Process Mining

UNICAM

Università di Camerino

1336

Lesson 5 – Mapping Petrinet to BPMN

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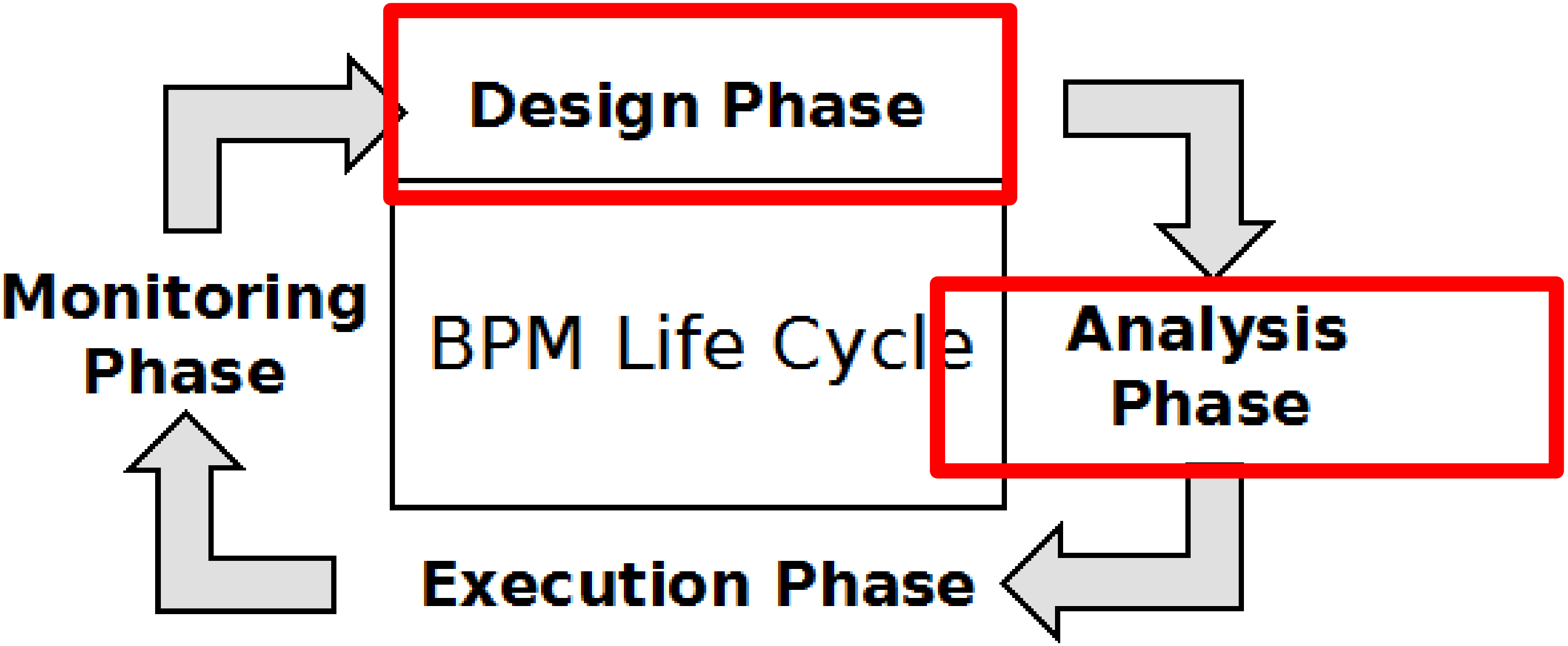
Business Process Modeling



Petri Nets

Why Petri Nets?

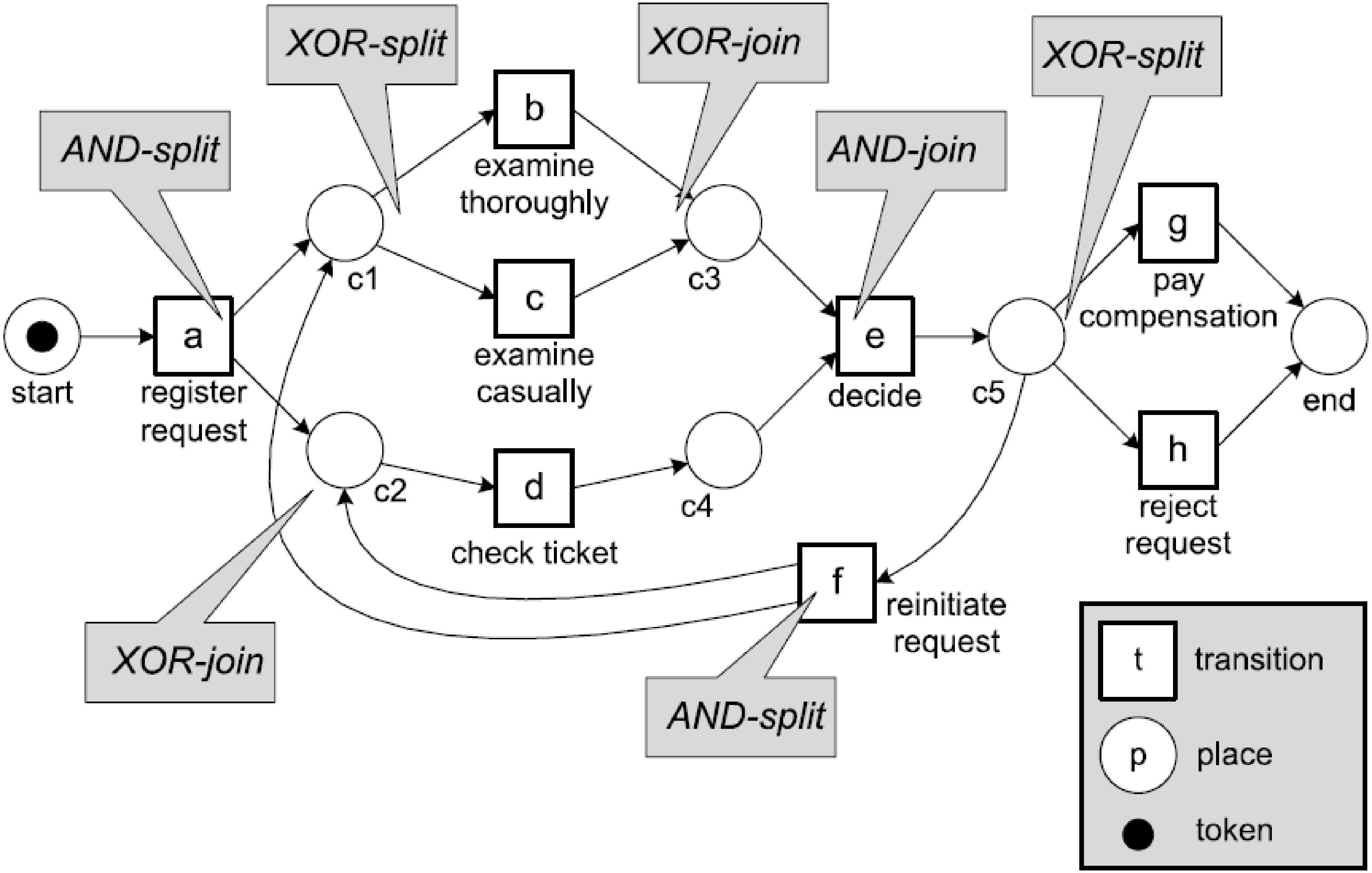
- Oldest BP modelling language
- Used to simulate and verify BPs
- Formal language
- Today used in software engineering to check properties in systems

Petri Net are composed by (P,T,F,M_0):

- Place (P)
- Transitions (T)
- Arcs (F)

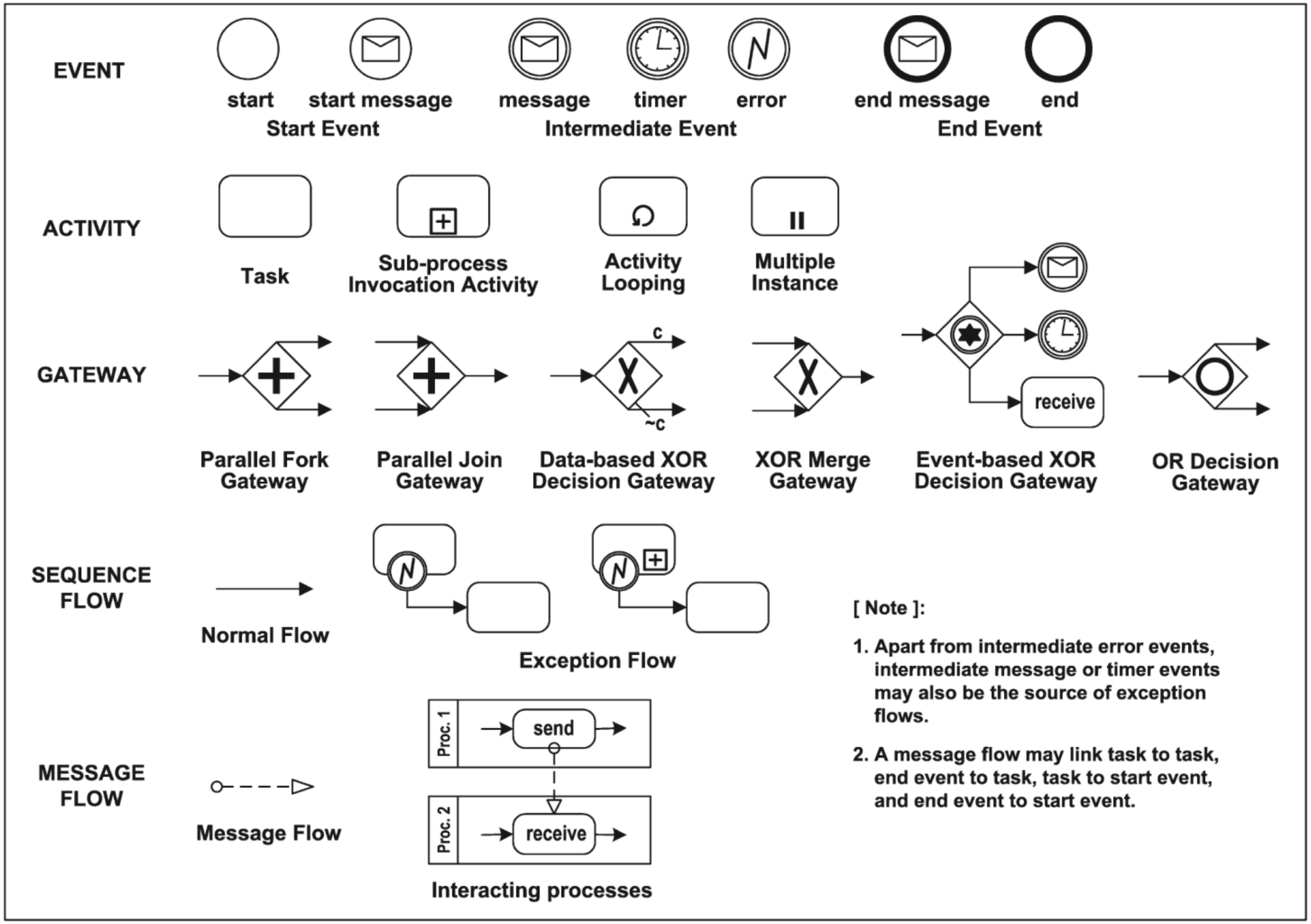
.. But also token! (M_0)

Petri Nets



AND-split
XOR-split
XOR-join
AND-join
XOR-split
start
a
register request
c1
c2
b
examine thoroughly
c
examine casually
d
check ticket
c3
c4
e
decide
c5
g
pay compensation
h
reject request
end
f
reinitiate request
XOR-join
AND-split
t
transition
p
place
●
token

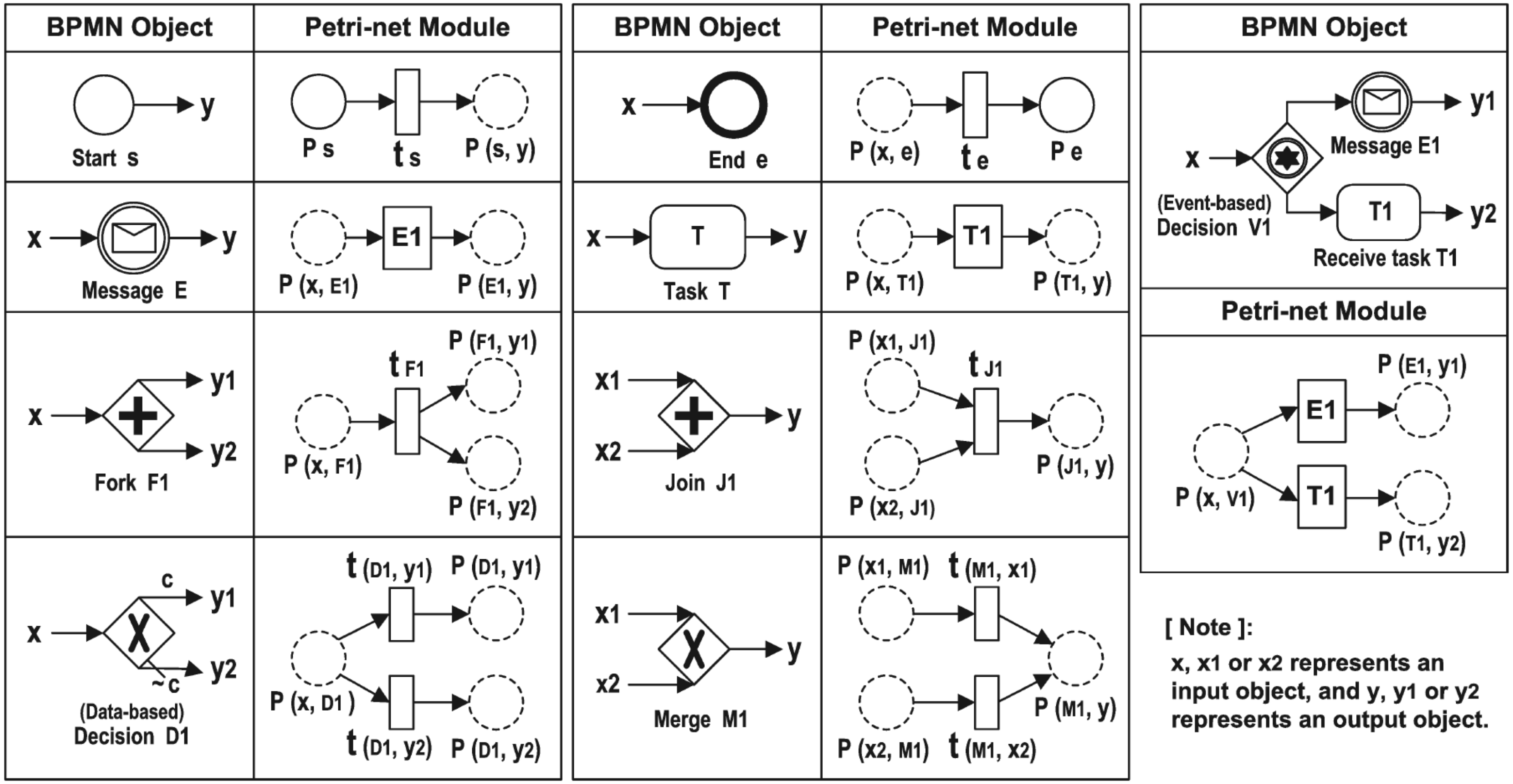
BPMN Summary



[Note]:

1. Apart from intermediate error events, intermediate message or timer events may also be the source of exception flows.
2. A message flow may link task to task, end event to task, task to start event, and end event to start event.

Mapping Rules

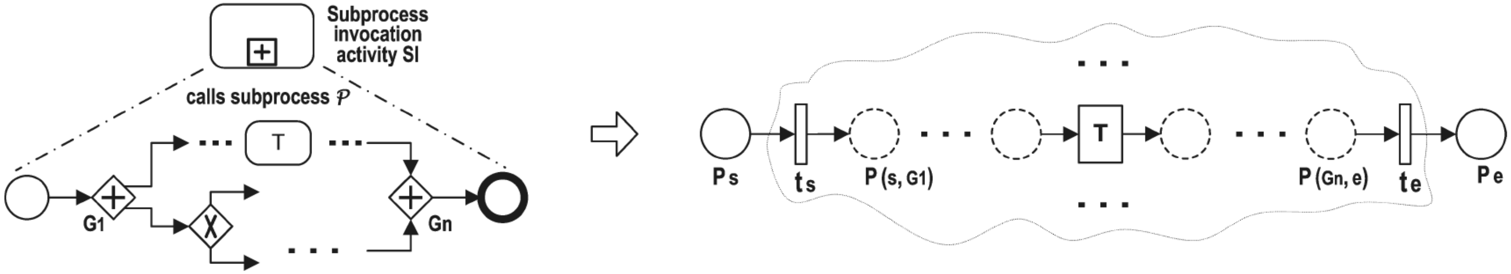


[Note]:

x, x1 or x2 represents an input object, and y, y1 or y2 represents an output object.

Dijkman, Remco M., Marlon Dumas, and Chun Ouyang. "Semantics and analysis of business process models in BPMN." *Information and Software technology* 50.12 (2008): 1281-1294.

Mapping Rules



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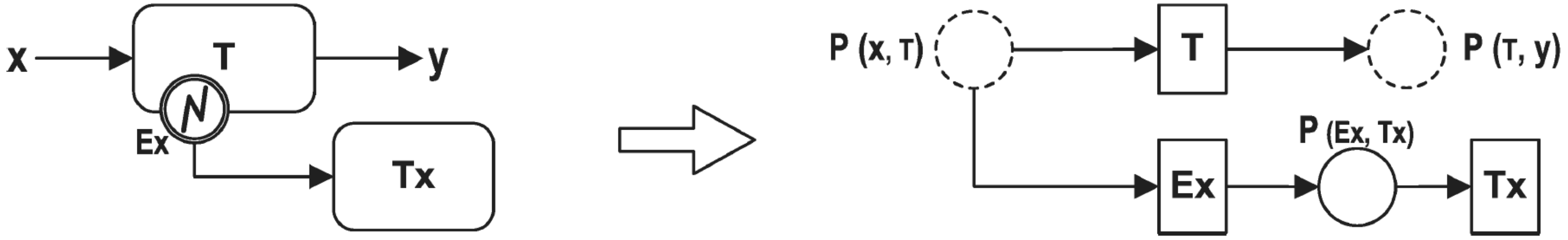
Mapping Rules



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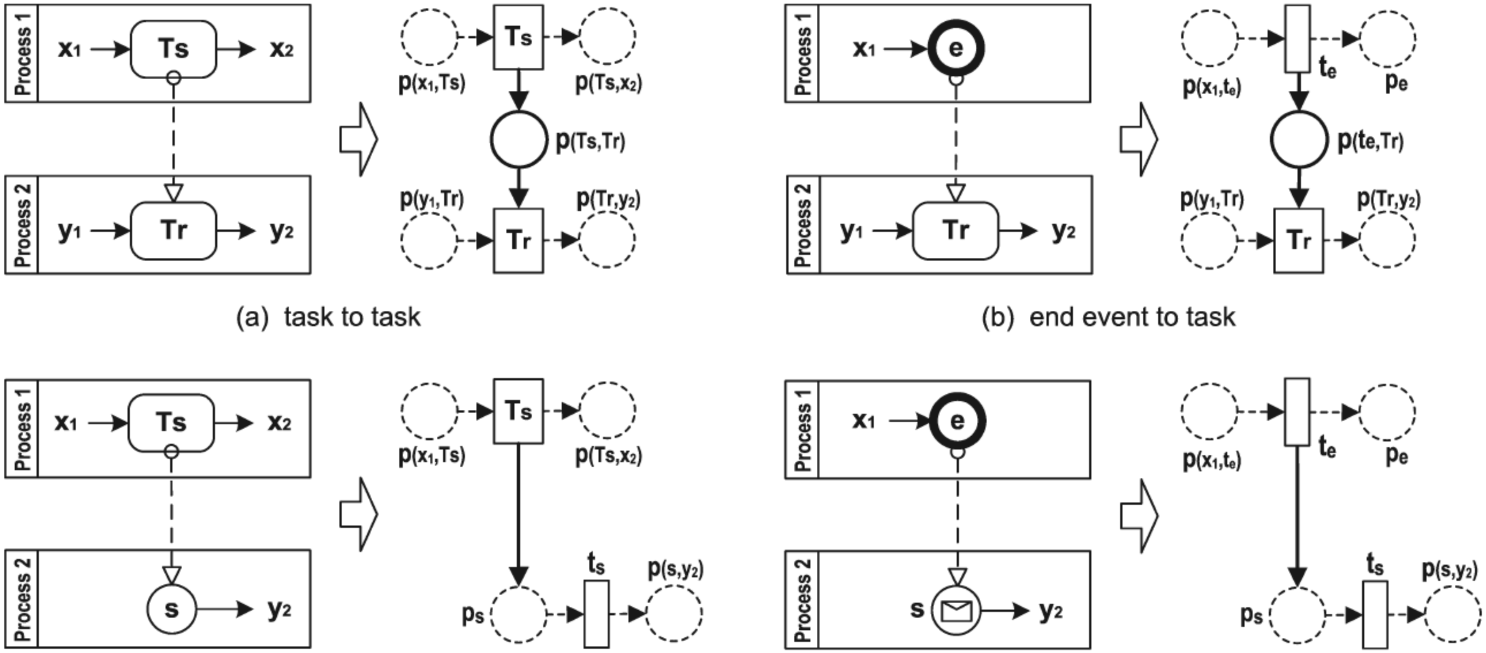
Mapping Rules



(a) task to task

(b) end event to task

(c) task to start event

(d) end event to start event

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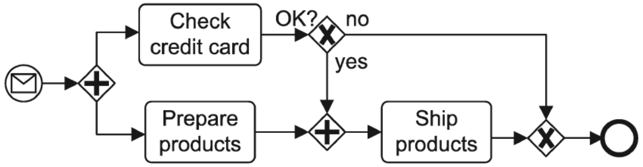
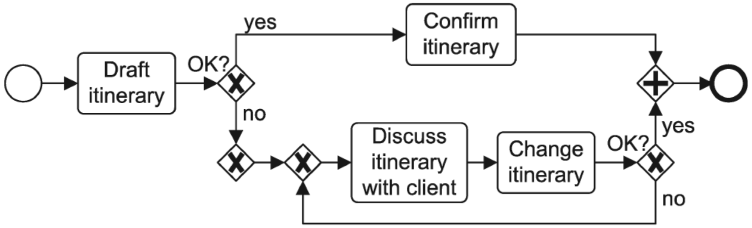
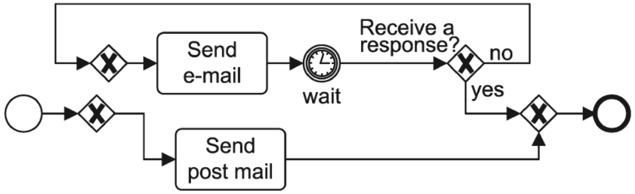
Exercises







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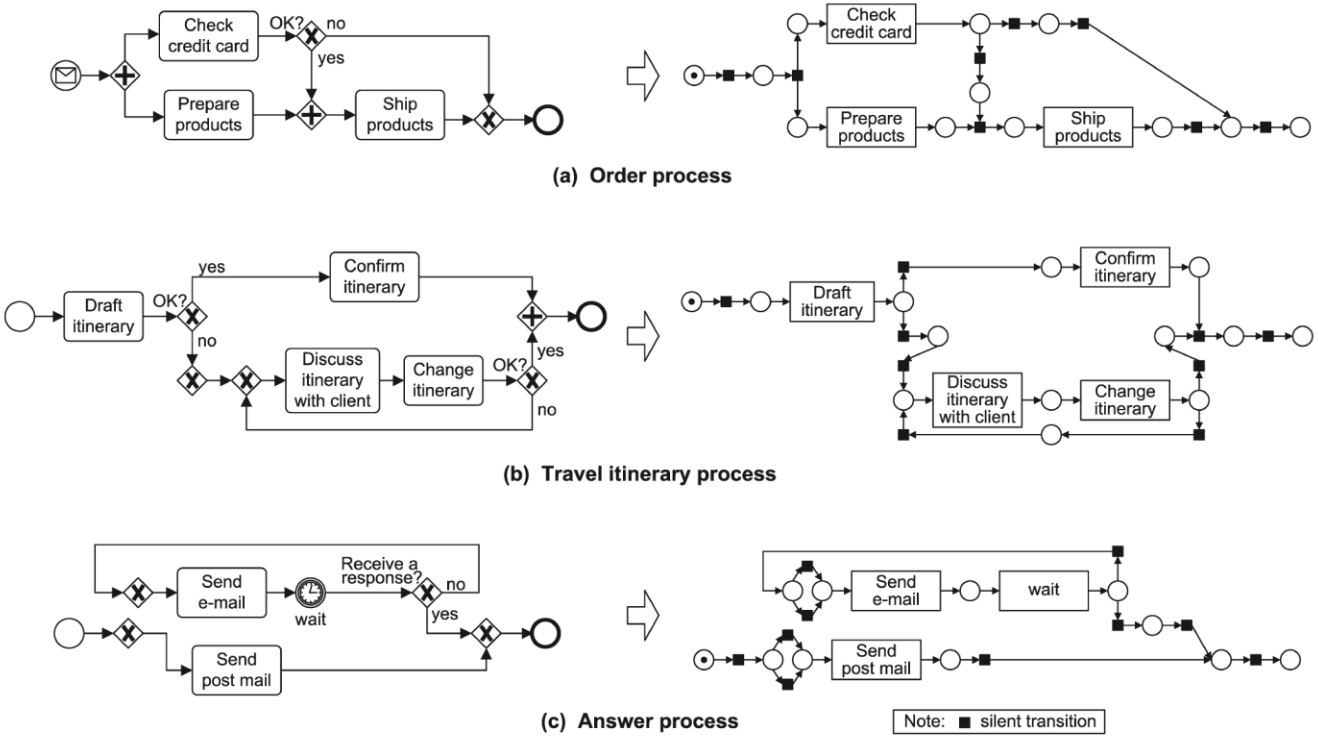

(a) Order process

(b) Travel itinerary process

(c) Answer process

Note: ■ silent transition

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QUESTIONS?