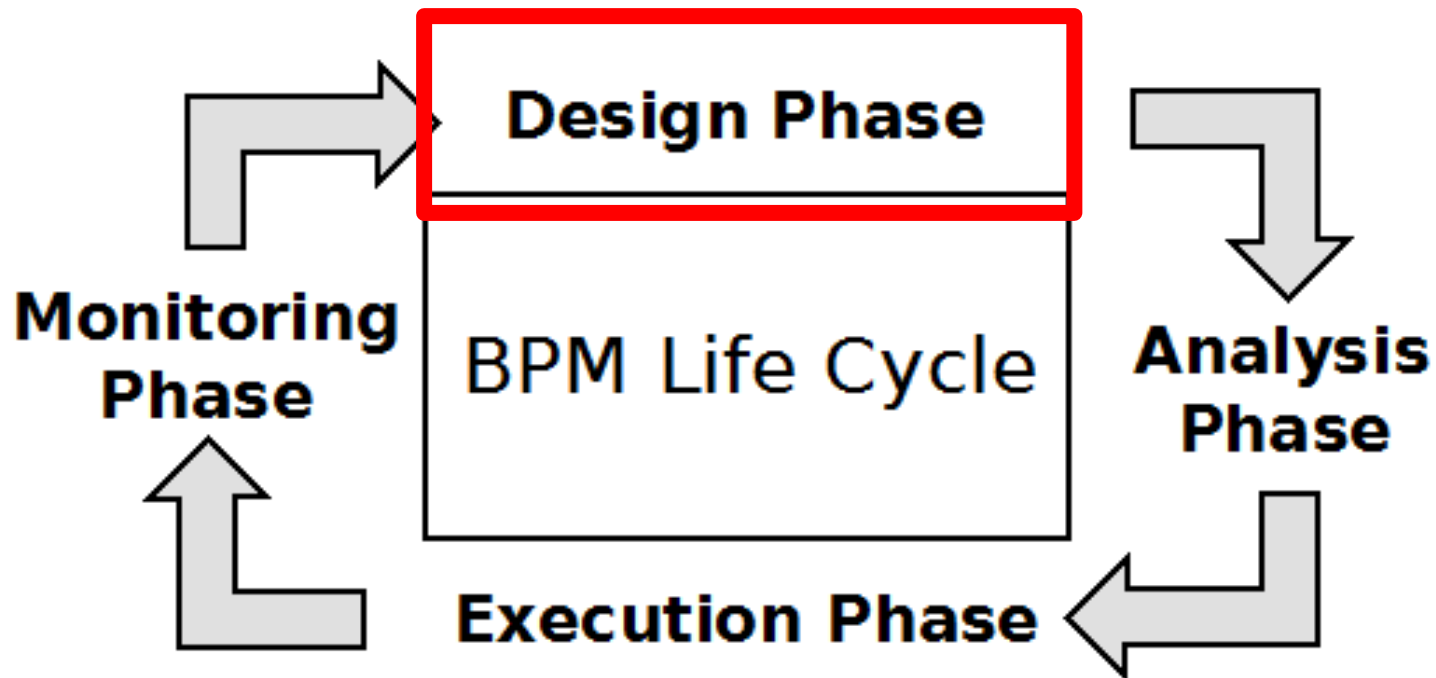


# Process Mining



## Lesson 4 – Modeling Languages (2)

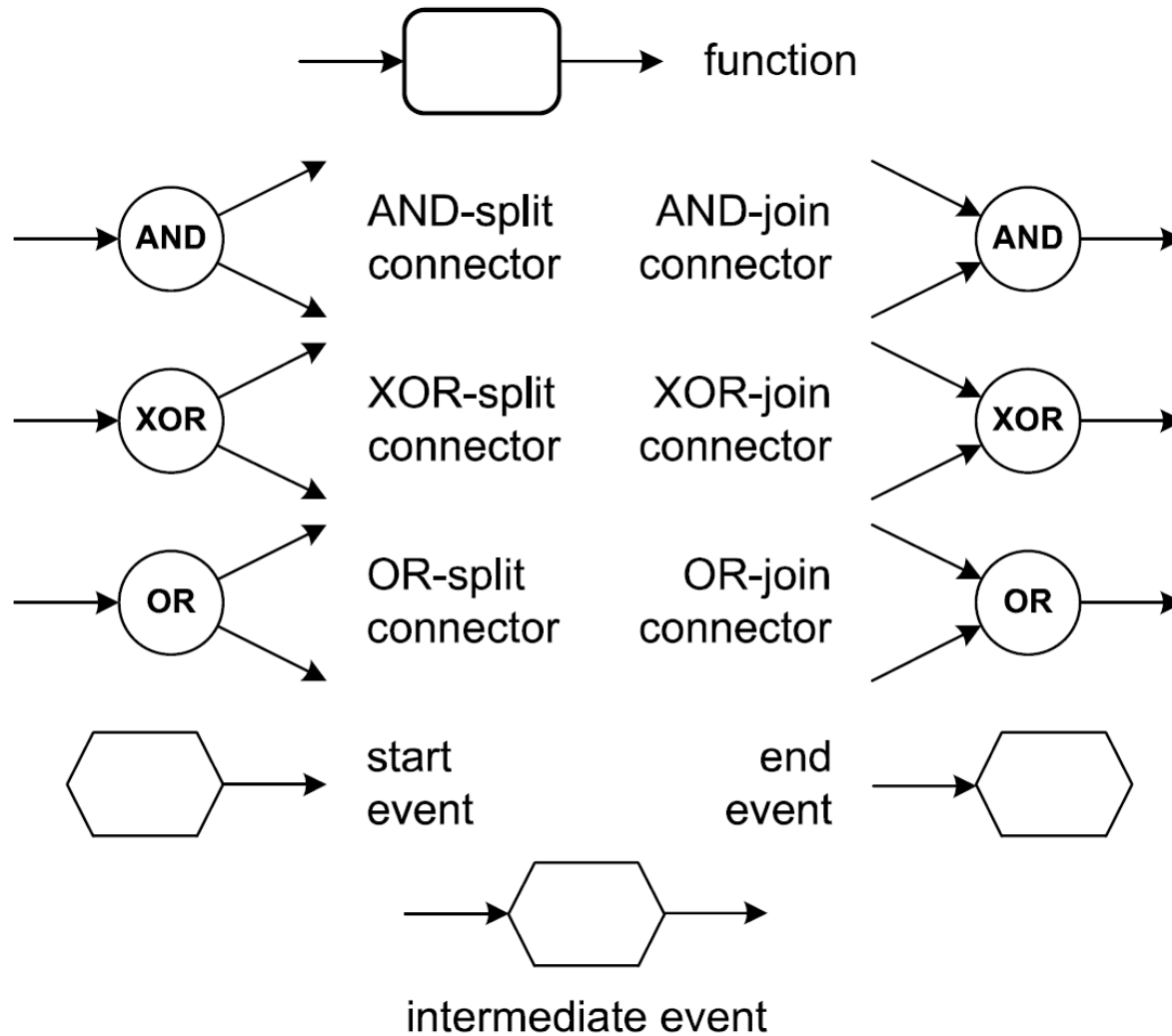
# Business Process Modeling



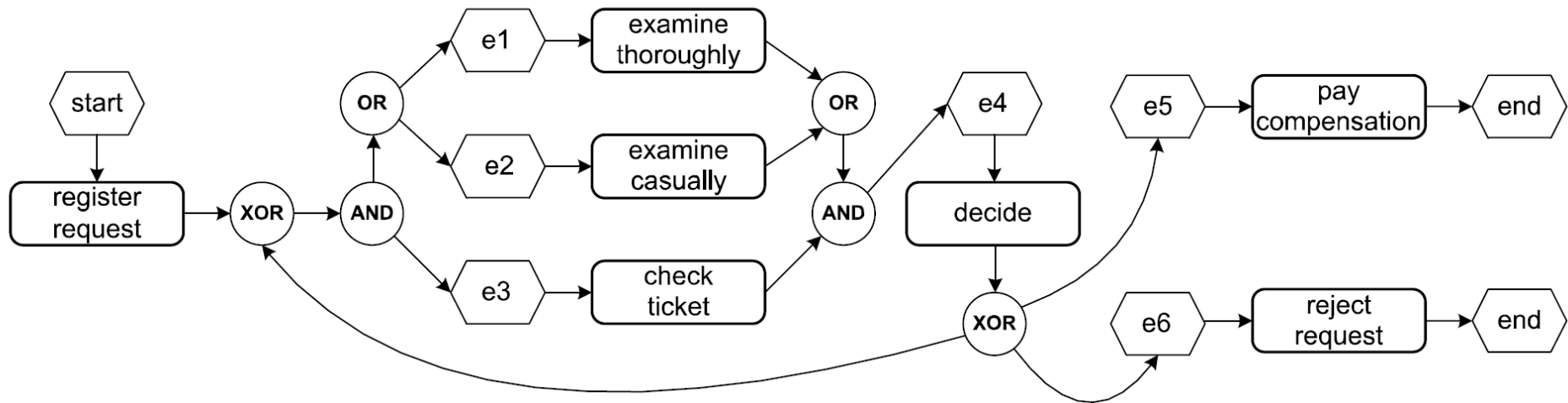
# Event-Driven Process Chain

## Why EPC?

- It is a simple subset of BPMN
- Graphical Notation
- Supported by some software system



# EPC



# Transition Systems

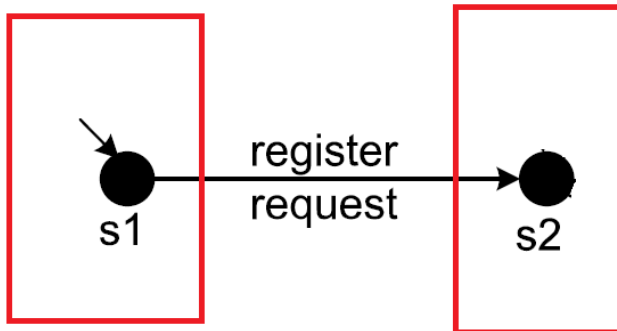
# Transition Systems

Why Transition Systems?

- Most basic process modelling notation

TS: State, Actions and transitions

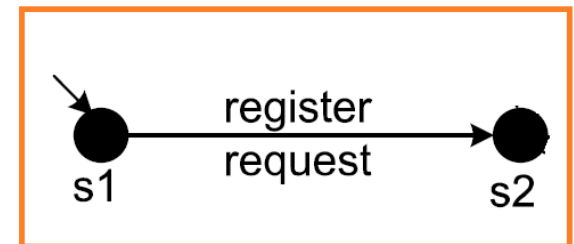
States



Action



Transition



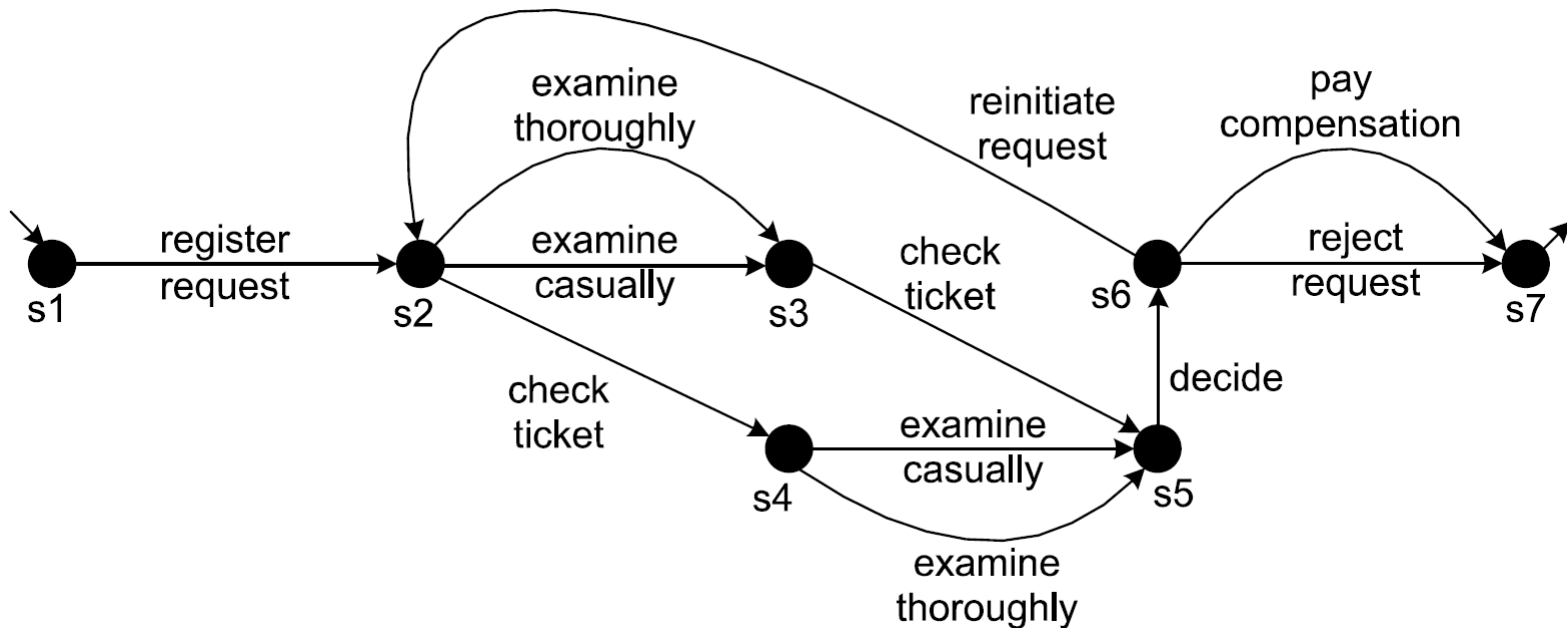


# Transition Systems

## Why Transition Systems?

- Most basic process modelling notation

TS: State, Actions and transitions

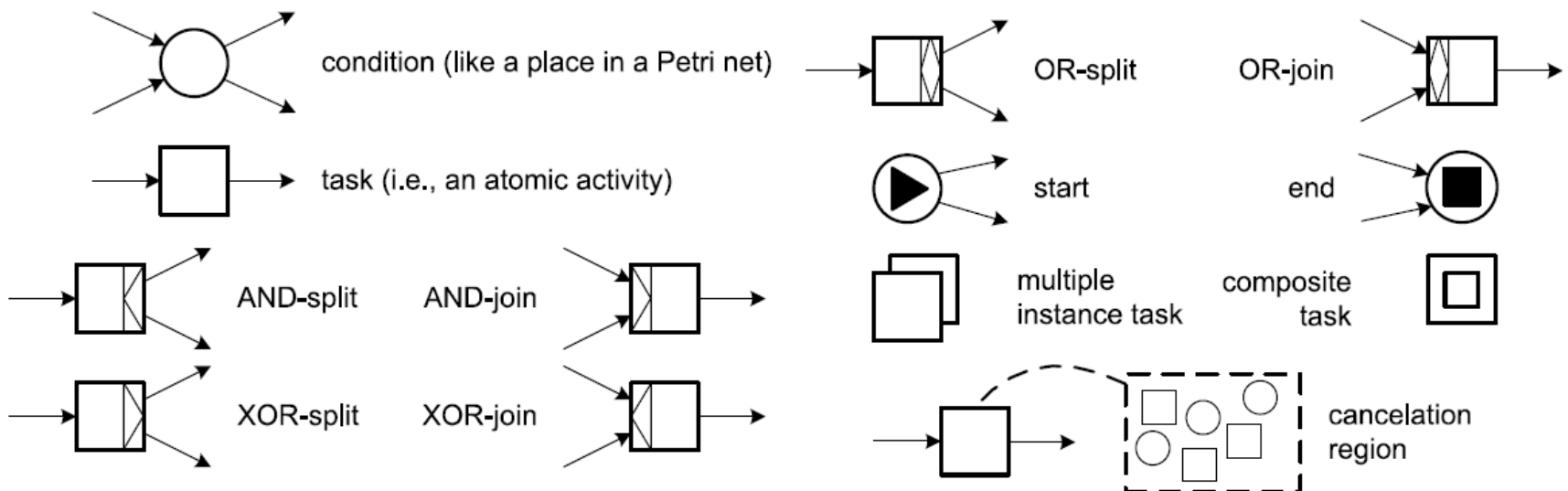


# Yet Another Workflow Language (YAWL)

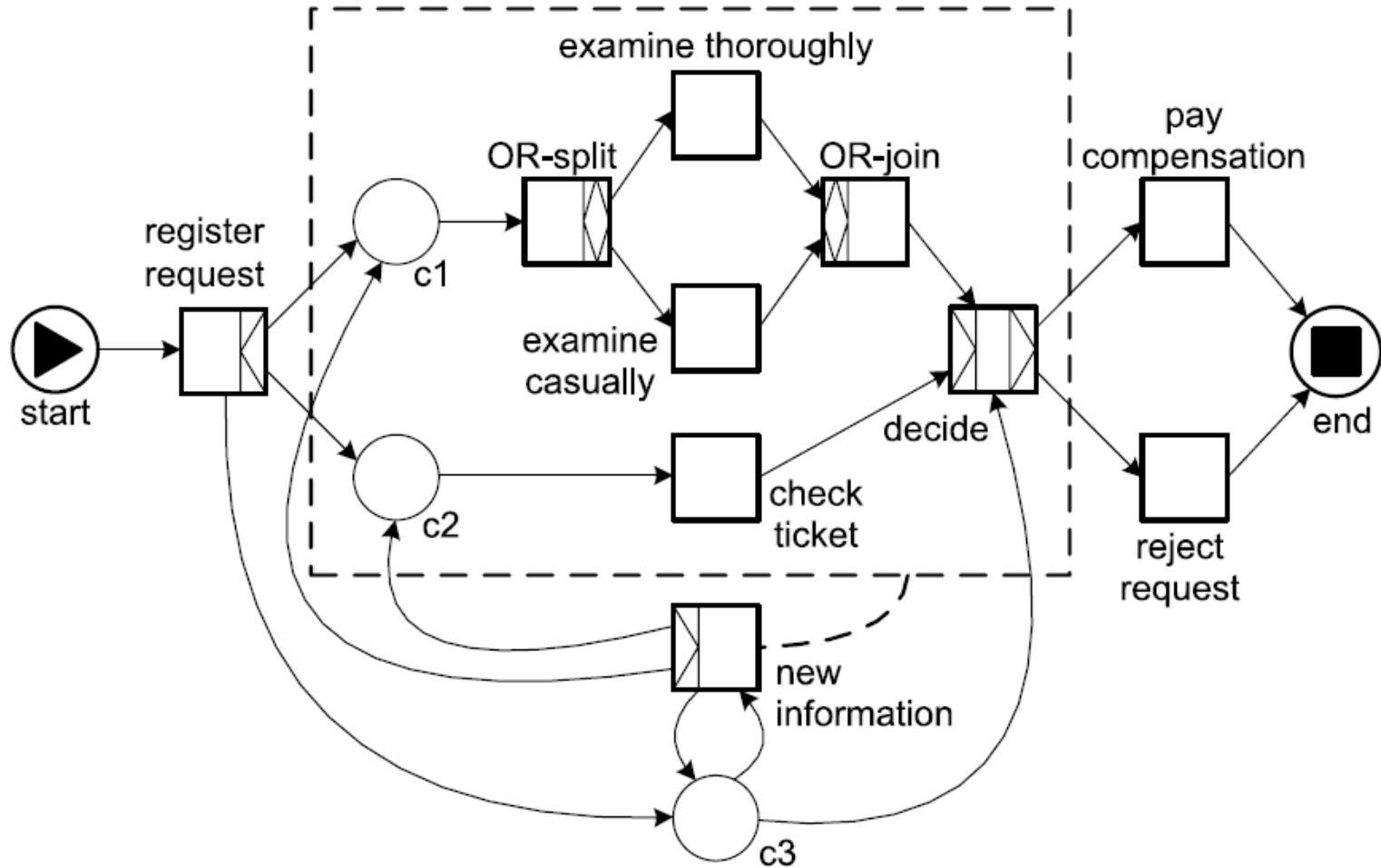
# YAWL

## Why YAWL?

- Similar to Petri-net
- Based on «patterns»
- Used in particular in literature



# YAWL



# Petri Nets

# Petri Nets

## Why Petri Nets?

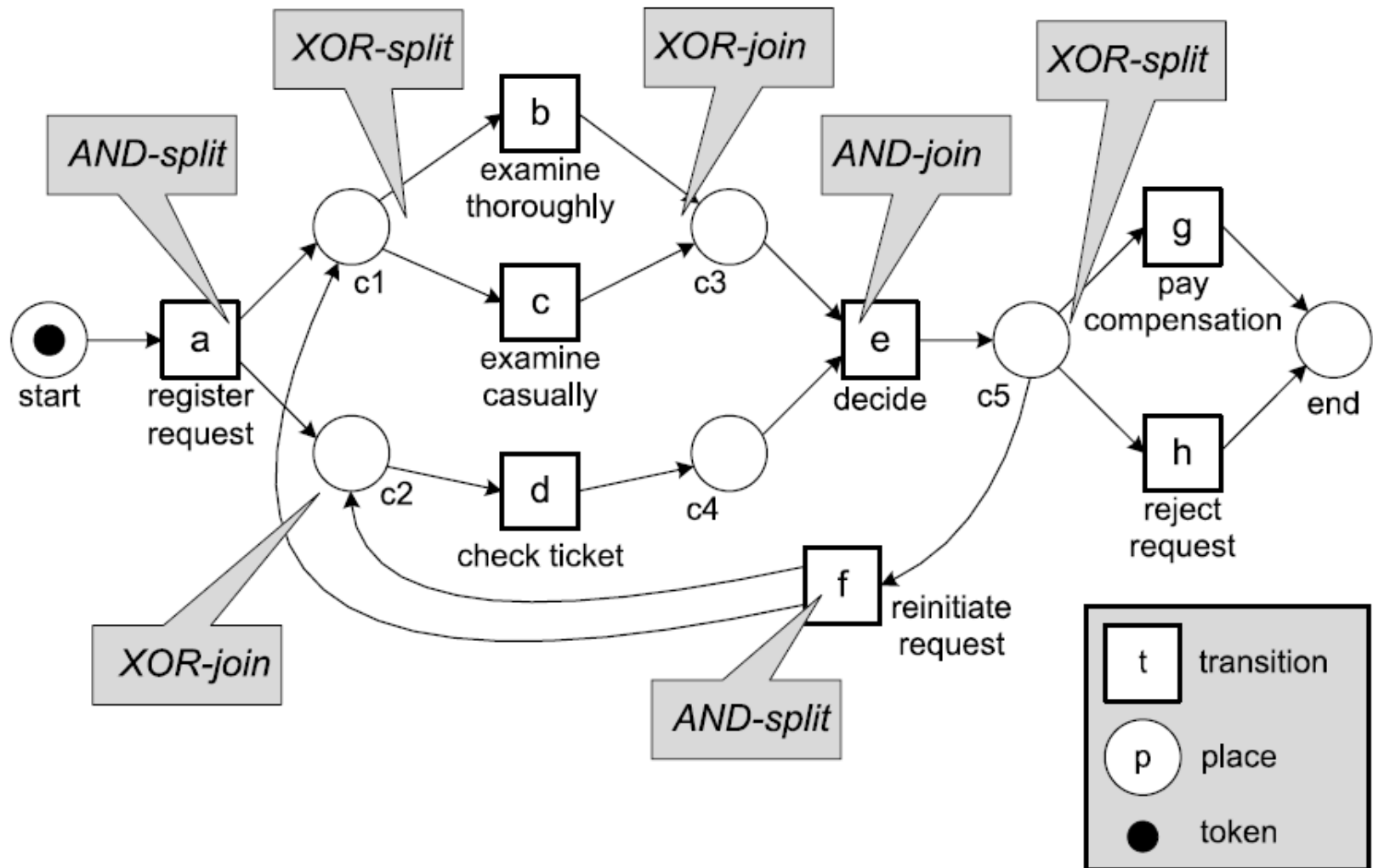
- Oldest BP modelling language
- Used to simulate and verify BPs
- Formal language
- Today used in software engineering to check properties in systems

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

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

.. But also token! ( $M_0$ )

# Petri Nets



# Exercises



# Petri Nets

Try to model a traffic light system in petri net (semaphore),

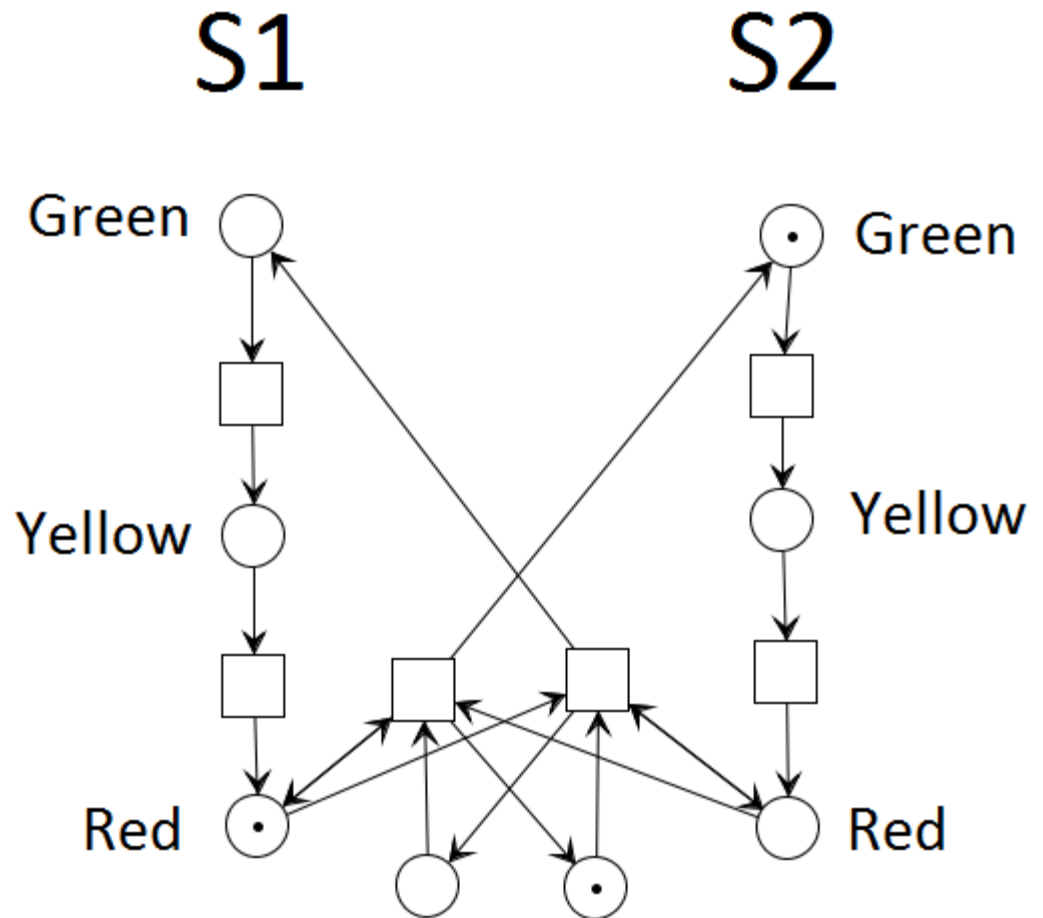
- 2 traffic light
- Each traffic light has 3 colors (green, yellow and red)





# Petri Nets

Traffic Light System V2



**QUESTIONS?**