Activity Diagram

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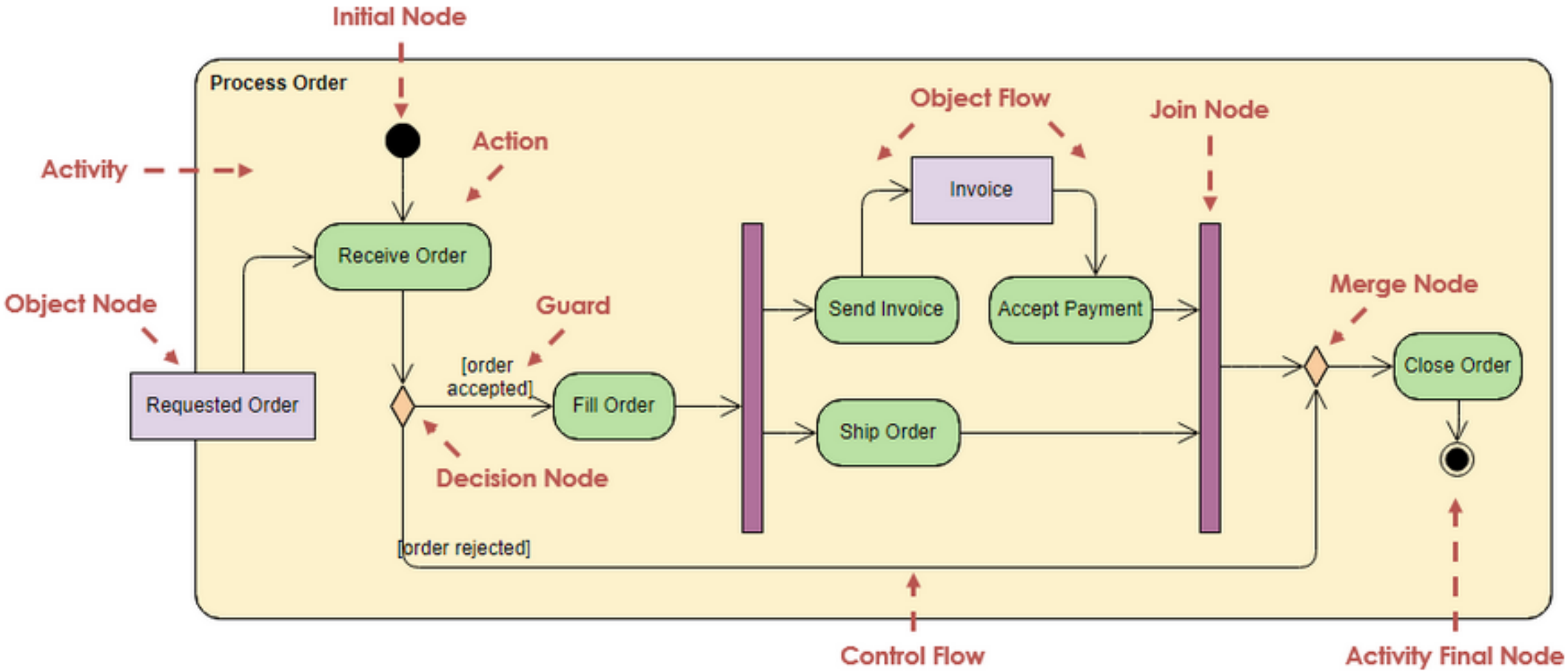
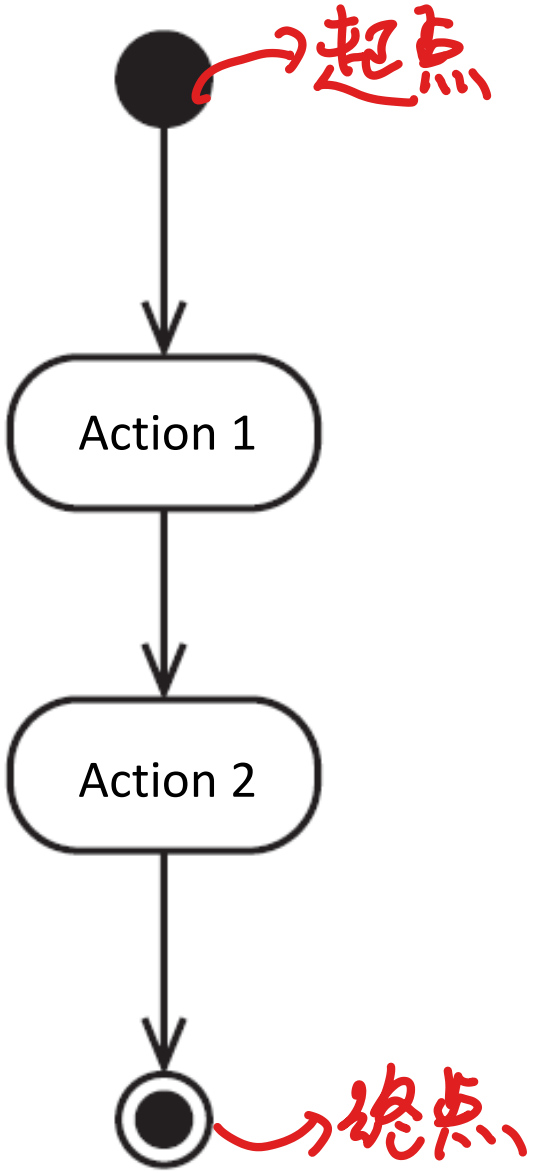
Activity Diagram



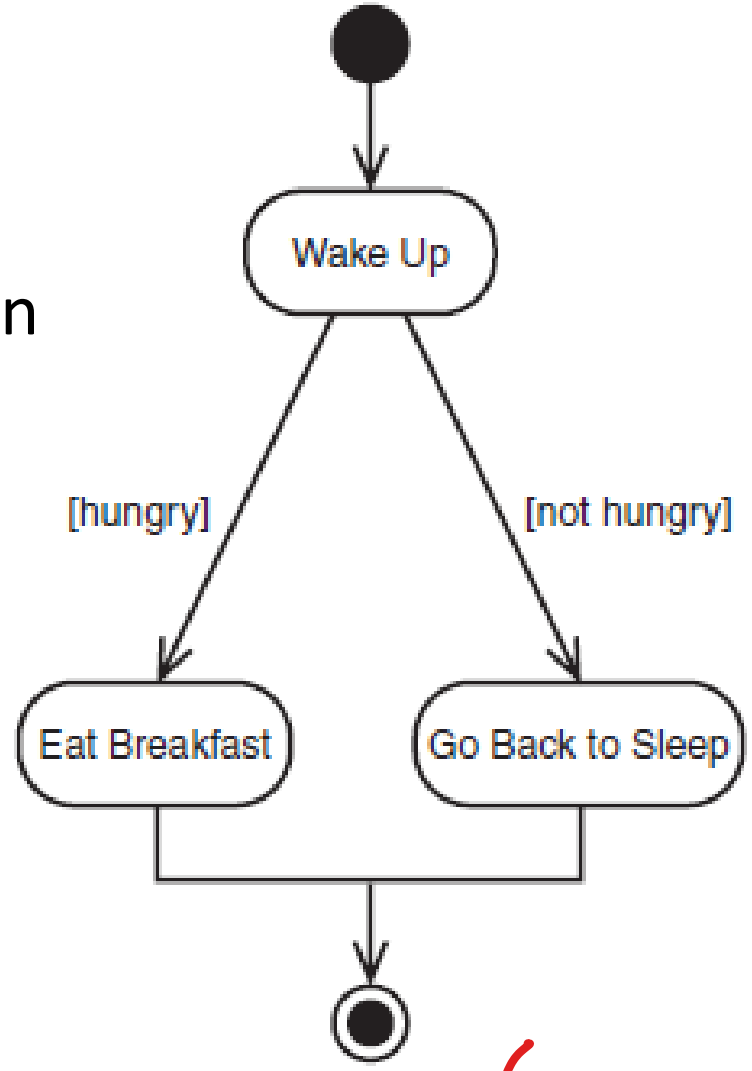
Basic

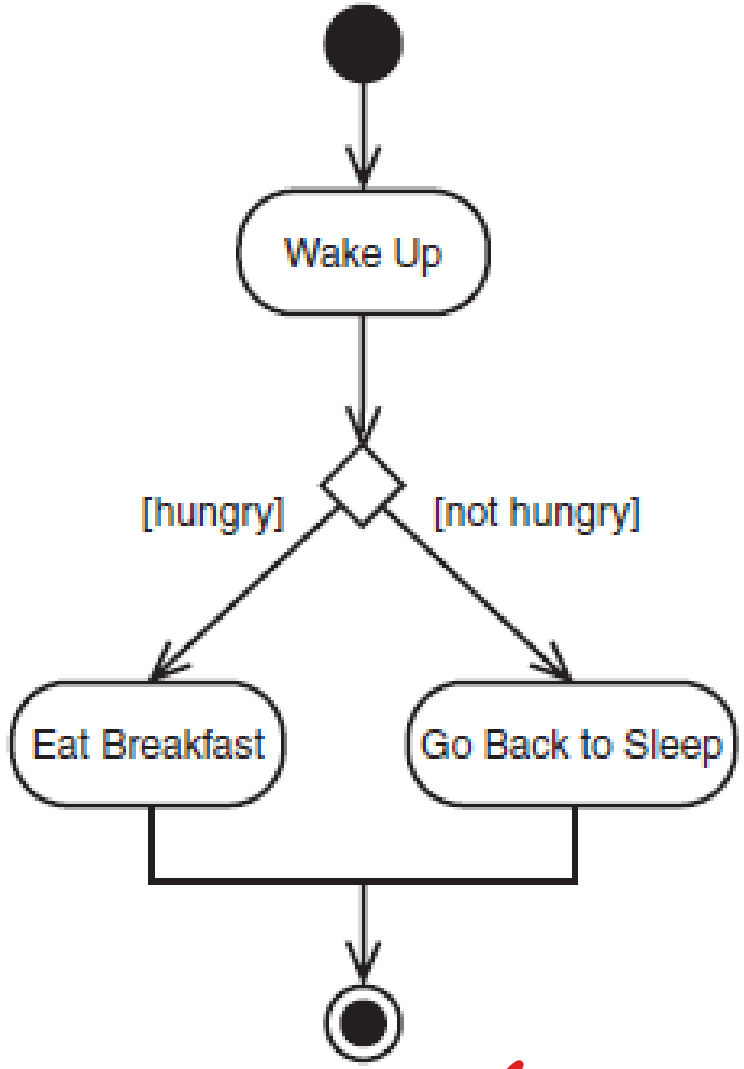
- An **action** represents an operation, a step in a business process, or an entire business process.
- Action is a named element which represents a **single atomic step within activity** i.e. that is **not further decomposed within the activity**.
- Arrow represents the transition from one activity to the next
- Filled circle represent start, bull’s eye represent an endpoint



Decision

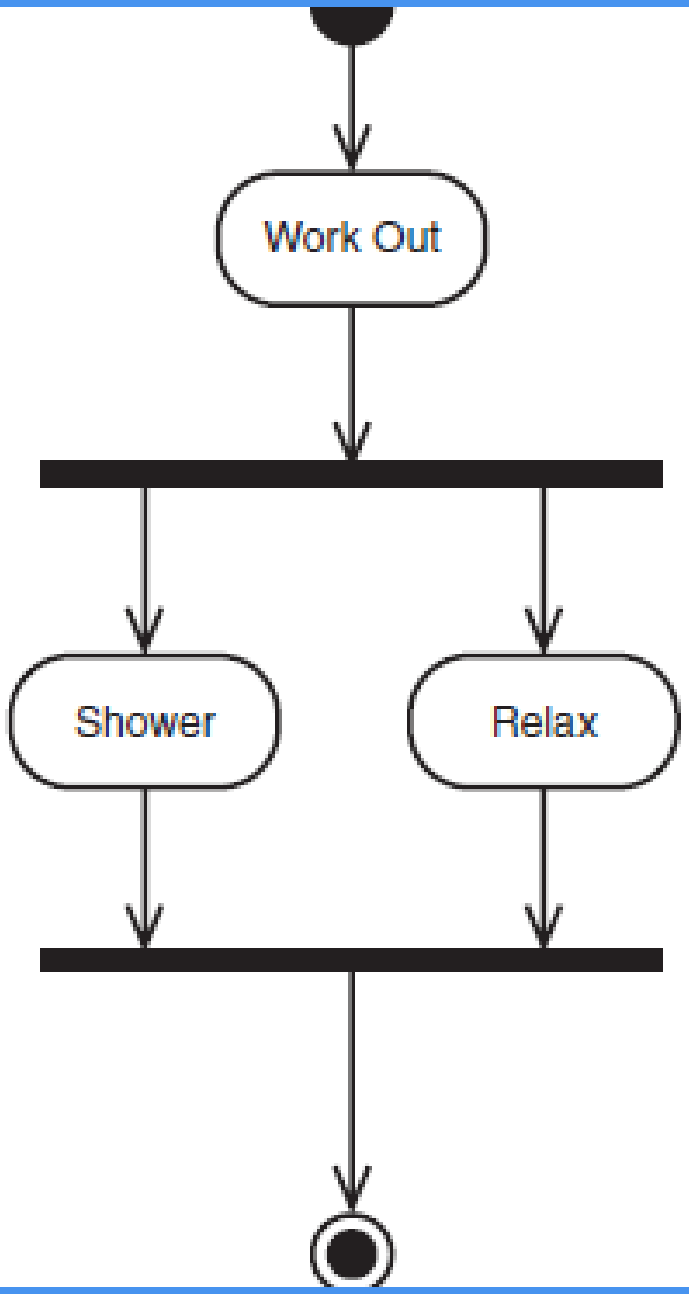
- Both are valid
- Label the condition with a squared bracket





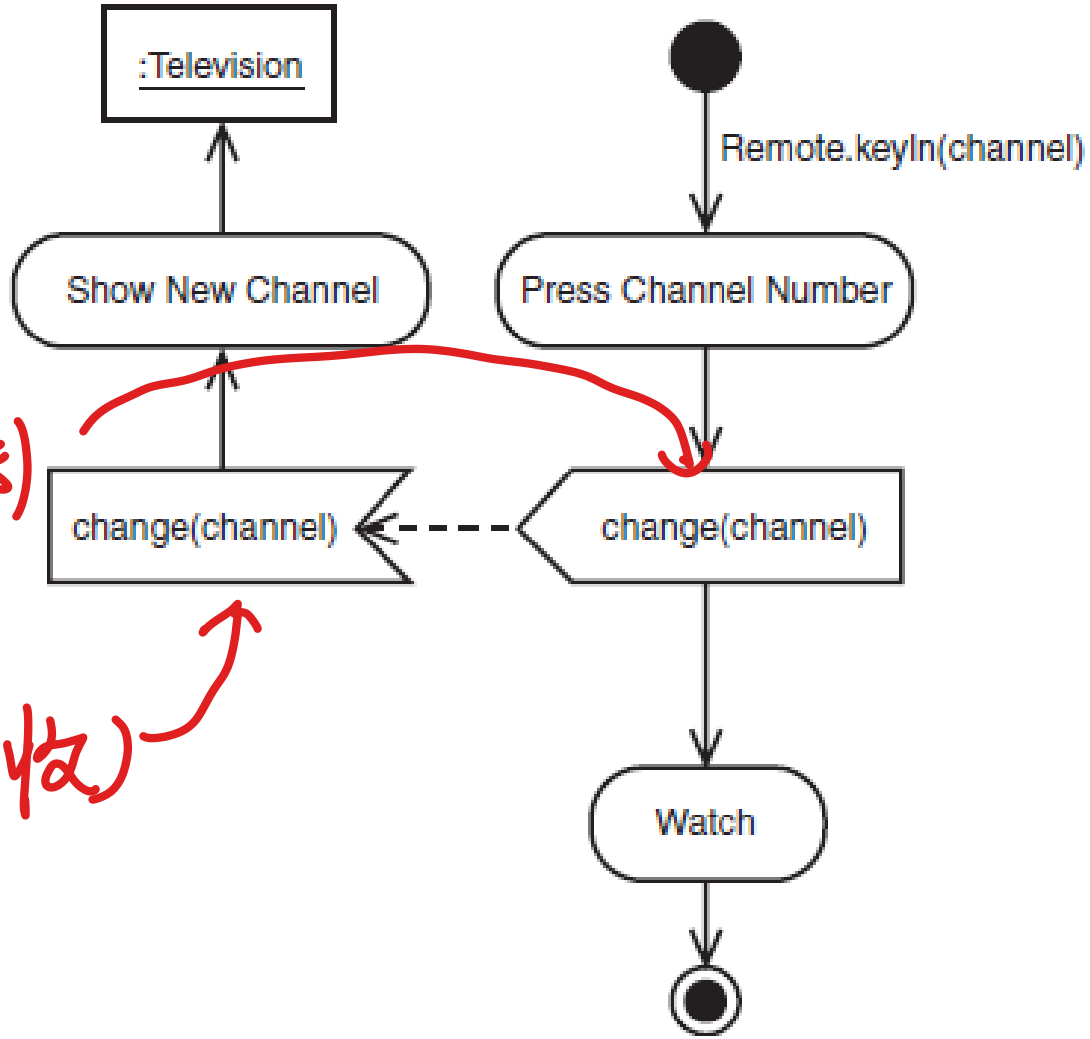
Concurrent Paths 并发路径

- When two or more concurrent paths running at the same time
- Use solid bold line to split the transition arrow into multiple concurrently executing paths
- Solid bold line also used to merge the concurrent paths



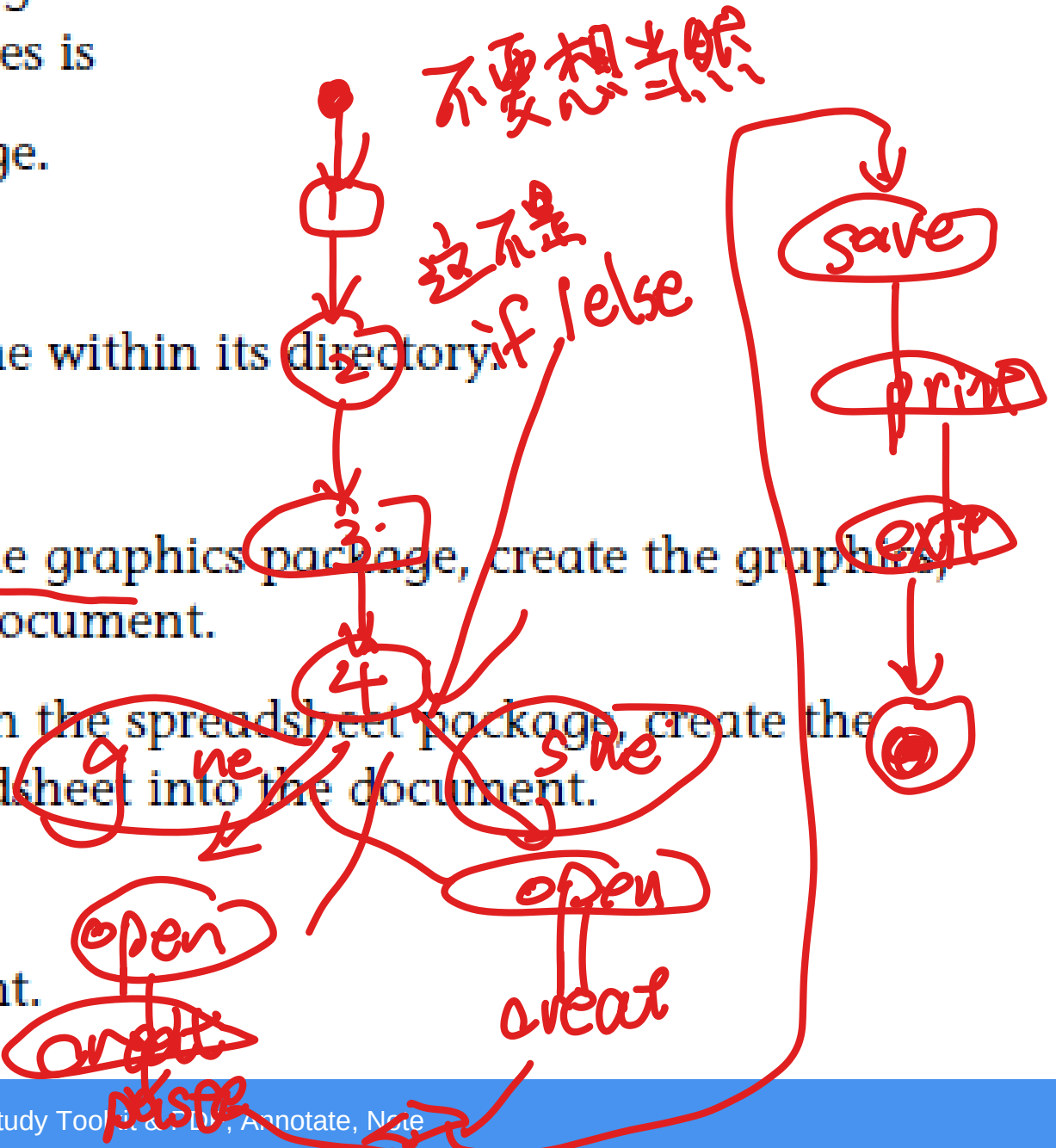
Sending and Receiving Signal

- There will be situation when your process need to send or receive signal
- Convex polygon – sending signal / output event
- Concave polygon – receiving signal / input event



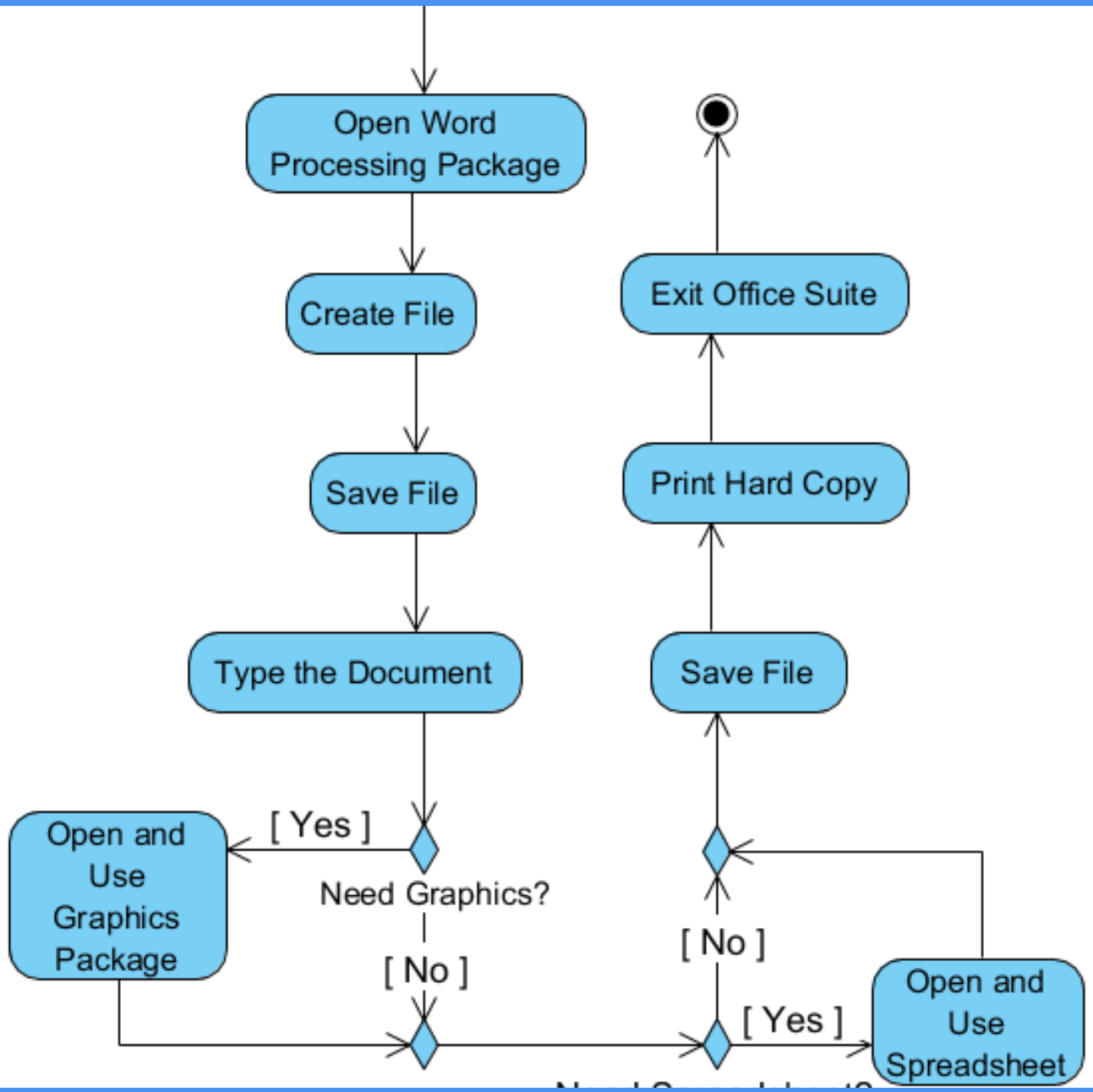
Think of the activities that go into using an office software suite to create a document. One possible sequence of activities is

1. Open the word processing package.
2. Create a file.
3. Save the file under a unique name within its directory.
4. Type the document.
5. If graphics are necessary, open the graphics package, create the graphics, and paste the graphics into the document.
6. If a spreadsheet is necessary, open the spreadsheet package, create the spreadsheet, and paste the spreadsheet into the document.
7. Save the file.
8. Print a hard copy of the document.



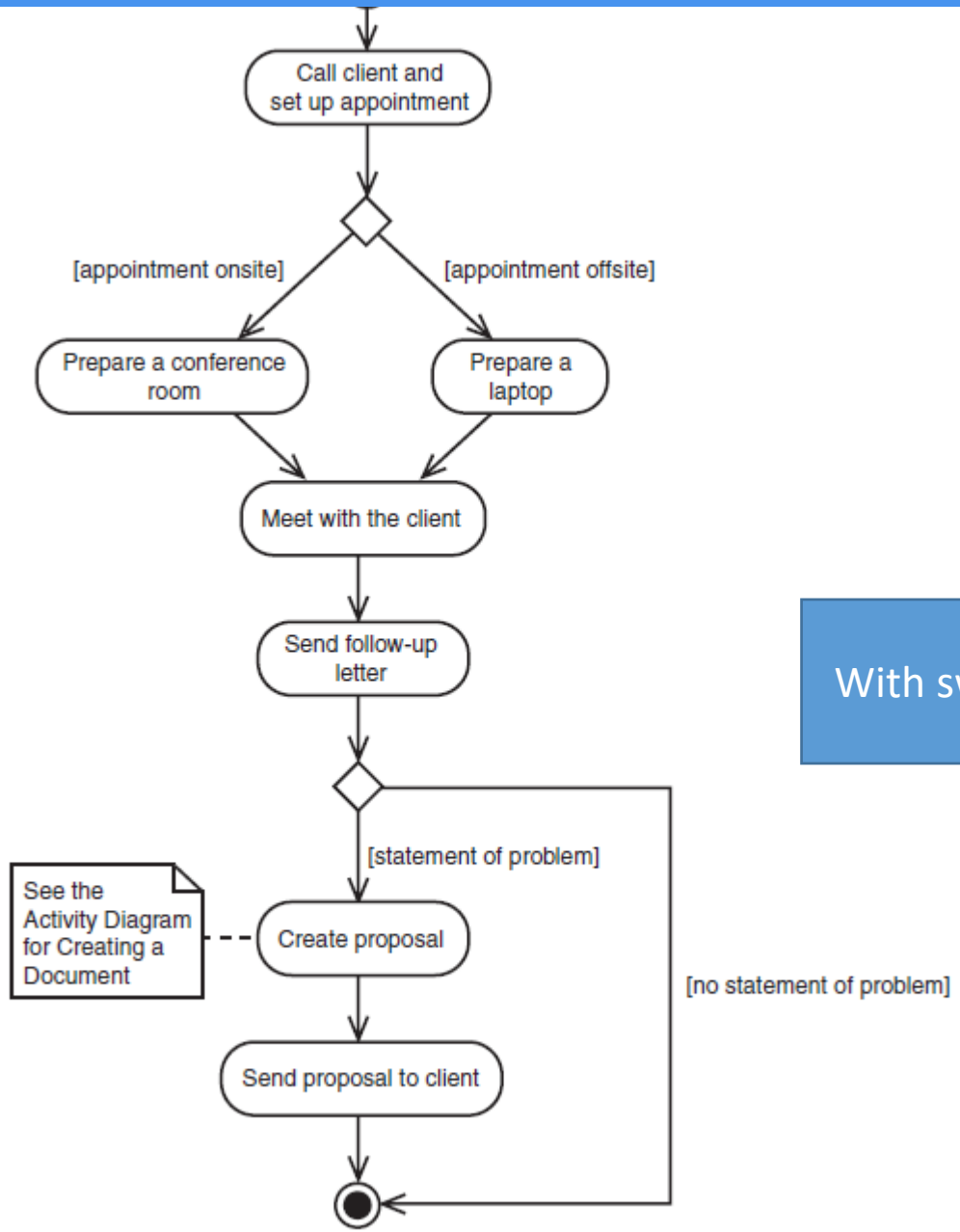
Suggested Answer

- Modify the suggested answer to include the use of Convex polygon and Concave polygon for the “Print Hard Copy” action.

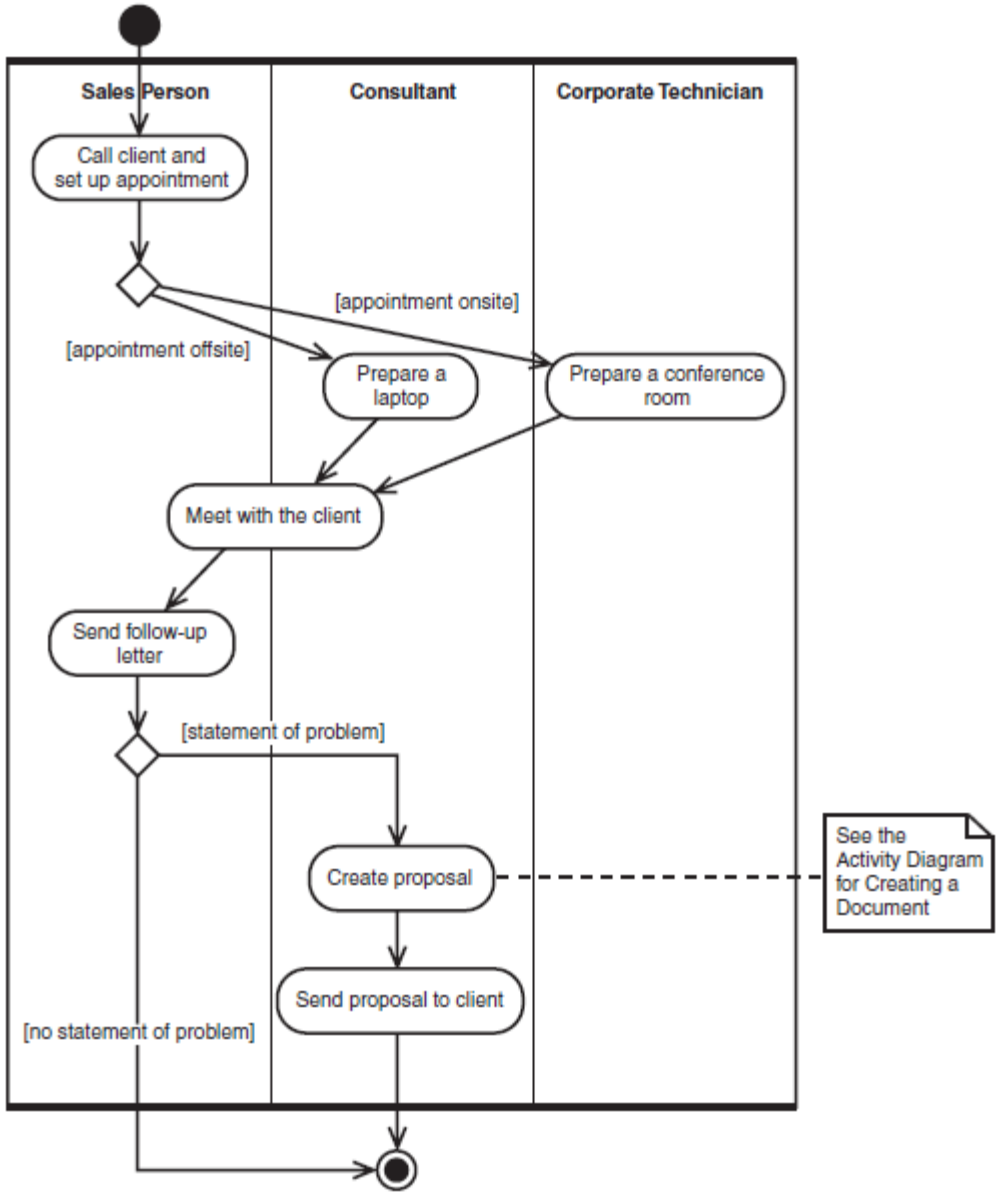


Swimlanes

- Use swimlanes to show who responsible for each activity in a process
- Separate the diagram into parallel segments called swimlanes 平行道
- Each swimlane shows the name of a role at the top
- Transitions can take place from one swimlane to another

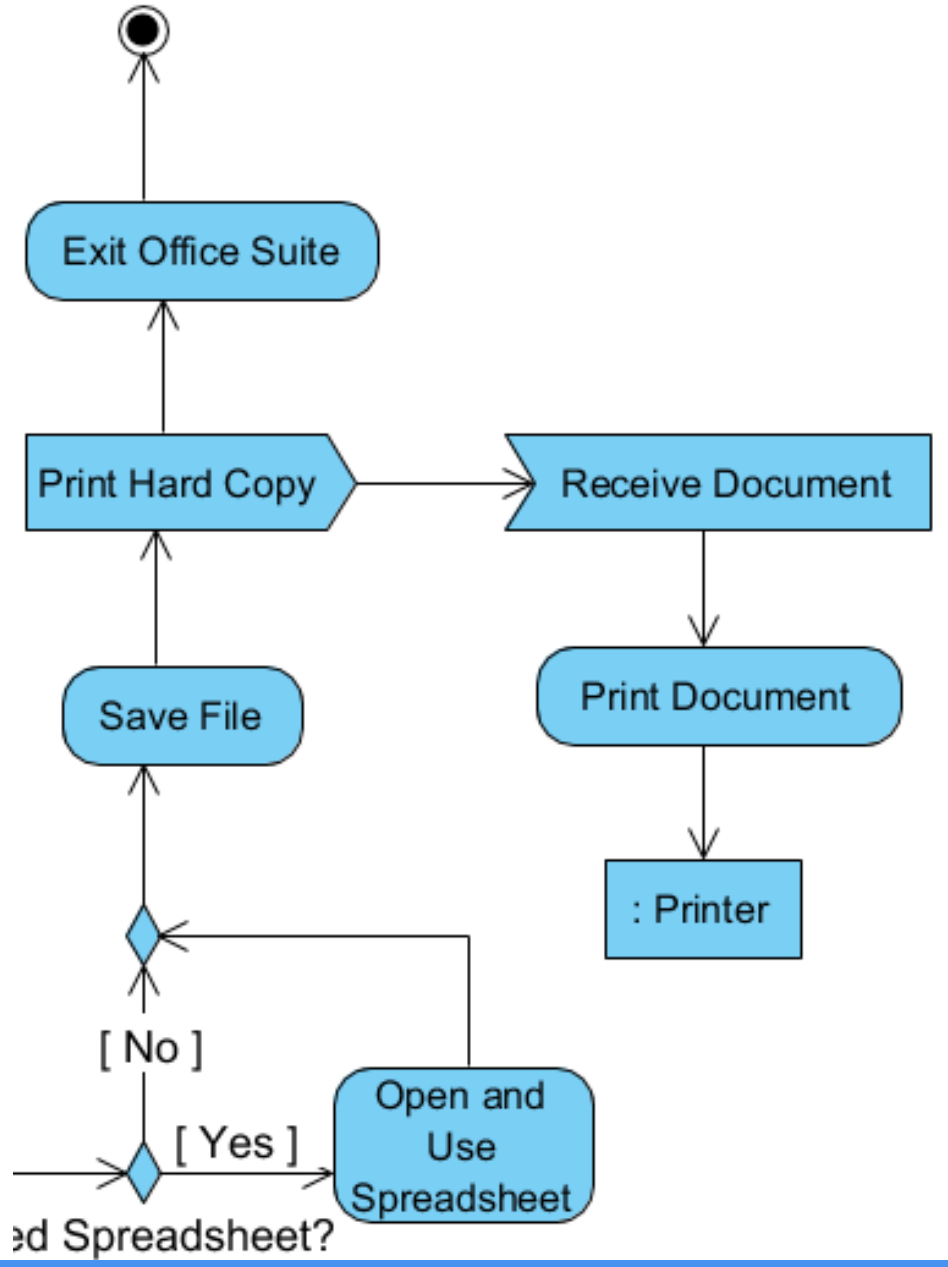


With swimlanes



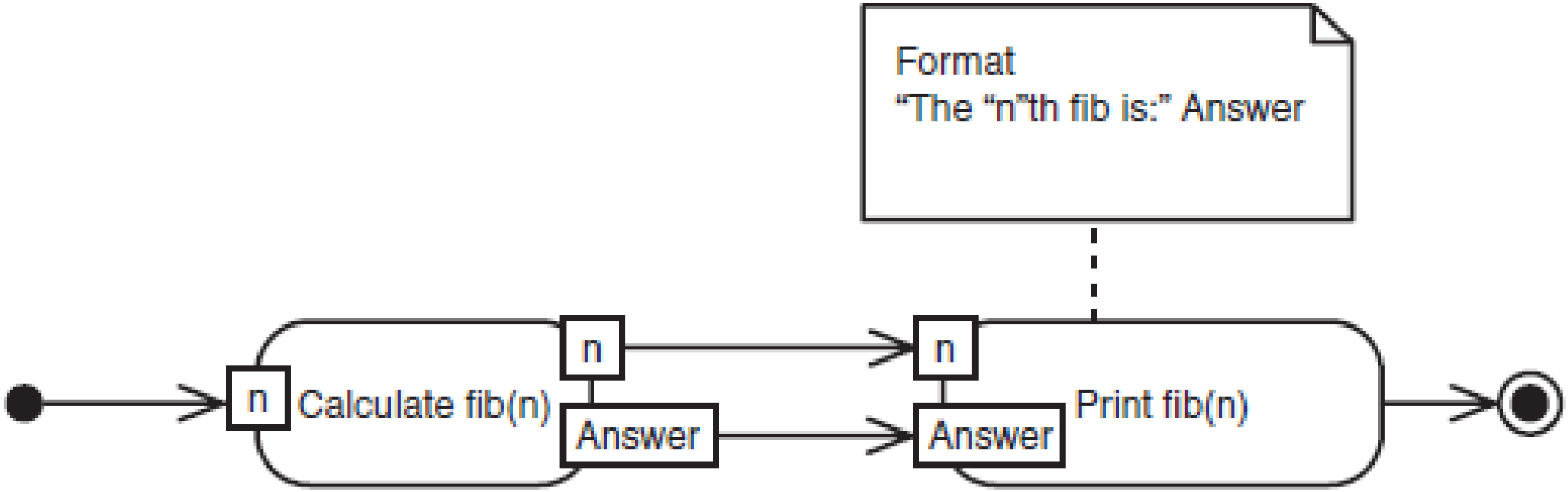
Modified Example

- Using send signal and receive signal to achieve actual printing task



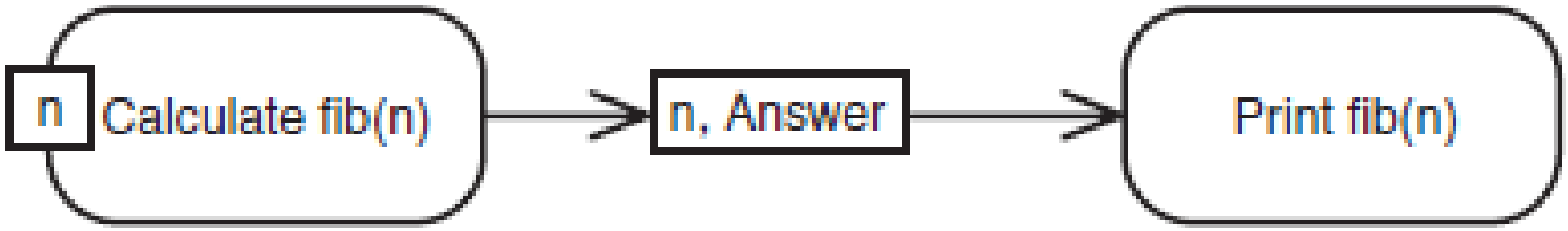
Taking parameters

- What is the problem with this notation?

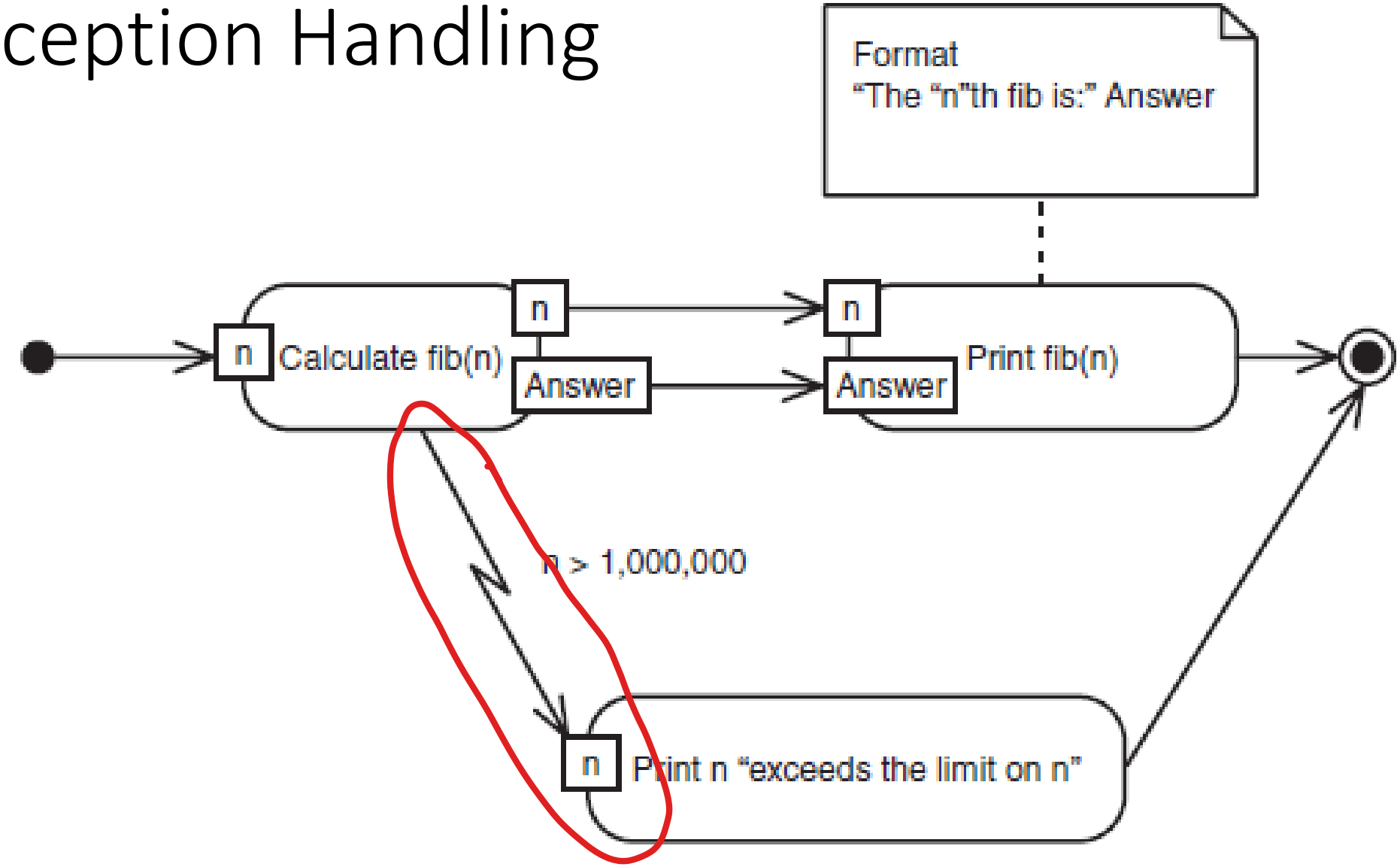


Taking Parameters

- Simplification

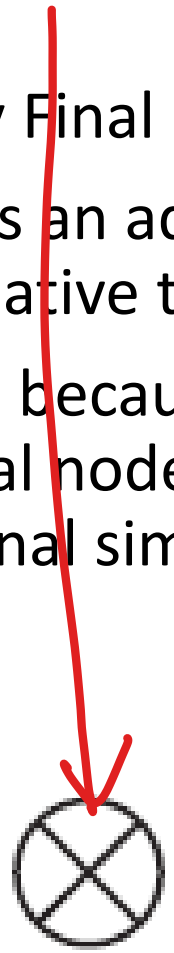


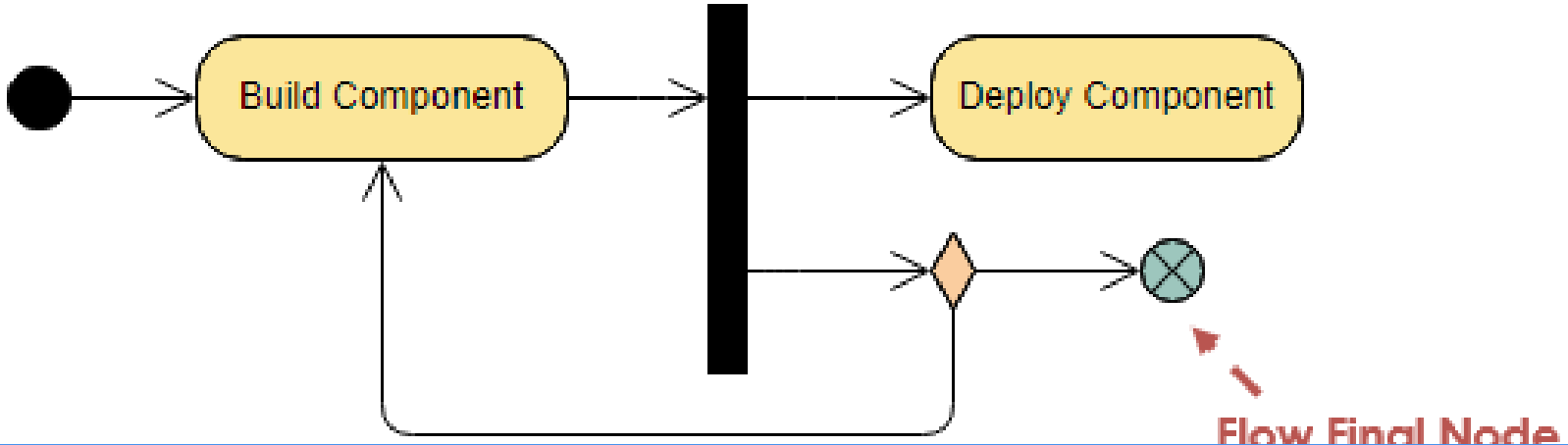
Exception Handling



Flow Final Node 活动终止点不影响其他流

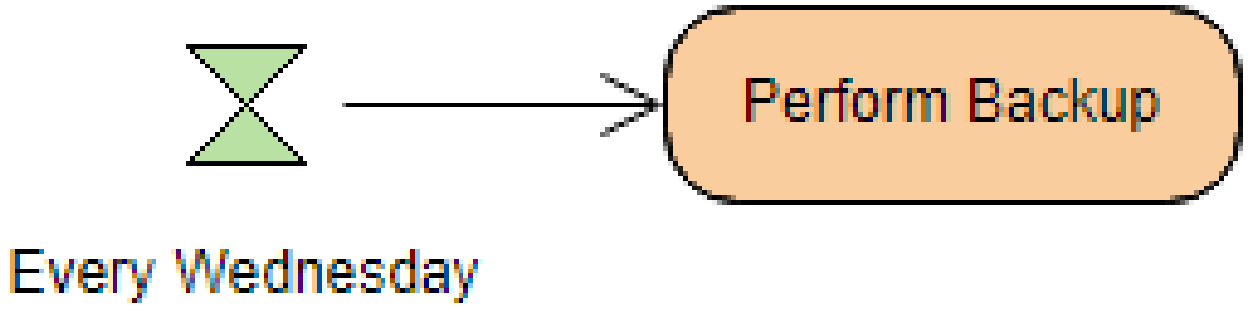
- Not Activity Final Node
- UML 2.0 has an additional control node type called Flow Final that is used as an alternative to the Activity Final node to terminate a flow.
- It is needed because in UML 2.0, when control reaches any instance of Activity Final node, the entire activity (including all flows) is terminated. The Flow Final simply terminates the flow to which it is attached.



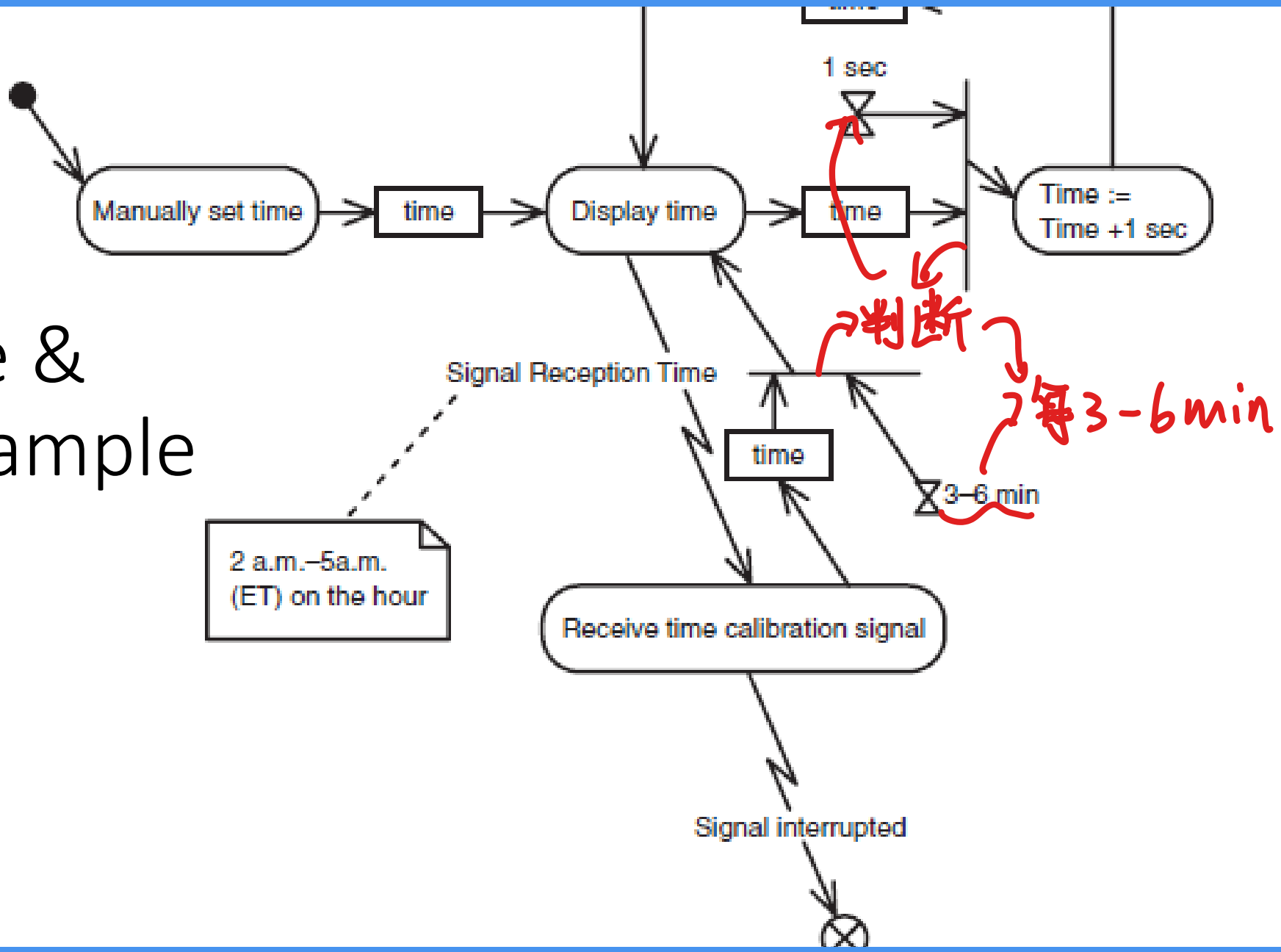


Time Event

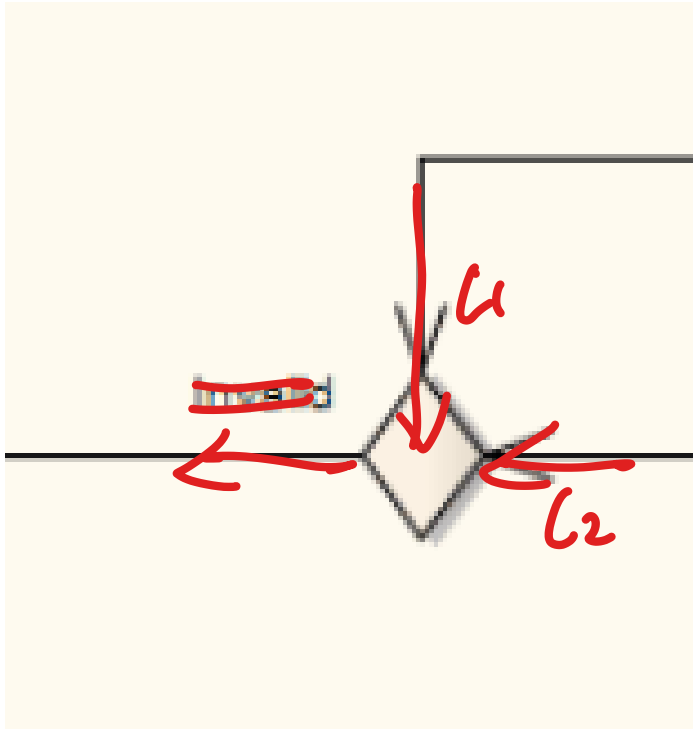
- Time event flows when the time expression is true



Flow Final Node & Time Event - Example

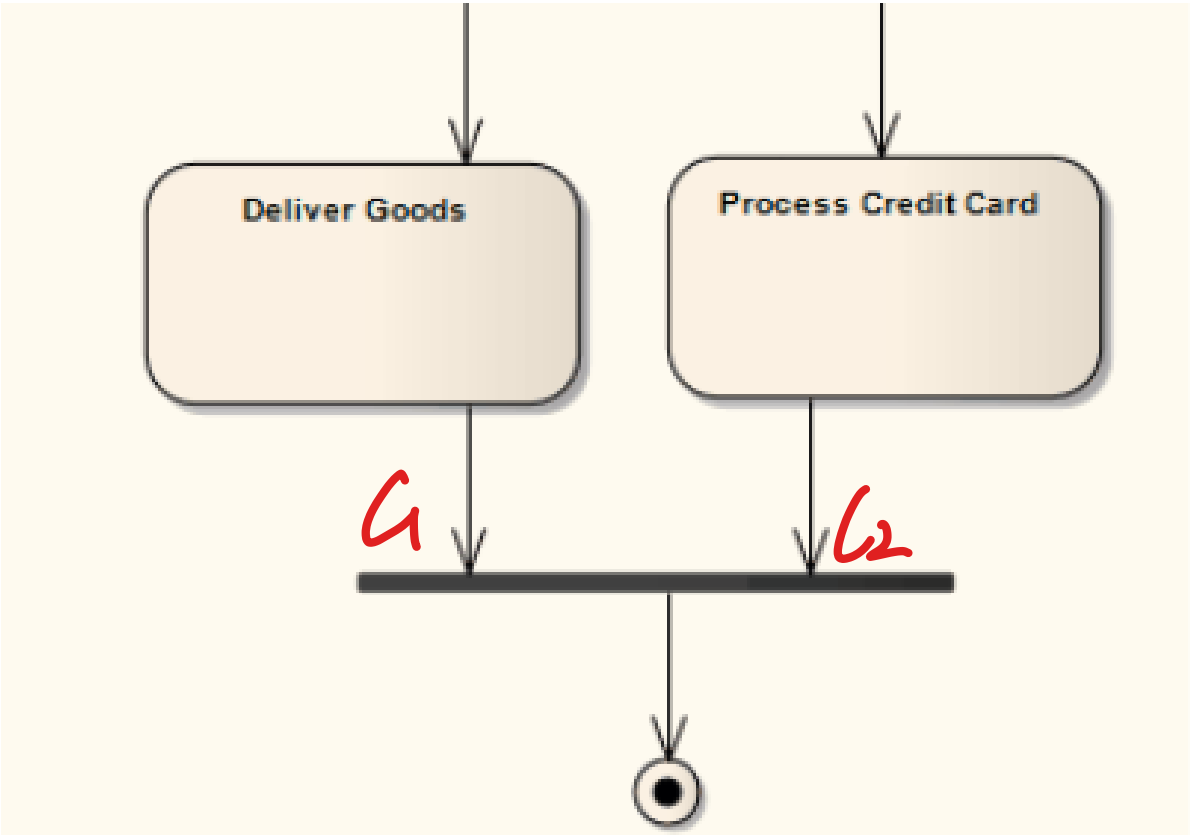


Merge Node vs. Join Node



Merge Node 合并节点、

C1, C2 任意到达都可通过



Join Node 联接节点、

C1, C2 必须都到达才能通过

Merge Example