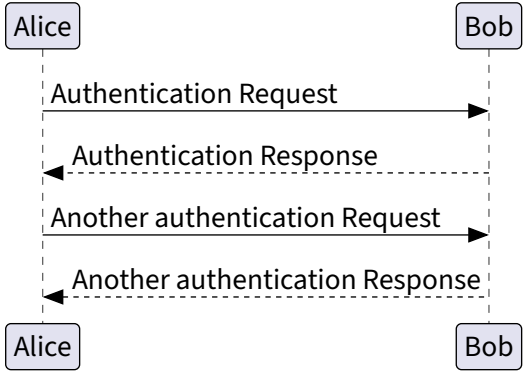
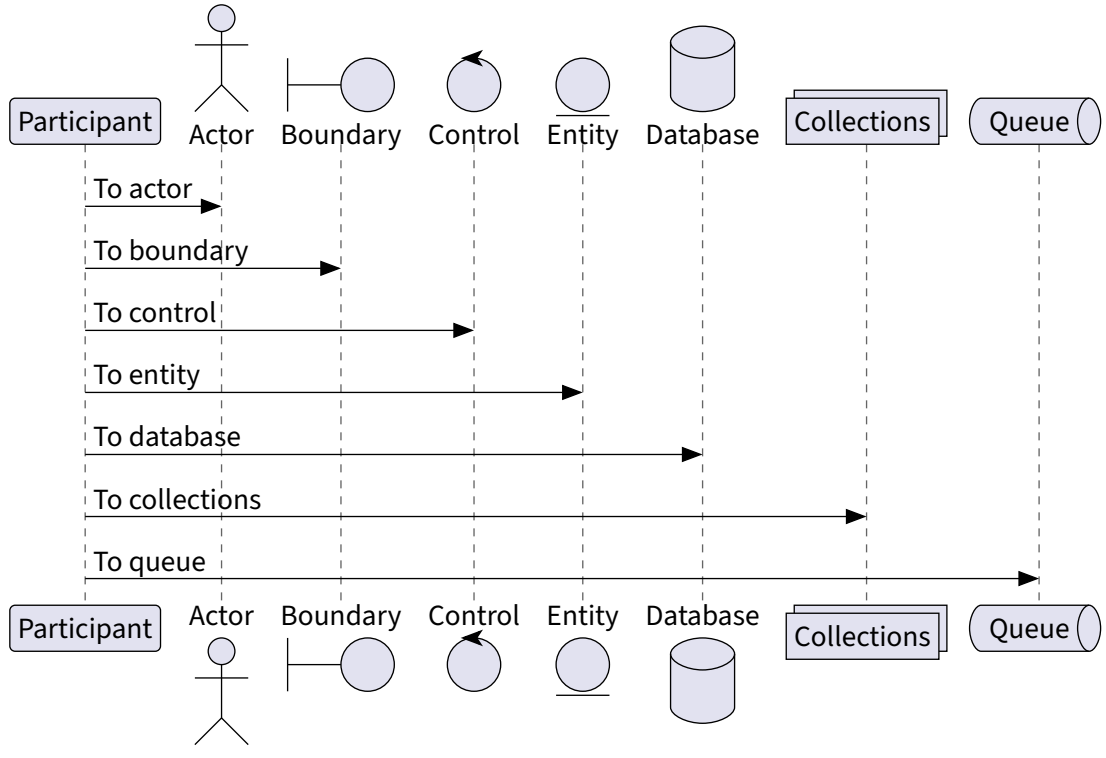
Basic Examples

```
@startuml
Alice -> Bob: Authentication Request
Bob --> Alice: Authentication Response

Alice -> Bob: Another authentication Request
Alice <-- Bob: Another authentication Response
@enduml
```



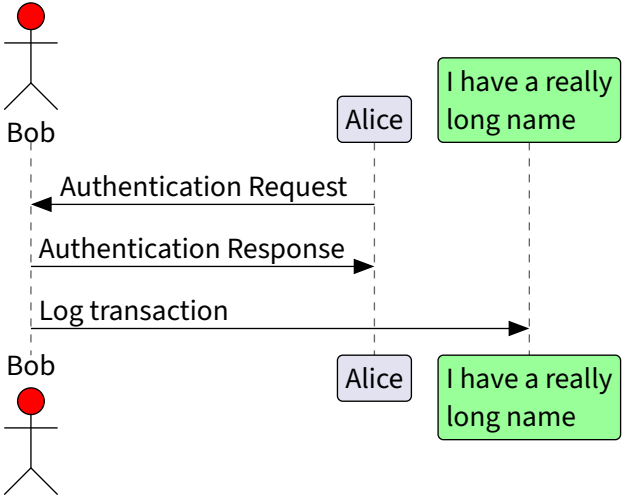
Declaring participant

```
@startuml
participant Participant as Foo
actor       Actor       as Foo1
boundary    Boundary    as Foo2
control     Control     as Foo3
entity      Entity      as Foo4
database    Database    as Foo5
collections Collections as Foo6
queue       Queue       as Foo7
Foo -> Foo1 : To actor
Foo -> Foo2 : To boundary
Foo -> Foo3 : To control
Foo -> Foo4 : To entity
Foo -> Foo5 : To database
Foo -> Foo6 : To collections
Foo -> Foo7: To queue
@enduml
```



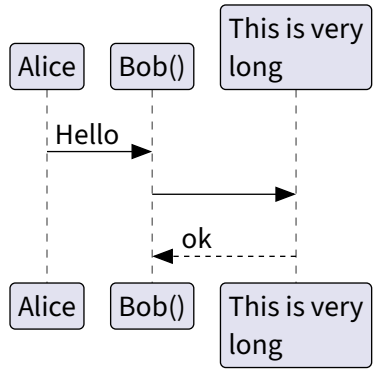
Declaring participant (2)

```
@startuml
actor Bob #red
' The only difference between actor
'and participant is the drawing
participant Alice
participant "I have a really\nlong name" as L #99FF99
/' You can also declare:
  participant L as "I have a really\nlong name"  #99FF99
  '/

Alice->Bob: Authentication Request
Bob->Alice: Authentication Response
Bob->L: Log transaction
@enduml
```



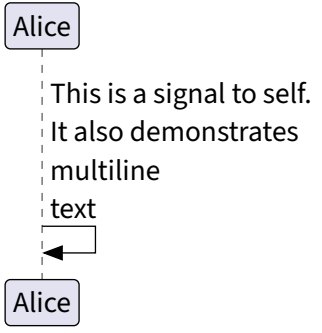
Use non-letters in participants

```
@startuml
Alice -> "Bob()" : Hello
"Bob()" -> "This is very\nlong" as Long
' You can also declare:
' "Bob()" -> Long as "This is very\nlong"
Long --> "Bob()" : ok
@enduml
```



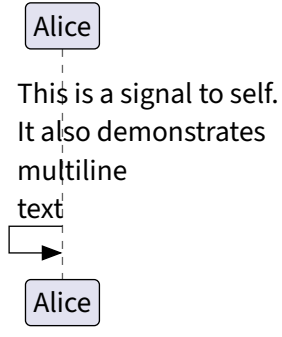
Message to Self

```
@startuml
Alice -> Alice: This is a signal to self.\nIt also demonstrates\nmultiline \ntext
@enduml
```



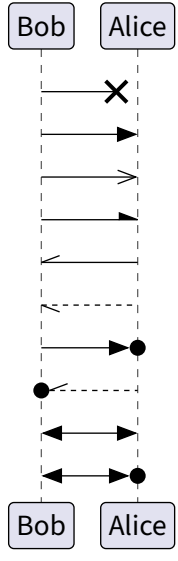
Message to Self (2)

```
@startuml
Alice <- Alice: This is a signal to self.\nIt also demonstrates\nmultiline \ntext
@enduml
```



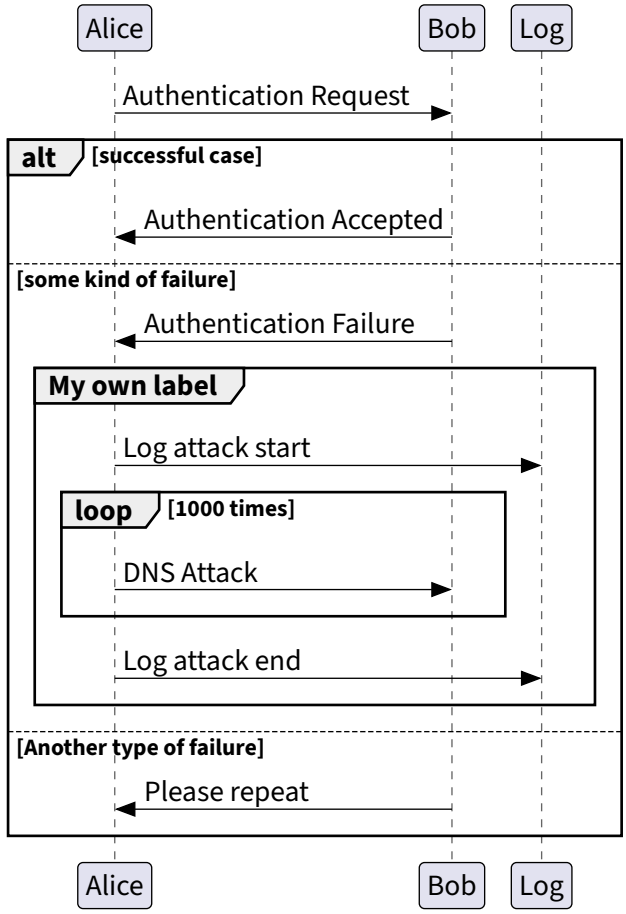
Change arrow style

```
@startuml
Bob ->x Alice
Bob -> Alice
Bob ->> Alice
Bob -\ Alice
Bob \\- Alice
Bob //-- Alice

Bob ->o Alice
Bob o\\-- Alice

Bob <-> Alice
Bob <->o Alice
@enduml
```



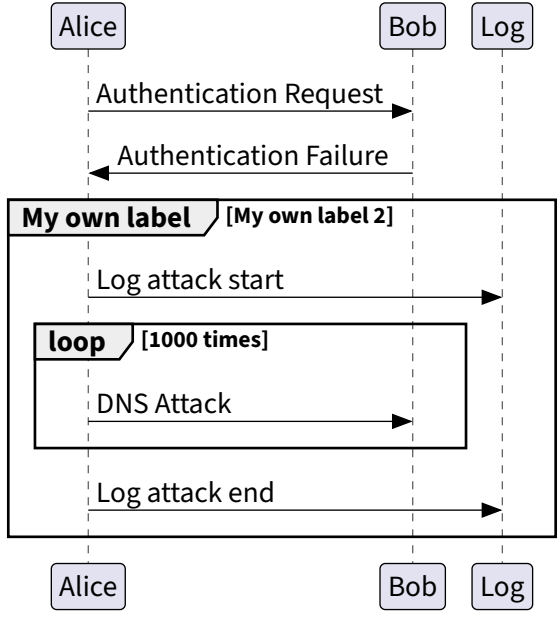
Grouping message

```
@startuml
Alice -> Bob: Authentication Request

alt successful case

    Bob -> Alice: Authentication Accepted

else some kind of failure

    Bob -> Alice: Authentication Failure
    group My own label
    Alice -> Log : Log attack start
        loop 1000 times
            Alice -> Bob: DNS Attack
        end
    Alice -> Log : Log attack end
    end

else Another type of failure

  Bob -> Alice: Please repeat

end
@enduml
```



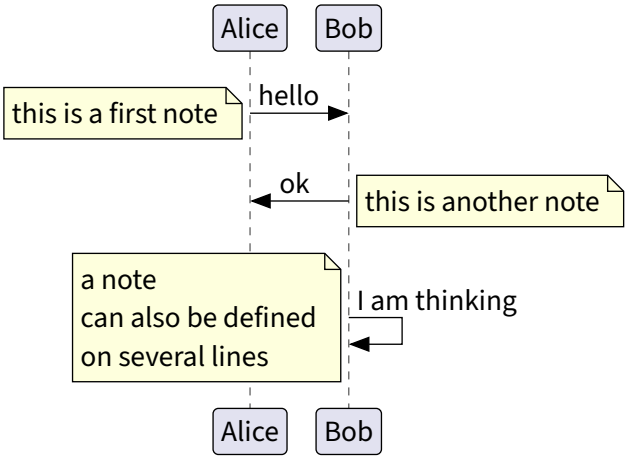
Secondary group label

```
@startuml
Alice -> Bob: Authentication Request
Bob -> Alice: Authentication Failure
group My own label [My own label 2]
    Alice -> Log : Log attack start
    loop 1000 times
        Alice -> Bob: DNS Attack
    end
    Alice -> Log : Log attack end
end
@enduml
```



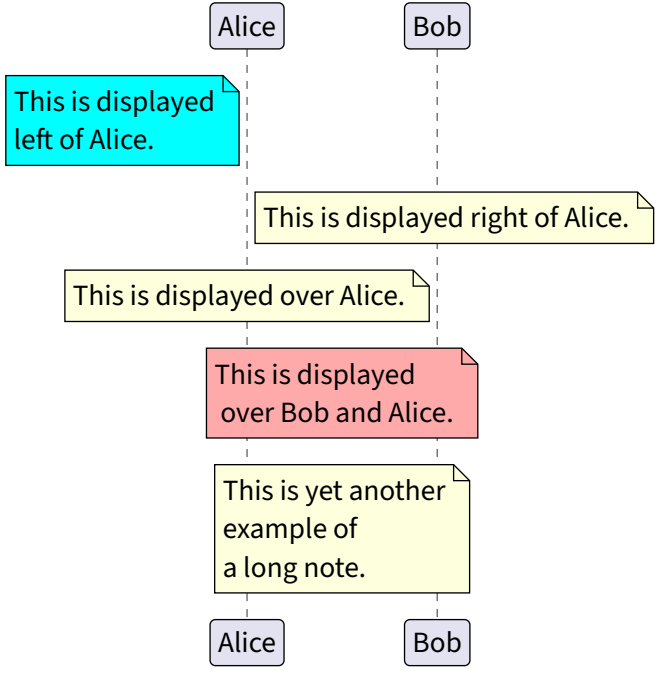
Notes on messages

```
@startuml
Alice->Bob : hello
note left: this is a first note

Bob->Alice : ok
note right: this is another note

Bob->Bob : I am thinking
note left
a note
can also be defined
on several lines
end note
@enduml
```



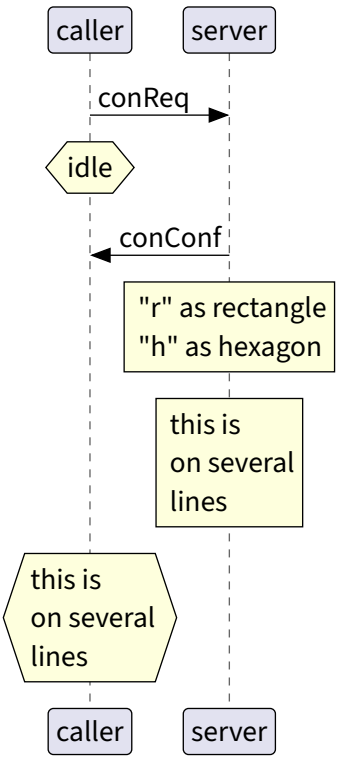
Some other notes

```
@startuml
participant Alice
participant Bob
note left of Alice #aqua
This is displayed
left of Alice.
end note

note right of Alice: This is displayed right of Alice.

note over Alice: This is displayed over Alice.

note over Alice, Bob #FFAAAA: This is displayed\n over Bob and Alice.

note over Bob, Alice
This is yet another
example of
a long note.
end note
@enduml
```



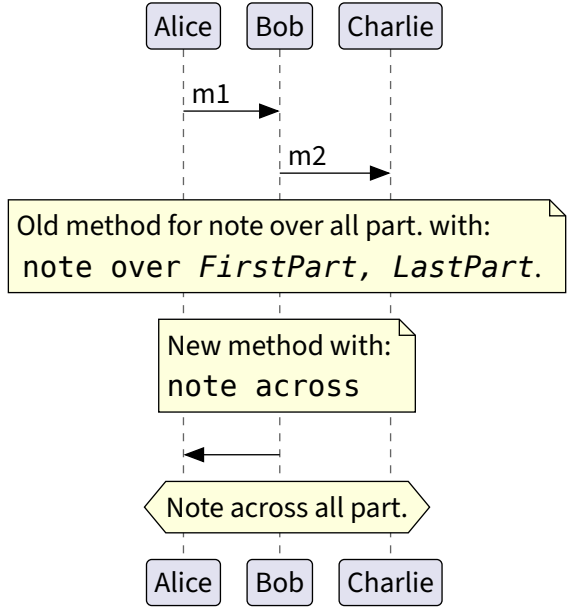
Changing notes shape [hnote, rnote]

```
@startuml
caller -> server : conReq
hnote over caller : idle
caller <- server : conConf
rnote over server
 "r" as rectangle
 "h" as hexagon
endrnote
rnote over server
 this is
 on several
 lines
endrnote
hnote over caller
 this is
 on several
 lines
endhnote
@enduml
```



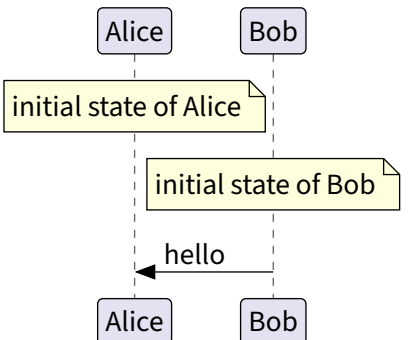
Note over all participants [across]

```
@startuml
Alice->Bob:m1
Bob->Charlie:m2
note over Alice, Charlie: Old method for note over all part. with:\n ""note over //FirstPart, LastPart//"".
note across: New method with:\n""note across""
Bob->Alice
hnote across:Note across all part.
@enduml
```



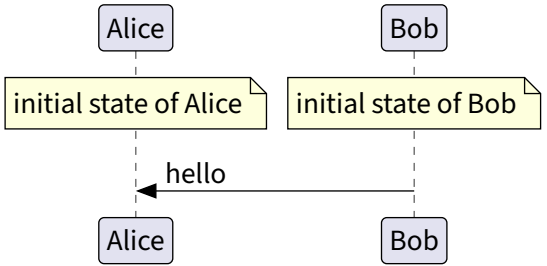
Several notes aligned at the same level [/]

```
@startuml
note over Alice : initial state of Alice
note over Bob : initial state of Bob
Bob -> Alice : hello
@enduml
```



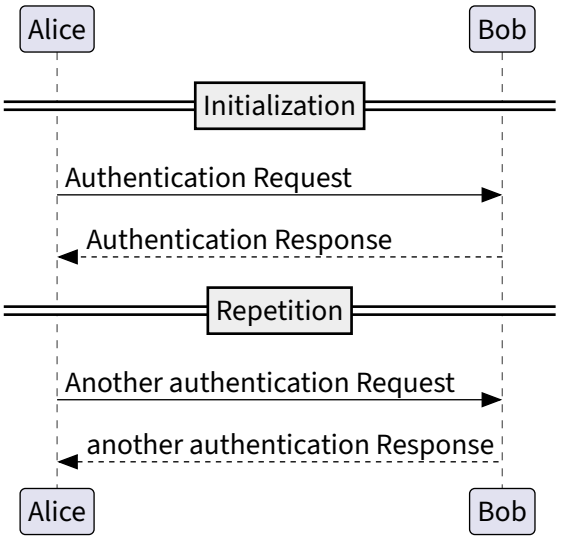
Several notes aligned at the same level [/] (2)

```
@startuml
note over Alice : initial state of Alice
/ note over Bob : initial state of Bob
Bob -> Alice : hello
@enduml
```



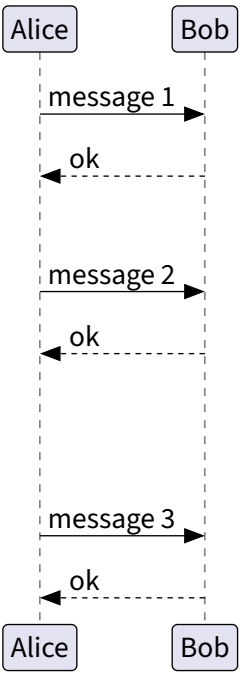
Divider or separator

```
@startuml

== Initialization ==

Alice -> Bob: Authentication Request
Bob --> Alice: Authentication Response

== Repetition ==

Alice -> Bob: Another authentication Request
Alice <-- Bob: another authentication Response

@enduml
```



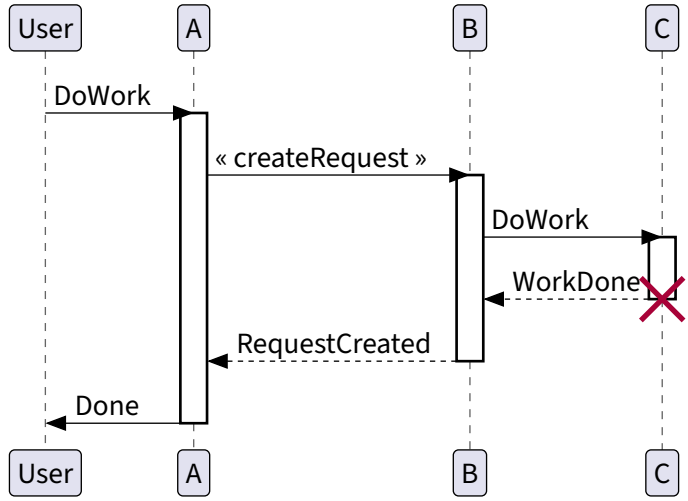
Space

```
@startuml

Alice -> Bob: message 1
Bob --> Alice: ok
|||
Alice -> Bob: message 2
Bob --> Alice: ok
||45||
Alice -> Bob: message 3
Bob --> Alice: ok

@enduml
```



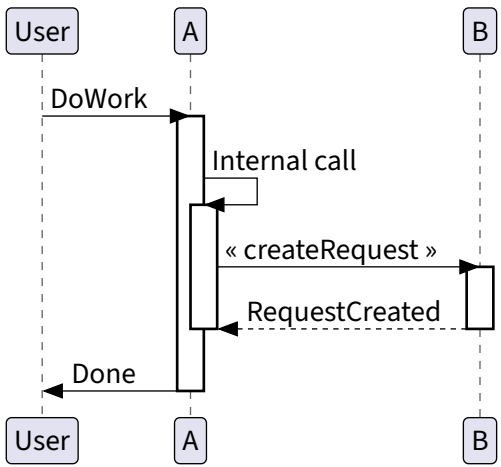
Lifeline Activation and Destruction

```
@startuml
participant User

User -> A: DoWork
activate A

A -> B: << createRequest >>
activate B

B -> C: DoWork
activate C
C --> B: WorkDone
destroy C

B --> A: RequestCreated
deactivate B

A -> User: Done
deactivate A

@enduml
```



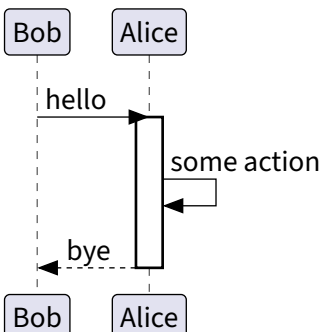
Lifeline Activation and Destruction (2)

```
@startuml
participant User

User -> A: DoWork
activate A #FFBBBB

A -> A: Internal call
activate A #DarkSalmon

A -> B: << createRequest >>
activate B

B --> A: RequestCreated
deactivate B
deactivate A
A -> User: Done
deactivate A

@enduml
```



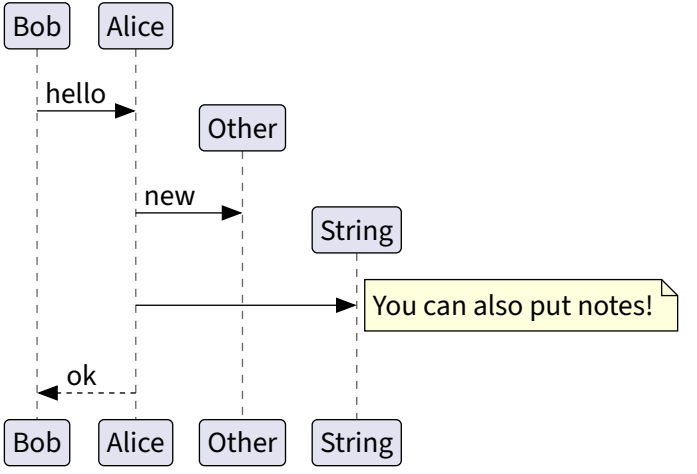
Return

```
@startuml
Bob -> Alice : hello
activate Alice
Alice -> Alice : some action
return bye
@enduml
```



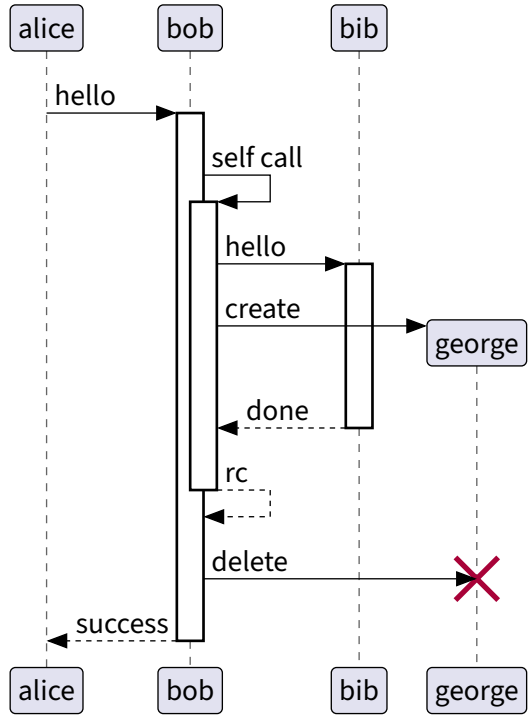
Participant creation

```
@startuml
Bob -> Alice : hello

create Other
Alice -> Other : new

create /'control'/ String
Alice -> String
note right : You can also put notes!

Alice --> Bob : ok

@enduml
```



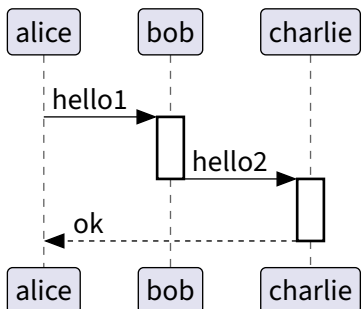
Shortcut syntax for activation, deactivation, creation

```
@startuml
alice -> bob ++ : hello
bob -> bob ++ : self call
bob -> bib ++ /' #005500'/ : hello
bob -> george ** : create
return done
return rc
bob -> george !! : delete
return success
@enduml
```



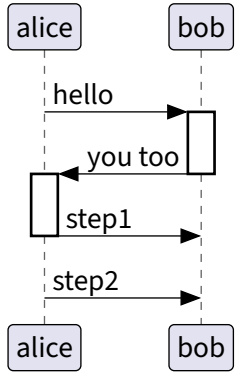
Shortcut syntax for activation, deactivation, creation (2)

```
@startuml
alice   ->  bob     ++   : hello1
bob     ->  charlie --++ : hello2
charlie --> alice   --   : ok
@enduml
```



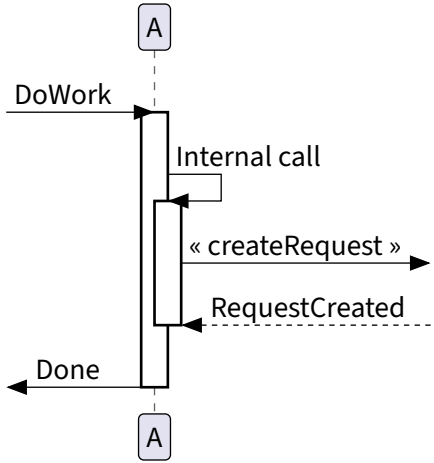
Shortcut syntax for activation, deactivation, creation (3)

```
@startuml
alice -> bob   ++ /'#gold'/: hello
bob   -> alice --++ /'#gold'/: you too
alice -> bob   --: step1
alice -> bob   : step2
@enduml
@enduml
```



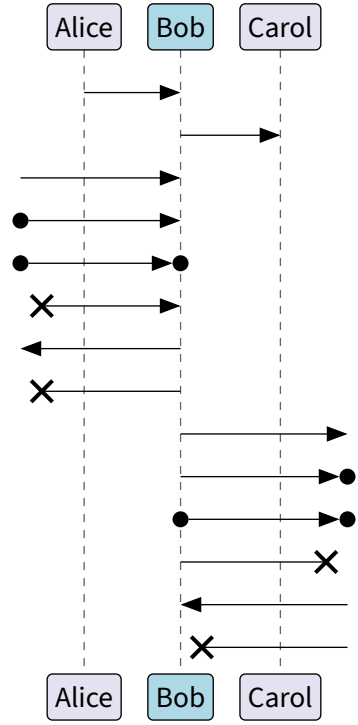
Incoming and outgoing messages

```
@startuml
[-> A: DoWork

activate A

A -> A: Internal call
activate A

A ->] : << createRequest >>

A<--] : RequestCreated
deactivate A
[<- A: Done
deactivate A
@enduml
```



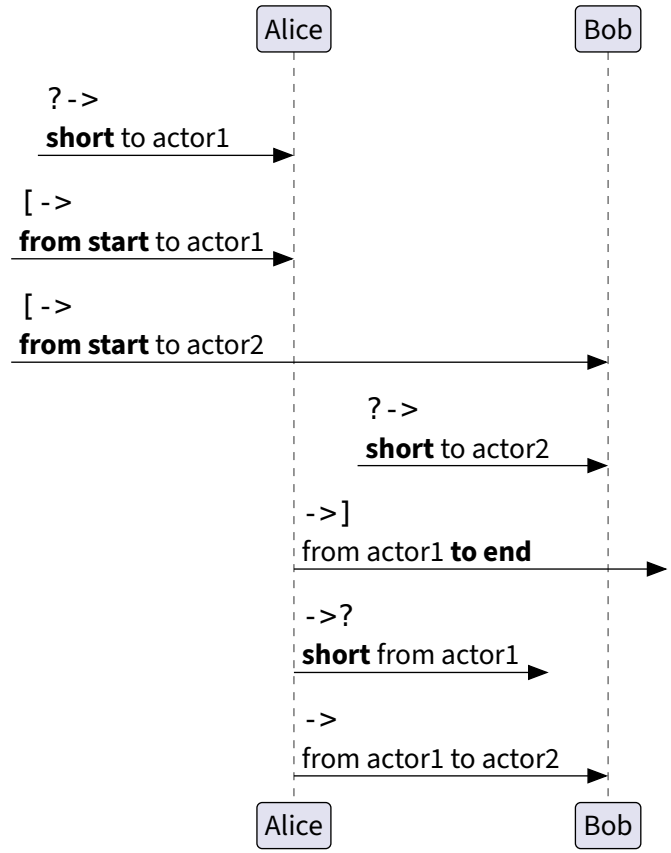
Incoming and outgoing messages (2)

```
@startuml
participant Alice
participant Bob #lightblue
Alice -> Bob
Bob -> Carol
...
[-> Bob
[o-> Bob
[o->o Bob
[x-> Bob
...
[<- Bob
[x<- Bob
...
Bob ->]
Bob ->o]
Bob o->o]
Bob ->x]
...
Bob <-]
Bob x<-]

@enduml
```



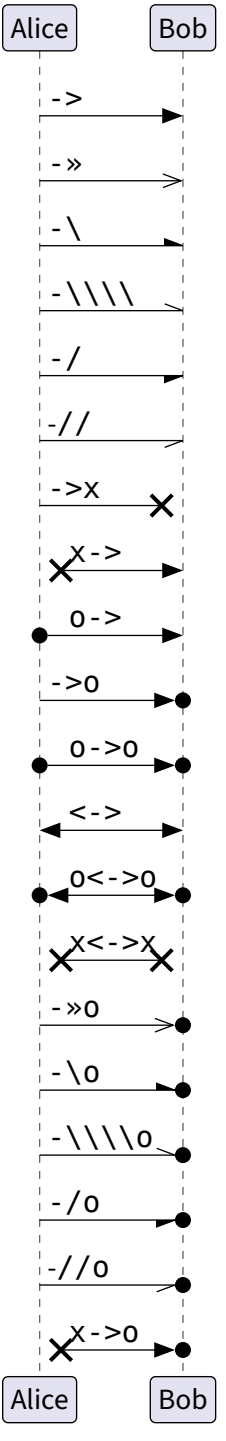
Short arrows for incoming and outgoing messages

```
@startuml
?-> Alice    : ""?->""\n**short** to actor1
[-> Alice    : ""[->""\n**from start** to actor1
[-> Bob      : ""[->""\n**from start** to actor2
?-> Bob      : ""?->""\n**short** to actor2
Alice ->]    : ""->]""\nfrom actor1 **to end**
Alice ->?    : ""->?""\n**short** from actor1
Alice -> Bob : ""->"" \nfrom actor1 to actor2
@enduml
```



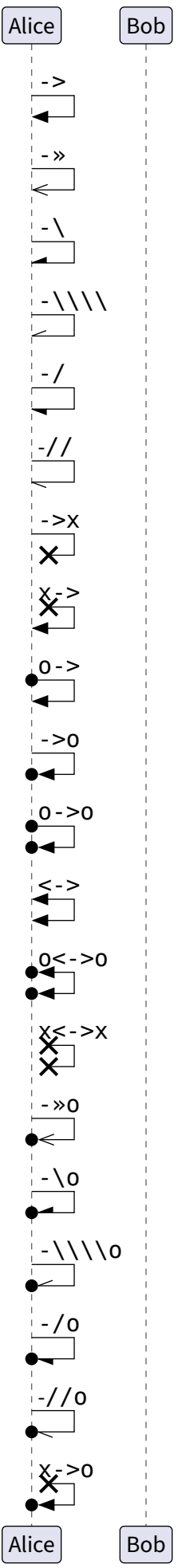
Normal arrow

```
@startuml
participant Alice as a
participant Bob   as b
a ->     b : ""->   ""
a ->>    b : ""->>  ""
a -\     b : ""-\   ""
a -\\    b : ""-\\\\""
a -/     b : ""-/   ""
a -//    b : ""-//  ""
a ->x    b : ""->x  ""
a x->    b : ""x->  ""
a o->    b : ""o->  ""
a ->o    b : ""->o  ""
a o->o   b : ""o->o ""
a <->    b : ""<->  ""
a o<->o  b : ""o<->o""
a x<->x  b : ""x<->x""
a ->>o   b : ""->>o ""
a -\o    b : ""-\o  ""
a -\\o   b : ""-\\\\o""
a -/o    b : ""-/o  ""
a -//o   b : ""-//o ""
a x->o   b : ""x->o ""
@enduml
```



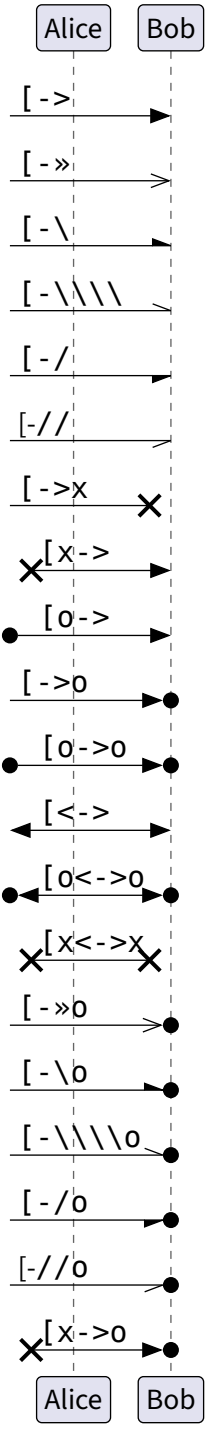
Itself arrow

```
@startuml
participant Alice as a
participant Bob   as b
a ->     a : ""->   ""
a ->>    a : ""->>  ""
a -\     a : ""-\   ""
a -\\    a : ""-\\\\""
a -/     a : ""-/   ""
a -//    a : ""-//  ""
a ->x    a : ""->x  ""
a x->    a : ""x->  ""
a o->    a : ""o->  ""
a ->o    a : ""->o  ""
a o->o   a : ""o->o ""
a <->    a : ""<->  ""
a o<->o  a : ""o<->o""
a x<->x  a : ""x<->x""
a ->>o   a : ""->>o ""
a -\o    a : ""-\o  ""
a -\\o   a : ""-\\\\o""
a -/o    a : ""-/o  ""
a -//o   a : ""-//o ""
a x->o   a : ""x->o ""
@enduml
```



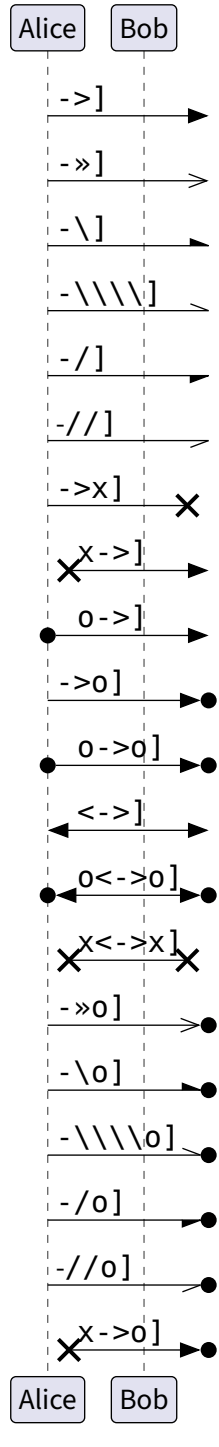
Incoming messages (with '|')

```
@startuml
participant Alice as a
participant Bob   as b
[->      b : ""[->   ""
[->>     b : ""[->>  ""
[-\      b : ""[-\   ""
[-\\     b : ""[-\\\\""
[-/      b : ""[-/   ""
[-//     b : ""[-//  ""
[->x     b : ""[->x  ""
[x->     b : ""[x->  ""
[o->     b : ""[o->  ""
[->o     b : ""[->o  ""
[o->o    b : ""[o->o ""
[<->     b : ""[<->  ""
[o<->o   b : ""[o<->o""
[x<->x   b : ""[x<->x""
[->>o    b : ""[->>o ""
[-\o     b : ""[-\o  ""
[-\\o    b : ""[-\\\\o""
[-/o     b : ""[-/o  ""
[-//o    b : ""[-//o ""
[x->o    b : ""[x->o ""
@enduml
```



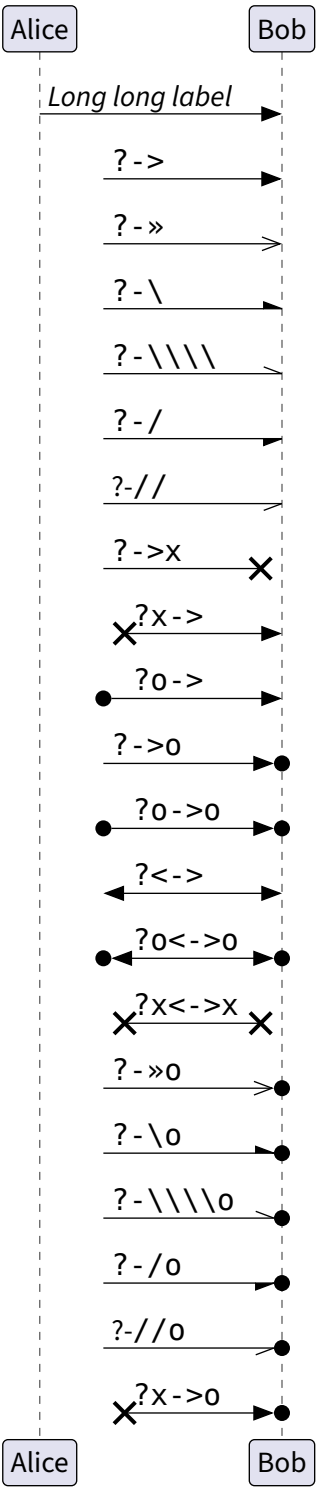
Outgoing messages (with '|')

```
@startuml
participant Alice as a
participant Bob   as b
a ->]      : ""->]   ""
a ->>]     : ""->>]  ""
a -\]      : ""-\]   ""
a -\\]     : ""-\\\\]""
a -/]      : ""-/]   ""
a -//]     : ""-//]  ""
a ->x]     : ""->x]  ""
a x->]     : ""x->]  ""
a o->]     : ""o->]  ""
a ->o]     : ""->o]  ""
a o->o]    : ""o->o] ""
a <->]     : ""<->]  ""
a o<->o]   : ""o<->o]""
a x<->x]   : ""x<->x]""
a ->>o]    : ""->>o] ""
a -\o]     : ""-\o]  ""
a -\\o]    : ""-\\\\o]""
a -/o]     : ""-/o]  ""
a -//o]    : ""-//o] ""
a x->o]    : ""x->o] ""
@enduml
```



Short incoming (with ‘?’)

```
@startuml
participant Alice as a
participant Bob   as b
a ->     b : //Long long label//
?->      b : ""?->   ""
?->>     b : ""?->>  ""
?-\      b : ""?-\   ""
?-\\     b : ""?-\\\\""
?-/      b : ""?-/   ""
?-//     b : ""?-//  ""
?->x     b : ""?->x  ""
?x->     b : ""?x->  ""
?o->     b : ""?o->  ""
?->o     b : ""?->o  ""
?o->o    b : ""?o->o ""
?<->     b : ""?<->  ""
?o<->o   b : ""?o<->o""
?x<->x   b : ""?x<->x""
?->>o    b : ""?->>o ""
?-\o     b : ""?-\o  ""
?-\\o    b : ""?-\\\\o ""
?-/o     b : ""?-/o  ""
?-//o    b : ""?-//o ""
?x->o    b : ""?x->o ""
@enduml
```



Short outgoing (with '?')

```
@startuml
participant Alice as a
participant Bob   as b
a ->     b : //Long long label//
a ->?      : ""->?   ""
a ->>?     : ""->>?  ""
a -\?      : ""-\?   ""
a -\\?     : ""-\\\\?""
a -/?      : ""-/?   ""
a -//?     : ""-//?  ""
a ->x?     : ""->x?  ""
a x->?     : ""x->?  ""
a o->?     : ""o->?  ""
a ->o?     : ""->o?  ""
a o->o?    : ""o->o? ""
a <->?     : ""<->?  ""
a o<->o?   : ""o<->o?""
a x<->x?   : ""x<->x?""
a ->>o?    : ""->>o? ""
a -\o?     : ""-\o?  ""
a -\\o?    : ""-\\\\o?""
a -/o?     : ""-/o?  ""
a -//o?    : ""-//o? ""
a x->o?    : ""x->o? ""
@enduml
```