UNIVERSITÄT KOBLENZ · LANDAU

Business Process Management

Exercise 8

Group 04

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TOTAL: 6,6/10

Business Process Management

Exercise 8

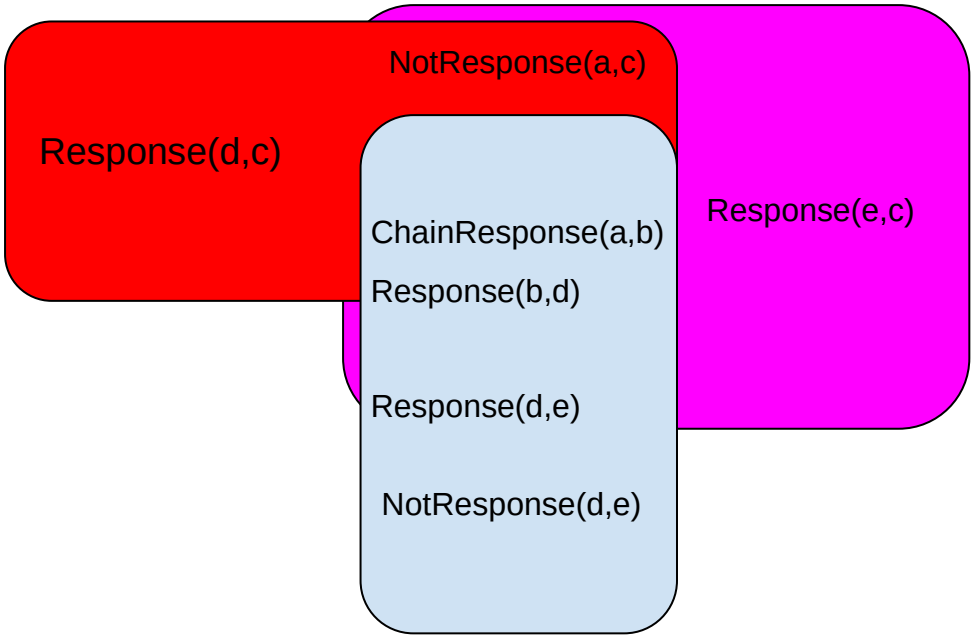
- **Task 1:** 2,5/4
  DMN Table containing one “example” for each of the 8 capabilities describing the problem along with the solution for each capability.

Which are your input and output columns?

Check Risk Category						
U	Customer Category	Existing Customer	Risk Score	Credit Score	Risk Category	Verification Category
	String	String	Integer	Integer [500..700]	String	
1	Employee	No	<120	<490	HIGH	7
2	Client	No	<120	[590..610]	MEDIUM	
3	Organization	No	<120	>610	LOW	1
4	Organization	No	<120	>610	HIGH	
5	Employee	No	[120..130]	>610	HIGH	4
6	Employee	No	[120..130]	[600..625]	MEDIUM	
7	Client	No	[130..150]	>625	LOW	3
8	Client	No	[140..150]	[625..630]	LOW	
9	Company	No	>130	-	VERY LOW	2
10	Organization	Yes	<=100	<580	HIGH	
11	Client	Yes	<=100	<580	HIGH	8
12	Client	Yes	<=100	(580..600]	MEDIUM	
13	Employee	Yes	<=100	>600	LOW	
14	Client	Yes	>100	<600	HIGH	6
15	Client	Yes	>100	[580..615]	MEDIUM	
16	Employee	Yes	>100	>615	LOW	5
17	Employee	Yes	>100	[620..650]	LOW	

Capability Framework:			
Number	**Verification Category**	**Problem**	**Solution**
1	Identical rule verification	As the output is different, this would be category 4 as well (-0,5) Rule 3 and 4 has identical input and hence are redundant.	Here, Rule 4 can be deleted after consulting domain expert as it does not result in information loss.
2	Equivalent rule verification	Here the rules are not equivalent, as the other columns don't match (-0,5) Rule 9 and 10 has semantically equivalent input 'Organization' and 'Company'.	Here, Rule 9 can be changed with input for 'Customer category' as 'Organization' resulting in no information loss.
3	Subsumed rule verification	Risk Score of Rule 8 is subsumed by Rule 7	Here, Rule 7 and 8 can be merged with 'Risk Score' as [130..150] and 'Credit Score' as >625 resulting in no information loss.
4	Interdeterminism verification	Rule 5 and Rule 6 can active together 'Credit Score' = 620 and will have indeterminism in 'Credit Category'	Here, No Rule can be deleted as it will result in Information loss. Hence, 'Credit Score' can be changed to (610..625].
5	Partial reduction verification	Rule 16 and Rule 17 rules are redundant and can be combined	Here, Rule 16 and Rule 17 can be combined for simplicity with 'Credit Score' as >615.
6	Overlapping condition verification	Rule 14 and Rule 15 has overlapping rules of Credit Score	Here, Rule either 'Credit Score' of Rule 14 can be converted to <580 or same for Rule 15 can be converted to [600..615] as per business compliance.
7	Unnecessary Facts Verification	Rule 1 has 'Credit Score' rule with values out of valid range([500..700]) and has no effect on decision making. unnecessary facts are case data and are not part of the DMN table (-0,5)	Here, Rule 1 can be deleted as it has no impact on decision making.
8	Missing rule verification	Rule 11 and Rule 12 has missing value for 'Credit Score' for value 580	Here, 'Credit Score' for Rule 12 can be changed to [580..600] resulting in no information loss or missing information.

Task 2: 4,1/6



M1:

~~ChainResponse(a,b)~~

~~Response(b,d)~~ This subset is not minimal, as Response(d,e) and NotResponse(d,e) already are inconsistent (-0,5)

Response(d,e)

NotResponse(d,e)

MCS(M1) = NotResponse(d,e)

M2:

ChainResponse(a,b)

Response(b,d)

Response(d,e)

Response(e,c)

NotResponse(a,c)

MCS(M2) = NotResponse(a,c)

M3: M4: {Response(b,d), NotPrecedence(b,d)} is missing (-1)

ChainResponse(a,b)

Response(b,d)

Response(d,c)

NotResponse(a,c)

MCS(M3) = NotResponse(a,c)

Culpability Values:

C#(Example, ChainResponse(a,b)) = 3 2 (-0,2)

C#(Example, Response(d,e)) = 2

C#(Example, NotPrecedence(b,d)) = 0 1 (-0,2)

C#(Example, Response(b,d)) = 3

C#(Example, ChainResponse(d,f)) = 0

C#(Example, NotResponse(a,c)) = 2

C#(Example, Response(e,c)) = 1

C#(Example, NotResponse(d,e)) = 1

C#(Example, Response(d,c)) = 1