Management and incident completion time prediction

[TRANSLATED VERSION - This document was originally developed in Portuguese]

This questionnaire is part of a research on process mining. Therefore, your answers will help us in the developement of this research.

The questionnaire is compound by four parts.

In each of the three first parts, you are going to be assigned to a task and you should make some choices in order to solve it. We would like for you to feel involved in the tasks in order to solve them in the best possible manner. To this regard, chose a moment in which you feel motivated to participate in this research. We estimate you will spend no more than 20 minutes to solve all three tasks.

In the forth part, ten question are made about you and your professional experience. Some of them are not required, but the more you answer, the more you help us.

We appreciate your collaboration and remain at your disposal to talk more about process mining if you are interested.

Best regards,
Thais Rodrigues Neubauer and Sarajane Marques Peres.

* Required

Task 1: Designing an incident management system and an incident completion time predictor system

Consider that you need to design a incident management system which stores the information that can help to design a completion time predictor for these incidents. A completion time predictor is a system capable of estimating, at any time point, how much time is left for a incident to be resolved.

To design these systems, consider that:

- the incident manager is being design for a company that support services based on hardware and software structures - for instance, a company that offers telecommunication services;

- the incident management process followed by this compnay is supported by the ITIL framework;

- the completion time predictor can be triggered at any point of the life cycle of an incident;

- the life cycle of an incident goes through states as: new, active, waiting for information, resolved, closed etc.

The systems you are designing should include a database with information about each incident, its management process and the context in which the incidents occur, and should also have an audit system that stores (in a log) all the operations perfomed during the life cycle of all incidents, from their criation to their closure. All the required information will be organized in the form of attributes which describe features of the incidents and of the operations performed about them, during all their life cycle, considering the different actions regarding their management.

Knowing that you will also be responsible for designing an completion time predictor, indicate the five attributes that cannot be missing from the database or in the audit log for the prediction of completion time to have high chance of being effective.
As "attributes", consider, for example, the columns of a table in a database. If the context of clients management was being used, attributes could be social security number, name, address, birth date etc.

As a "effective prediction" consider that:

- your system should be able to make accurate predictions, i.e. inform, with a small error, how much time is left for the incident to be finalized - for instance, in the order of a few minutes of error to an incident in which the completion takes some hours.
- your system must be capable of making accurate predictions as soon as possible, i.e. the sooner an accurate prediction can be made considering the life cycle of the incident, the more effective will be the system.

Please, order the chosen attributes by importante, from the most to the least important.

1. First attribute (the most important): *

2. Second attribute:

3. Third attribute:

4. Forth attribute:

5. Fifth attribute:

Task 2: Using a existing incident management system to design an incident completion time predictor system

Now, consider that an incident management system already exists and that in this system is stored the 29 attributes listed below:

[1] client identifier -- identifier of the user affected by the incident
[2] location -- identifier of the location affected by the incident
[3] caller identifier -- identifier of the user who reported the incident to the clerk
[4] clerk identifier -- identifier of the user who registered the incident into the management plataform
[5] assigned identifier -- identifier of the user in charge of the incident
[6] assigned group -- identifier of the support group that was assigned as in charge of the incident
[7] type of contact -- form of contact used to report the incident
[8] opening timestamp -- timestamp (date and time) of the incident registration in the incident management plataform
[9] category -- first-level description of the service being affected
[10] subcategory -- second-level description of the service being affected - related to the first-level (category)
[11] item identifier -- identifies the item affected by the incident
[12] vendor identifier -- identifies the vendor related to the incident management
[13] problem identifier -- identifier referencing homonyms relation describing problem identifier associated with this incident;
[14] change requisition -- identifies the change requisition associated to the incident
[15] sympton -- description of the user perception about the service availability
[16] impact -- description of the impact caused by the incident. Possible values are: high, medium, low.
[17] urgency -- description of the urgency asked by the user for the incident resolution. Possible values are: high, medium, low.
[18] priority -- priority value calculated by the system based on the impact and urgency attributes. Possible values are: critic, high, medium, low.
[19] priority confirmation -- indication of whether the incident priority record was double-checked or not
[20] incident state -- attribute that can assume values referring to eight states relevant to the life cycle of an incident in the management process. The possibble states are: new, resolved, closed, active, awaiting for user information, awaiting for information about the problem, awaiting for vendor information and awaiting for information about the evidence.
[21] reassignment count -- number of times incident has changed group or support analysts responsible for handling the incident
[22] reopen count -- number of times the incident resolution was rejected by the user who is affected by the incident.

[23] update count -- number of times the incident record was updated
[24] change user -- identifier of the user who performed a particular change in the incident
[25] a priori knowledge -- indication if any existing documentation in the system was used as support to resolve the incident
[26] notify -- indication of notifications generated for an incident (whether they were generated or not, and if so, which are they)
[27] SLA control -- indicates if the SLA (Service Level Agreement) to the incident resolution was exceeded or not
[28] creation timestamp -- timestamp (date and time) of the criation of the incident in the management system
[29] alteration timestamp -- timestamp (date and time) in which the incident record was altered in the managament system.

PS: These attributes are based on the ones used by the ServiceNow plataform. If you have experience with context in which this plataform is used, consider your experience to solve this task.

Which of the above attributes would you chose as a basis for design an incident completion time predictor?

Choose up to five attributes and order them from the most important to the least important. Use the scroll bar to access the option which do not appear in the inicial view of the frame below. The scroll bar may be hiden until you position your mouse in the bottow outside of the frame.

6. *

Mark only one oval per row.

	1	2	3	4	5	6	7	8
Atributo 1 - mais importante	◯	◯	◯	◯	◯	◯	◯	◯
Atributo 2	◯	◯	◯	◯	◯	◯	◯	◯
Atributo 3	◯	◯	◯	◯	◯	◯	◯	◯
Atributo 4	◯	◯	◯	◯	◯	◯	◯	◯
Atributo 5 - menos importante	◯	◯	◯	◯	◯	◯	◯	◯

7. Would you add attributes to the 29 attributes list presented above? If so, inform which attributes would you add.

Task 3: Evaluating attribute selections to design an incident completion time predictor system

In this last task, you have to evaluate some selections that was used in incident completion time predictor projects. The selections are organized in three different sets. Each set originated one predictor system, that is, based on the information provided by these attributes, the system develop a reasoning that enables the estimation of the remaining time for the indicident to be resolved. The attributes sets are listed bellow:

- Set 1: identifier of the client, identifier of the assigned employee (responsable for handling the indicident).

- Set 2: incident state, location.

- Set 3: incident state, category, priority.

Based on the three presented sets of attributes, answer the questions bellow:

8. Do you believe that the Set 1 is a good selection of attributes to support incident completion time prediction? *

Mark only one oval.

- Yes
- No

9. Justify your answer.

10. Do you believe that the Set 2 is a good selection of attributes to support incident completion time prediction? *

Mark only one oval.

- Yes
- No

11. Justify your answer.

12. Do you believe that the Set 3 is a good selection of attributes to support incident completion time prediction? *

Mark only one oval.

- Sim
- Não

13. Justify your answer.

Tell us more about you ...

The information requested here is intended to enrich the responses you have already gave us. In addition to general information, we ask for your name in case we need to request further information. However, your name and job position are not mandatory; if you do not feel comfortable providing them, there is no problem.

14. What is your full name?

15. What is your current job position?

16. For how long have you worked with process management? *

Mark only one oval.

- I do not work with process management
- Less than an year
- From one to three years
- More than three years

17. How do you classify your level of knowledge on process management? *

Mark only one oval.

- I do not have knowledge on process management
- Basic knowledge
- Intermediate knowledge
- Advanced knowledge

18. For how long have you worked with incident process management? *

Mark only one oval.

- I do not work with incident process management
- Less than an year
- From one to three years
- More than three years

19. How do you classify your level of knowledge on incident process management? *

Mark only one oval.

- I do not have knowledge on incident process management
- Basic knowledge
- Intermediate knowledge
- Advanced knowledge

20. For how long have you worked with the ITIL framework? *

Mark only one oval.

- I do not work with the ITIL framework
- Less than an year
- From one to three years
- More than three years

21. How do you classify your level of knowledge on the ITIL framework? *

Mark only one oval.

- ◯ I do not have knowledge on the ITIL framework
- ◯ Basic knowledge
- ◯ Intermidiate knowledge
- ◯ Advanced knowledge

22. For how long have you worked with the ServiceNow plataform? *

Mark only one oval.

- ◯ I do not work with the ServiceNow plataform
- ◯ Less than an year
- ◯ From one to three years
- ◯ More than three years

23. How do you classify your level of knowledge on the support to incident management process offered by the ServiceNow plataform? *

Mark only one oval.

- ◯ I do not have knowledge on the ServiceNow plataform
- ◯ Basic knowledge
- ◯ Intermidiate knowledge
- ◯ Advanced knowledge

Thanks for your collaboration :)

24. Use this space for suggestions, comments or adicional information.

In case you want to know more about this research, contact us:

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And do not forget to submit your answers!!! :-)
