

Study of the Dining Philosophers

Various expression of a problem

The planning

In case you thought we forgot

Exploring Modal Logics

Metalogic

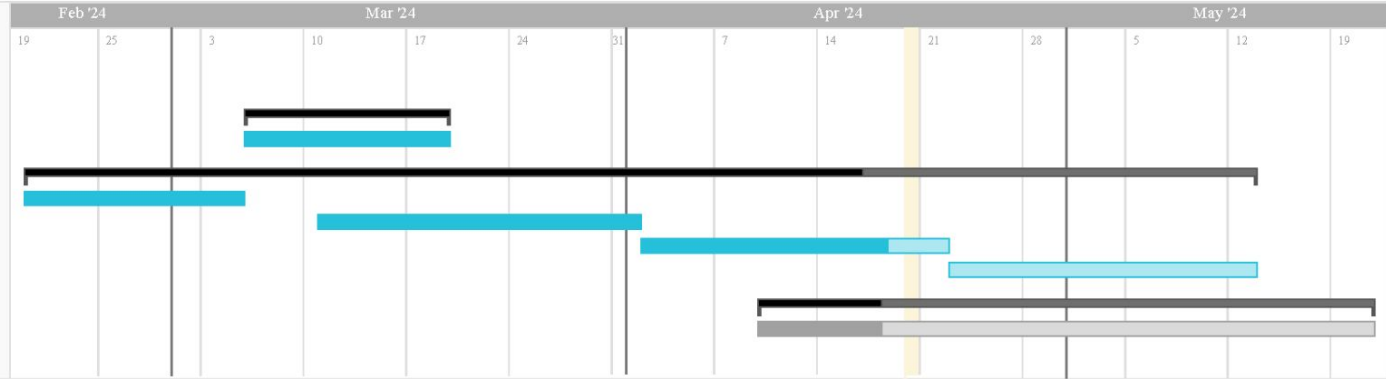
Understanding main concepts / properties

Modal Logics

Introductory research on Deontic logic / PCTL / Past + CTL
Studying higher order logics and the impact of order of sound...
Studying Modal logics efficiency on given problems
Further research (possible applications, further extensions ...)

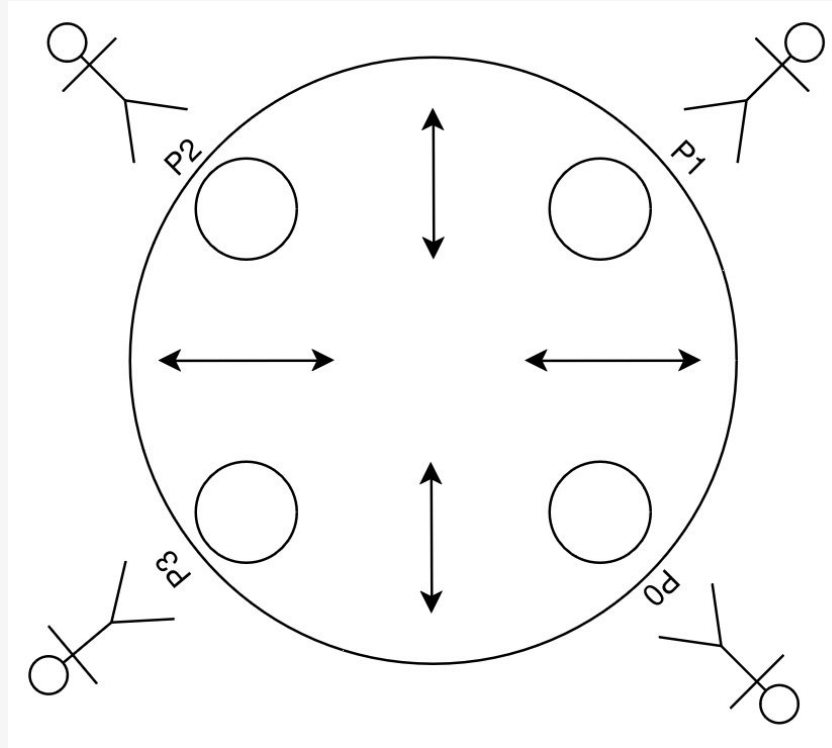
Report

Writing the report



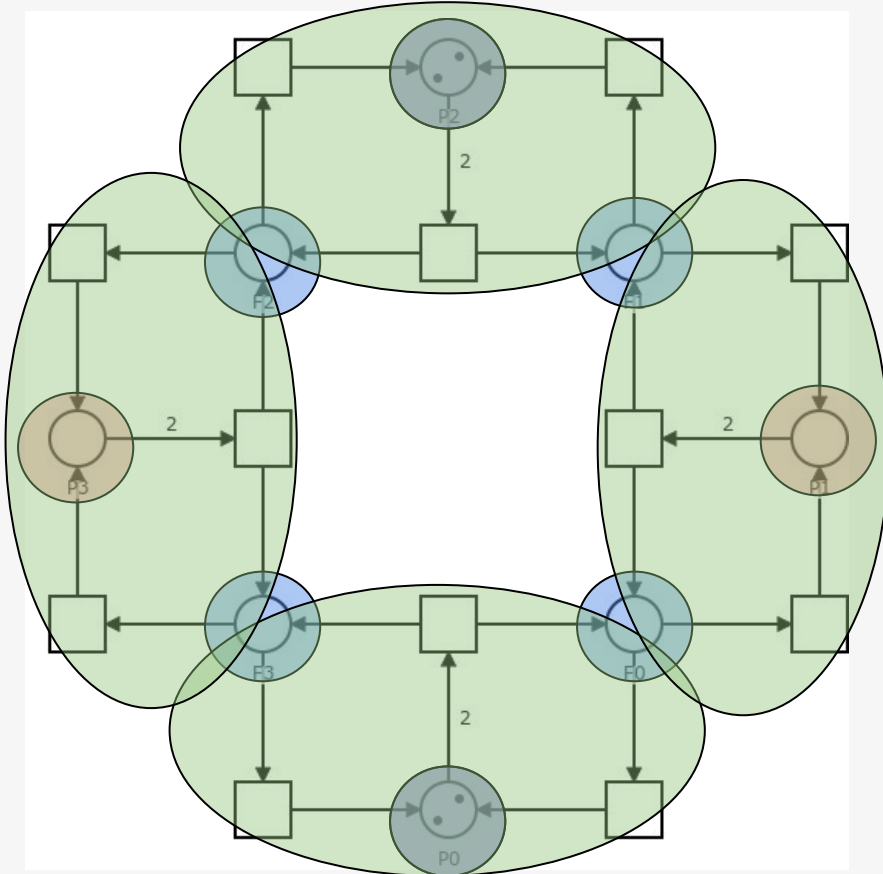
The dining philosophers

If you don't already know



The dining Philosophers

Modelisation



- 4 actors
- 4 ressources
- 4 actions

One problem four logics

Deontic, CTL, P+CTL, PCTL*

Define One event:

$M_i := P_i$ is eating

Statement:

$\Diamond M_3$

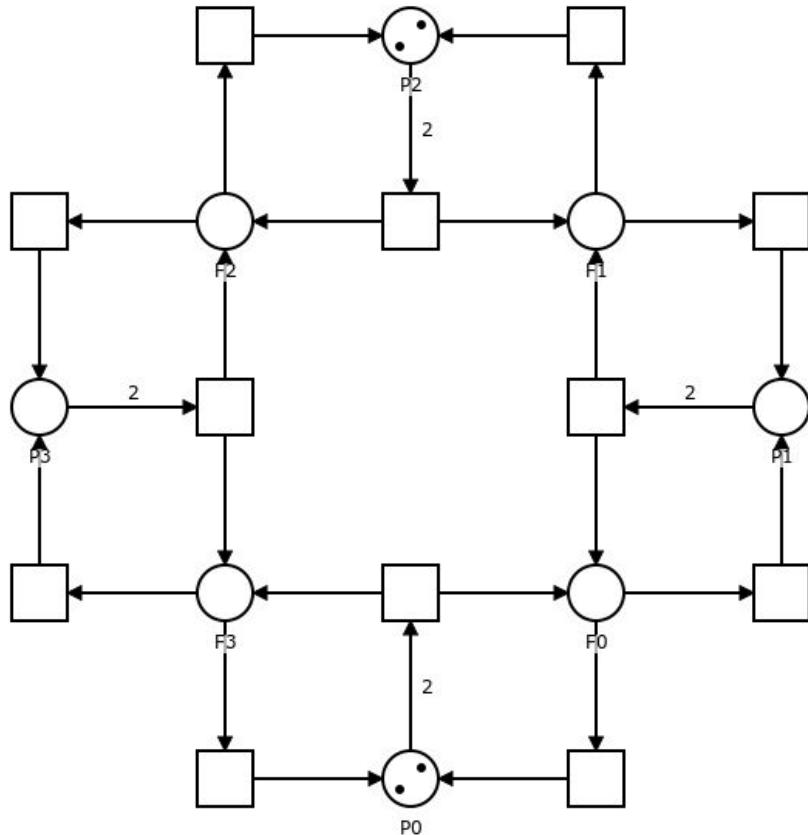
Modal

PM_3

Deontic

One problem four logics

Kripke Structure



$$K := (S, I, R, L)$$

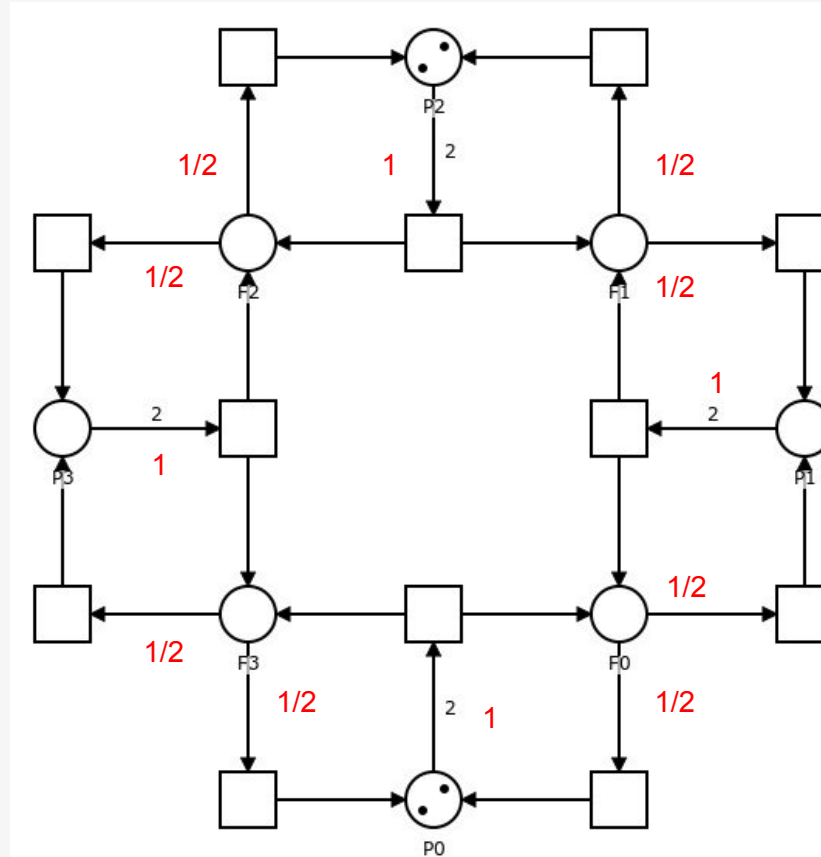
$$S := \{x \mid x \in \{\epsilon, P_0, P_1\} \times \{\epsilon, P_1, P_2\} \times \{\epsilon, P_2, P_3\} \times \{\epsilon, P_3, P_0\}\}$$

$$I := (P_0, P_2, P_2, P_0)$$

Statement:

EXM_3
CTL*

EXM_3
PAST+CTL



Statement:

$$P_{p>0}(\text{EXM}_3)$$

PCTL

Expressivity

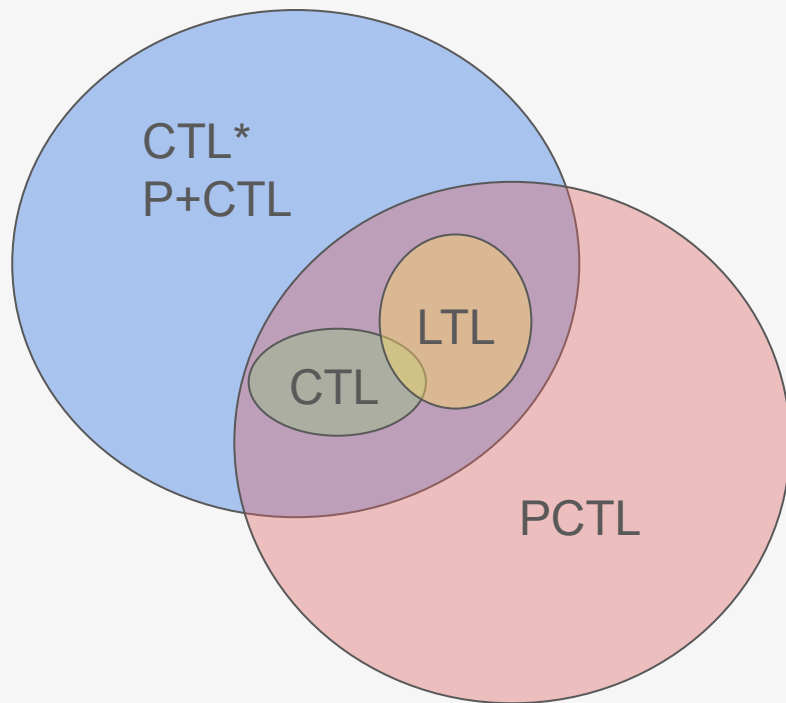
Structures and Logic

Deontic

CTL*

PCTL

PAST+CTL



THANK YOU

Any questions? Remarks ?