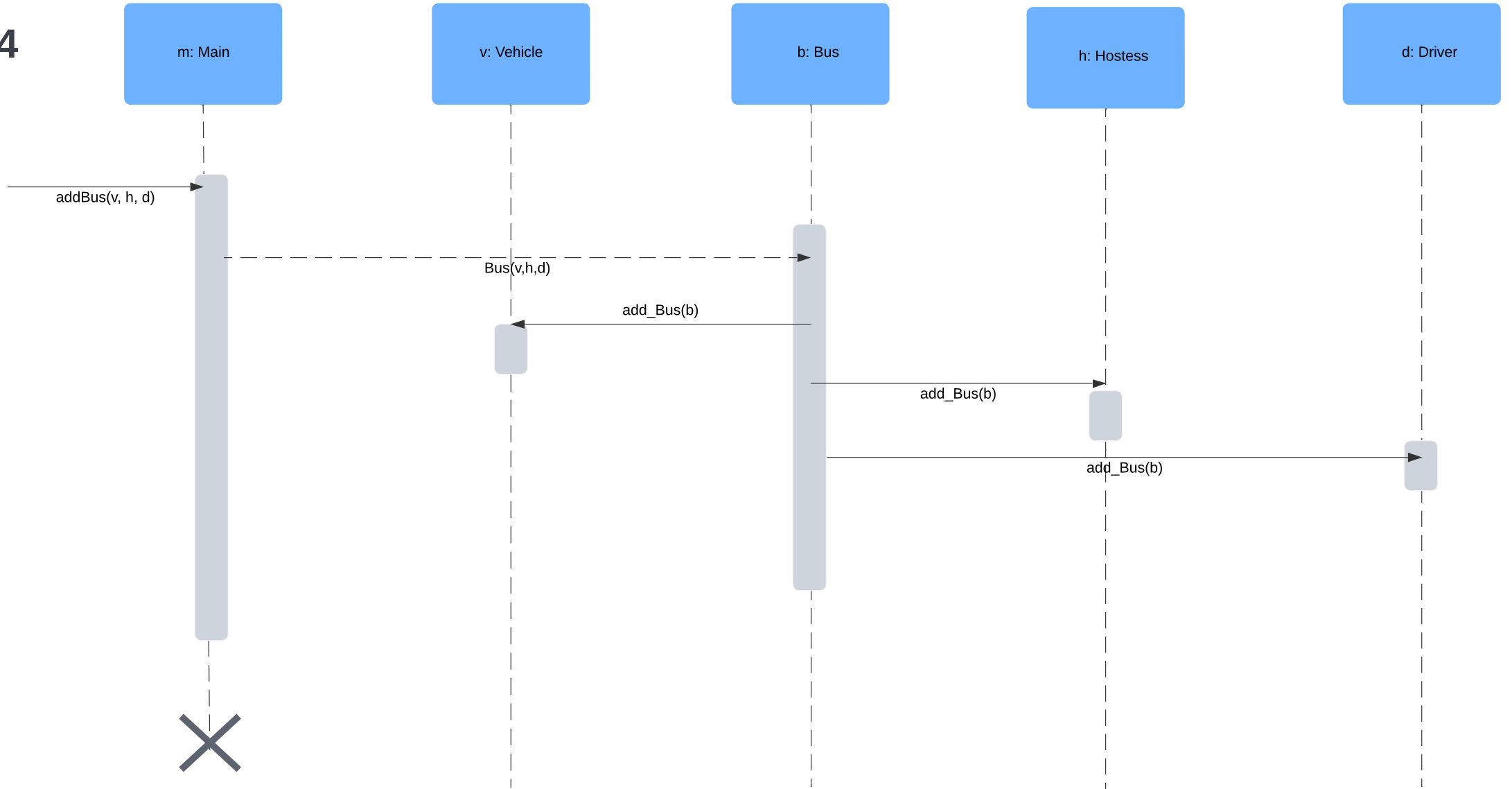addBus(v, h, d)

Bus(v,h,d)

add_Bus(b)

add_Bus(b)

add_Bus(b)

Exercise 2

1. Withdraw Cash from ATM

Use Case Description:

- **Actor:** Customer
- **Preconditions:** The ATM is operational and user has an active and valid account

Steps:

1. The user inserts their bank card into the ATM.
2. The system prompts the user to enter their PIN.
3. The user enters their PIN.
4. The system verifies the PIN and displays transaction options.
5. The user selects the "Withdraw Cash" option.
6. The system prompts the user to enter the withdrawal amount.
7. The user enters the amount they want to withdraw.
8. The system checks if the amount entered is valid, the user's account has sufficient funds and if the ATM has enough cash.
9. If all conditions are met, the ATM ejects the bank card and prepares the cash.
10. The user obtains the card from the ATM.
11. The system prints a receipt and dispenses the cash.
12. The user receives the cash and receipt.

Alternative Flow:

4B. If the PIN is incorrect, the ATM prompts the user to try again up to a maximum of three attempts before ejecting the card.

9B. If the requested amount is invalid or it exceeds the user's balance or the ATM's cash availability, an error message is displayed, and the user is prompted to enter a different amount.

2. Record Sale at a POS Terminal

Use Case Description:

- **Actor:** Cashier
- **Preconditions:** The cashier is logged into the system.

Steps:

1. The user scans or manually enters all the items being purchased by the user.
2. The system validate code displays each item's details and prices.

3. The user asks the system to display the total.
4. The system calculates the total amount due, including taxes and displays all the items and their subtotals.
5. The user confirms the list.
6. The system displays payment methods.
7. The user chooses a payment method and pays the bill.
8. The system verifies the payment and records the transaction by updating inventory and sales records.
9. The user prompts to print the receipt.
10. The receipt is printed.

Alternative Flow:

2b. If an item is not recognized by the POS terminal, the cashier is alerted to reenter or rescan the code or the cashier contacts support for further help.

8b. If the payment method fails (e.g., declined card), the cashier prompts the customer to use another method.