## Control Information

# **CombinedFragments**

- ◆ Option (*opt*)
- ◆ Alternatives (alt)
- ◆ Parallel (*par*)
- ◆ Critical Region (critical)
- ◆ Iteration (*loop*)
- Continuation .

Option (opt)

# • insertCard happened in the past insertCard opt [valid card] requestKey enterKey

# ${\it Combined Fragments}$

# Option (opt)

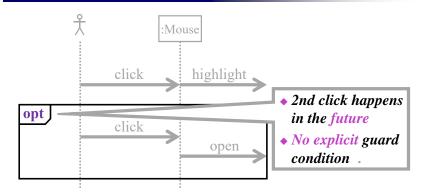
- Represents a choice of behavior where
  - *either* the (sole) operand happens
  - or nothing happens

    Like "if then"

    without "else" in programming.

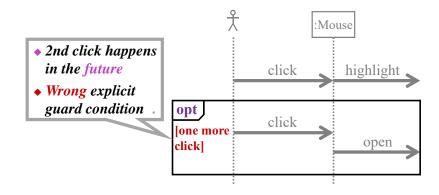
## Option (opt)

# Example 2



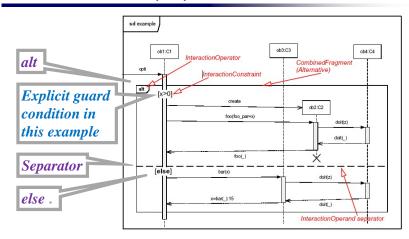
#### Example 2 (continued)

# We Learn from Mistakes



#### **CombinedFragments**

## Alternatives (alt)



## **CombinedFragments**

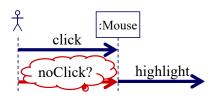
# Alternatives (alt)

- 2 or more behavioral options
- ◆ At most 1 will be chosen

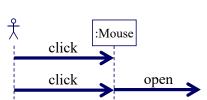
Like "if then else" in programming.

## **Duration Constraints**

• Example 1: Single click

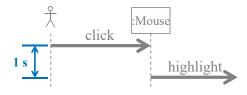


◆ Example 2:
Double click

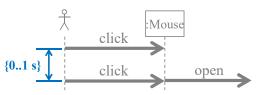


## **Duration Constraints**

◆ Example 1: Single click

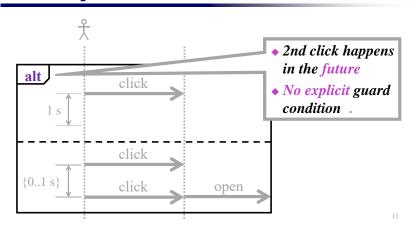


◆ Example 2: Double click



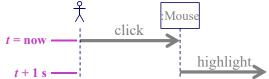
#### Alternatives (alt)

# Example 1



## **Time Constraints**

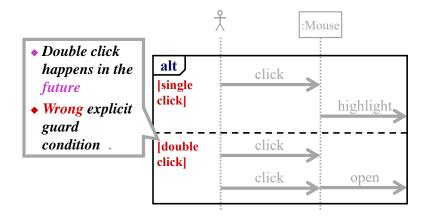
• Example 1: Single click t = now - t



♦ Example 2: Mouse Double click t = now click open

#### Example 1 (Continued)

# We Learn from Mistakes



#### **CombinedFragments**

# Parallel (par)

- ◆ Represents a parallel merge of the behavior of the operands
- Different operands can be interleaved in any way as long as the order within each operand is preserved.

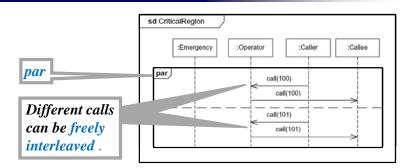
#### ${\it Combined Fragments}$

# **Critical Region** (critical)

- Events in a critical region must be handled first
- Events in a critical region cannot be interleaved with events outside the region.

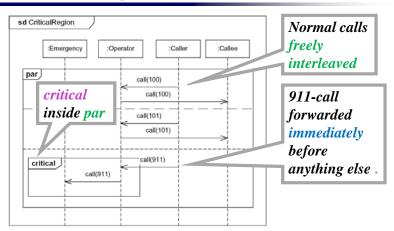
#### **CombinedFragments**

# Parallel (par)



#### **CombinedFragments**

# **Critical Region** (critical)



15