INFO-H420 Management of Data Science and Business Workflows

Assignment 1: BPMN (15 points)

Exercise 1 *(4 points)*

Model the following business process.

> *Mail from the party is collected on a daily basis by the mail processing unit. Within this unit, the mail clerk sorts the unopened mail into the various business areas. The mail is then distributed. When the mail is received by the registry, it is opened and sorted into groups for distribution, and thus registered in a mail register. Afterwards, the assistant registry manager within the registry performs a quality check. If the mail is not compliant, a list of requisitions explaining the reasons for rejection is compiled and sent back to the party. Otherwise, the matter details are captured and provided to the cashier, who takes the applicable fees attached to the mail. At this point, the assistant registry manager puts the receipt and copied documents into an envelope and posts it to the party. Meantime, the cashier captures the party details and prints the physical court file.*

Exercise 2 *(4 points)*

Model the following process for selecting Nobel Prize laureates for chemistry.

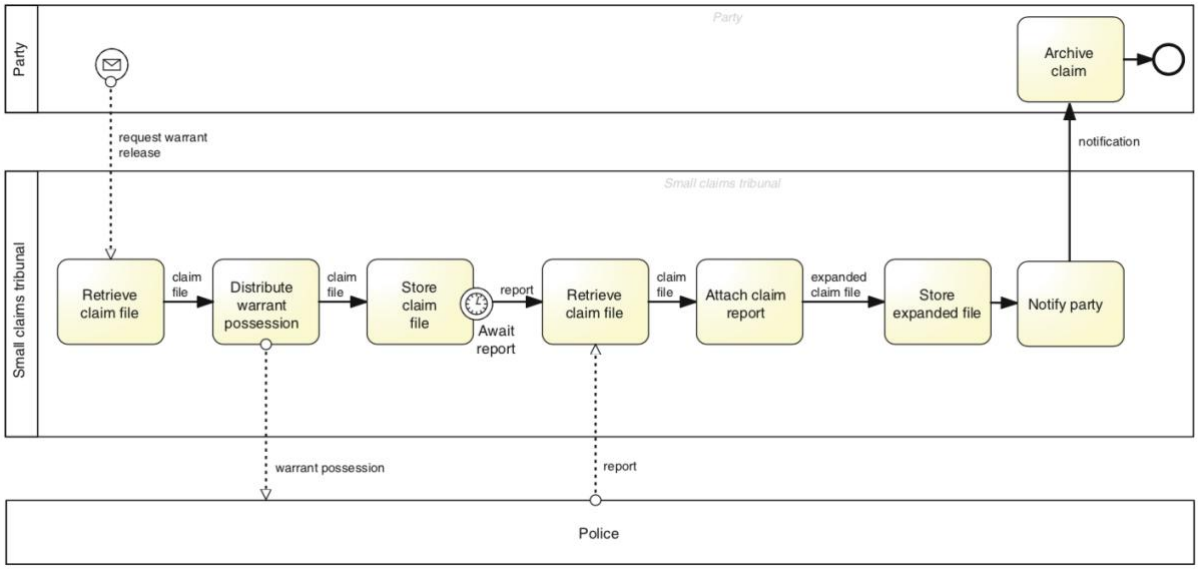
> *September: nomination forms are sent out. The Nobel committee sends out confidential forms to around 3,000 people—selected professors at universities around the world, Nobel laureates in physics and chemistry, and members of the Royal Swedish Academy of Sciences, among others.*
>
> *February: deadline for submission. The completed nomination forms must reach the Nobel Committee no later than 31 January of the following year. The committee screens the nominations and selects the preliminary candidates. About 250–350 names are nominated as several nominators often submit the same name.*
>
> *March–May: consultation with experts. The Nobel committee sends the list of the preliminary candidates to specially appointed experts for their assessment of the work of the candidates.*
>
> *June–August: writing of the report. The Nobel committee puts together the report with recommendations to be submitted to the Academy. The report is signed by all members of the committee.*
>
> *September: committee submits recommendations. The Nobel committee submits its report with recommendations on the final candidates to the members of the Academy. The report is discussed at two meetings of the chemistry section of the Academy.*

October: Nobel laureates are chosen. In early October, the Academy selects the Nobel laureates in chemistry through a majority vote. The decision is final and without appeal. The names of the Nobel laureates are then announced.

December: Nobel laureates receive their prize. The Nobel Prize award ceremony takes place on 10 December in Stockholm, where the Nobel laureates receive their Nobel Prize, which consists of a Nobel medal, a diploma, and a document confirming the prize amount.

Exercise 3 *(3 points)*

What is wrong with the following model?



Exercise 4 *(4 points)*

Model the following business process.

An IT helpdesk handles requests from clients. The clients are employees of a company. There are about 500 employees in total. A request may be an IT-related problem of a client or an access request (e.g., requesting rights to access a system). Requests need to be handled according to their type and their priority. There are three priority levels: "critical", "urgent", or "normal".

A client calls the help desk or sends an email to make a request. The help desk is staffed with 5 Level-1 support staff who, typically, are junior people with less than 12 months experience, but are capable of resolving known problems and simple requests. The hourly cost of a Level-1 staff member is € 40.

When the Level-1 employee does not know the resolution to a request, the request is forwarded to a more experienced Level-2 support staff. There are 3 Level-2 staff members and their hourly cost is € 60. When a Level-2 employee receives a new request, he or she evaluates it to assign a priority level. The ticketing system that tracks the process will later assign the request to the same or to another Level-2 staff depending on the assigned priority level and the backlog of requests.

Once the request is assigned to a Level-2 staff member, the request is researched by the Level-2 employee and a resolution is developed and sent back to the Level-1 employee. Eventually, the Level- 1 employee forwards the resolution to the client who tests the resolution. The client notifies the outcome of the test to the Level-1 employee via email. If the client states that the request is fixed, it is marked as complete, and the process ends. If the request is not fixed, it is resent to Level-2 support for further action and goes through the process again.

Requests are registered in a ticketing system. The ticketing system allows help desk employees to record the details of the request, the priority level and the name of the client who generated the request. When a request is registered, it is marked as "open". When it is moved to Level-2, it is marked as "forwarded to Level-2". When the resolution is sent back to Level-1, the request is marked as "returned to Level-1". Finally, when a request is resolved, it is marked as "closed". Every request has a unique identifier. When a request is registered, the ticketing system sends an email to the client. The email includes a so-called request reference number that the client needs to quote when asking questions about the request.

Instructions

The assignment contributes 15% to the overall grade.

This assignment is to be made in **groups** of two persons. You are asked to form the groups via "Groups for Assignment 1" on the Université Virtuelle (UV). If you cannot find a partner, please post a request in the "Discussion Forum" on UV.

You are asked to submit a short **report** presenting your solution to the exercises, including justifications for the choices and assumptions made.

The report must be uploaded as a pdf file to "Assignment 1" on UV by **October 16**, 2023.