

# **Information System Design**

## **IT60105**

### **Lecture 10**

### **Interaction Diagrams - II**

# Lecture #10

- Sequence diagrams in UML 2.0
- Fragments

# Combined Fragments

- A combined fragment is one or more processing sequence enclosed in a frame and executed under specific named circumstances. The fragments available are:
- Alternative fragment (denoted “alt”) models if...then...else constructs.
- Option fragment (denoted “opt”) models switch constructs.
- Break fragment models an alternative sequence of events that is processed instead of the whole of the rest of the diagram.
- Parallel fragment (denoted “par”) models concurrent processing.
- Weak sequencing fragment (denoted “seq”) encloses a number of sequences for which all the messages must be processed in a preceding segment before the following segment can start, but which does not impose any sequencing within a segment on messages that don't share a lifeline.

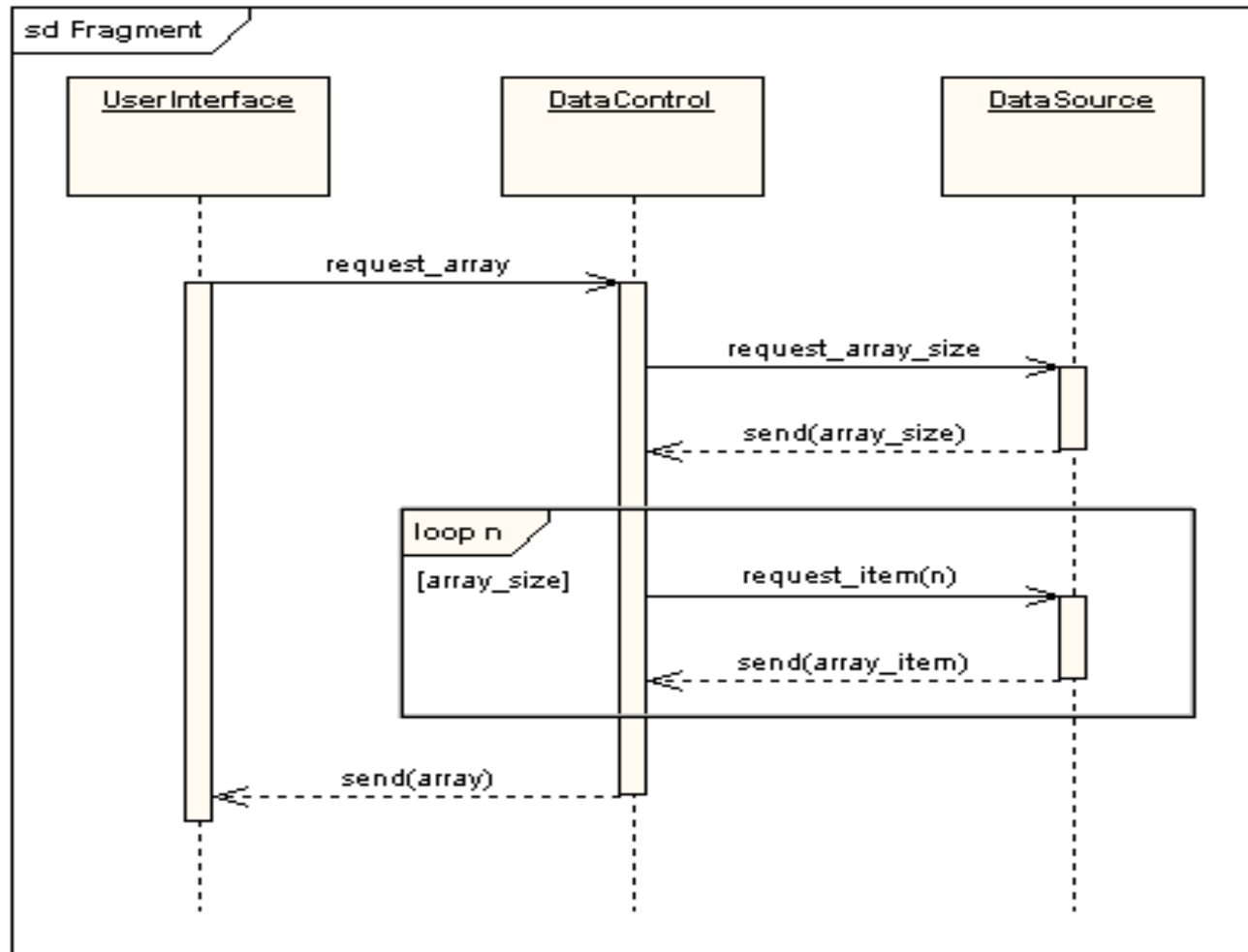
# Combined Fragments

Contd...

- Strict sequencing fragment (denoted “strict”) encloses a series of messages which must be processed in the given order.
- Negative fragment (denoted “neg”) encloses an invalid series of messages.
- Critical fragment encloses a critical section.
- Ignore fragment declares a message or message to be of no interest if it appears in the current context.
- Consider fragment is in effect the opposite of the ignore fragment: any message not included in the consider fragment should be ignored.
- Assertion fragment (denoted “assert”) designates that any sequence not shown as an operand of the assertion is invalid.
- Loop fragment encloses a series of messages which are repeated.

# Example: Combined Fragments

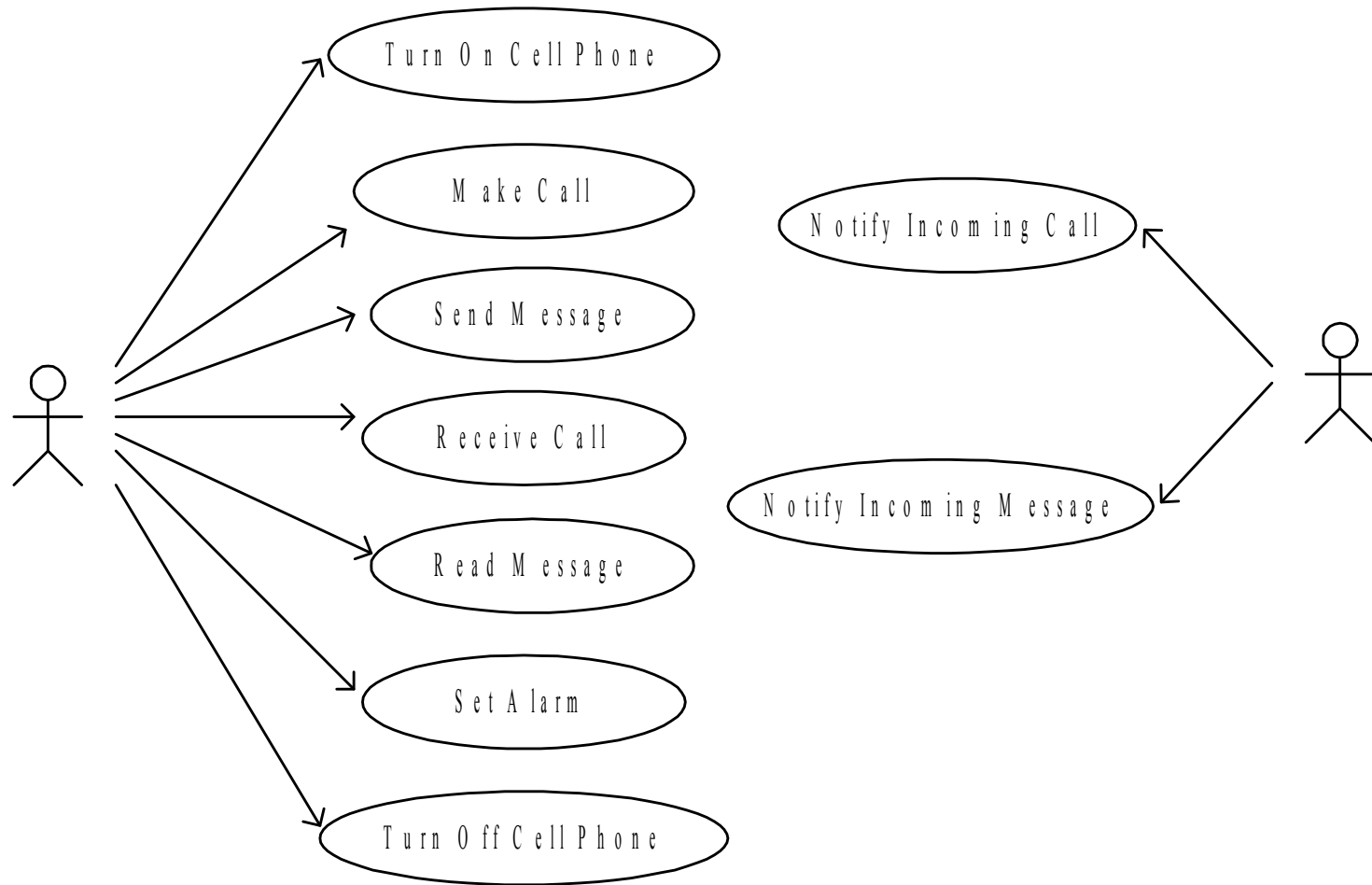
- The following diagram shows a loop fragment.



# An Example

## Cell Phone System

# Cell Phone System



# Use case: Make Call

## Use case scenarios

1. Enter phone number
  - 1.1 Abnormal termination
2. Begin talk session
  - 2.1 Invalid phone number
  - 2.2 Network busy
  - 2.3 Connection failed
  - 2.4 Continue talk
    - 2.4.1 Network disconnected
3. End talk session
4. Enquire call duration (optional)



