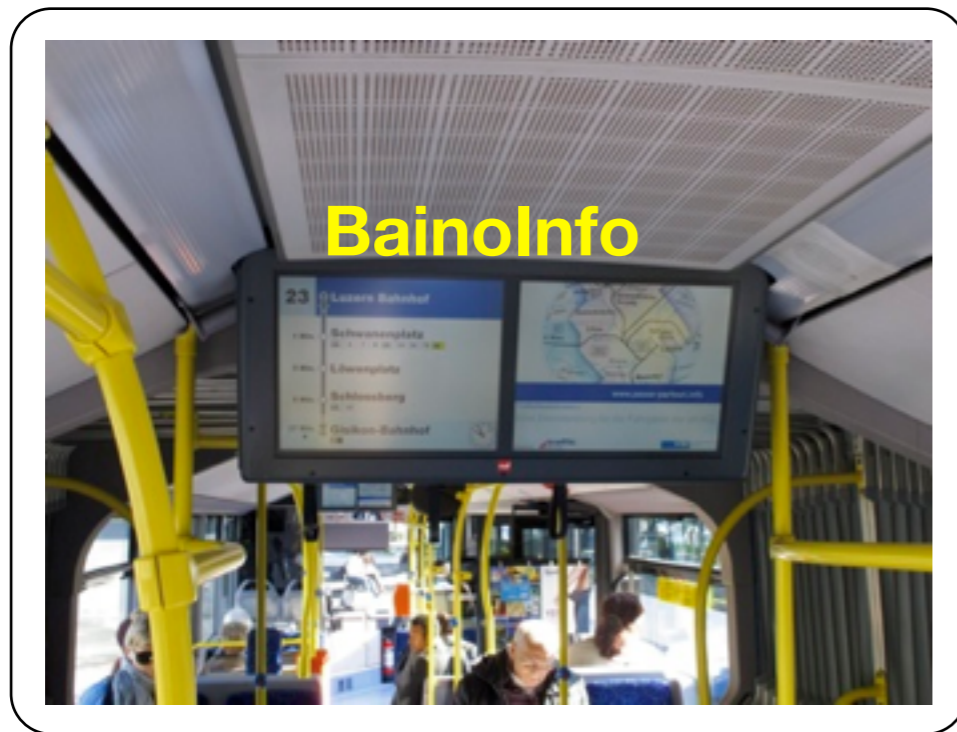# Open Reactive Dispatch

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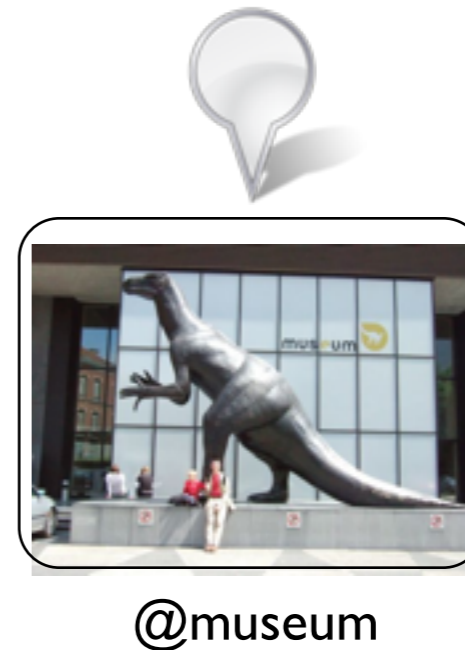
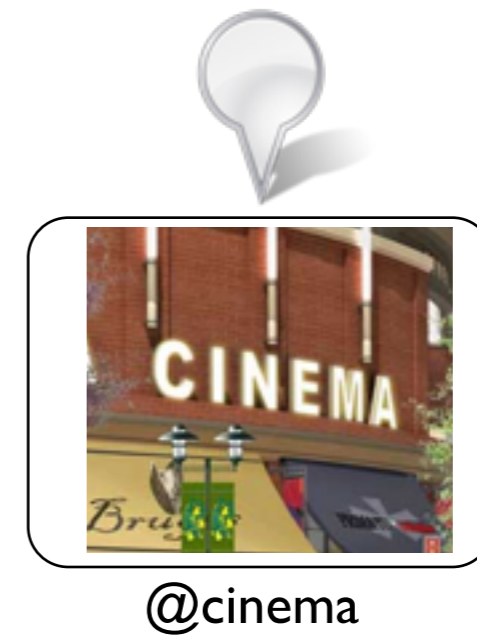# Context-driven Applications

Scenario: An onboard digital platform

Context-driven Applications

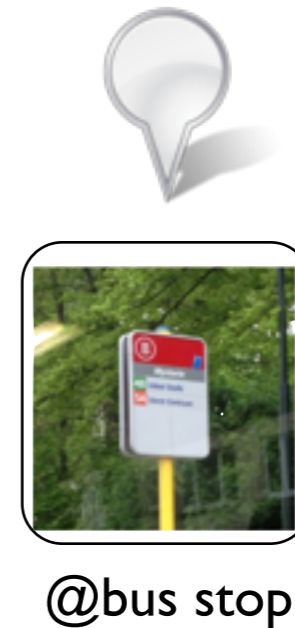Scenario: An onboard digital platform

BainoInfo

@museum

Context-driven Applications

Scenario: An onboard digital platform

@cinema

Context-driven Applications

Scenario: An onboard digital platform
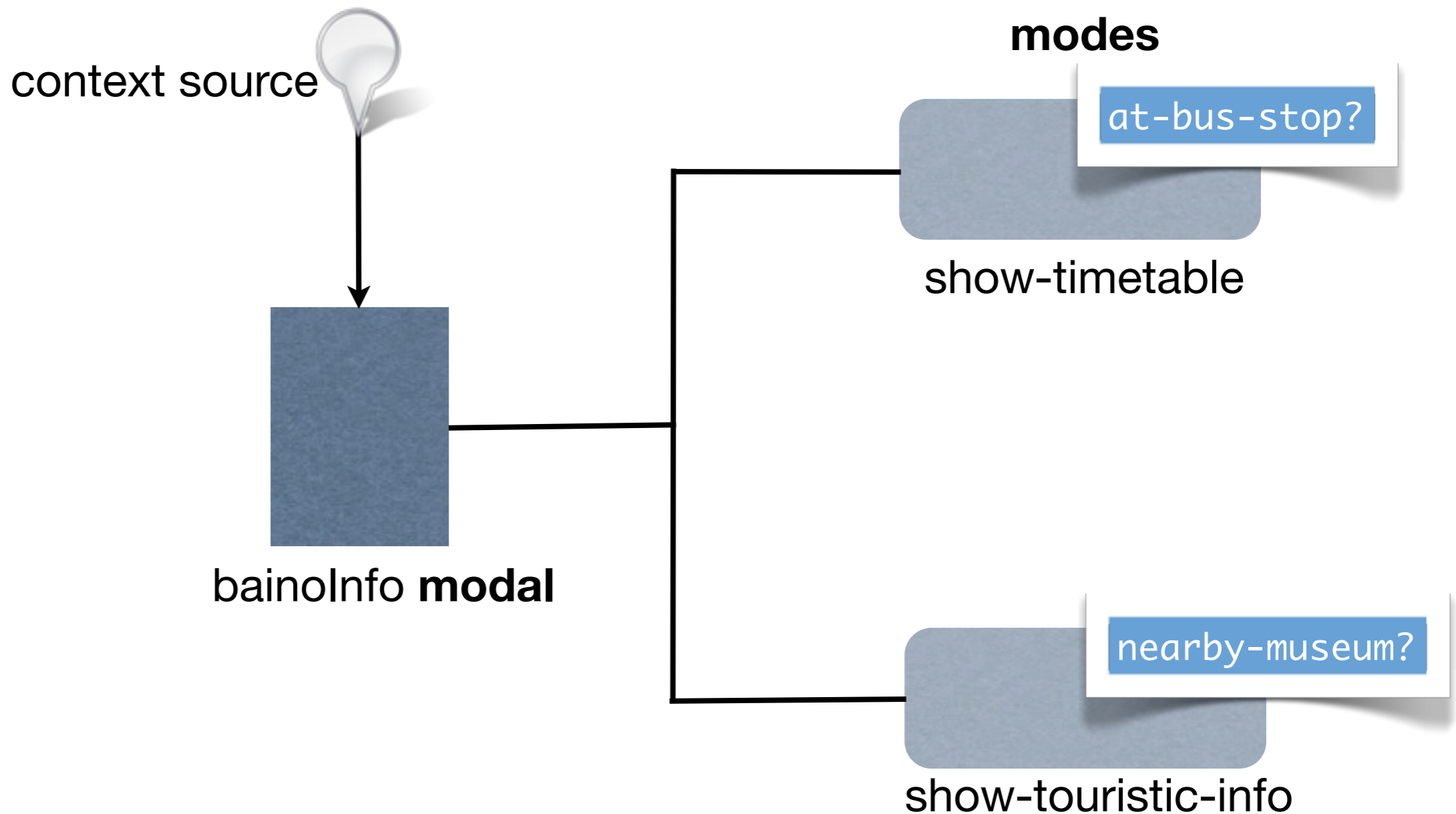

BainoInfo

@bus stop

Need for:

- Contextual dispatch.

- Reactive and eventual dispatch.

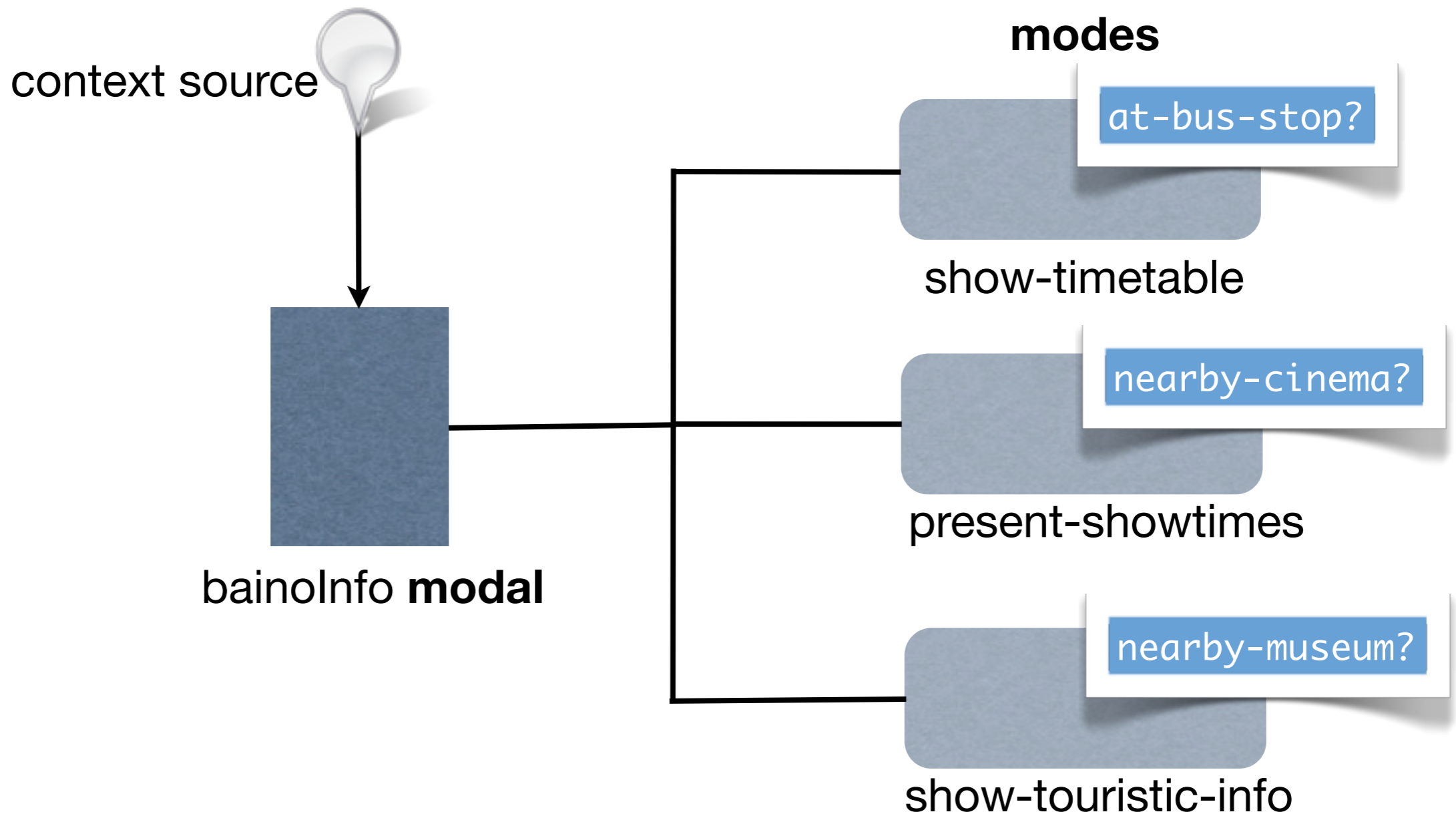- Contextual-constrained executions.

Open Reactive Dispatch

- **Mode:** represents a context-dependent behavioural variation.

- **Modal:** an extensible composition unit of related modes.

Open Reactive Dispatch

- **Mode:** represents a context-dependent behavioural variation.

- **Modal:** an extensible composition unit of related modes.

context source

modes

`at-bus-stop?`

show-timetable

`nearby-cinema?`

present-showtimes

bainoInfo **modal**

`nearby-museum?`

show-touristic-info

Contextual and Open Reactive Dispatching

modes

✔

bus location

@museum

`nearby-museum?`

show-touristic-info

`(bainoinfo)`

bainoinfo **modal**

`at-bus-stop?`

show-timetable

Contextual and Open Reactive Dispatching

bus location

@bus stop

modes

nearby-museum?

show-touristic-info

bainoinfo **modal**

at-bus-stop?

✓

show-timetable
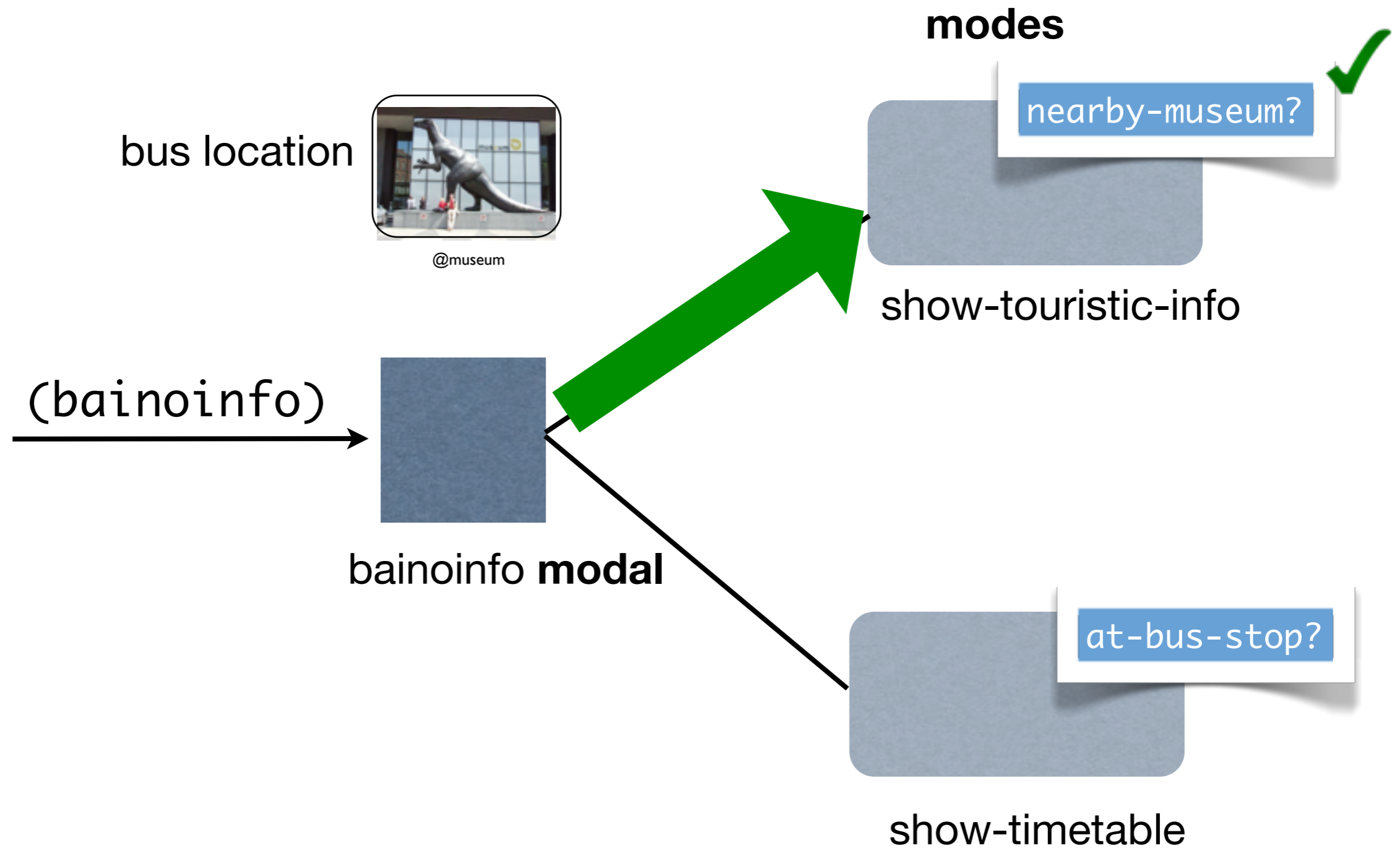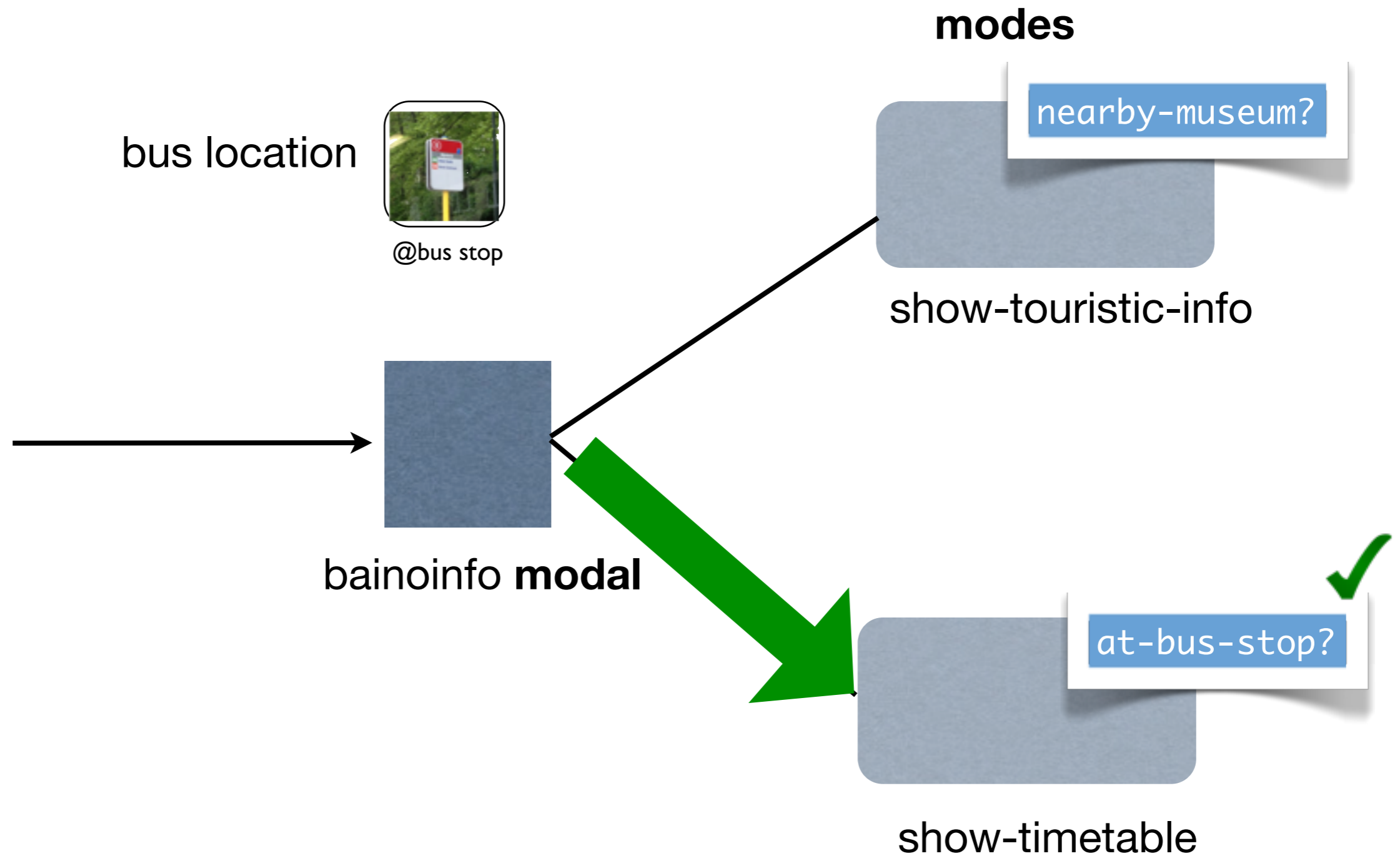
Open Reactive Dispatch in Flute

```
(define bus-location (ctx-event))

(define bainoinfo (modal (bus-location)
  (define bus-company "BainomugiStar")
  (define city        "Kampala")
  (define language    "EN")))
```

context source definition

modal definition

Open Reactive Dispatch in Flute

Modes are added to a modal as required.

```
(mode (bainoinfo)
   (at-bus-stop? bus-location)
   (suspend resume deferred)
   (lambda ()
      (show bus-company)
      (show city)
      (show (get-stop-name))
      (show (get-timetable))
      ...))
```

context predicate

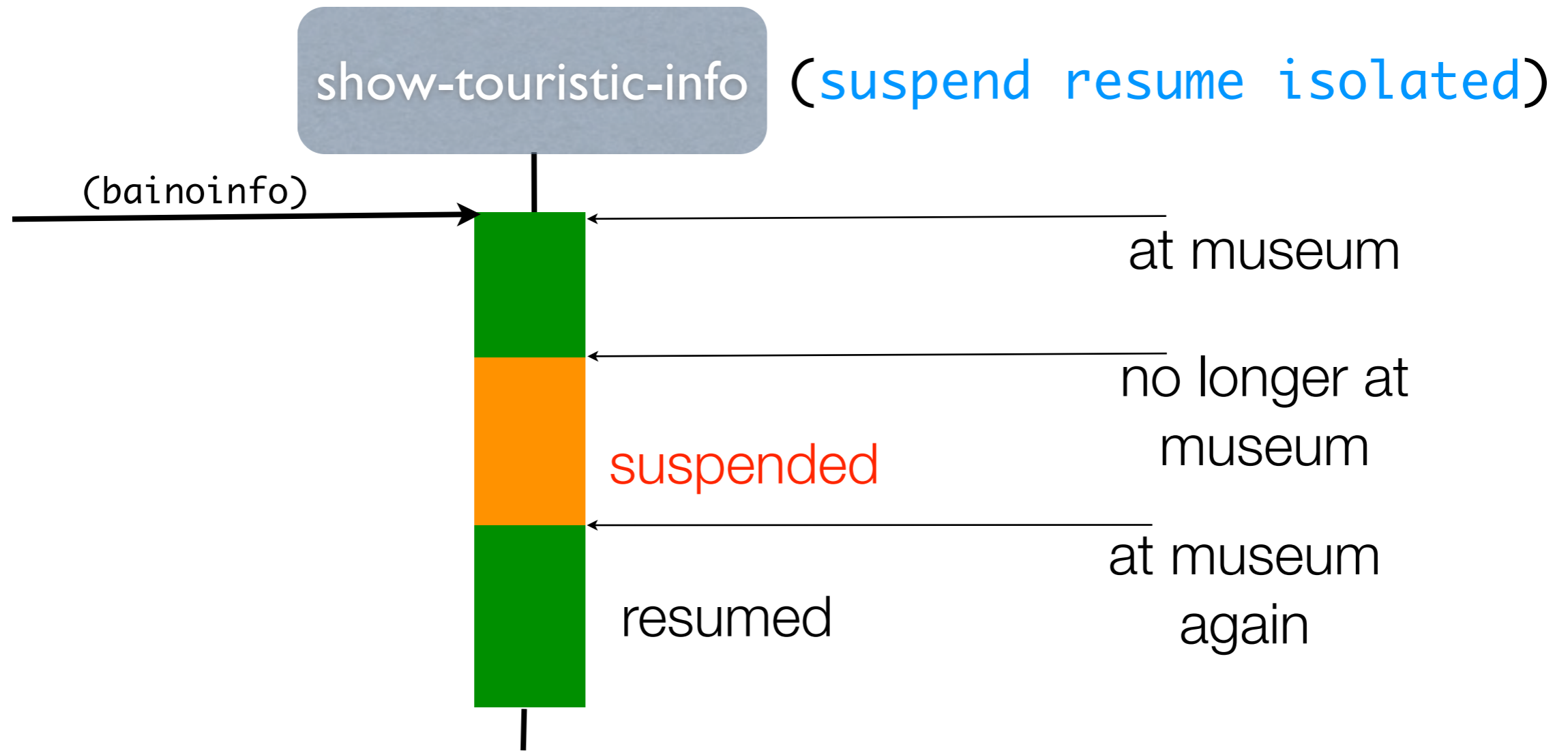interruption, resumption, and scoping strategies

Open Reactive Dispatch in Flute
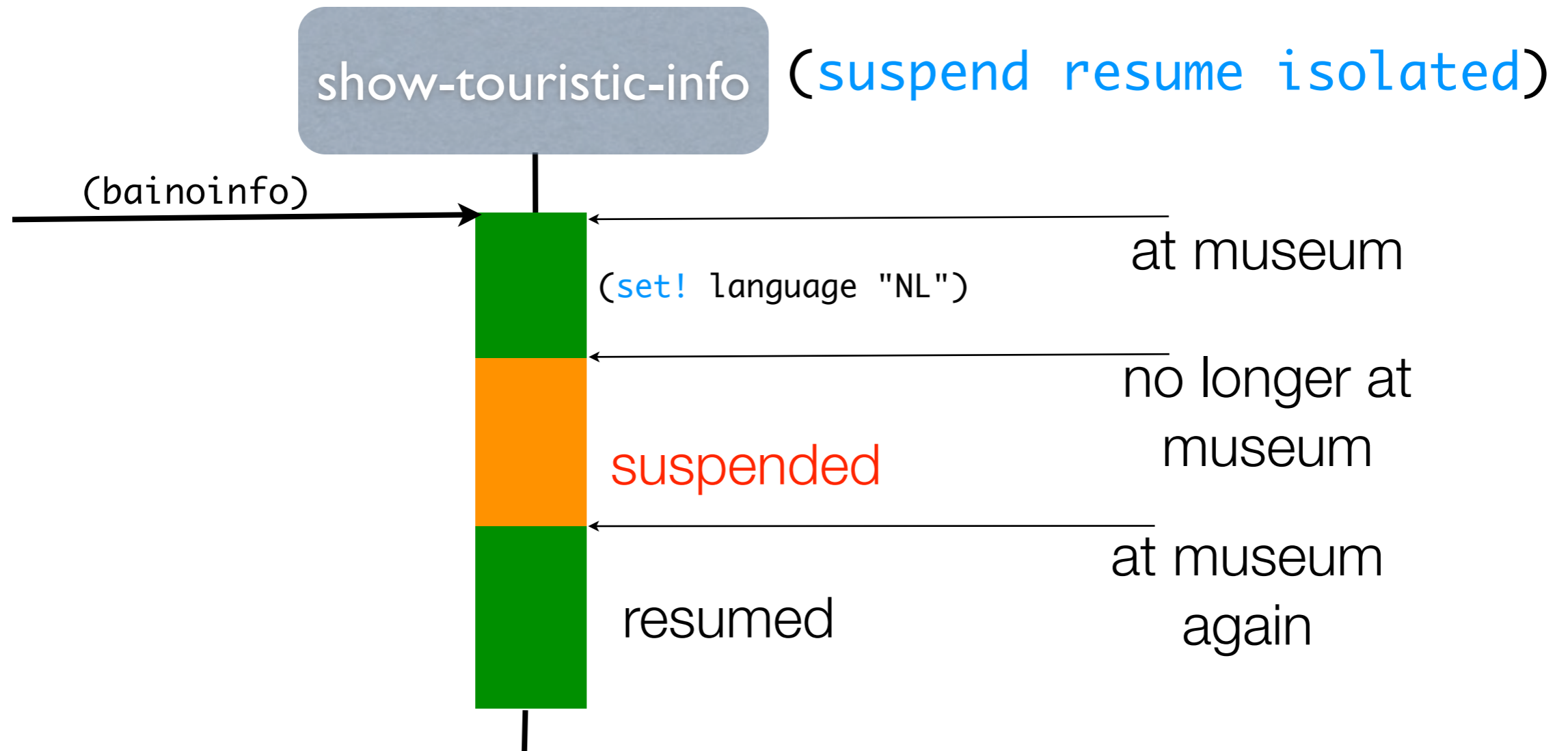
Modes are added to a modal at runtime.

```
(mode (bainoinfo)
  (at-bus-stop? b
  (suspend resume
  (lambda ()
    (show bus-com
    (show city)
    (show (get-st
    (show (get-ti
    ...))
```

```
(mode (bainoinfo)
  (nearby-museum? bus-location)
  (suspend resume isolated)
  (lambda ()
    (show bus-company)
    (show city)
    (set! language "NL")
    (show (get-museum-name))
    (show (museum-attractions))
    ...))
```

Contextual-constrained Executions

show-touristic-info (suspend resume isolated)

(bainoinfo)

at museum

no longer at museum

suspended

at museum again

resumed

Contextual-constrained Executions

show-touristic-info (suspend resume isolated)

(bainoinfo)

at museum

(set! language "NL")

no longer at museum

suspended

at museum again

resumed

Thank You.

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http://soft.vub.ac.be/~ebainomu/Flute/