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Process Analytics

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Advanced Process Mining

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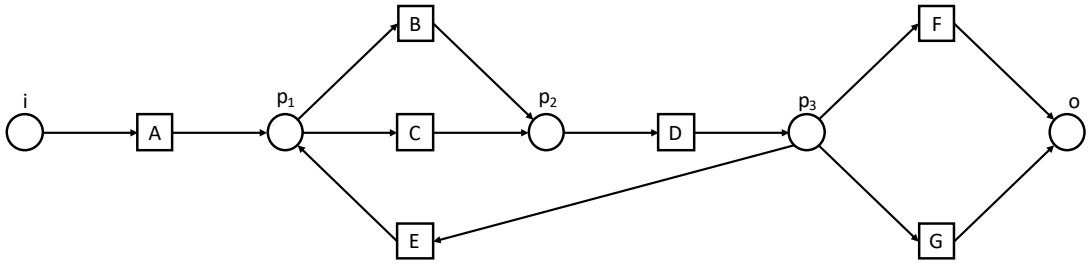
Exercise sheet 4

Token Replay

Exercise 1: Token Replay



#	Trace
200	ACDF
177	ADCEG
56	AFG
22	FDCA

Calculate the fitness for the given process model and the event log by applying token replay.

Solution

#	Trace	p	c	m	r	$Fitness_E(L, N)$
200	ACDF	5	5	0	0	1
177	ADCEG	6	6	2	2	$\frac{2}{3}$
56	AFG	4	4	2	2	$\frac{1}{2}$
22	FDCA	5	5	3	3	$\frac{2}{5}$

$Fitness_E(L, N) = 0.7780$

Exercise 2: Token Replay reversed

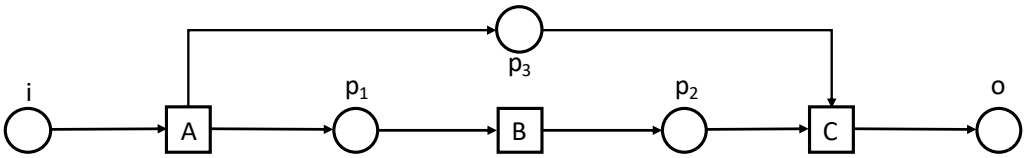
Are the following combinations of p, c, m and r possible? If so, create a workflow net and a trace that satisfy the following combinations:

a) $p \neq c \wedge c \neq m \wedge m \neq r \wedge p \neq r \wedge p \neq m \wedge c \neq r$

b) $p = c = m = r$

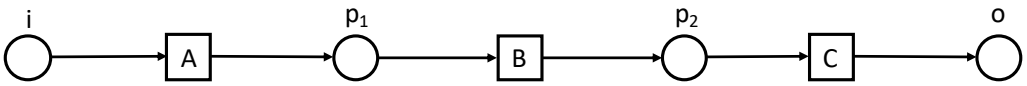
Solution

a) The following workflow net in combination with the trace `BC` will result in the desired combination of p, c, m and r.



Trace	p	c	m	r
BC	3	4	2	1

b) The following workflow net in combination with the trace `B` will result in the desired combination of p, c, m and r.



Trace	p	c	m	r
B	2	2	2	2