Internetworking
UML Sequence Diagram

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UML sequence diagram

Very common kind of interaction diagram

- Focus on messages interchanged between lifelines
- Temporal occurrence of interchange

Important elements

- Lifeline
- Occurrence
- Execution

https://www.uml-diagrams.org/sequence-diagrams.html

UML sequence diagram – lifeline

Lifeline is a named element which represents an individual participant
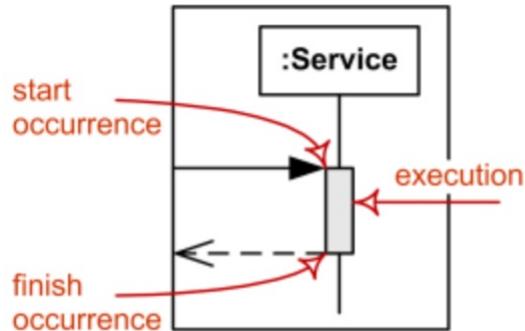
Lifeline *"data" of class Stock*

https://www.uml-diagrams.org/sequence-diagrams.html

UML sequence diagram – occurrence

Occurrence is an interaction fragment which represents a moment in time (event) at the beginning or end of a message or at the beginning or end of an execution.
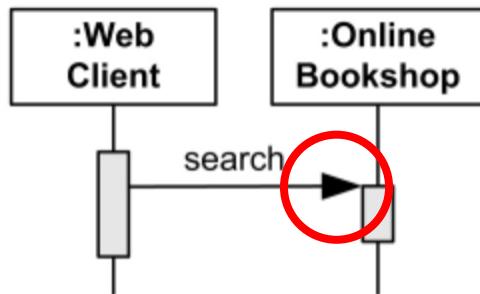
*Duration of an execution is represented by two execution occurrences - start and finish.*
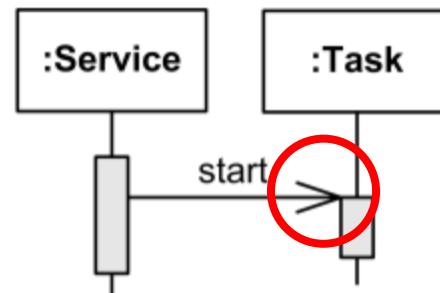
UML sequence diagram – messages

Synchronous Call

Web Client searches Online Bookshop and waits for results.

Asynchronous Call

Service starts Task and proceeds in parallel without waiting.

https://www.uml-diagrams.org/interaction-message.html

UML sequence diagram – messages

Replay Message

- dashed line
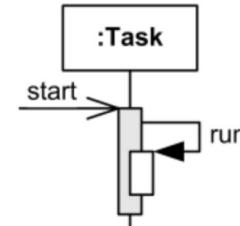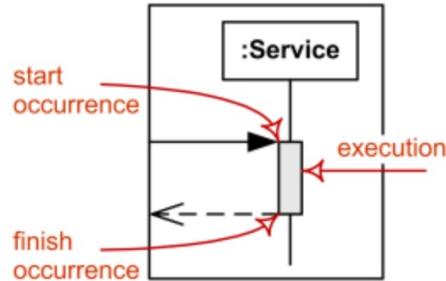
Web Client searches Online Bookshop and waits for results to be returned.

https://www.uml-diagrams.org/interaction-message.html

UML sequence diagram – execution

Execution is a interaction fragment which represents a period in the participant's lifeline when it is
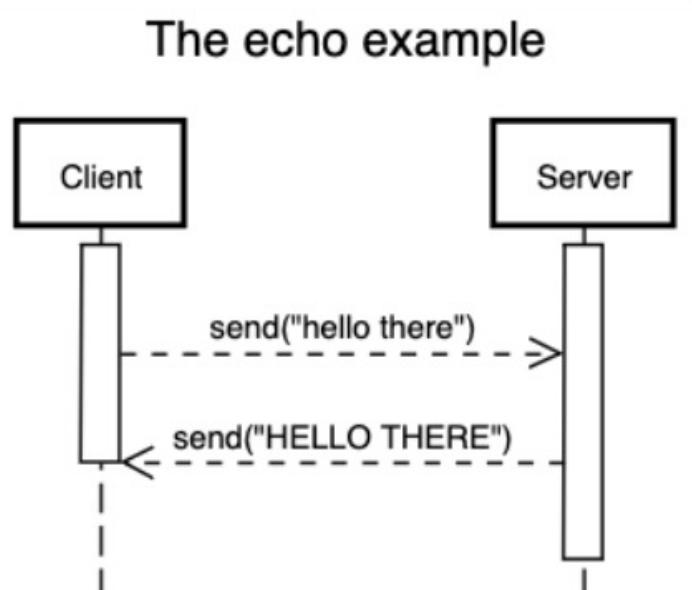
- executing a unit of behavior or action within the lifeline,
- sending a signal to another participant,
- waiting for a reply message from another participant.

Execution specification *shown as grey rectangle on the Service lifeline.*

https://www.uml-diagrams.org/sequence-diagrams.html

Example - Echo

The echo example

Two participants: client and server
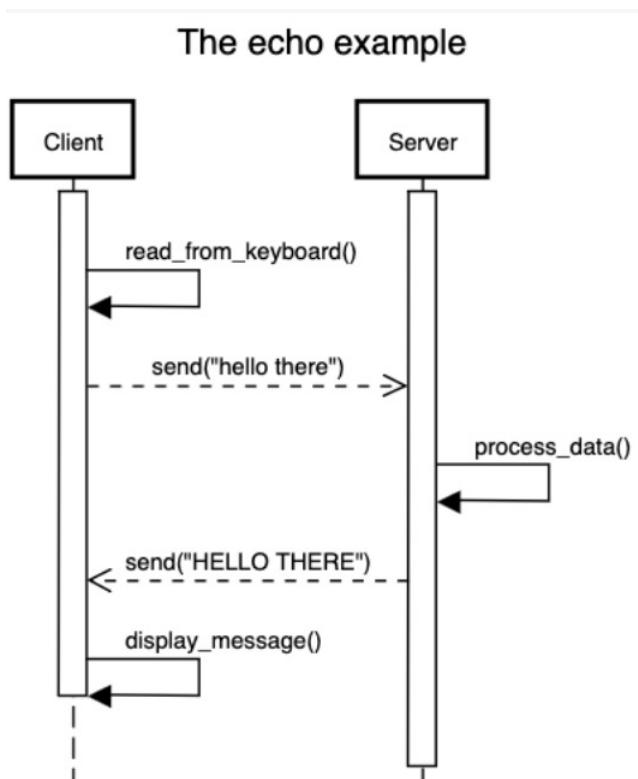
Both are active

- Server waits for an incoming message
- Client process keyboard strokes, waits for reply and then terminates

Two messages are sent asynchronously

Example – Echo

The echo example

Refined version of the example showing more details

- depending on what level of detail is needed