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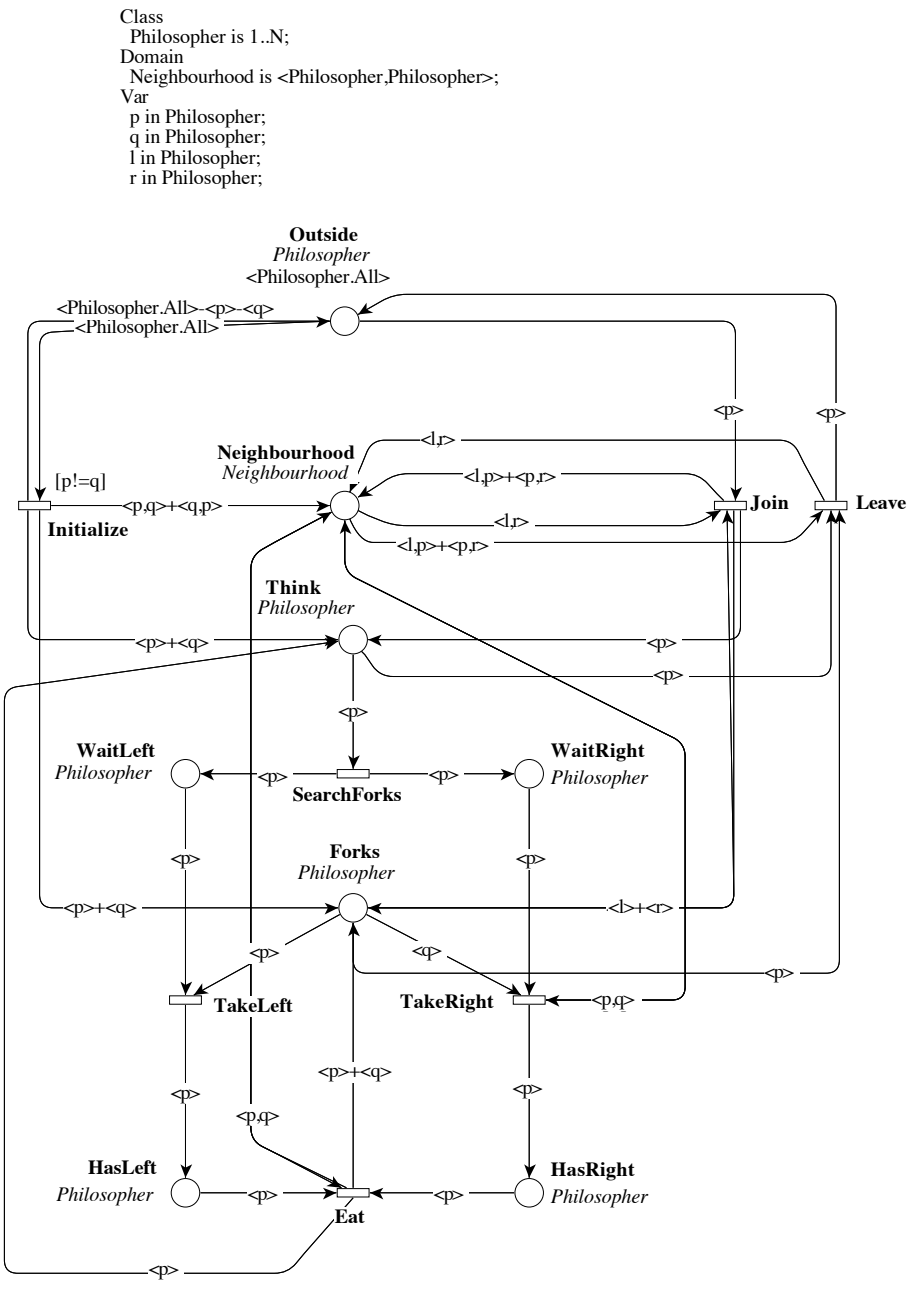
Introduction

This Model form is a short description of the Dynamic Philosophers model that comes, for the Model Checking Contest @ Petri Nets, with: a set of PNML files, a set of properties to be checked (possibly one file per model instance) and an optional set of properties concerning the model (invariants, etc. – possibly one file per model instance). For Coloured Nets, equivalent PNML P/T net files are proposed too.

Dynamic Philosophers



Presentation

Description: This model is a variation of the Dining Philosophers where philosophers can join or quit the table. Each philosopher has its own fork, as in the usual version. The interesting point is that identifiers of left and right for each philosopher must be computed or stored somewhere.

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A philosopher can enter the table only if the two forks around his position are available. He can leave if his fork is free, and he is thinking.

This model has been proposed for CO-OPN, but can be translated in Colored nets, and unfolded in Place/Transition nets.

Origin: **Modeling Distributed Systems using Concurrent Object Oriented Petri Nets**, *Chen, A, Buchs, D, Lucio, L, Pedro, L, and Risoldi, M*, In: Proceedings of the Fourth International Workshop on Modelling of Objects, Components and Agents, MOCA'06, vol. FBI-HH-B-272, pp. 103-122

Scaling parameter

Name	Description	Values
N	The maximum number of philosophers	3,10,20,50, 80

Information about the Model

Data on the Model

Number of places	Number of transitions	Number of arcs	Scaling parameter value
$7 * N + N^2$	$N + 3 * N^2 + 2 * N^3$	?	N

Stated Properties

safe	✔	**free choice**	?	**event graph**	?
deadlock	✔	**state machine**	?	**reversible**	?

Other Properties (not mandatory)