

Introduction

This Model form is a short description of the HouseConstruction model that comes, for the Model Checking Contest 2013 @ Petri Nets (“suprise model category”), 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.

HouseConstruction

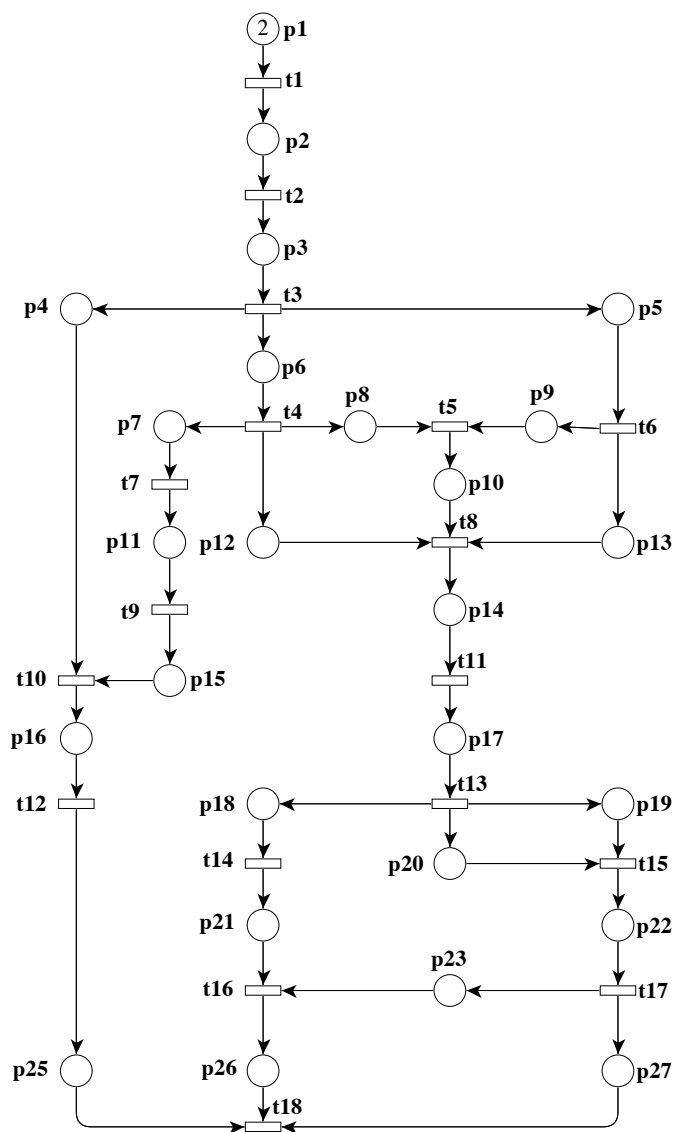


Figure 1: Presentation of the model for instance 2

Presentation

Description: This model has been extracted from the [petriweb.org](http://www.petriweb.org) repository available at <http://www.petriweb.org>. According to the provided information, the net was designed by J. L. Peterson, from a PERT chart by F. Levy The PERT chart contains timing information, which is not accurately translated.

We introduced the number of initial tokens in place p2 as a scaling parameter (construction of several houses in parallel). Experimented values are: 2, 5, 10, 20, 50, 100, 200, 500.

Origin: this model was described in (this was not checked, the book being unavailable in our library):

- Peterson, James Lyle (1981). Petri Net Theory and the Modeling of Systems. Prentice Hall. ISBN 0-13-661983-5

Scaling parameter

Name	Description	Values
N	the initial marking of place p2	2, 5, 10, 20, 50, 100, 200, 500

Information about the Model

Data on the Model

Number of places	Number of transitions	Number of arcs	Scaling parameter value
26	18	51	all

Stated Properties

safe	✗	free choice	✓	event graph	✓
deadlock	✓	state machine	✗	reversible	✗

Other Properties (not mandatory)

The reachability graph was computed for some values of N given below:

- for $N = 1$, 66 states,
- for $N = 2$, 1501 states,
- for $N = 5$, 1.18798×10^6 states,
- for $N = 10$, 1.66357×10^9 states.