강의 노트 별 동영상 반드시 보기.

Sequence Diagram Modeling

why —

Prof. Kim, Hyeon Soo

충남대학교
CHUNGNAM NATIONAL UNIVERSITY

SEAL Software Engineering & Application Lab.
소프트웨어 공학 및 응용 연구실

Sequence Diagram Modeling

- **Sequence Diagram**
  - » 유스케이스의 각 task를 수행하기 위하여 객체들이 메시지를 교환하는 순서를 나타냄

- Elements of sequence diagram
  - » 객체: 클래스의 인스턴스
    - ✓ 박스 안에 클래스 이름, 객체 식별자를 명시하고 밑줄
  - » 액터
    - ✓ 유스케이스 다이어그램의 막대 인간 심볼
  - » 메시지
    - ✓ 액터에서 객체로, 객체에서 객체로 이동하는 화살표로 표시

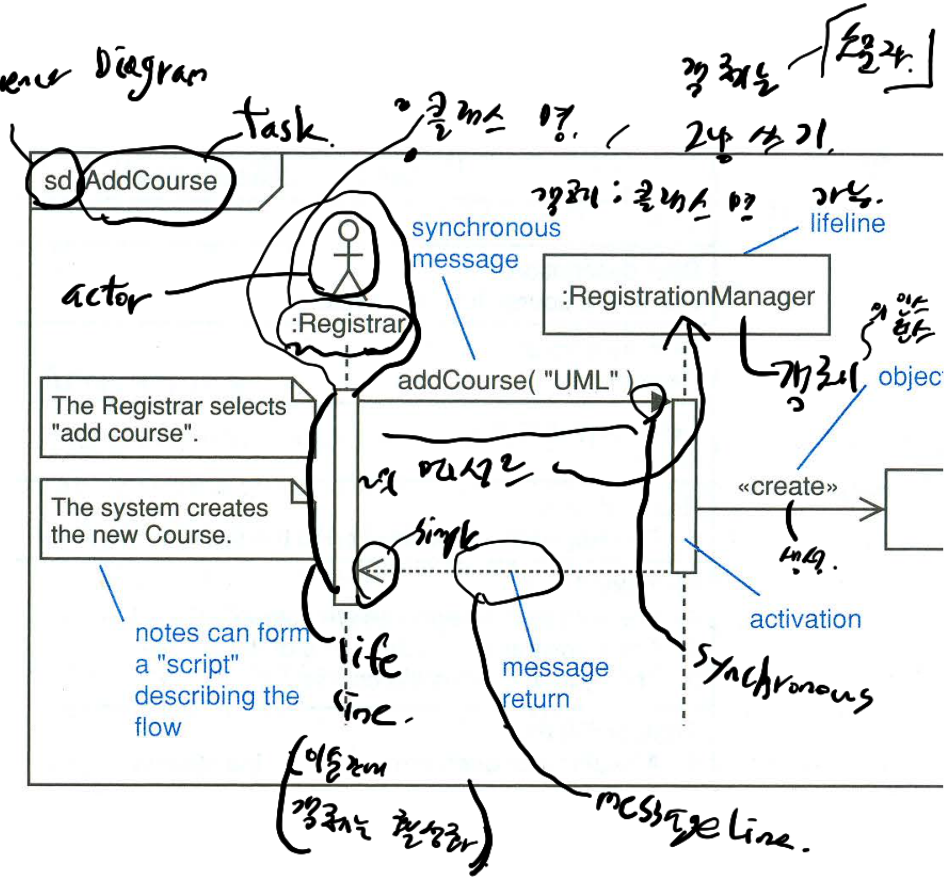
Sequence Diagram Modeling

▪ Sequence Diagram

≫ horizontal axis : 객체가 수평으로 정렬됨
- ✓ a set of objects
- ✓ actor: leftmost position

≫ vertical axis
- ✓ time ticking: 시간의 흐름
- ✓ lifeline: object's execution during the sequence (sent, received, activation)
- ✓ activation: represented as a thin rectangle

≫ horizontal message line
- ✓ communication between the objects
- ✓ arrow: specifies a type of the message
  - synchronous
  - asynchronous
  - simple

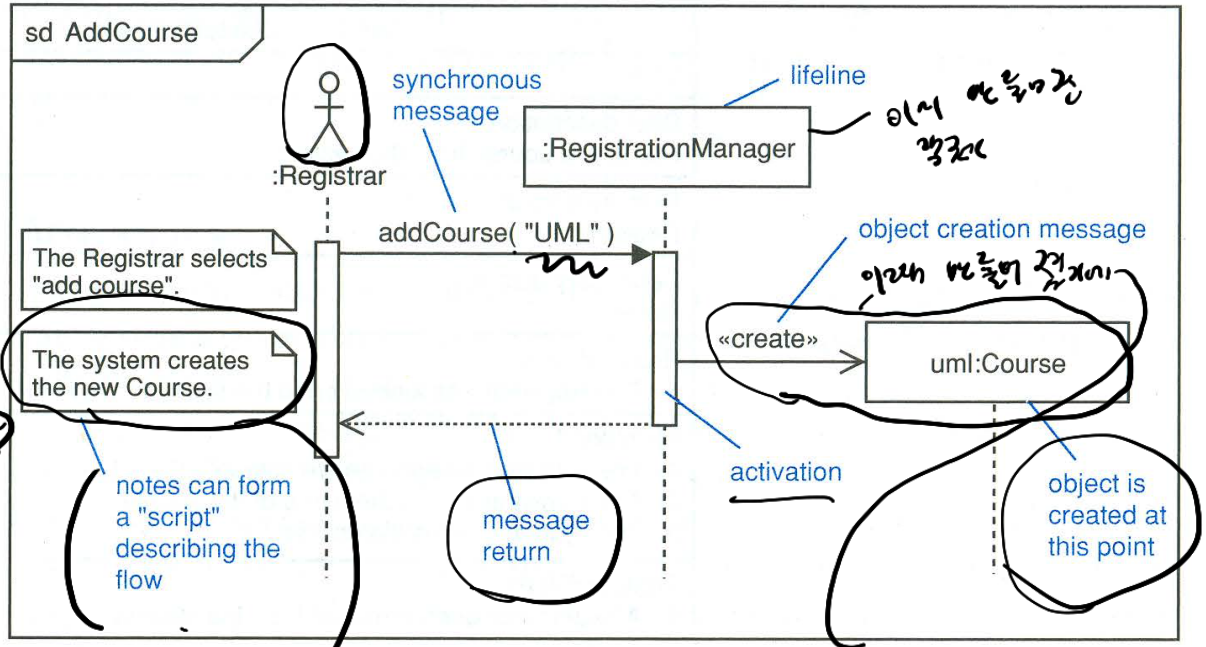


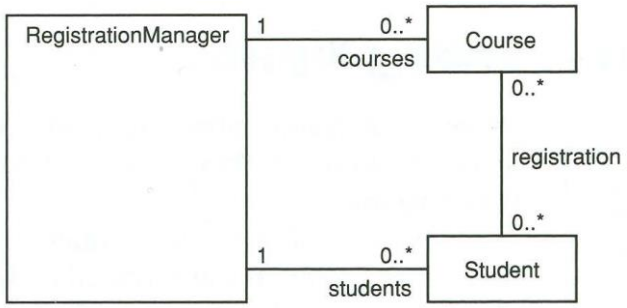
Sequence Diagram Modeling

Lifelines and messages

이 use case 를 실현하는 sequence Diagram.

Use case: AddCourse
ID: 8
Brief description: Add details of a new course to the system.
Primary actors: Registrar
Secondary actors: None.
Preconditions: 1. The Registrar has logged on to the system.
Main flow: 1. The Registrar selects "add course". 2. The Registrar enters the name of the new course. 3. The system creates the new course.
Postconditions: 1. A new course has been added to the system.
Alternative flows: CourseAlreadyExists





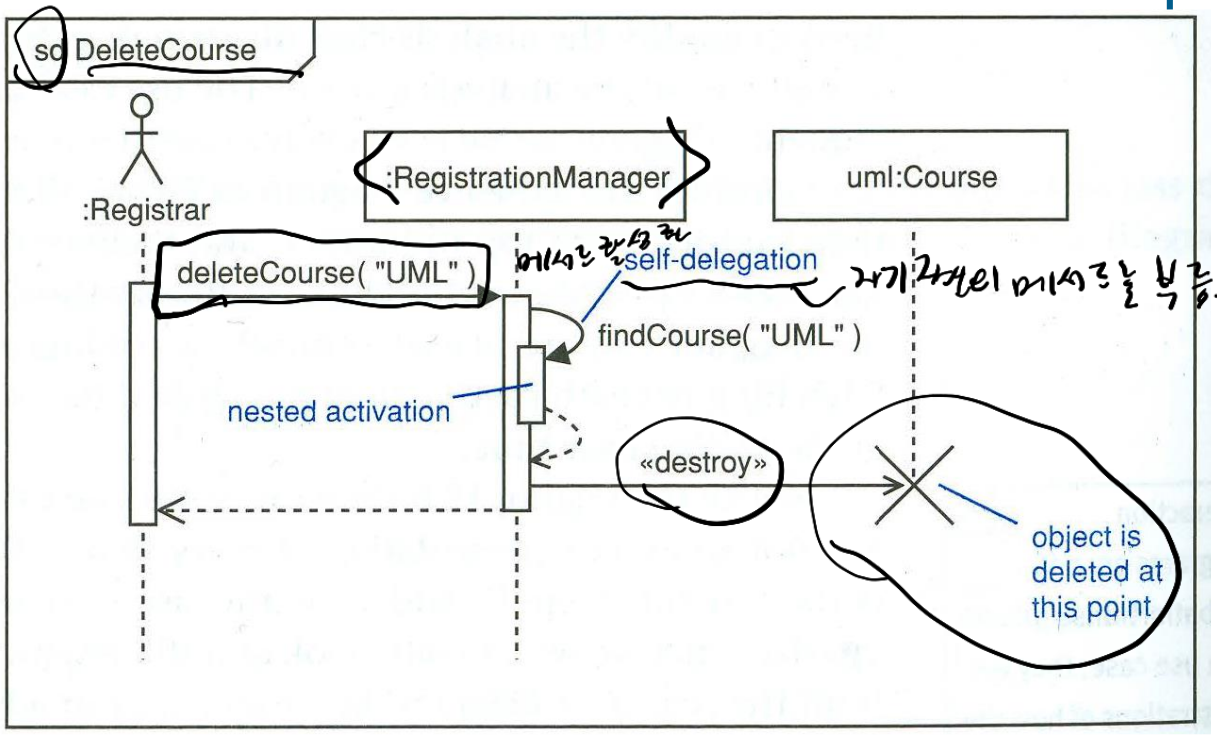
note.
(comment).

RegistrationManager는 optional.

Sequence Diagram Modeling

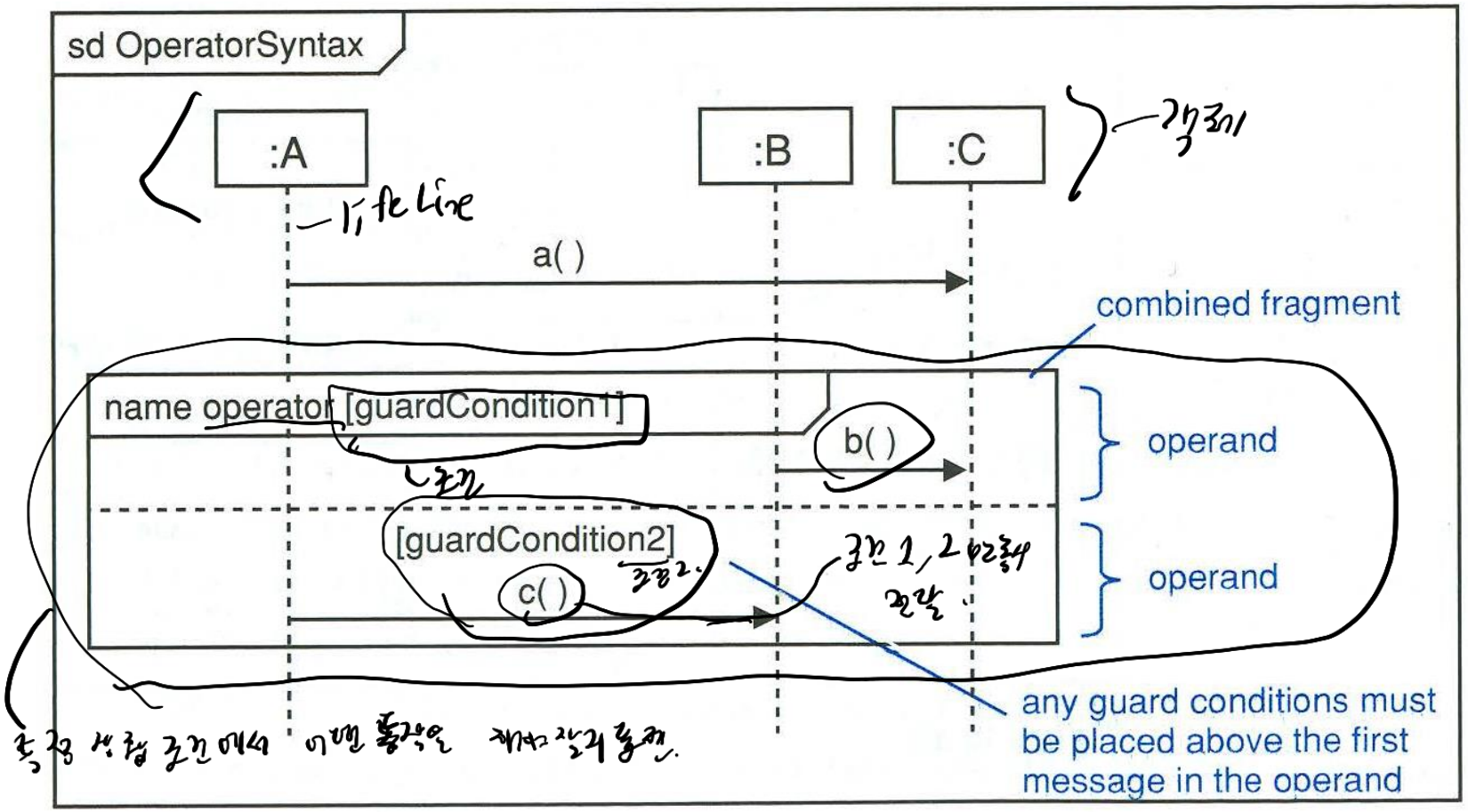
- **Lifelines and messages**

Use case: DeleteCourse
ID: 8
Brief description: Remove a course from the system.
Primary actors: Registrar
Secondary actors: None.
Preconditions: 1. The Registrar has logged on to the system.
Main flow: 1. The Registrar selects "delete course". 2. The Registrar enters the name of the course. 3. The system deletes the course.
Postconditions: 1. A course has been removed from the system.
Alternative flows: CourseDoesNotExist



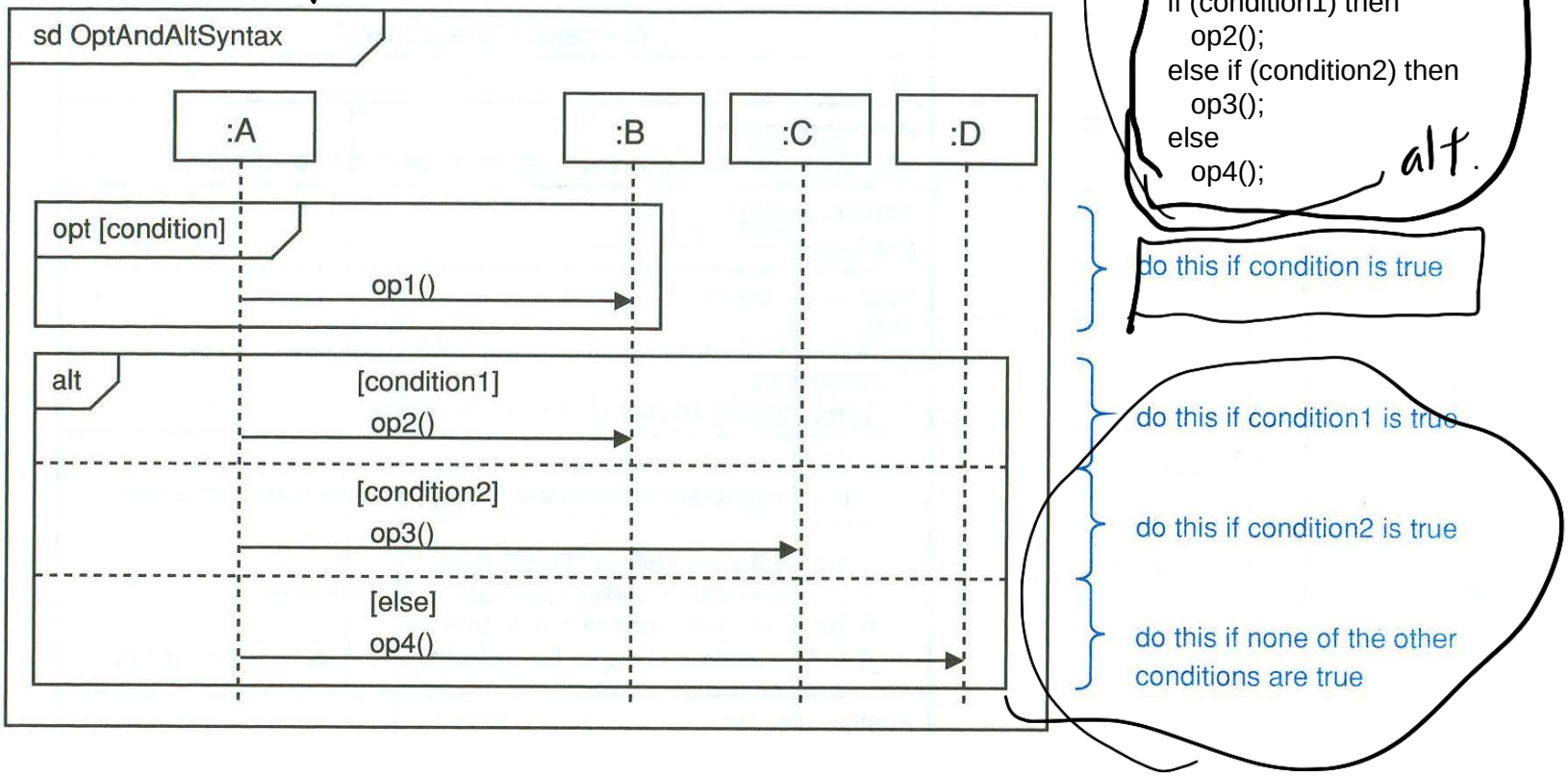
Sequence Diagram Modeling

- **Combined fragments and operators**



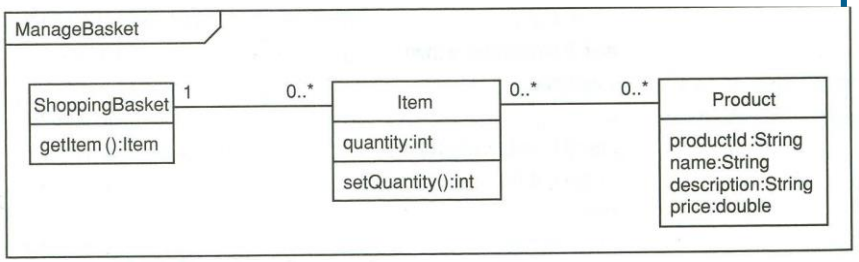
Sequence Diagram Modeling

- **Combined fragments and operators**
  - Branching with **opt** and **alt**

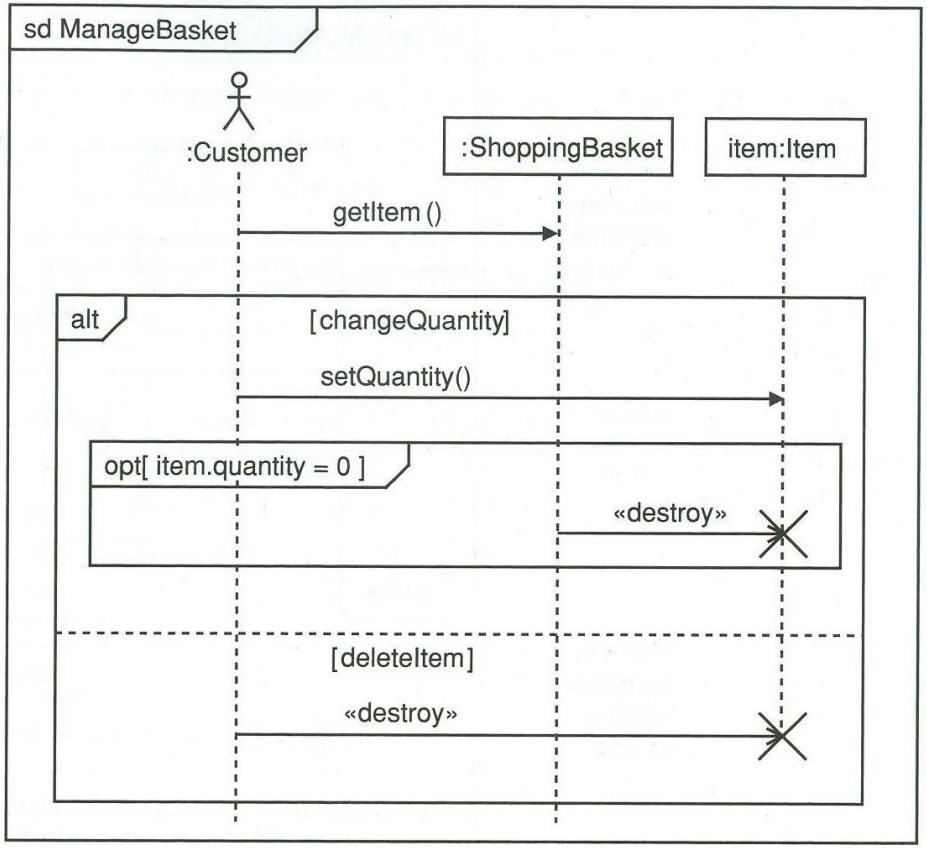


Sequence Diagram Modeling

- **Combined fragments and operators**
  - Branching with **opt** and **alt** 의 활용사례.
    - ≫ [example] ManageBasket

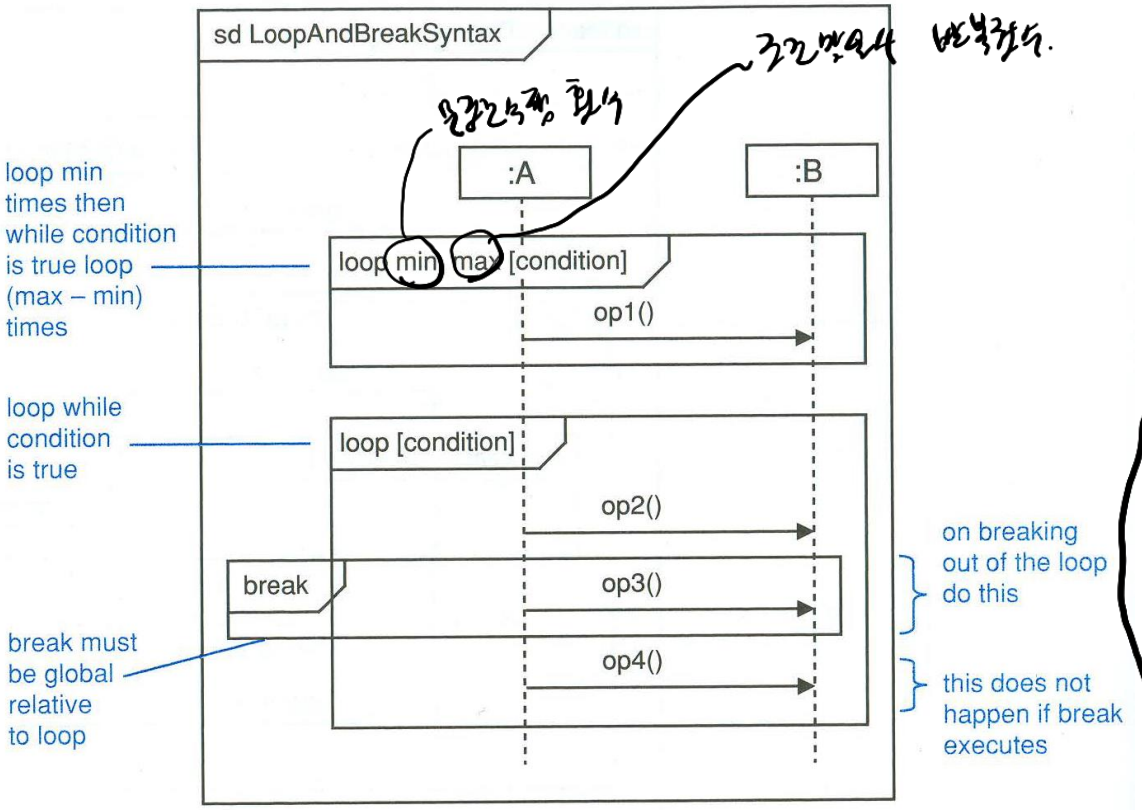


Use case: ManageBasket
ID: 2
Brief description: The Customer changes the quantity of an item in the basket.
Primary actors: Customer
Secondary actors: None.
Preconditions: 1. The shopping basket contents are visible.
Main flow: 1. The use case starts when the Customer selects an item in the basket. 2. If the Customer selects "delete item" 2.1 The system removes the item from the basket. 3. If the Customer types in a new quantity 3.1 The system updates the quantity of the item in the basket.
Postconditions: None.
Alternative flows: None.



Sequence Diagram Modeling

- **Combined fragments and operators**
  - Iteration with **loop** and **break**




```
loop min times then
   while (condition is true)
      loop (max-min) times
-----------------------------------
loop (condition is true) then
   op2();
   if (condition1) then
      op3();
      break;
   endif
   op4();
endloop
```

Sequence Diagram Modeling

- **Combined fragments and operators**
  - Iteration with **loop** and **break**
    - [example]
    - ✓ 다중성을 고려한 경우