

Task Model

WHAT IS A TASK MODEL?

Task models are logical descriptions of the activities that must be carried out to achieve user goals.

- They are useful for designing, analyzing, and evaluating interactive software applications.
- They describe how activities can be performed to achieve user goals during interaction with the application in question

TASK MODEL

- A **task** consists of:
 - a **goal** (a desired state); and
 - a **procedure** to achieve that goal.
- A **procedure** is a set of sub-tasks linked by:
 - **composition** relations; and
 - **temporal** relations.
- An **elementary task** is a task that can be broken down into physical actions.
- A physical action is an operation on an input/output device that causes a change in the device's state (click, movement, display, etc.)

Example: The task "Save a document" is an *elementary task*. Its procedure is:

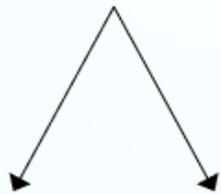
- 1) Move hand to mouse (physical action),
- 2) Move cursor to 'File' menu (physical action),
- 3) Click (physical action),
- 4) Move cursor to 'Save' (physical action),
- 5) Click (physical action).

TASK MODEL

- There are many specialized notations for task modeling, such as:
 - **UAN** (User Action Notation): Focuses on low-level user actions and system feedback.
 - **CTT** (ConcurTaskTrees): Excellent for showing the temporal relationships (e.g., choice, concurrency, order) between tasks and sub-tasks.
 - **HTA** (Hierarchical Task Analysis): A classic method that breaks down tasks into a hierarchy of operations and plans.
 - **MAD** (Méthode Analytique de Description): A French method for detailed task description and analysis.
- Techniques from software engineering can also be applied:
 - **UML** Use Case Diagrams: Describe the high-level functionalities (goals) of a system from a user's perspective.

MODÈLE DE TÂCHES

Une tâche



alternative



alternative non stricte



séquence



suite non ordonnée

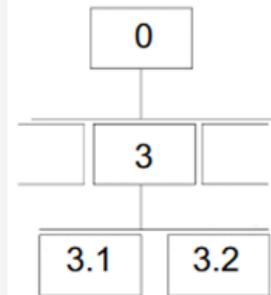


boucle

Plan 0: Do 1-2-4-5 in that order
when the defaults are incorrect, do 3

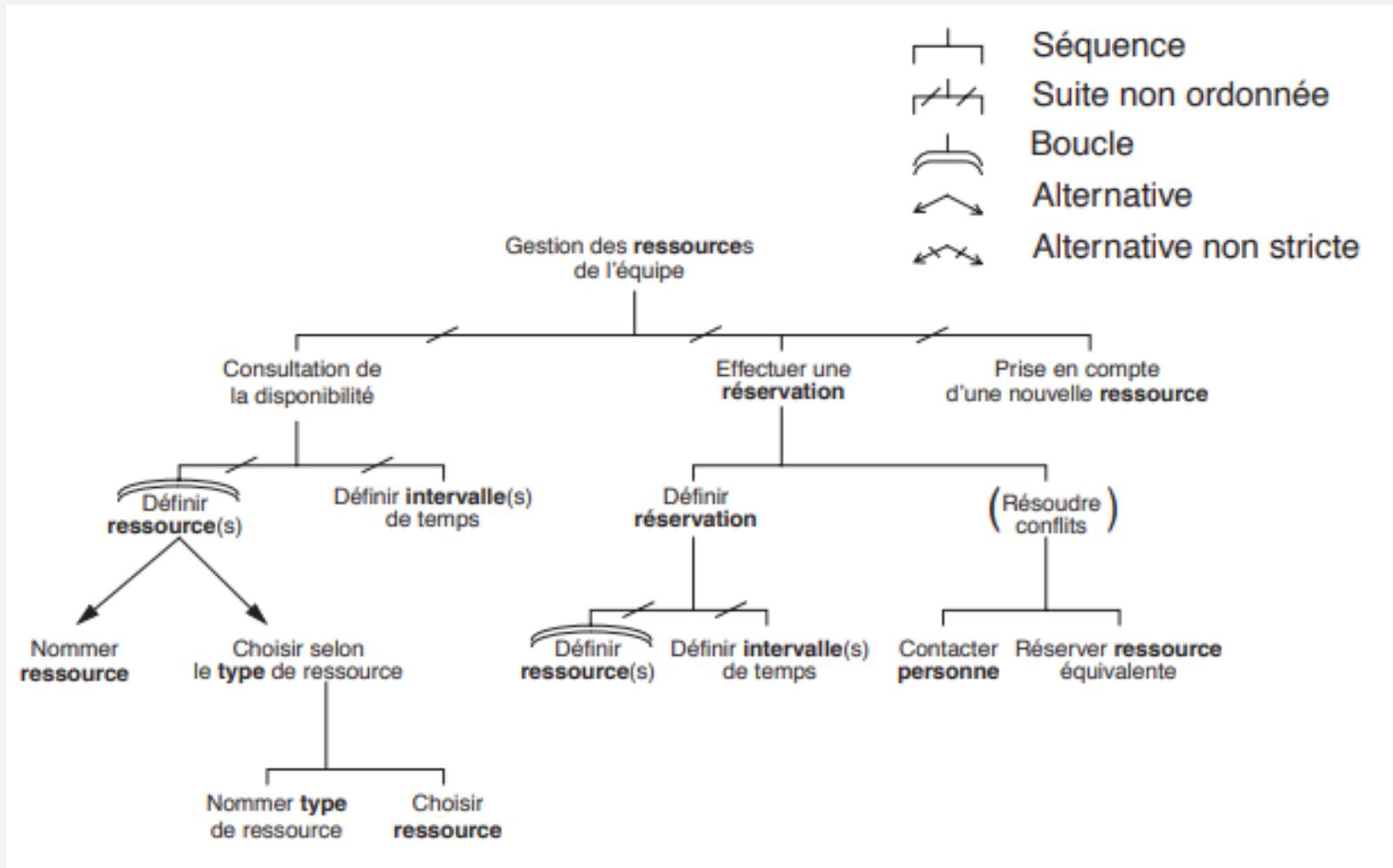
1.
Enter PIN

Task numbering:



TASK MODEL

- Un exemple d'arbre de tâches noté avec HTA (Hierarchical Task Analysis).



TASK MODEL

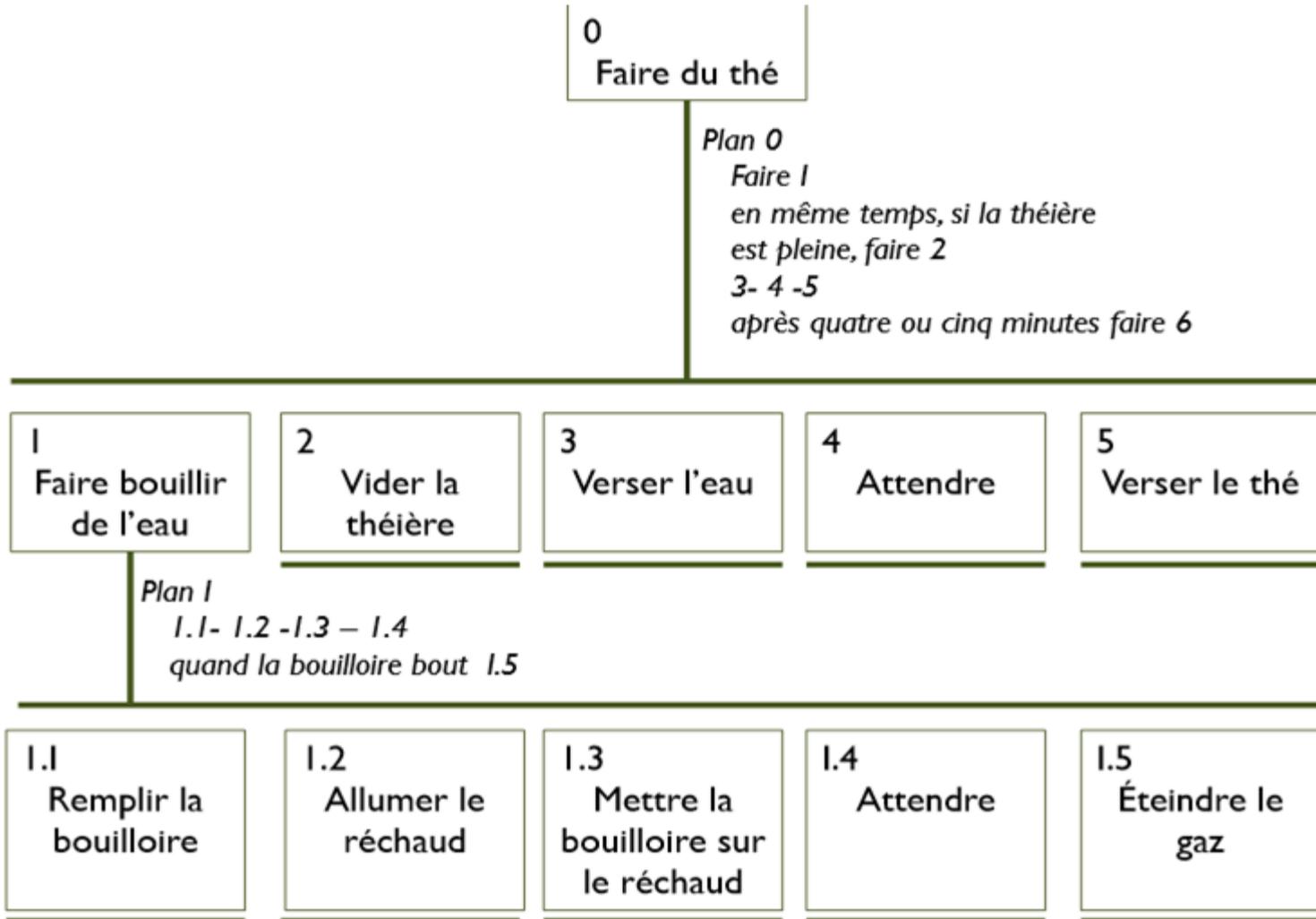
- No specific notation is defined to indicate the following nuances

Concept	Definition
Parallelism	Multiple sub-tasks <i>can</i> be executed simultaneously, but are not required to be.
Concurrency	Multiple sub-tasks <i>must</i> be executed at the same time.
Interleaving	Multiple sub-tasks are logically concurrent but are executed as a rapid alternation of single tasks.

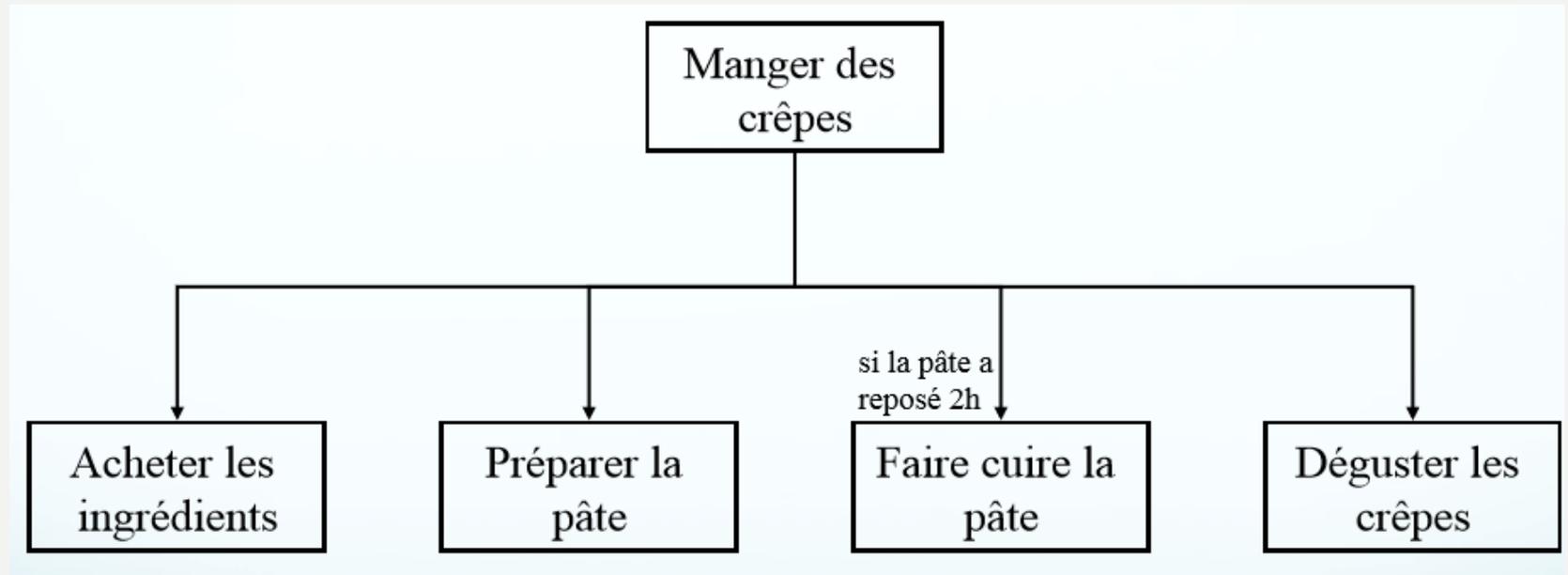
- **Notation for Optionality:**
A **dashed line/link** is used to represent an **optional** sub-task.

TASK MODEL: EXAMPLE

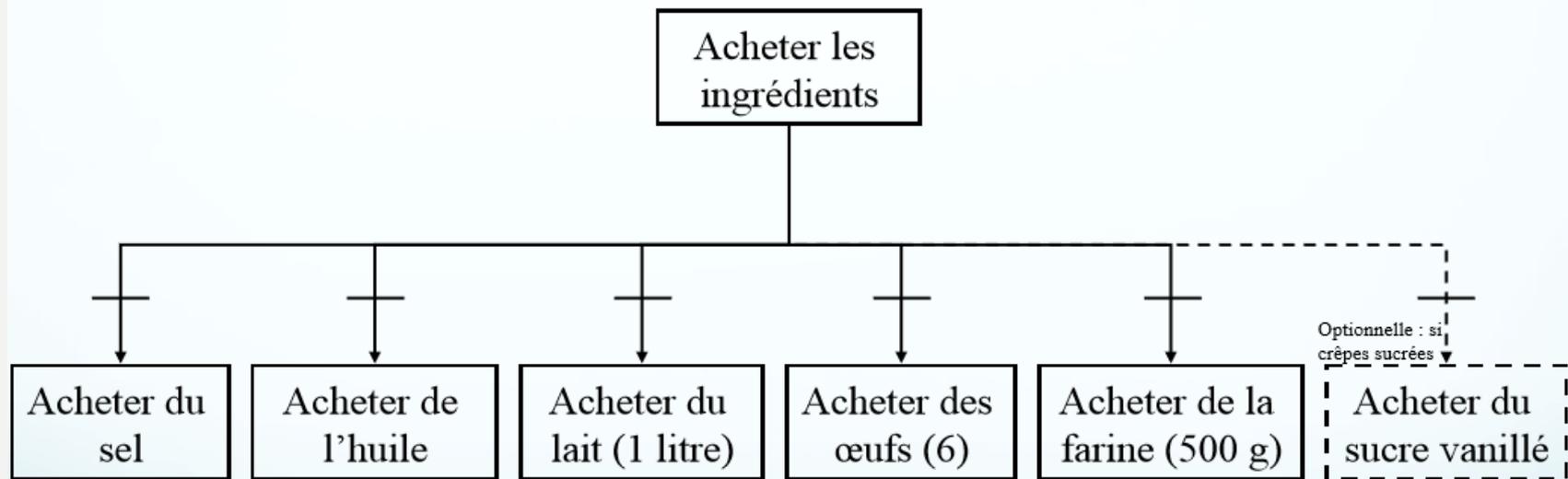
HTA (Hierarchical Task Analysis)



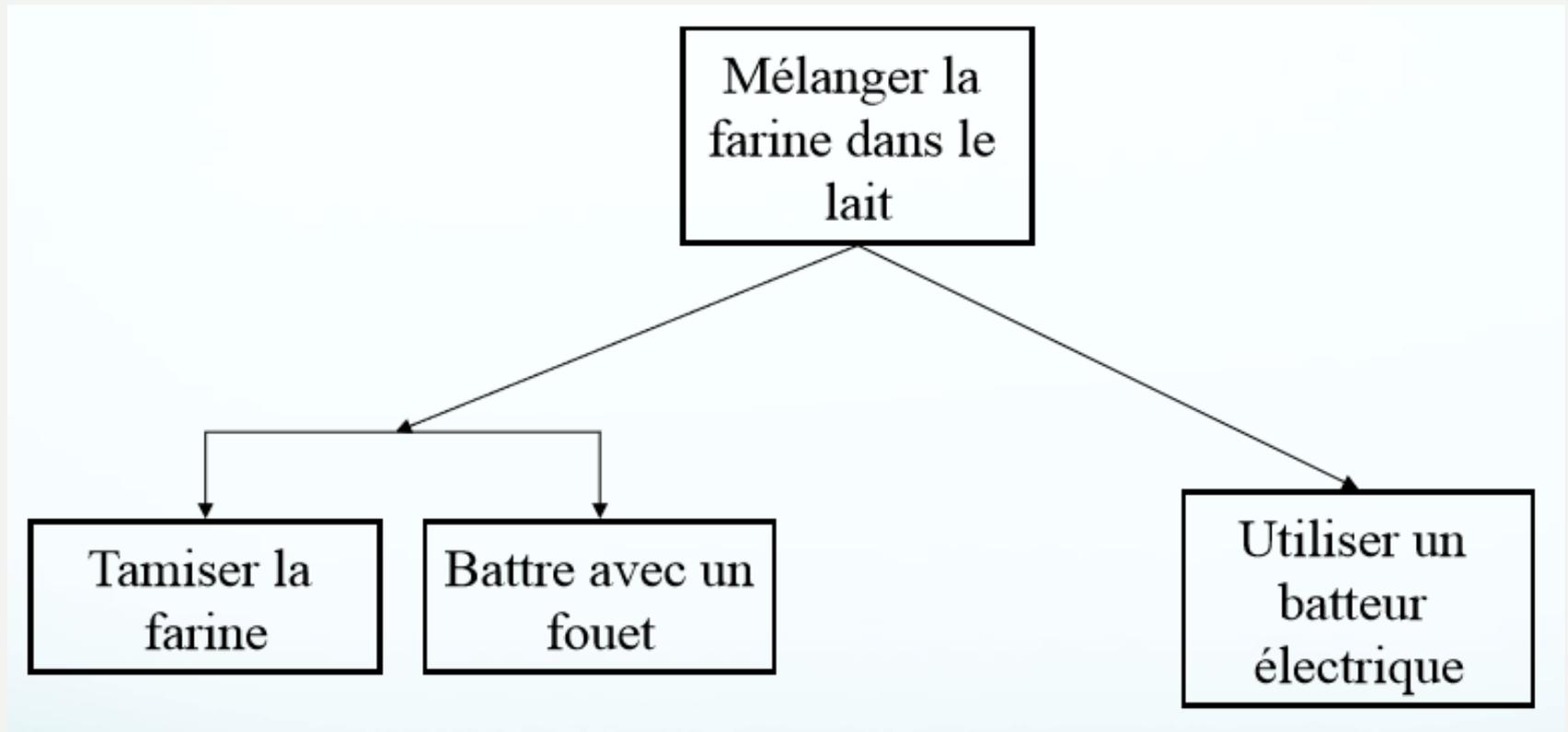
SEQUENCE: PANCAKE EXAMPLE



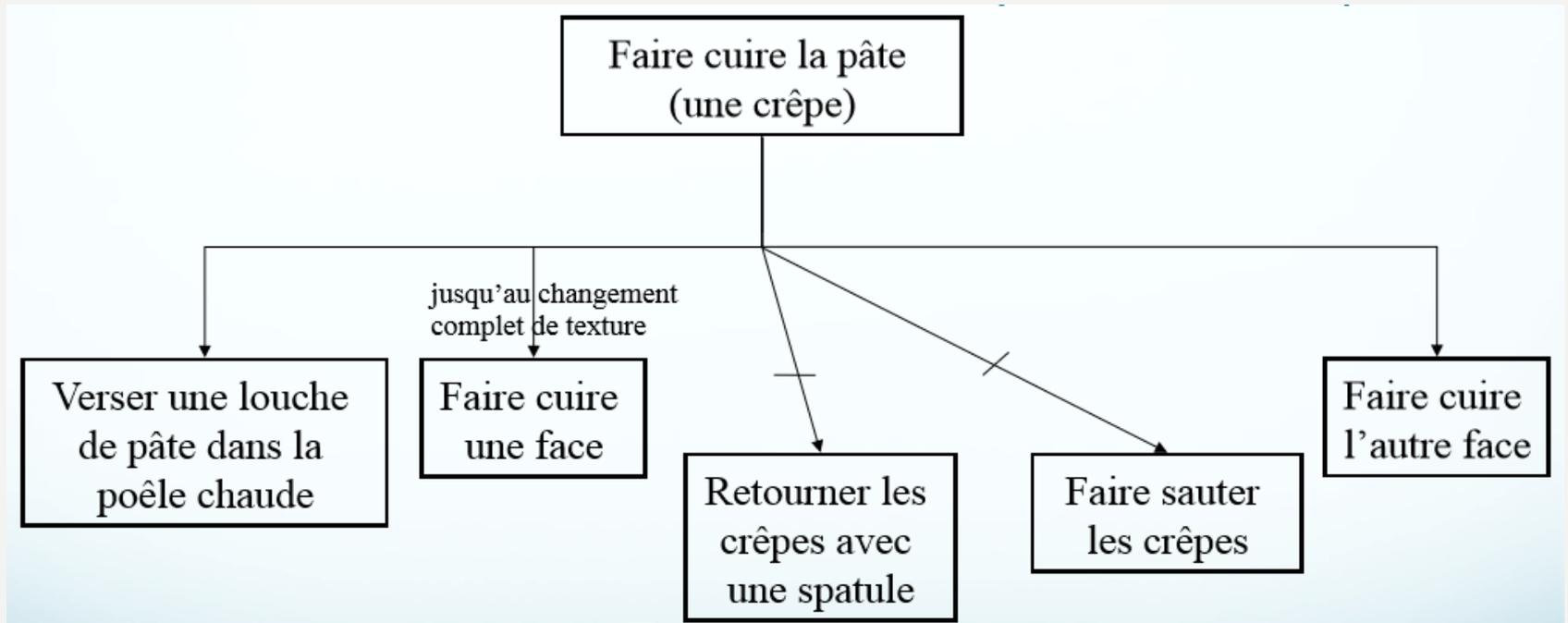
UNORDERED SEQUENCE: PANCAKE EXAMPLE



ALTERNATIVE: PANCAKE EXAMPLE



NON-STRICT ALTERNATIVE: PANCAKE EXAMPLE



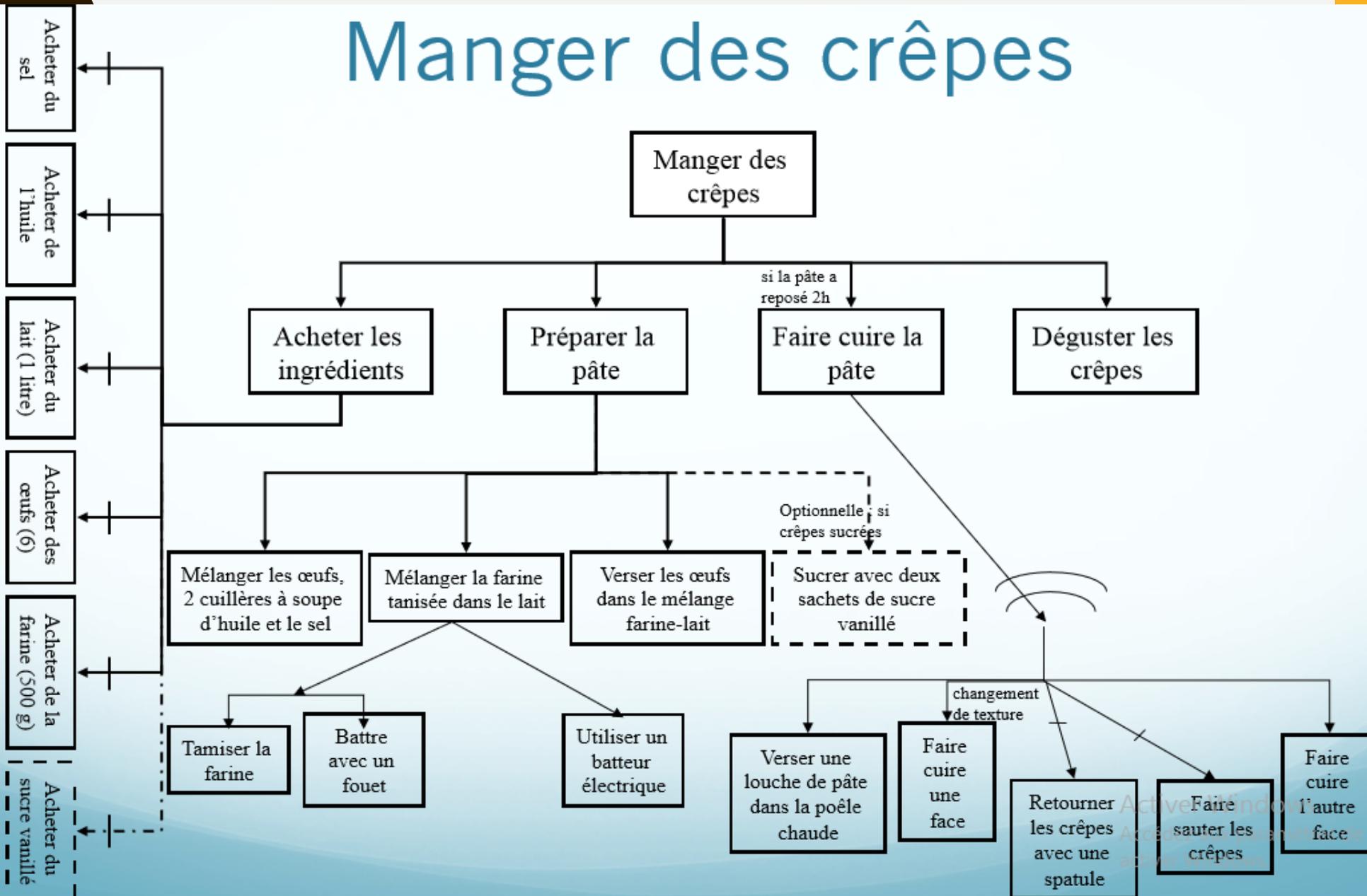
LOOP: PANCAKE EXAMPLE



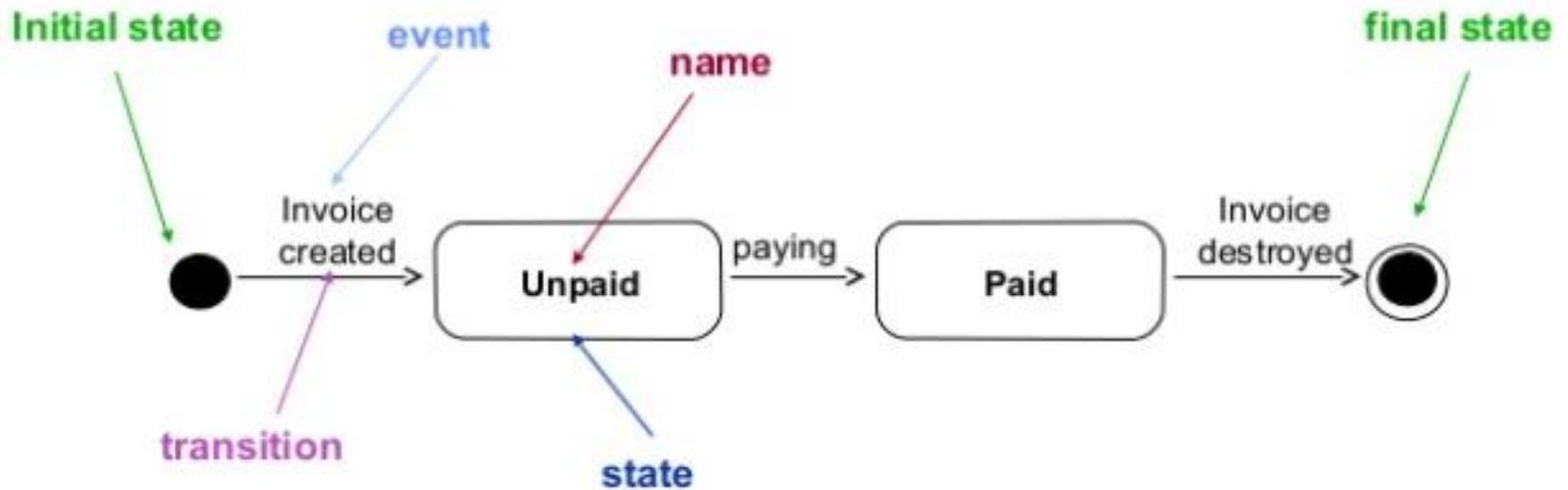
tant qu'il reste
de la pâte

Faire cuire la pâte
(une crêpe)

Manger des crêpes



HTA VARIANT: STATE DIAGRAM



THANK YOU