

Feedback — Quiz Week 5

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You submitted this quiz on **Sun 15 Nov 2015 6:41 PM CET**. You got a score of **3.95** out of **5.00**. You can [attempt again](#), if you'd like.

Question 1

When mining decision points, many predictor variables can be used besides case or event attributes. In the lecture, four types of contexts possibly influencing decisions were mentioned (instance, process, social, and external). To which of these context types belongs the possible predictor variable 'weather'?

Your Answer	Score	Explanation
<input type="radio"/> Instance context		
<input type="radio"/> Process context		
<input type="radio"/> Social context		
<input checked="" type="radio"/> External context	✓ 0.50	Weather indeed belongs to the external context.
Total	0.50 / 0.50	

Question Explanation

Mining decision points, and the different predictor variables that can be included, are discussed in more detail in lecture 5.2: 'Mining decision points'.

Question 2

Given the event log snapshot below, which of the following Petri net parts, enriched with guards, fits this data perfectly (i.e. ignoring the activities register and archive)?

Case ID	Activity	Timestamp	Resource	Claim object	Claim history	Outside Temperature (°C)
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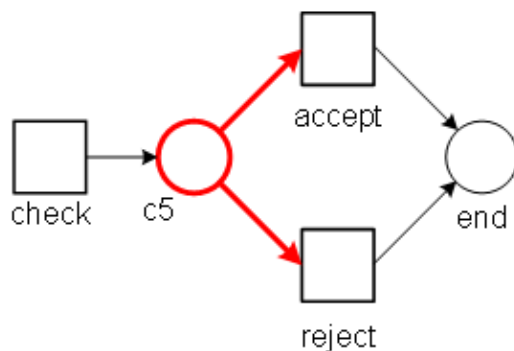
558	register	01/12/2014 09:00	Jessica	car	€ -	21.7
558	check	01/12/2014 10:00	Jane	car	€ -	21.7
558	accept	01/12/2014 10:20	Jane	car	€ -	21.7
558	archive	01/12/2014 10:55	Jack	car	€ -	21.7
610	register	01/12/2014 11:05	Jessica	computer	€ 1,000.00	22.4
610	check	01/12/2014 11:10	Jack	computer	€ 1,000.00	22.4
610	reject	01/12/2014 11:15	Jane	computer	€ 1,000.00	22.4
610	archive	01/12/2014 11:20	Jack	computer	€ 1,000.00	22.4
722	register	01/12/2014 12:13	Jane	clothes	€ 500.00	18.8
722	check	01/12/2014 12:23	Jessica	clothes	€ 500.00	18.8
722	reject	01/12/2014 12:37	Jessica	clothes	€ 500.00	18.8
722	archive	01/12/2014 12:58	Jane	clothes	€ 500.00	18.8
823	register	01/12/2014 13:05	Jessica	car	€ 10,000.00	18.3
823	check	01/12/2014 13:13	Jane	car	€ 10,000.00	18.3
823	accept	01/12/2014 13:45	Jane	car	€ 10,000.00	18.3
823	archive	01/12/2014 13:56	Jessica	car	€ 10,000.00	18.3
901	register	01/12/2014 14:08	Jessica	computer	€ 2,250.00	19.6
901	check	01/12/2014 14:09	Jack	computer	€ 2,250.00	19.6

901	reject	01/12/2014 14:10	Jane	computer	€ 2,250.00	19.6
901	archive	01/12/2014 14:11	Jessica	computer	€ 2,250.00	19.6
1138	register	01/12/2014 15:09	Jane	car	€ 750.00	21.4
1138	check	01/12/2014 15:23	Jessica	car	€ 750.00	21.4
1138	reject	01/12/2014 15:46	Jessica	car	€ 750.00	21.4
1138	archive	01/12/2014 15:57	Jane	car	€ 750.00	21.4
1234	register	01/12/2014 16:03	Jessica	clothes	€ 12,500.00	21.3
1234	check	01/12/2014 16:23	Jane	clothes	€ 12,500.00	21.3
1234	reject	01/12/2014 16:53	Jane	clothes	€ 12,500.00	21.3
1234	archive	01/12/2014 16:59	Jessica	clothes	€ 12,500.00	21.3

Your Answer**Score Explanation**

●

[Claim history < 500 OR Claim history > 10.000]

[$500 \leq \text{Claim history} \leq 10.000$]

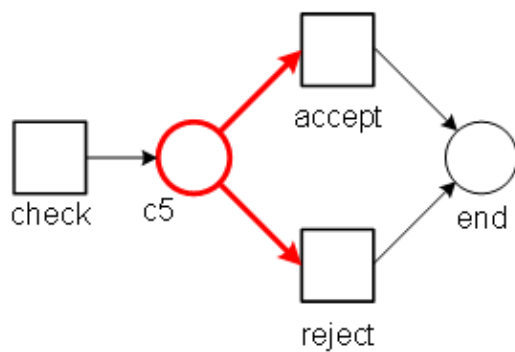
●

✖ 0.00

This is incorrect since for case 1234 the temperature ends with an odd digit ('3') while the

[Outside Temperature ends with an odd digit]

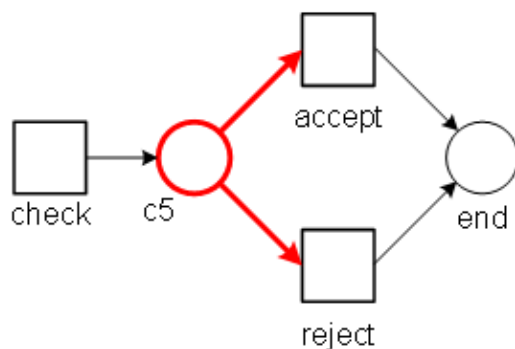
case is rejected.



[Outside Temperature ends with an even digit]

•

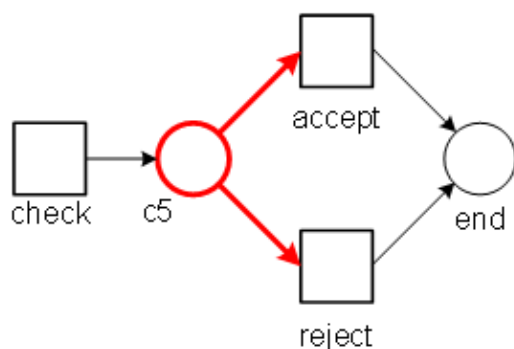
[Resource executing activity 'check' = Jane
AND Claim object = car]



[Resource executing activity 'check' ≠ Jane
OR Claim object ≠ car]

•

[Claim object = car]



[Claim object ≠ car]

Total


0.00 /
0.50

Question Explanation

More details on mining decision points in Petri nets are provided in lecture 5.3: 'Discovering data aware Petri nets'.

Question 3

When we are **verifying** guards in a process model with the data from the event log, the guards are used...


Your Answer	Score	Explanation
<input type="radio"/> ...in a prescriptive manner.		
<input checked="" type="radio"/> ...in a descriptive manner.	 0.00	This is not correct since descriptive guards 'describe' the data, and try to explain the observed data by enriching a process model.
Total	0.00 / 0.50	

Question Explanation

The difference between descriptive and prescriptive guards is provided in lecture 5.3: 'Discovering data aware Petri nets'.

Question 4

What do we need to record while replaying the observed traces on the process model in order to enrich the process model with detailed performance information, such as waiting times and actual service times?

Your Answer	Score	Explanation
<input checked="" type="radio"/> For each time a case visits a particular place or transition we record when the case arrives and leaves that place/transition.	 0.50	This is indeed the correct answer, as is explained in lecture 5.4: 'Mining bottlenecks'.
<input type="radio"/> We only keep track of the start and end time of each case and average out the elapsed time over the intermediate places and transitions.		
<input type="radio"/> For each time a case visits a particular place we record when the case arrives in that place. We never record when a case leaves a place, or time related information for transitions.		

- We only need to record the start time of activities/transitions, the rest can be easily deduced.

Total	0.50 /
	0.50

Question Explanation

How to annotate a process model with performance information is explained in lecture 5.4: 'Mining bottlenecks'.

Question 5

When analysing bottlenecks we first align the data (e.g. traces) with the process model, and only then perform bottleneck analysis.

Another option would be to only consider traces that correctly fit the process model.

What additional information do we gain in our bottleneck analysis after aligning the event log with the process model?

Your Answer	Score	Explanation
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● Otherwise we don't know which activities are executed.

● Otherwise we cannot calculate global case performance statistics.

● ☒ We can now include non-perfect fitting cases. If not we would have a bias in the performance analysis for fitting cases.

✓ 0.50

This is indeed the main reason. In addition, the alignments also allow us to provide more detailed performance information than when using only the event log.

For example, if deviating cases typically also take longer and we would remove such cases, then our estimated durations would be too low.

Total	0.50 /
	0.50

Question Explanation

Bottleneck discovery is explained in lecture 5.4: 'Mining bottlenecks'.

Question 6

Given the event log below, select the correct resource activity matrix.

Case ID	Activity	Time	Resource
1	Register	1	Bas
2	Register	11	Bas
2	Verify	15	Felix
3	Register	21	Bas
1	Verify	22	Bas
3	Verify	23	Joos
2	Decide	23	Eduardo
3	Decide	26	Eric
1	Decide	27	Eduardo
2	Reject	28	Wil
3	Accept	29	Eric
2	Archive	30	Joos
4	Register	31	Bas
1	Accept	31	Eduardo
1	Archive	33	Joos
4	Verify	35	Felix
4	Decide	38	Eric
4	Reject	42	Eric
3	Archive	45	Felix

Your Answer**Score Explanation**

●

	Register	Verify	Decide	Accept	Reject	Archive
Bas	4	1	0	0	0	0
Eduardo	0	0	2	1	0	0
Eric	0	0	2	1	1	0

Felix	0	2	0	0	0	1
Joos	0	1	0	0	0	2
Wil	0	0	0	0	1	0

	Register	Verify	Decide	Accept	Reject	Archive
Bas	1	0.25	0	0	0	0
Eduardo	0	0	0.5	0.5	0	0
Eric	0	0	0.5	0.5	0.5	0
Felix	0	0.5	0	0	0	0.33
Joos	0	0.25	0	0	0	0.66
Wil	0	0	0	0	0.5	0

	Register	Verify	Decide	Accept	Reject	Archive
Bas	1	0.25	0	0	0	0
Eduardo	0	0	0.5	0.25	0	0
Eric	0	0	0.5	0.25	0.25	0
Felix	0	0.5	0	0	0	0.25
Joos	0	0.25	0	0	0	0.5
Wil	0	0	0	0	0.25	0



0.50

This is indeed the correct resource activity matrix.

	Register	Verify	Decide	Accept	Reject	Archive
Bas	1	0.5	0	0	0	0
Eduardo	0	0	0.25	0.5	0	0
Eric	0	0	0.75	0.5	0.5	0
Felix	0	0.25	0	0	0	0.33
Joos	0	0.25	0	0	0	0.66
Wil	0	0	0	0	0.5	0

Total

0.50 /

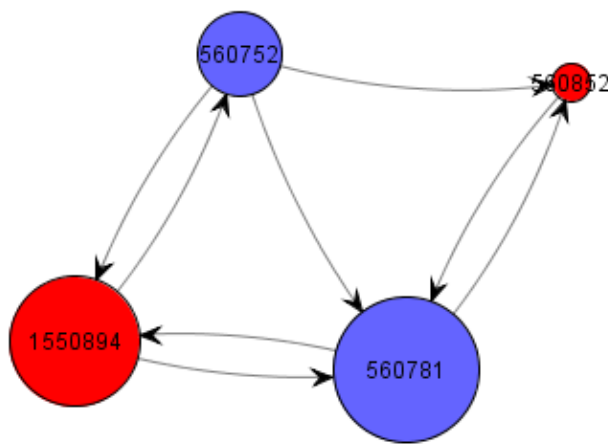
0.50

Question Explanation

The resource-activity matrix is explained in more detail in lecture 5.5: 'Mining social networks'.

Question 7

Consider the social network presented below, which shows the handover of work, where the size of each circle indicates the number of recorded events executed by that resource and the colour indicates the role of the resource. Which of the following statements are true, based on this social network.

**Your Answer****Score****Explanation**

☐ All resources handover work to each of the other resources.



0.10

This is not correct, resource '560781' for instance never hands over work to resource '560752'.

☒ Resource '560752' seems to hand work over to all other resources.



0.10

☒ Resources '1550894' and '560852' never (or very few times) execute tasks directly after each other.



0.10

☐ Resource '560852' hands over work to resource '560752'.



0.10

This is not correct, the reverse is true however.

☒ Resources '560852' was involved in the fewest number of events.



0.10

Total 0.50 /
0.50

Question Explanation

The different social networks are discussed in more detail in lecture 5.5: 'Mining social networks'.

Question 8

Consider the following resource-activity matrix:

	Register	Verify	Decide	Accept	Reject	Archive
Bas	1	0.01	0	0	0	0
Eduardo	0	0	0.25	0.45	0.25	0
Eric	0	0	0.7	0.5	0.5	0
Felix	0	0.24	0	0	0	0.33
Joos	0	0.25	0	0	0	0.66
Wil	0	0	0.05	0.05	0.25	0

If you would have to choose one of the following groupings, which one would you choose.

Your Answer **Score** **Explanation**

☐ {Bas,Wil} and
{Eduardo,Eric,Felix,Joos}

☐ {Wil} and
{Bas,Eduardo,Eric,Felix,Joos}

☐ {Bas,Eduardo,Eric} and
{Felix,Joos,Wil}

☒ {Bas}, {Eduardo,Eric,Wil},
and {Felix,Joos}

✓ 0.50

This is indeed correct. Bas is clearly in a separate group from Felix and Joos, since only Bas executes the 'register' activity and the 'verify' activity very infrequent. Wil however does belong to the same group as Eduardo and Eric since, although infrequently, he executes the same set of activities.


Total 0.50 /
0.50

Question Explanation

Grouping similar resources based on the resource-activity matrix is discussed in more detail in lecture 5.6: 'Organizational mining'.

Question 9

What is the main difference between regular OLAP cubes and process cubes?

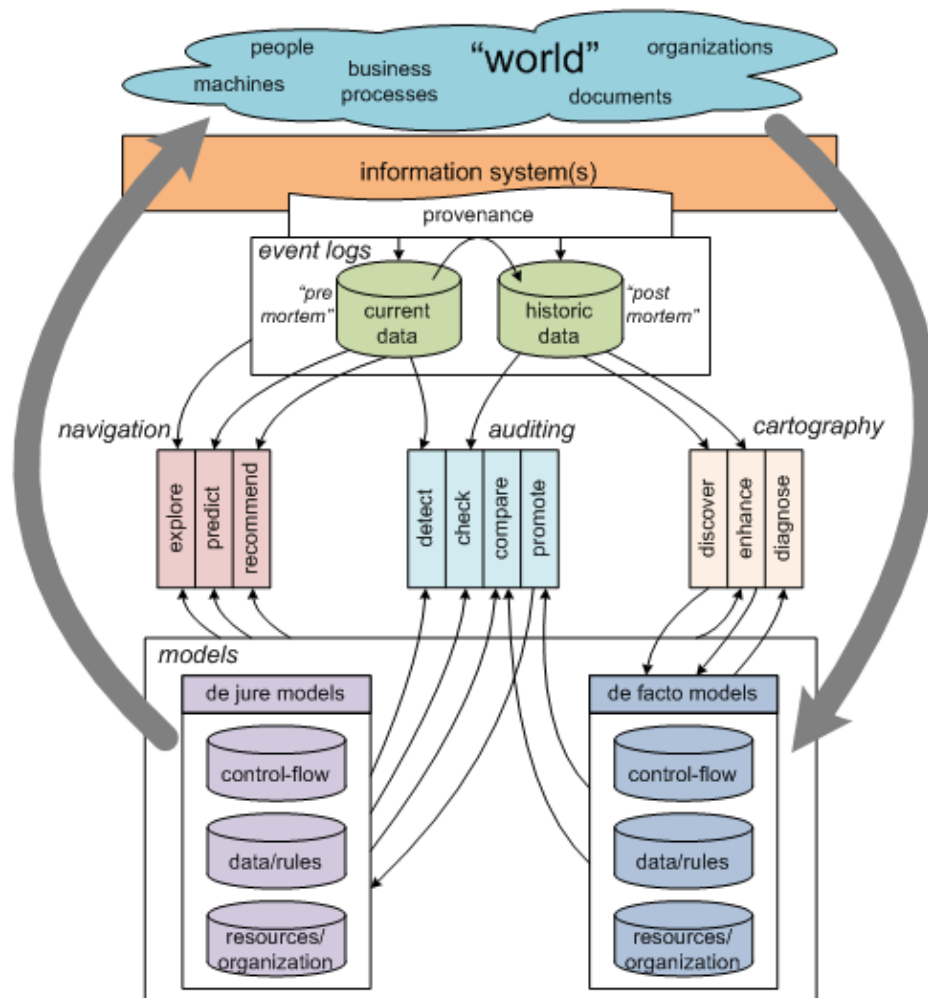
Your Answer	Score	Explanation
<input type="radio"/> OLAP cubes can have many dimensions, as opposed to process cubes which typically have 3 or 4 maximum.		
<input type="radio"/> Within regular OLAP cubes you can drill-up and down (i.e. decrease/increase the number of columns) and slice and dice (i.e. filter), which is not possible in process cubes.		
<input checked="" type="radio"/> Within one cell there are numbers rather than events.	 0.50	<p>This is indeed the main difference: within a process cube's cell the individual events need to be stored to be able to recreate a sublog to execute existing techniques on.</p> <p>Within OLAP cubes many pre-calculations such as aggregations are already made on the raw numbers, which increases performance.</p>
Total	0.50 / 0.50	

Question Explanation

Process cubes, and their main difference with 'regular' OLAP cubes are explained in lecture 5.8: 'Comparative process mining using process cubes'.

Question 10

Consider the refined process mining framework shown below. Which of the following 10 process mining activities use (also) current data (e.g. "pre mortem" data) of cases that are still running and therefore can still be influenced?



Your Answer	Score	Explanation
<input checked="" type="checkbox"/> Predict	✓ 0.05	Predictions are indeed made used current data to be able to make predictions for running cases, also by using historic data.
<input checked="" type="checkbox"/> Recommend	✓ 0.05	Recommendations are indeed made used current data to be able to make recommendations for running cases, also by using historic data.
<input type="checkbox"/> Diagnose	✓ 0.05	This activity usually does not (directly) use the event log data.
<input type="checkbox"/> Discover	✓ 0.05	This activity is usually performed by only considering historic data of completed cases.
<input type="checkbox"/> Promote	✓ 0.05	This activity usually does not (directly) use the event log data.
<input type="checkbox"/> Compare	✓ 0.05	This activity usually does not (directly) use the event log data.
<input checked="" type="checkbox"/> Explore	✓ 0.05	The explore activity can use both pre-mortem as well as post-mortem data as is indicated by the arrow originating from the bigger 'event logs' box in the diagram to this activity. Since this might be unclear, you receive points whether you selected this activity or not.

<input type="checkbox"/> Enhance	✓	0.05	This activity is usually performed by only considering historic data of completed cases.
<input checked="" type="checkbox"/> Check	✗	0.00	This activity is usually performed by only considering historic data of completed cases.
<input checked="" type="checkbox"/> Detect	✓	0.05	Detections are indeed made used current data to be able to provide signals of detections for running cases, also by using historic data.
Total		0.45 / 0.50	

Question Explanation

The refined process mining framework is explained in more detail in lecture 5.9: 'Refined process mining framework'.

