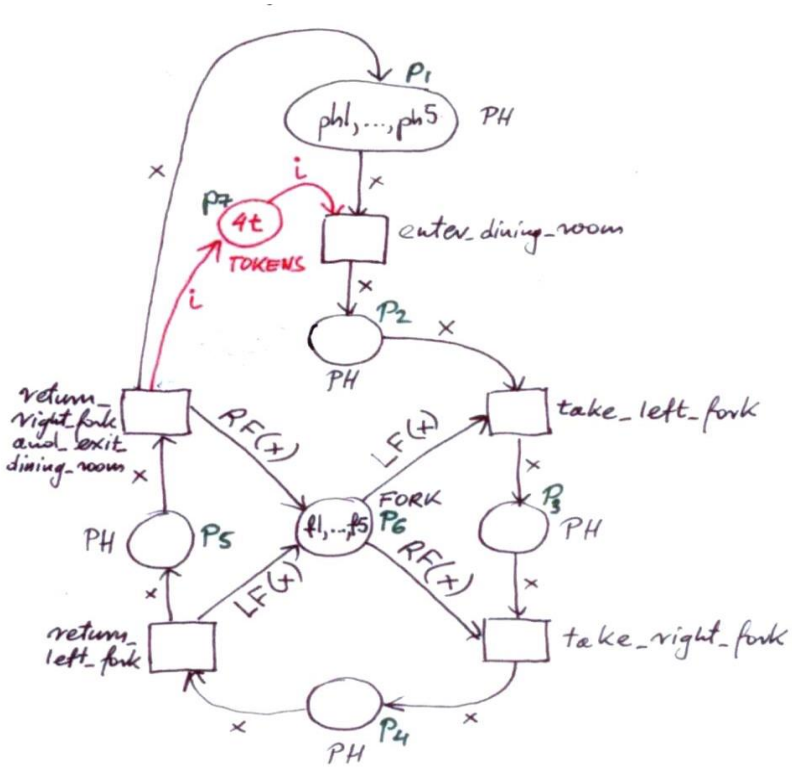
Colour Petri Nets Solution to Dining Philosophers with Butler.

colour PH = with ph1 | ph2 | ph3 | ph4 | ph
colour FORK = with f1 | f2 | f3 | f4 | f5
colour TOKENS = with t
var x : PH
var i: TOKENS
fun LF x = case of ph1 ⇒ f2 | ph2 ⇒ f3 | ph3 ⇒ f4 | ph4 ⇒ f5 | ph5 ⇒ f1
fun RF x = case of ph1 ⇒ f1 | ph2 ⇒ f2 | ph3 ⇒ f3 | ph4 ⇒ f4 | ph5 ⇒ f5



Interpretation of places:
p_1 - thinking room

p_2 - philosophers without forks in the dining room
p_3 - philosophers with left forks in the dining room
p_4 - philosophers that are eating
p_5 - philosophers that finished eating and still with right forks in the dining room
p_6 - unused forks
p_7 - butler or counter