Modélisation du cycle de vie des Objets

Bases de la Conception Orientée Objet - AS

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UML

Dans ce module

- **Specification**
  - Besoins des utilisateurs (diag. cas d'utilisations)
  - Interaction Utilisateur <-> Logiciel (diag. séquence)
- **Conception**
  - Structure interne du logiciel (diag. classes)
  - État interne du logiciel à l'instant T (diag. objets)
  - **Évolution des objets (diag. états-transitions)**
  - Interaction des objets (diag. séquence)

UML

Les diagrammes

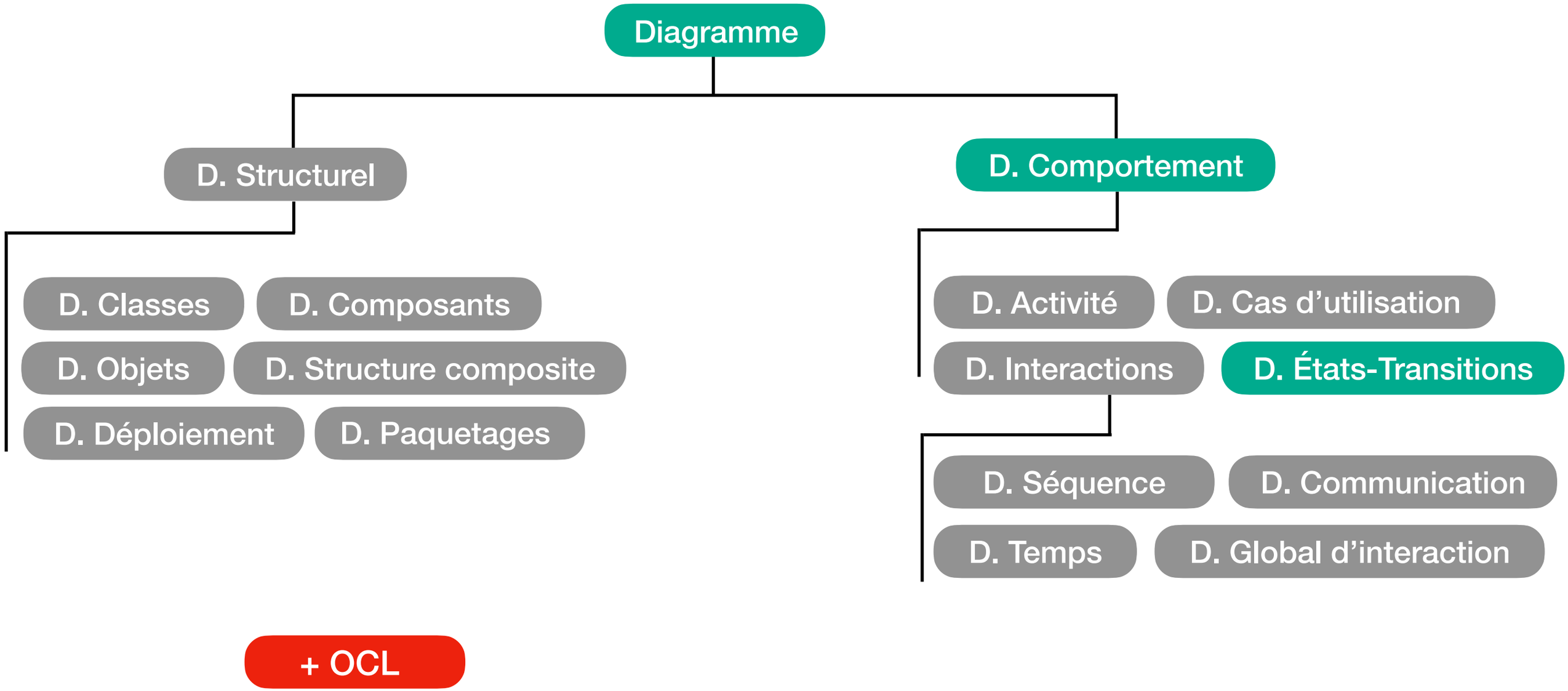

Diagramme d’états-transition

Définition

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Définition

- Représentation du cycle de vie d’une entité (les objets généralement)
- Description des états et des transitions qui les lient, ainsi que les événements qui déclenchent les changements d’états

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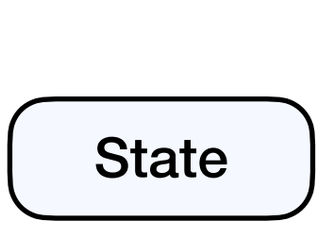

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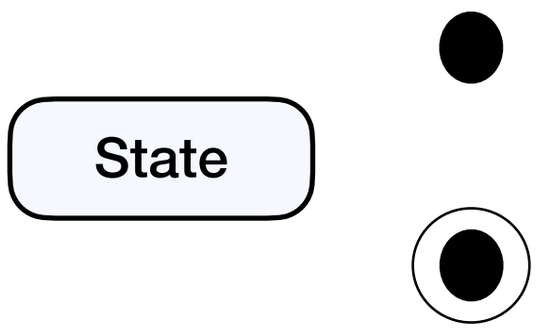

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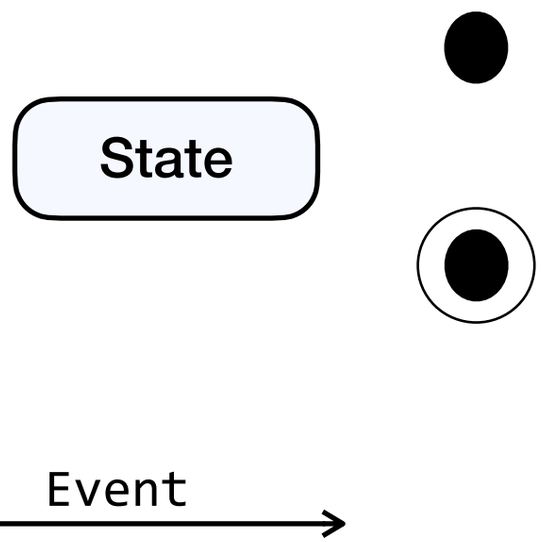
  - État final (destruction de l’objet) :
  - Événement / transition



Etats-Transitions

Événements / transitions

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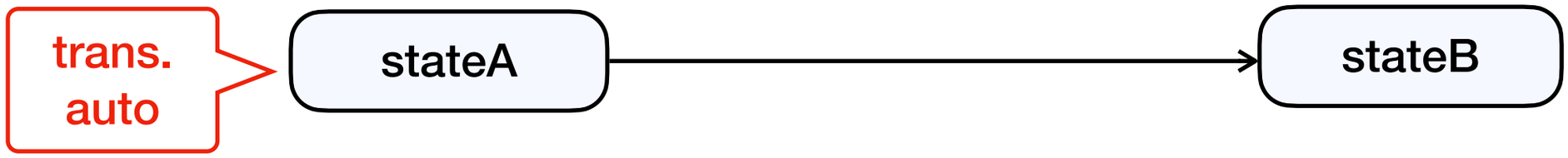
Événements / transitions



Etats-Transitions

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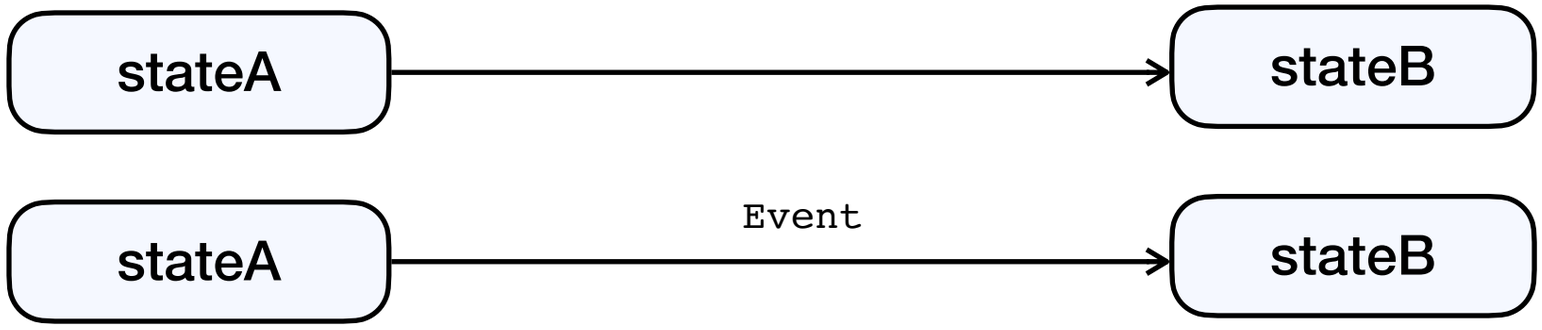
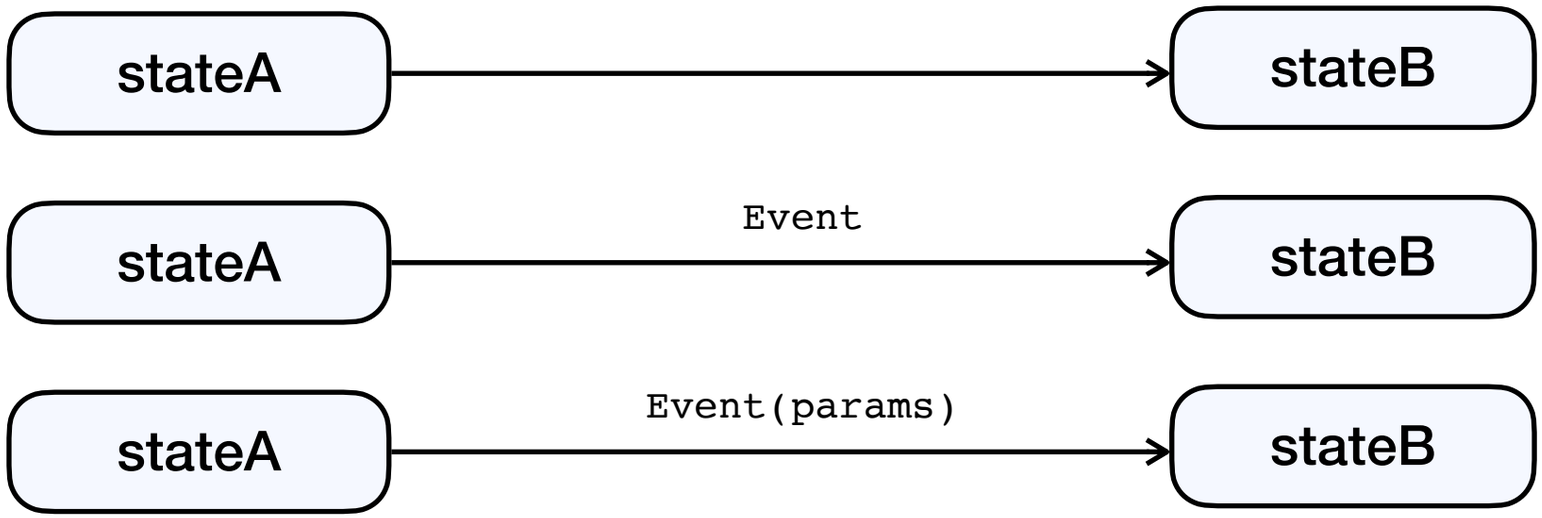


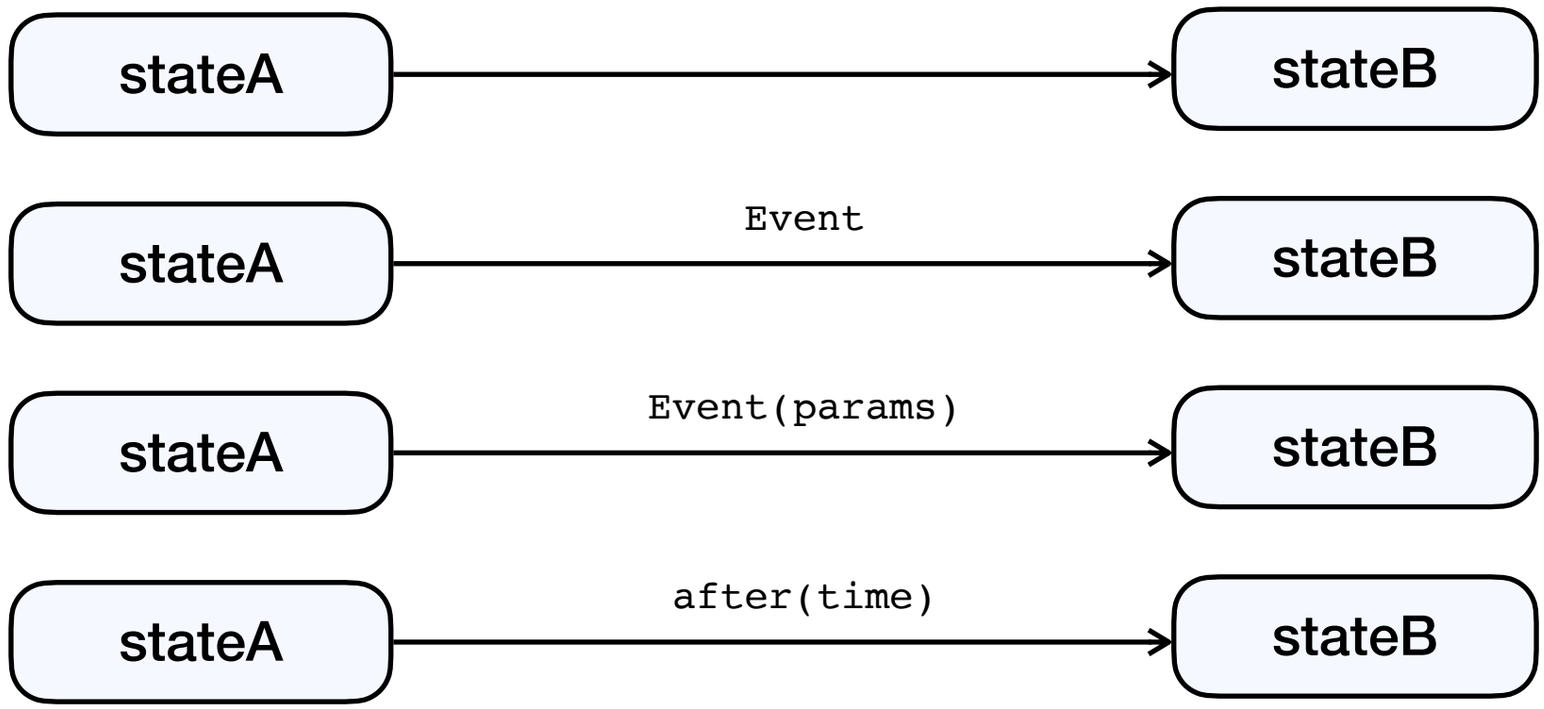
Etats-Transitions

Événements / transitions



Etats-Transitions

Événements / transitions



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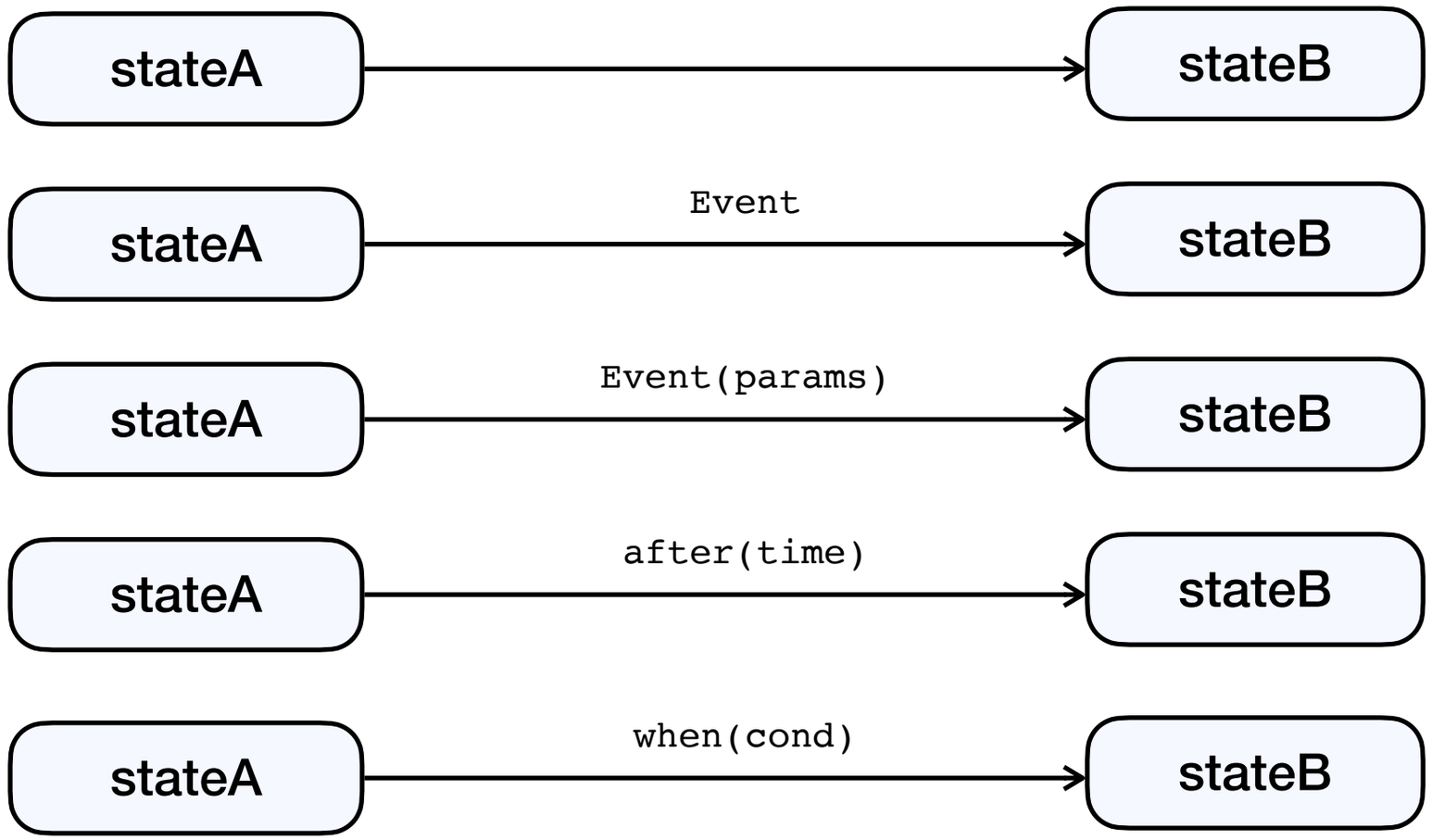
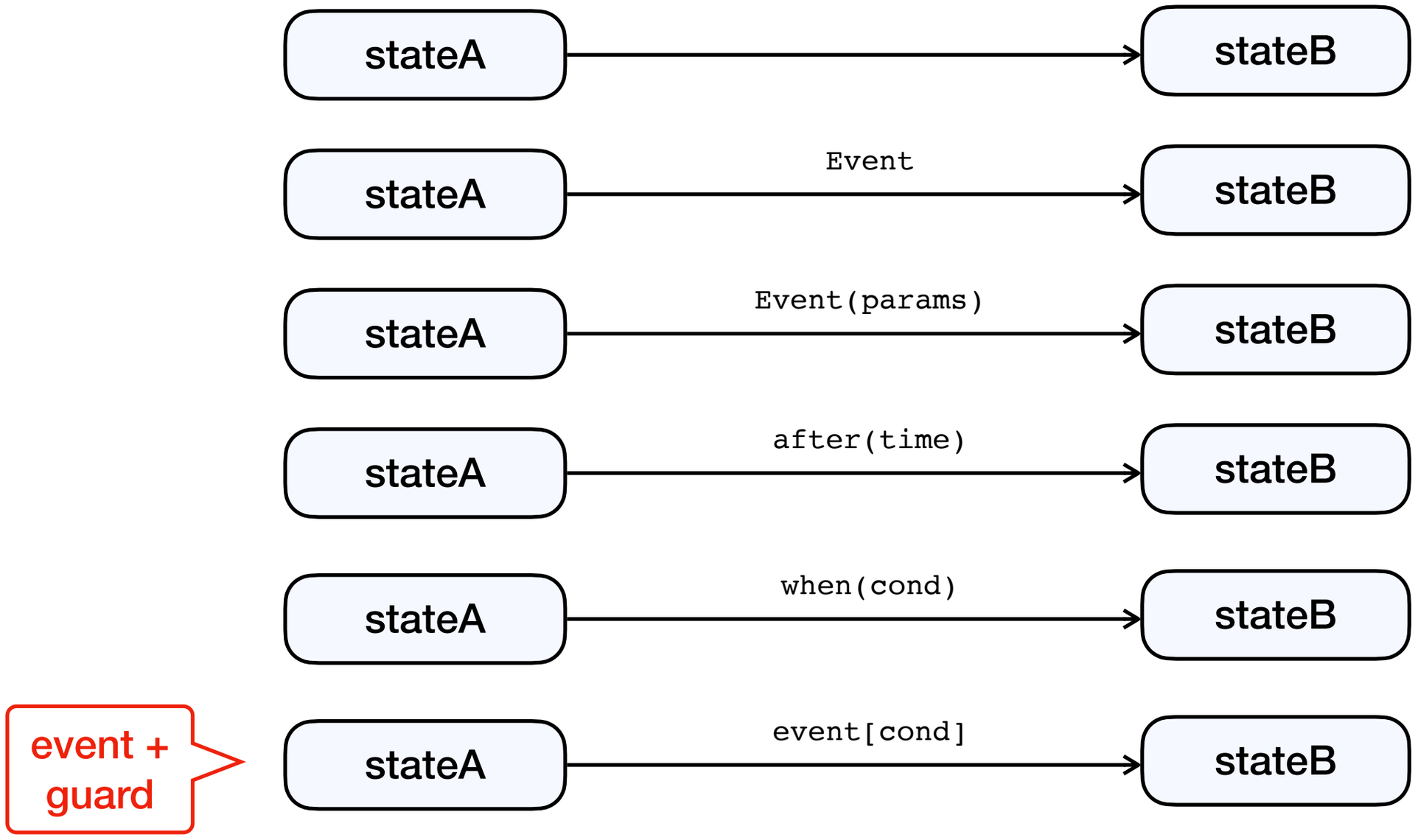


Etats-Transitions

Événements / transitions



Etats d’un objet

Exemple

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Exemple

AlarmClock
alarmON: boolean ringing: boolean alarm: HOUR

Etats d’un objet

Exemple

<<enuremation>> HOUR
6:00 7:00 9:00

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Etats d’un objet

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state10: alarmON = false; ringing = true; alarm = 6:00
state11: alarmON = false; ringing = true; alarm = 7:00
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Etats d’un objet

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Etats d’un objet

Exemple

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state7: alarmON = false; ringing = false; alarm = 6:00
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Etats d’un objet

Exemple

Sonnerie

- `state1: alarmON = true; ringing = true; alarm = 6:00`
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Etats d’un objet

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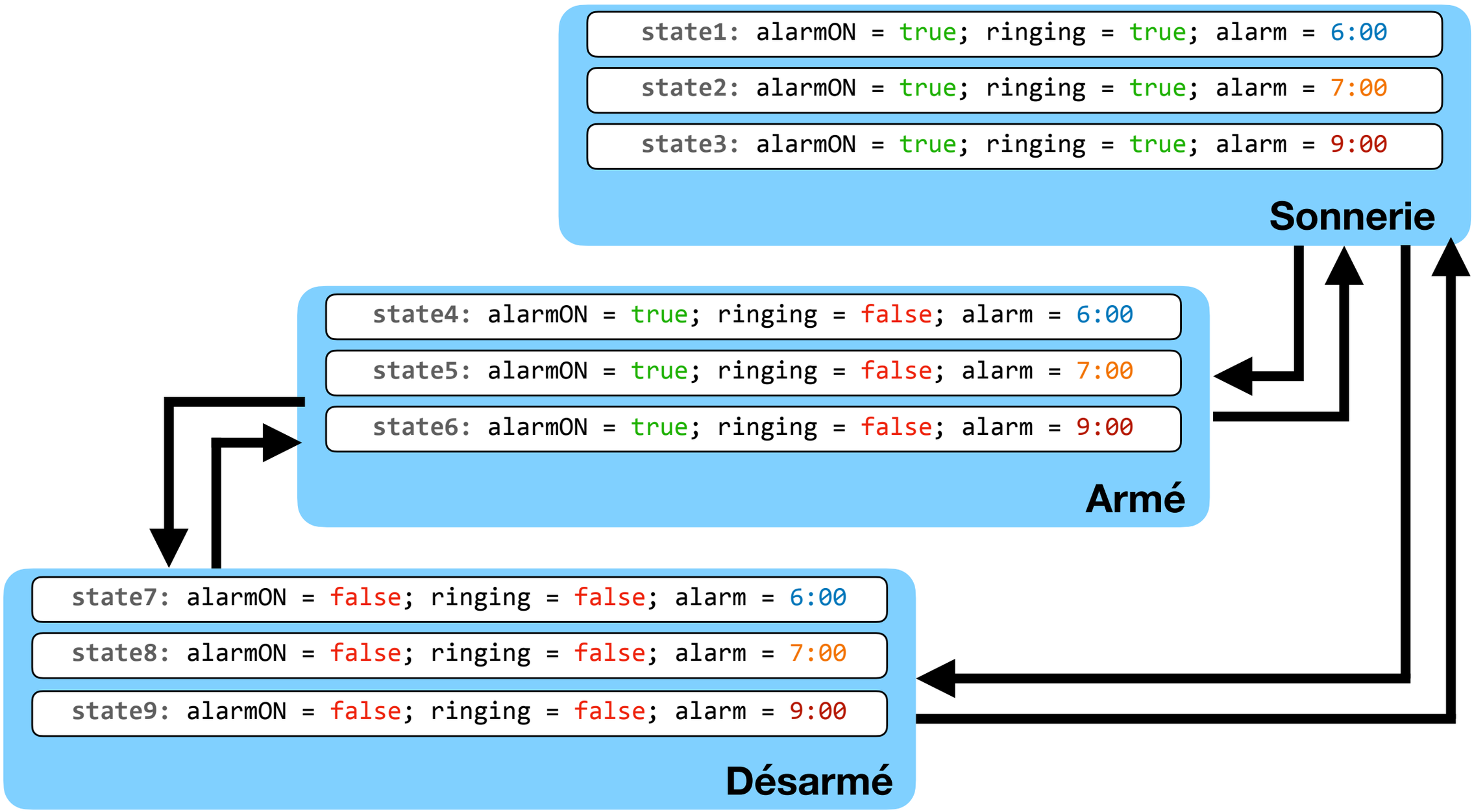
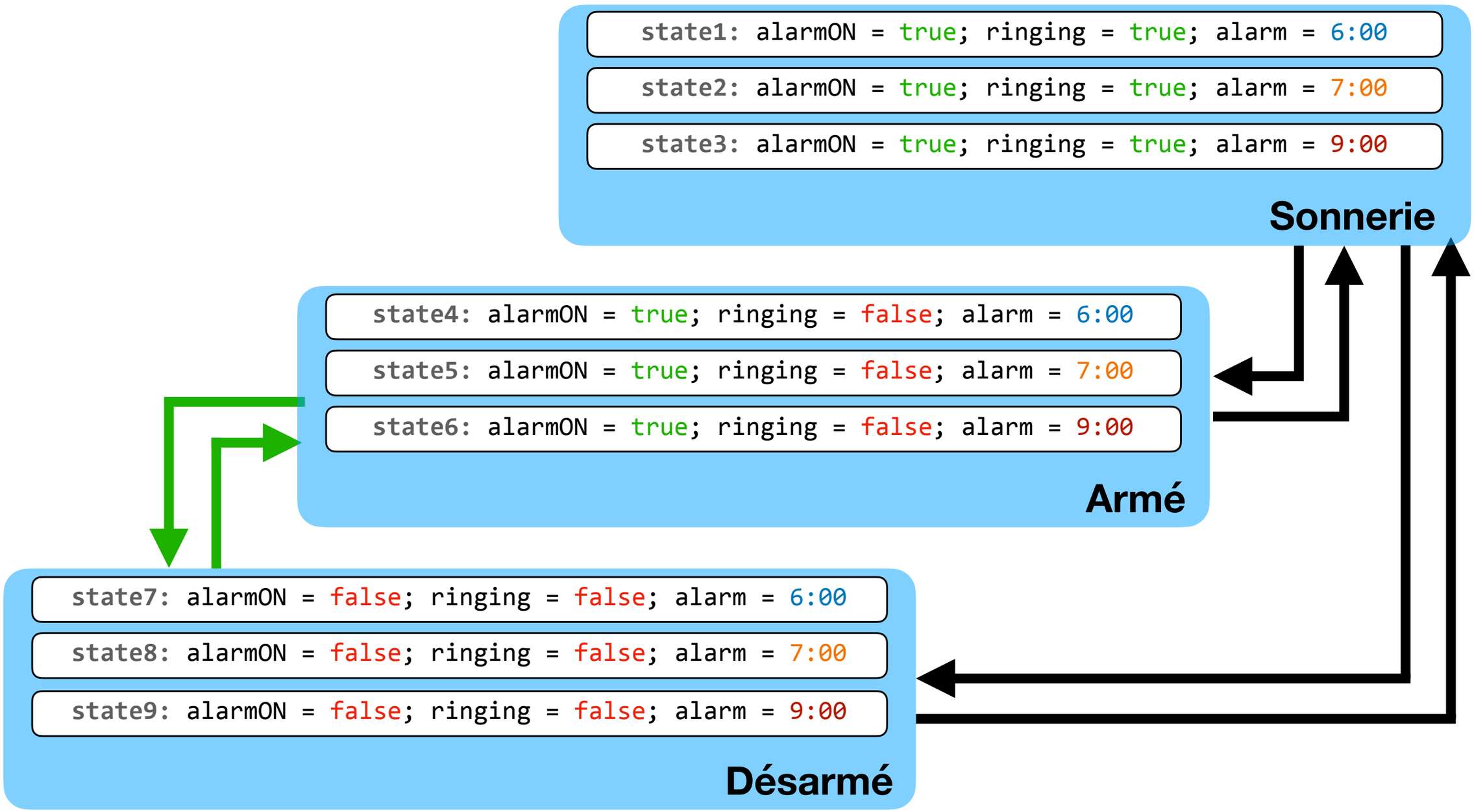
Transitions

Exemple



Transitions

Exemple



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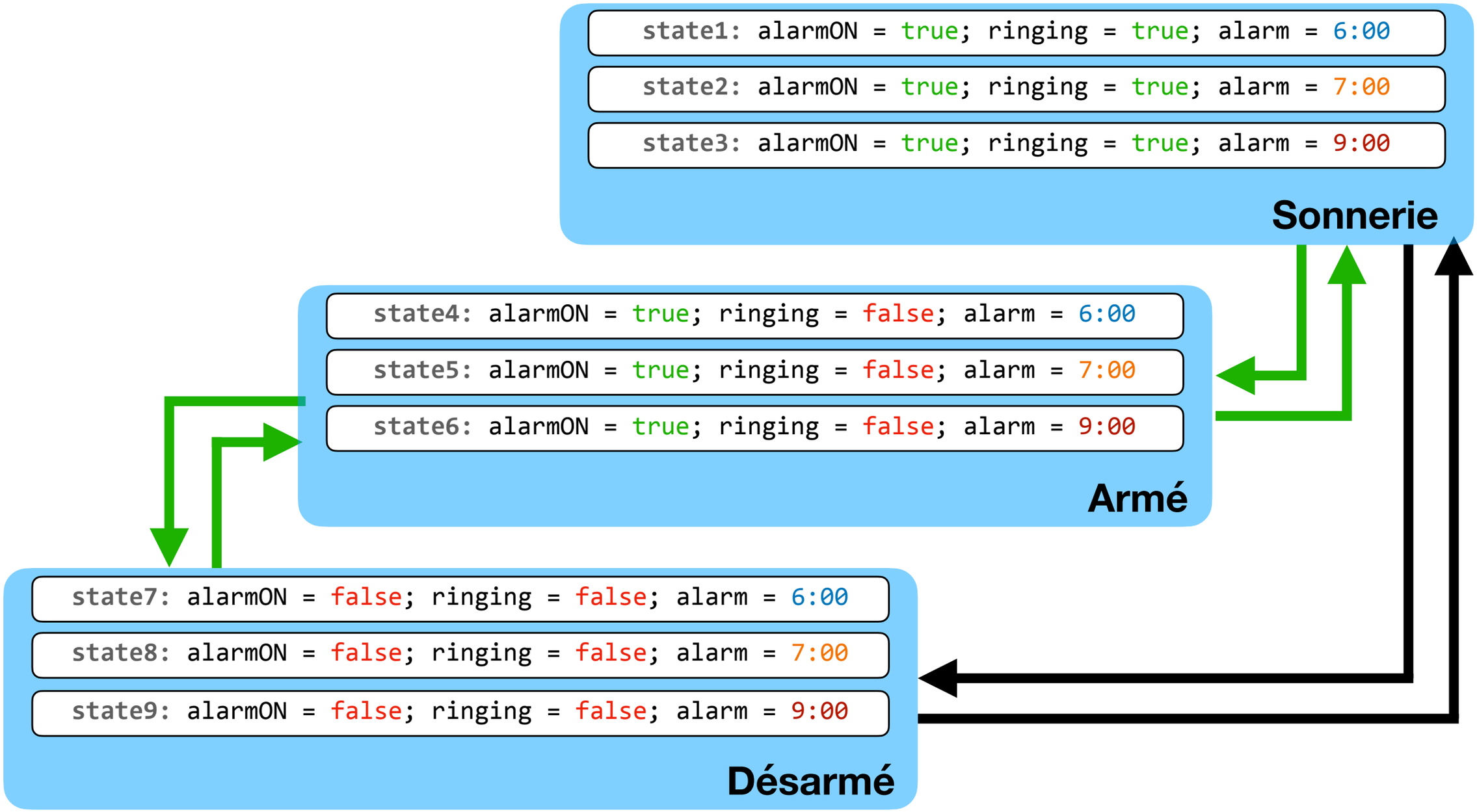

Transitions

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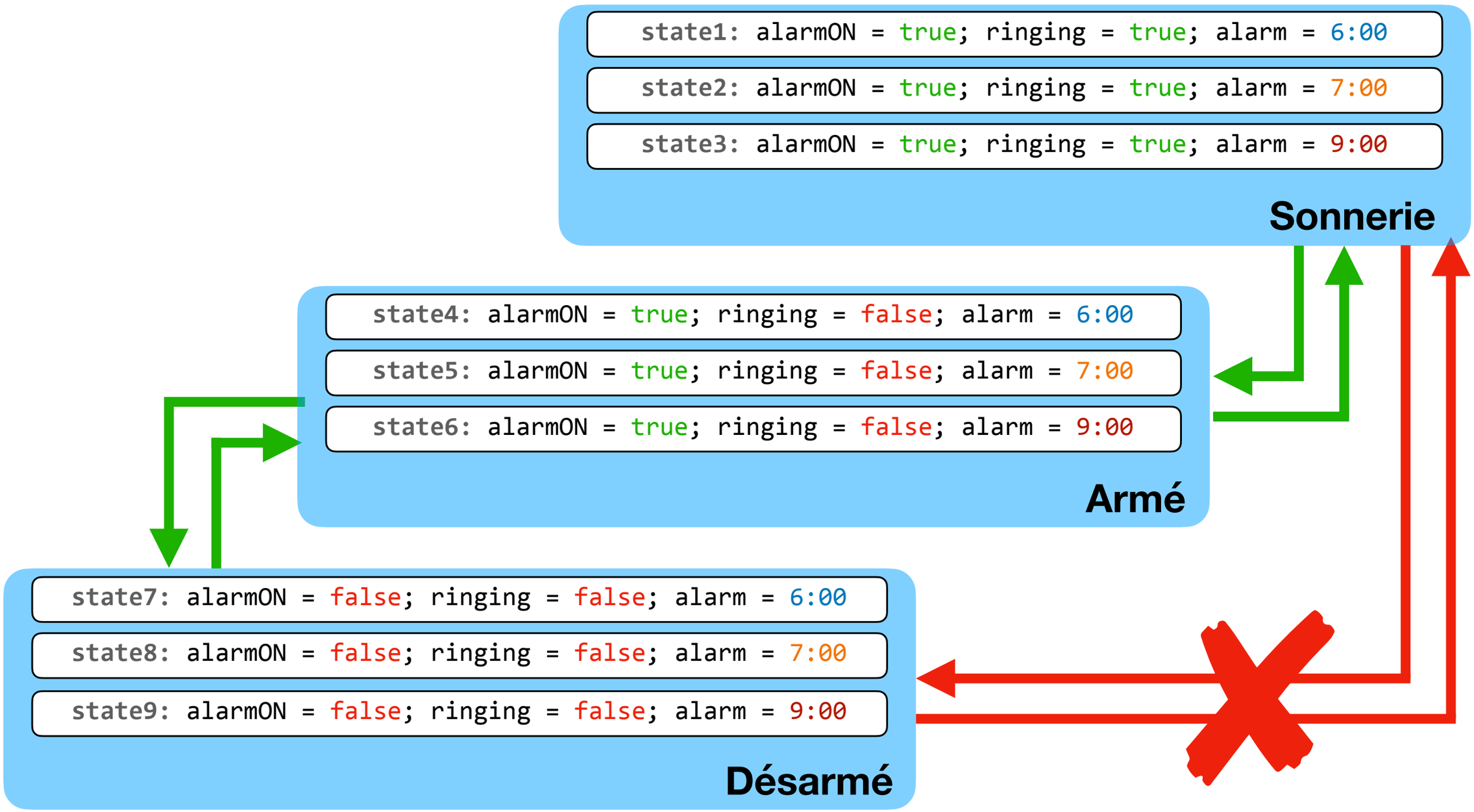

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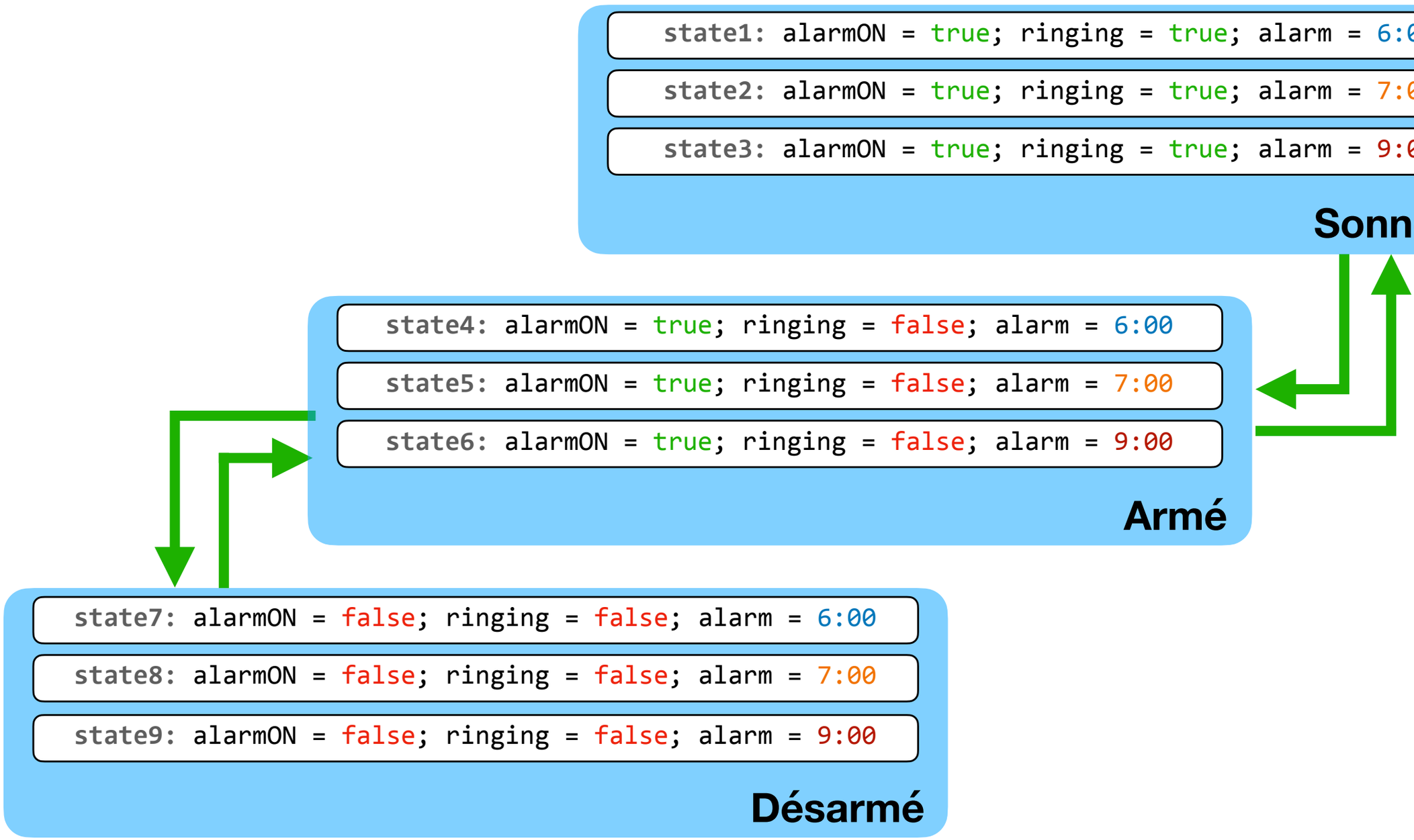
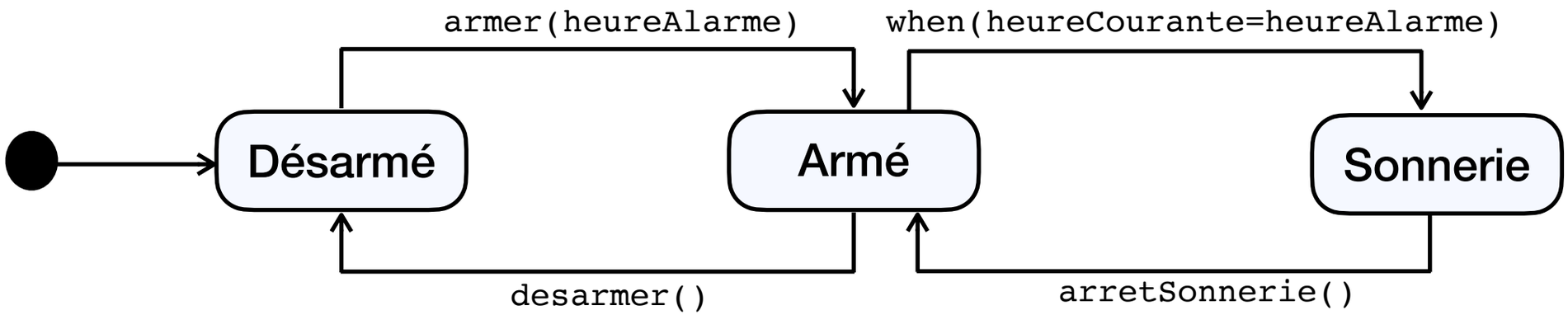


Etats-Transitions

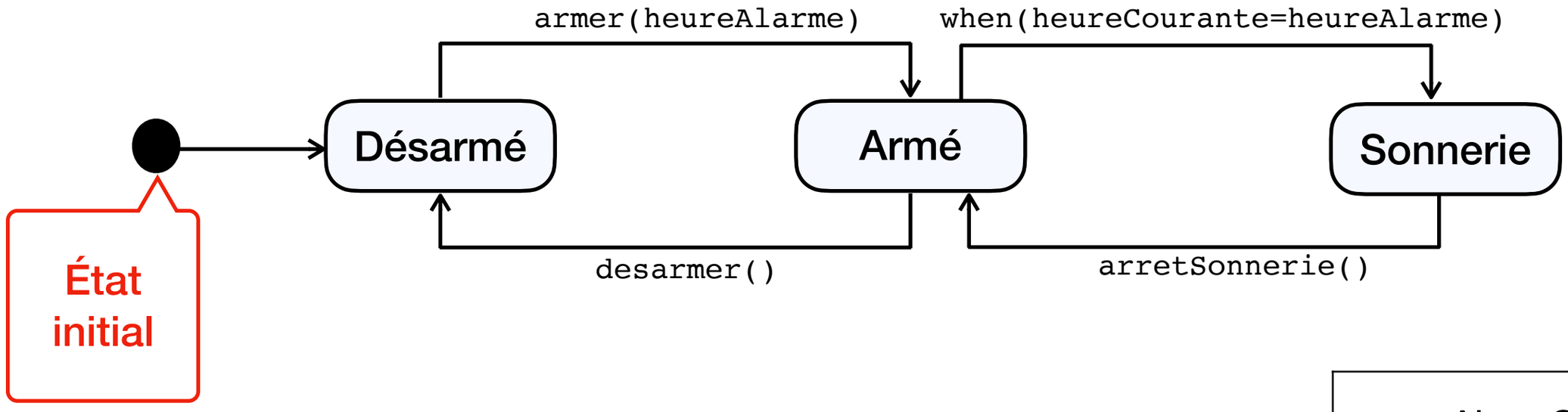
Syntaxe



AlarmClock
alarmON: boolean ringing: boolean alarm: HOUR

Etats-Transitions

Syntaxe



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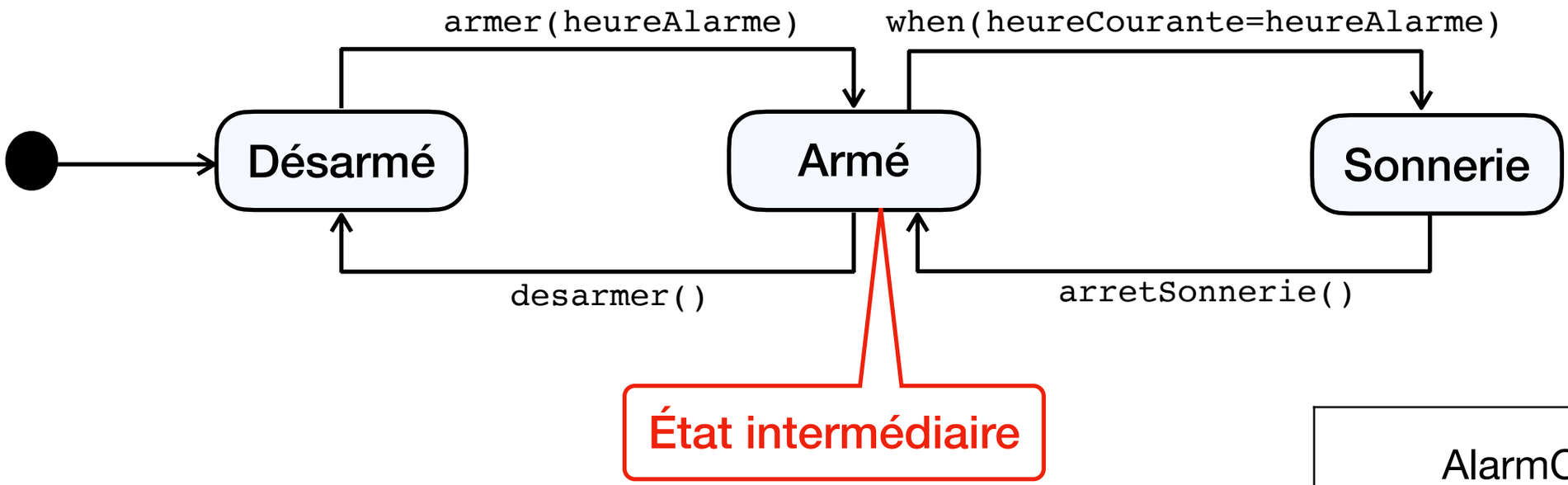

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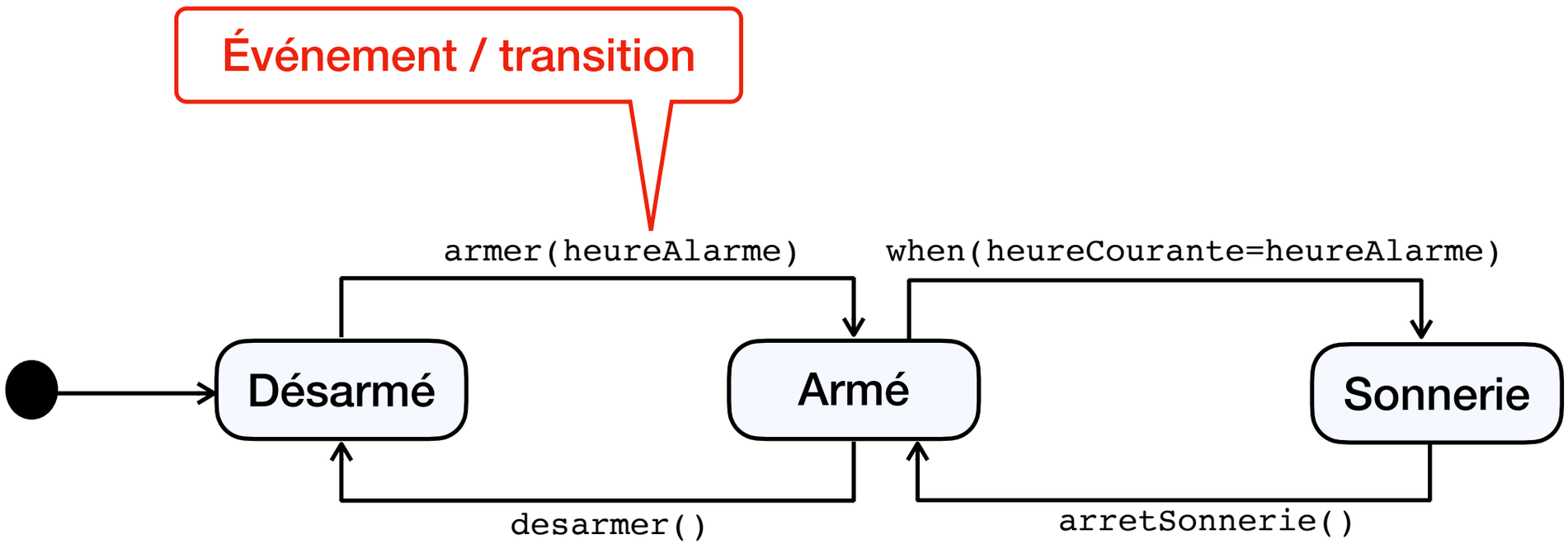

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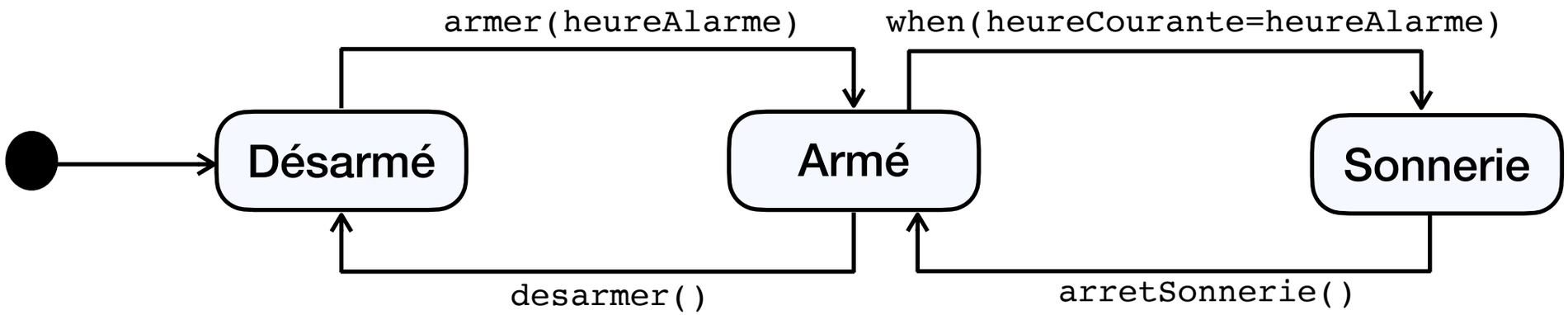

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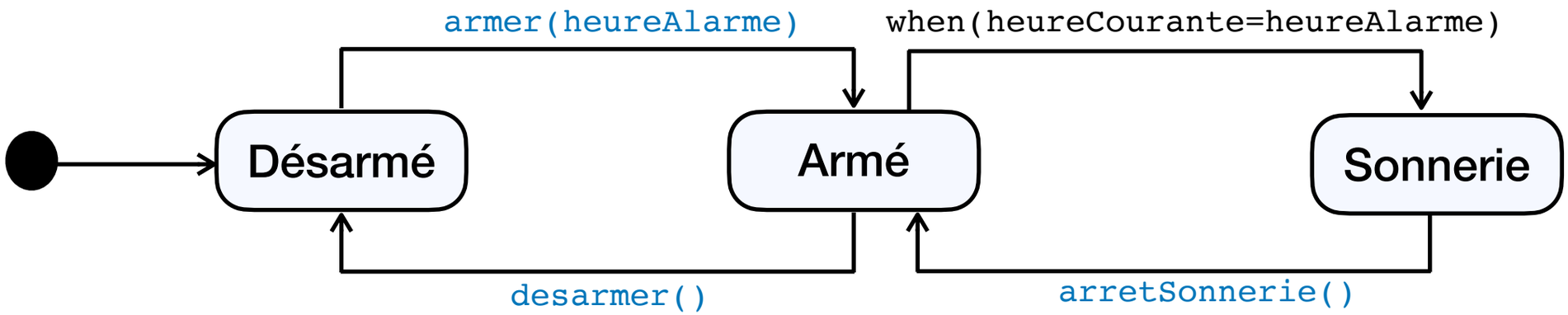
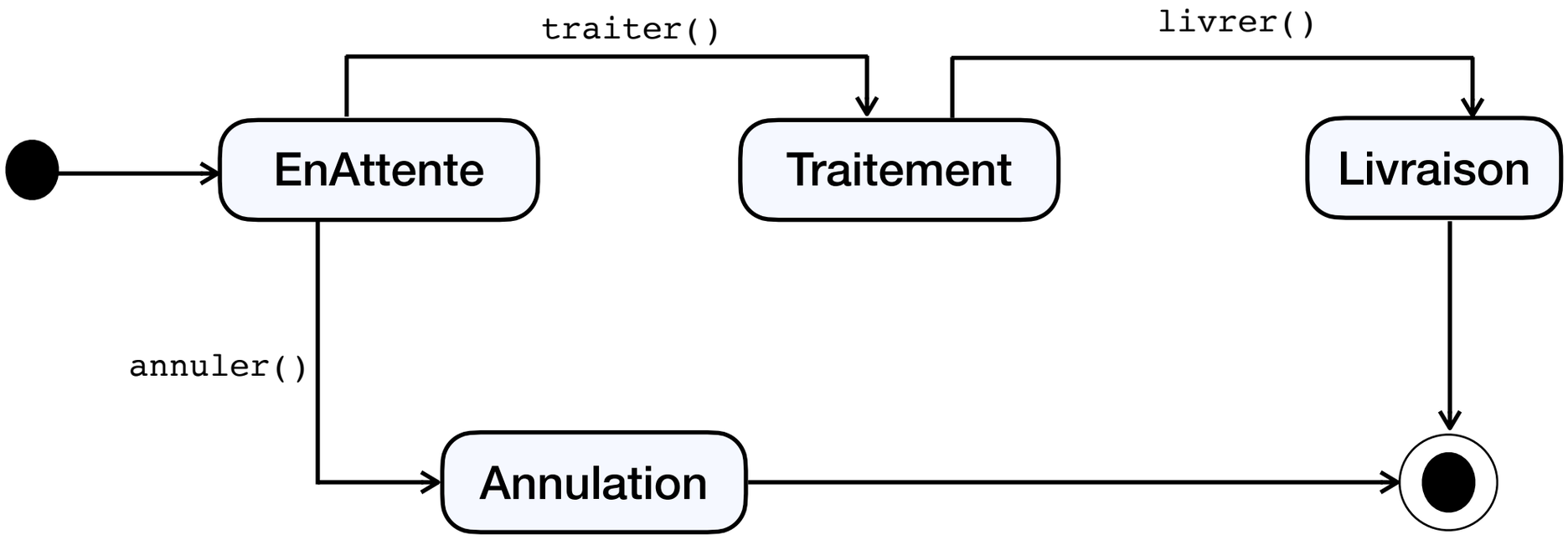


AlarmClock
alarmON: boolean ringing: boolean alarm: HOUR
armer(heureAlarme) desarmer() arretSonnerie()

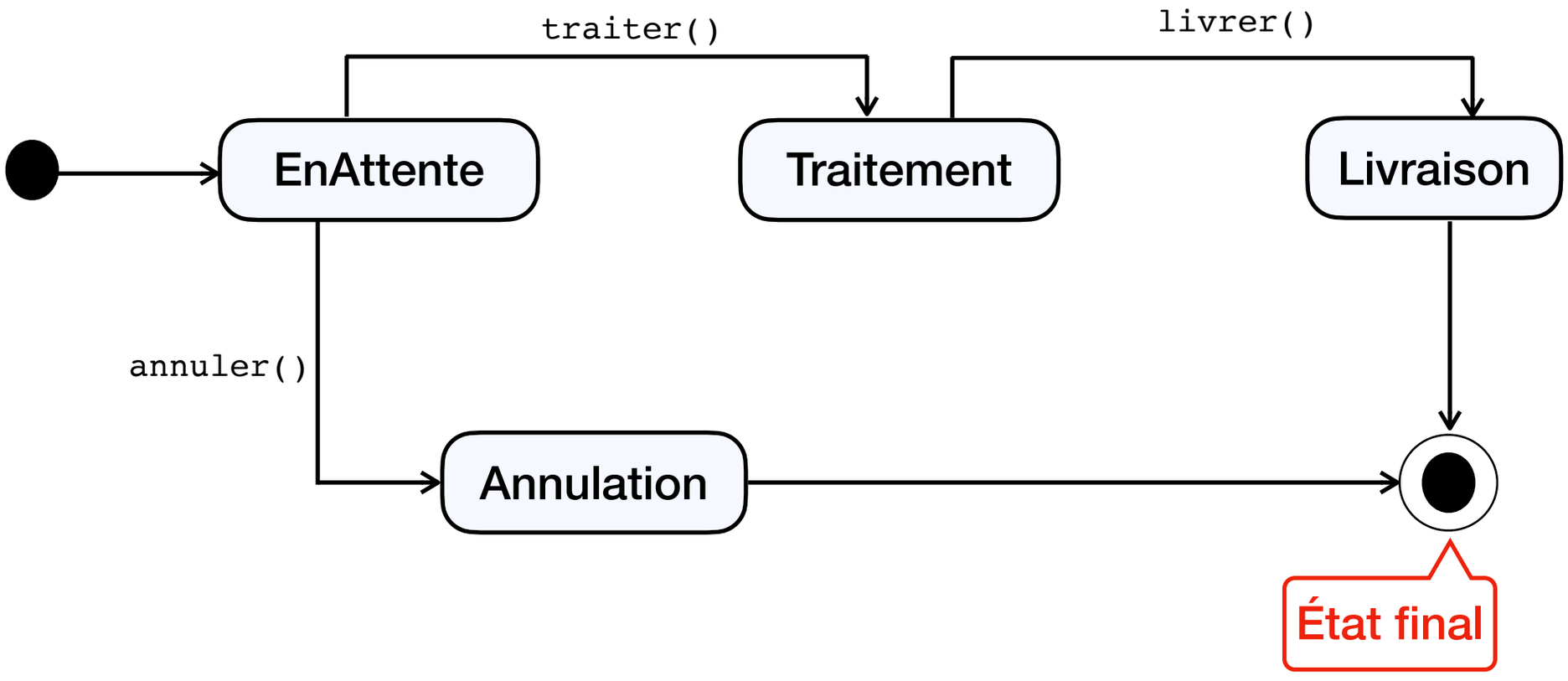
Etats-Transitions

Commande



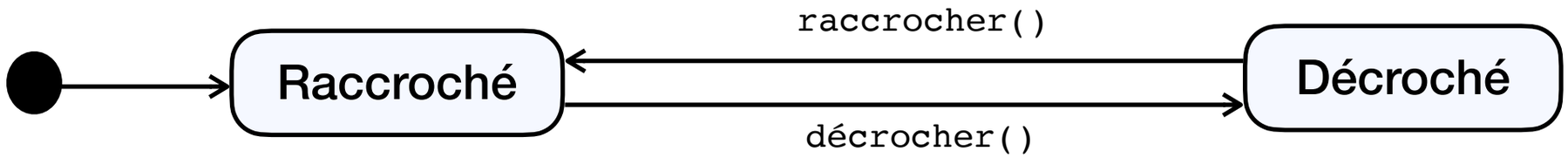
Etats-Transitions

Commande



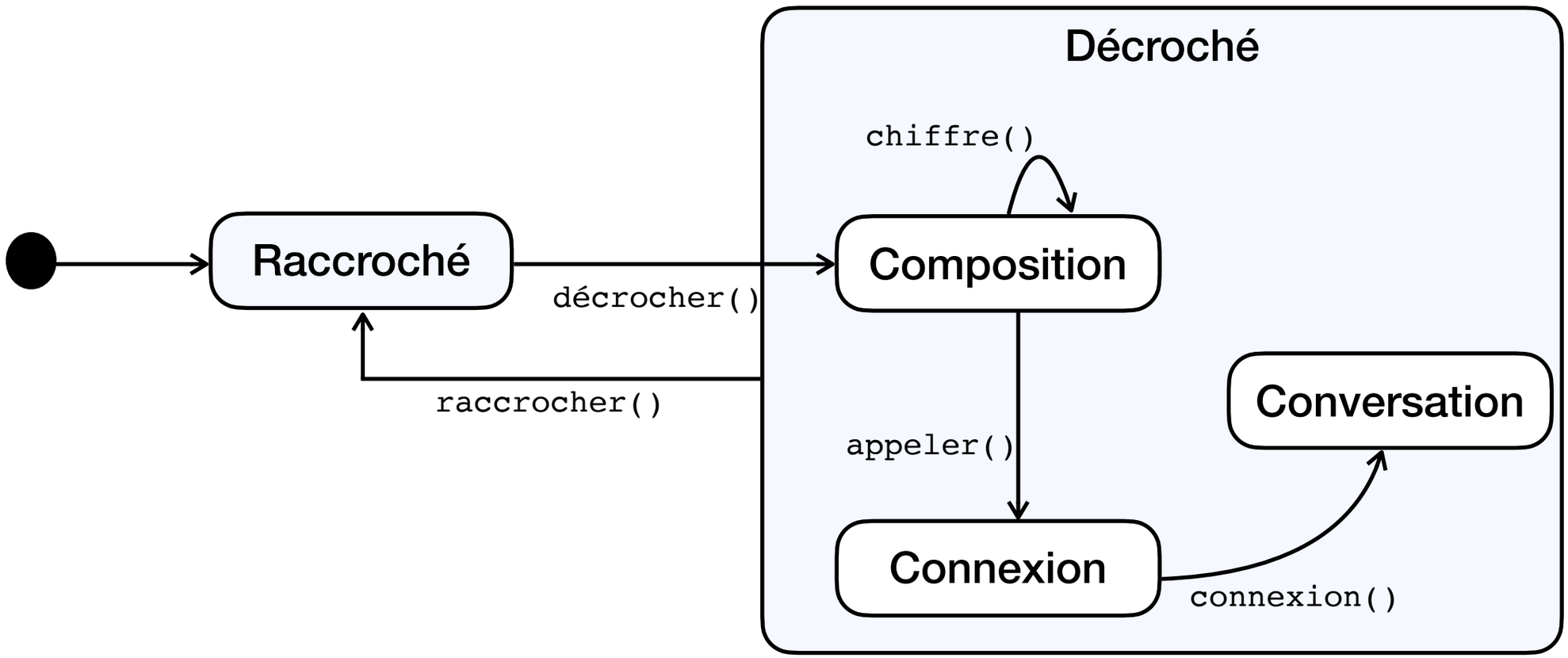
État composite

Téléphone (1/3)



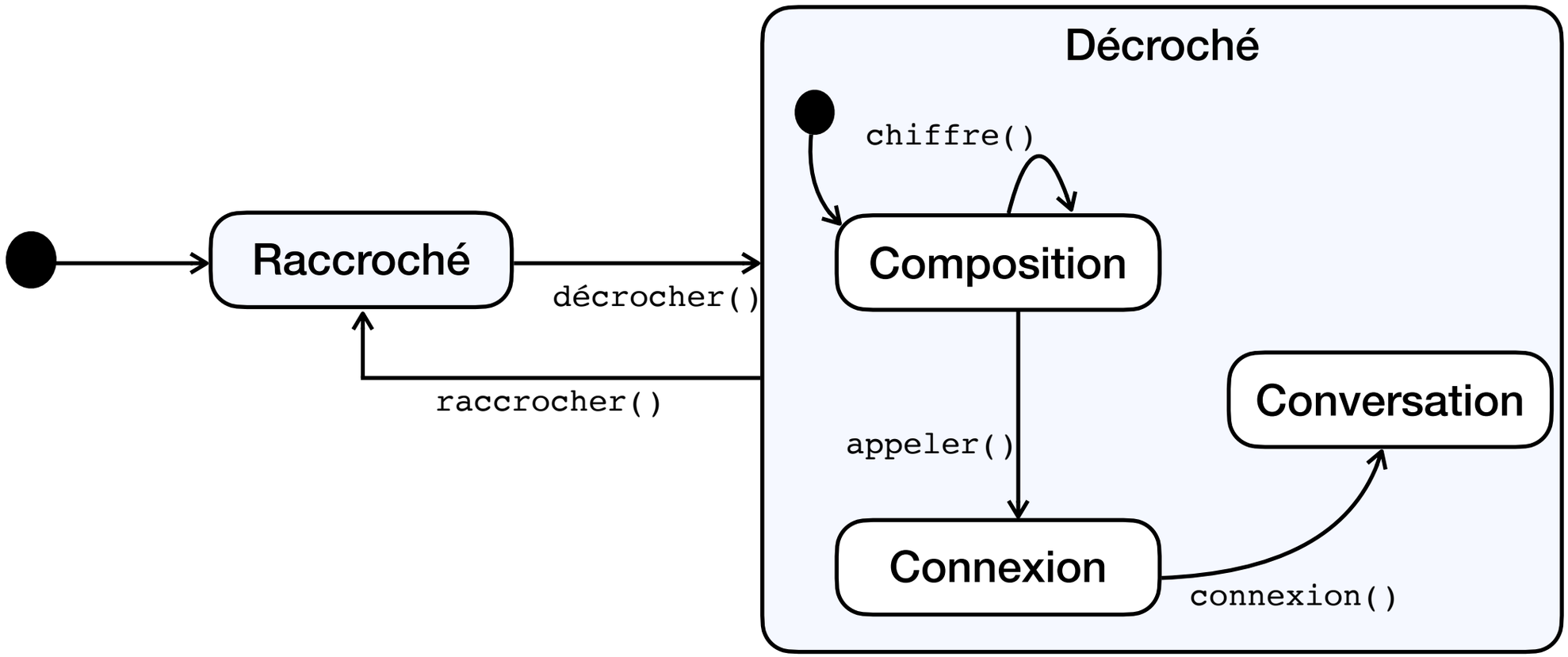
État composite

Téléphone (2/3)



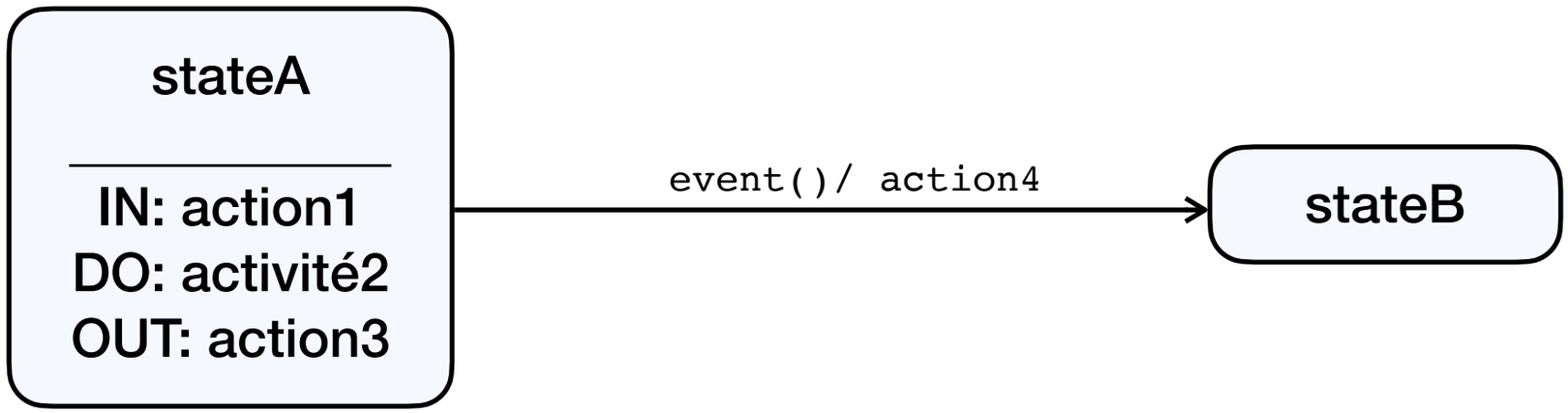
État composite

Téléphone (3/3)



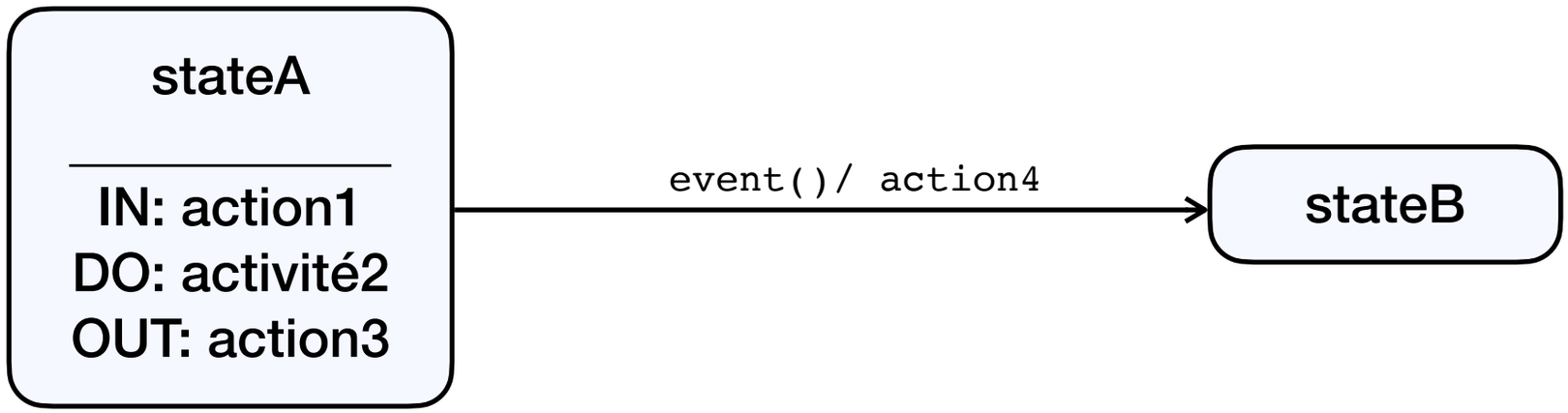
Notations avancées

Actions et activités



Notations avancées

Actions et activités




```
Action1 -> activité2 -> action3 -> action4
```

Références

Books

- **UML Distilled (Third Edition): A Brief Guide to the Standard Object Modeling Language.** M Fowler 2004.

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- **Requirements Engineering: From System Goals to UML Models to Software Specifications.** A. Lamsweerde 2009.

- **Software Engineering with UML.** B. Unhelkar 2018.

Many

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