

Net: functionNet_sim_example.project

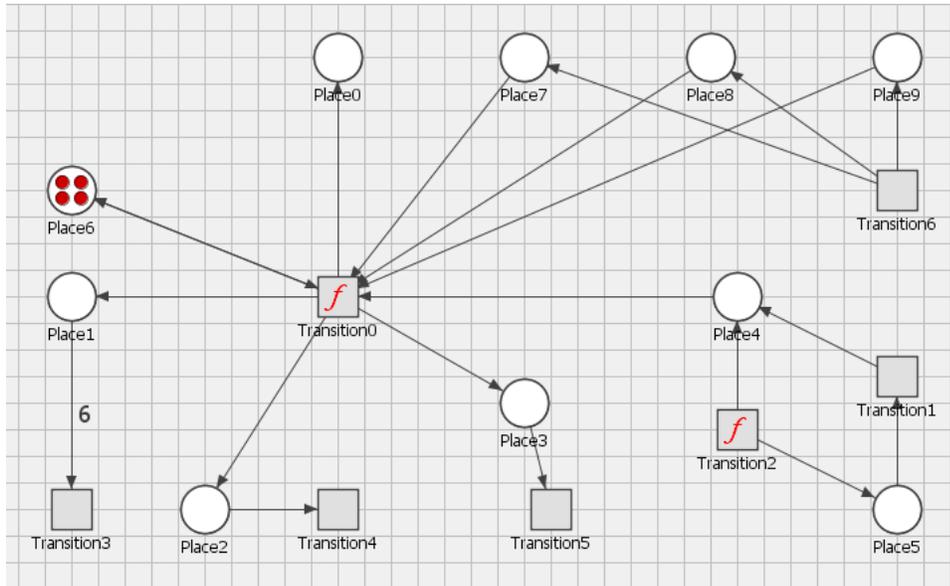
Manual sections/chapters:

4.1.4 (Functional Petri nets)

4.4.3 (Functional editor)

Description of the example:

Net from the example is given in the following picture:



It has two functional transitions: Transition0 (T0) and Transition2 (T2). For the first one the functions defining the tokens produced and consumed are given in the following picture taken from the functions editor:

Transition: Transition0							
Tables:							
fID	Place name	Function	Correct	Arc type	Weight	Enabled	
p4-->T	Place4	p1	<input checked="" type="checkbox"/>	NORMAL	1	<input checked="" type="checkbox"/>	
p6-->T	Place6		<input type="checkbox"/>	READARC	1	<input type="checkbox"/>	
p7-->T	Place7		<input type="checkbox"/>	NORMAL	1	<input type="checkbox"/>	
p8-->T	Place8		<input type="checkbox"/>	NORMAL	1	<input type="checkbox"/>	
p9-->T	Place9		<input type="checkbox"/>	NORMAL	1	<input type="checkbox"/>	
T-->p1	Place1	p6+p4	<input checked="" type="checkbox"/>	NORMAL	1	<input checked="" type="checkbox"/>	
T-->p0	Place0		<input type="checkbox"/>	NORMAL	1	<input type="checkbox"/>	
T-->p2	Place2		<input type="checkbox"/>	NORMAL	1	<input type="checkbox"/>	
T-->p3	Place3		<input type="checkbox"/>	NORMAL	1	<input type="checkbox"/>	
T-->p6	Place6		<input type="checkbox"/>	READARC	1	<input type="checkbox"/>	

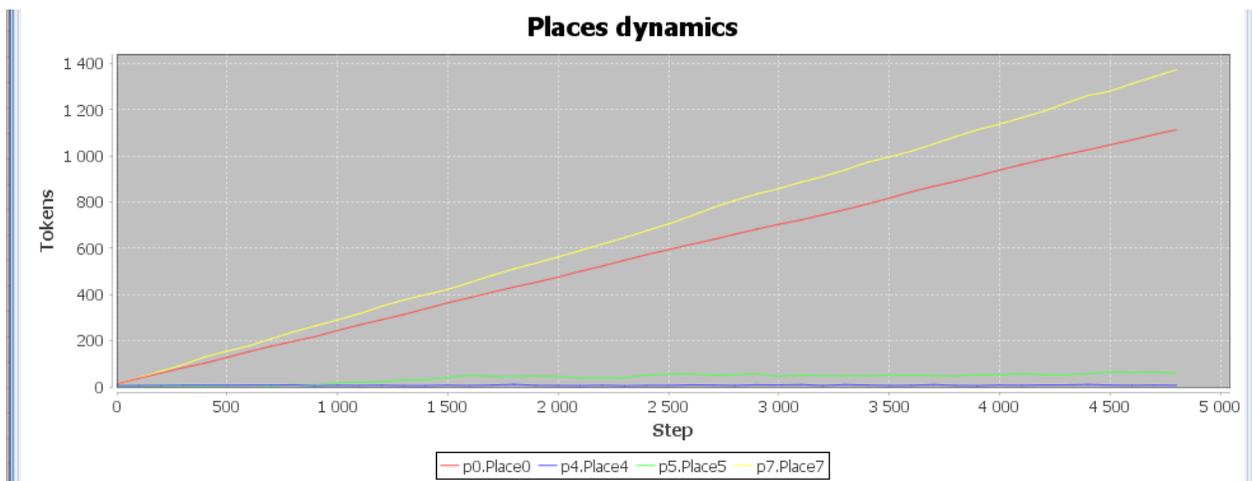
One can see, that T0 will produce in Place1 (P1) tokens equal to the sum of tokens from places P6 and P4 (Place6 and Place4). From P4 tokens will be taken equal to the number of tokens in P1 (that many tokens in P4 are necessary in any step for the T0 to be enabled at all). All other weights for arcs are set to 1.

As for the T2, it has one function:

Transition: Transition2						
Tables:						
fID	Place name	Function	Correct	Arc type	Weight	Enabled
T-->p5	Place5		<input checked="" type="checkbox"/>	NORMAL	1	<input type="checkbox"/>
T-->p4	Place4	mod(p1,p4)	<input checked="" type="checkbox"/>	NORMAL	1	<input type="checkbox"/>

It will produce 1 token in Place5, and the number of tokens equal to the result of modulo function for places P1 and P4 (for example, if at a some time there are 5 tokens in P1 and 3 tokens in P4, 2 will be produced in P4 ($5 \% 3 = 2$)).

After simulation taken for 5000 steps, the results for some of the places are as follows:



One can see here, that Place4 (its tokens production regulated by a modulo functions) is even lower that in Place5 (only 1 token produced per T2 activation). On the other hand, accumulation of tokens in place P0 is lower than e.g., in P7 (P0 tokens production is regulated by a function and it depends on the number of tokens in P6 (constant, equal to 4) and the number of tokens in P4 (also regulated by a function as already described)).