Exercise 0

Model the following business process for opening a bank account:

When the bank receives a new online application for opening a bank account, the application is evaluated. If the application is rejected, the customer is notified by email and the process ends. If the application is approved, a new bank account is created. Before the process ends, the bank sends a welcome pack, a bank card, and a PIN number in separate letters to the customer.

Instructions:

- Only use the following BPMN elements: task, events, gateways, sequence flow

Exercise 1

Model the following business process for assessing credit risks:

When a new credit request is received, the risk is assessed. If the risk is above a threshold, an advanced risk assessment needs to be carried out, otherwise a simple risk assessment will suffice. Once the assessment has been completed, the customer is notified with the result of the assessment, and in the meantime the disbursement is organized.

For simplicity, you can assume that the result of an assessment is always positive.

Instructions:

- Only use the following BPMN elements: task, events, gateways, sequence flow

Exercise 2

Model the following fragment of a business process for insurance claims.

When the insurer receives a claim of a customer, it is registered and examined by a claims officer who then writes a settlement recommendation. This recommendation is then checked by a senior claims officer who may mark the claim as "OK" or "Not OK". If the claim is marked as "Not OK", it is sent back to the claims officer and the recommendation is repeated. If the claim is "OK", the claim handling process proceeds.

Instructions:

- Model the relevant resources (pools, lanes) and business objects (data object, data store).

Exercise 3

Model the following business process of an insurer for handling a claim. The claim is submitted by a claimant.

When a claim is received, a claims officer first checks if the claimant is insured. If not, the claimant is informed that the claim must be rejected by sending an automatic notification via an SAP system. Otherwise, a senior claims officer evaluates the severity of the claim. Based on the outcome (simple or complex claims), the relevant forms are sent to the claimant, again using the SAP system. Once the forms are returned, they are checked for completeness by the claims officer. If the forms provide all relevant details, the claim is registered in the claims management system, and the process ends. Otherwise, the claimant is informed to update the forms via the SAP system. Upon reception of the updated forms, they are checked again by the claims officer to see if the details have been provided.

Instructions:

- Model the relevant resources (pools, lanes) and business objects (data object, data store).

Exercise 4

Model the following business process for damage compensation at rental properties:

If a tenant is evicted because of damages to the premises, a process needs to be started by the tribunal in order to hold a hearing to assess the amount of compensation the tenant owes to the owner of the premises. This process starts when a cashier of the tribunal receives a request for compensation from the owner. The cashier then retrieves the file for those particular premises and checks that the request is both acceptable for filing and compliant with the description of the premises on file. After these checks, the cashier needs to set a hearing date. Setting a hearing date incurs fees to the owner. It may be that the owner has already paid the fees with the request, in which case the cashier allocates a hearing date and the process completes. If the owner has not paid the required fees, the cashier produces a fees notice and waits for the owner to pay the fees before reassessing the document compliance.

For simplicity, you can assume that the request always passes the checks.

Instructions:

- Model the relevant resources (pools, lanes) and business objects (data object, data store).

Exercise 5

Model the following business process for processing car damage claims:

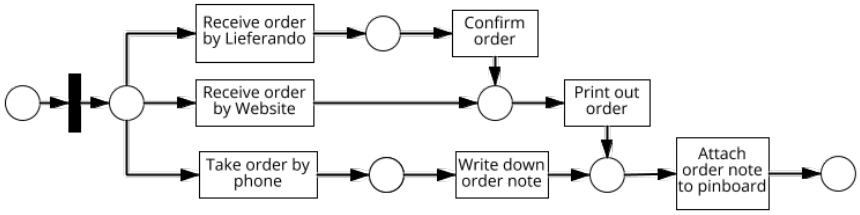
The motor claim handling process starts when a customer submits a claim with the relevant documentation. The notification department at the car insurer checks the documents upon completeness and registers the claim. Next, the Handling department picks up the claim and checks the insurance. Then, an assessment is performed. If the assessment is positive, a garage is phoned to authorize the repairs and the payment is scheduled (in this order). Otherwise, the claim is rejected. The claim is also immediately rejected if any of the previous checks fail. In any case (whether the outcome is positive or negative), a letter is sent to the customer and the process is considered to be complete.

Instructions:

- Model the relevant resources (pools, lanes) and business objects (data object, data store).

Exercise 6

In a pizzeria, one person centrally records all incoming orders and attaches them to a pinboard. Translate the following Petri net of this process into a BPMN model:



Instructions:

- Use Business Objects where needed.

Exercise 7

Model the following business process for rating doctors in a hospital:

The doctor rating workflow at a hospital is carried out by two different roles. The first one is a quality assurance (QA) specialist from the quality assurance department, while the second one represents the managing director of the hospital.

The QA specialist starts a new case regarding a certain doctor by interviewing patients. Since a patient interview workflow is already established, it is simply integrated in the new workflow. Meanwhile, the director asks an external expert to review the work of the doctor under rating. Unfortunately, since the expert only gets a low expenses fee, it can happen that the expert is not responding in time. If that happens, another expert has to be asked (who could also not respond in time, i.e. the procedure repeats). If an expert finally sends an expertise, it is received by the director and forwarded to the QA specialist. The QA specialist then files the results containing the patient interviews as well as the expertise and afterwards creates a report. While the QA specialist is doing this, the manager pays the expenses of the expert by filling a cheque and sending it to the expert.

Instructions:

- Model the relevant resources (pools, lanes)
- Modeling the relevant business objects (data object, data store) is not required.

Exercise 8

Model the following process which describes the selection and allocation of elective courses at a school:
Version a):

Students must book two elective courses from the 5th school year onwards. Each year ten teachers are responsible for offering elective courses (each teacher one course). A course description is given by each teacher to the secretary's office at least one month before the start of the school year. The secretary collects all ten descriptions and enters the information into the course booking system (CBS). One week before the start of the school year, all responsible teachers receive a list of students who have registered for their course from the secretary. The teachers who have too many registered students choose which students can participate in the course. As a general rule, students in a higher year have priority. The (potentially empty) list of students who have not been accepted is handed over by each teacher to the secretary's office. The secretary then assigns these students to courses in which there are still free places and rebooks the students in the CBS.

Version b):

Students must book two elective courses from the 5th school year onwards. Each year twelve teachers are responsible for offering elective courses (each teacher one course). A course description is given by each teacher to the secretary's office at least two months before the start of the school year. The secretary collects all twelve descriptions and enters the information into the course information system (CIS). Two weeks before the start of the school year, all responsible teachers receive a list of students who have registered for their course from the

secretary. The teachers who have too many registered students choose which students can participate in the course. As a general rule, students in a lower year have priority. The (potentially empty) list of students who have not been accepted is handed over by each teacher to the secretary's office. The secretary then assigns these students to courses in which there are still free places and rebooks the students in the CIS.

Instructions:

1. Model each resource as white-box pool, i.e. do not use black-box pools nor pools with more than one lane.
2. Modeling business objects is not required.

Exercise 9

Model the following business process which describes the admission process of a PhD program at a university:
Version a):

To apply for the PhD program, students first fill in an online application form with their personal data. Online applications are recorded in an admission information system to which all staff members involved in the process have access. After a student has submitted the online form, a PDF document is generated and the student is requested to download it, sign it, and send it by post together with a transcript of grades and a letter of motivation. When these documents are received by the admissions office, the officer makes an initial assessment and rejects the application if the student has insufficient grades (such notifications of rejection are sent by email). In case of sufficient grades, the admissions office forwards the student documents by internal mail to the academic committee, which is responsible for deciding whether to offer admission or not. The committee meets once every month to examine all applications that are ready for academic assessment at the time of the meeting. At the end of the committee meeting, the chair of the committee notifies the admissions office of the selection outcomes. A few days later, the admissions office checks the selection outcomes and sends a rejection or admission email to each candidate.

Version b):

To apply for the PhD program, students first fill in an online application form with their personal data. Online applications are recorded in an application information system to which all members involved in the process have access. After a student has submitted the online form, a PDF document is generated and the student is requested to download it, sign it, and send it by post together with their diploma and a letter of motivation. When these documents are received by the administration office, the officer makes an initial assessment and rejects the application if the student's motivation letter is not convincing (such notifications of rejection are sent by letter). In case of a convincing letter of motivation,

the administration office forwards the student documents by internal mail to the academic committee, which is responsible for deciding whether to offer admission or not. The committee meets once every two months to examine all applications that are ready for academic assessment at the time of the meeting. At the end of the committee meeting, the committee notifies the administration office of the outcomes. A few weeks later, the administration office checks the outcomes and sends a rejection or admission letter to each candidate.

Instructions:

1. Model the relevant resources (pools, lanes). The process should be modeled from the university point of view, i.e. the student can be modeled as a black box.
2. Modeling business objects is not required.

Exercise 10

Model the following business process between a supplier and a retailer:

After a retailer requests an offer from a supplier, the supplier prepares an offer and sends it to the retailer. Next, the supplier can receive an order confirmation, an order change, or an order cancellation from the retailer. It may happen that no response is received at all. If no response is received after 48 hours, or if an order cancellation is received, the supplier will cancel the order. If an order confirmation is received within 48h, the supplier will process the order normally. If an order change is received within 48h, the supplier will update the order and ask again the retailer for confirmation. The retailer is allowed to change an order at most three times. Afterwards, the supplier will automatically cancel the order.

Instructions:

- Model the relevant resources (pools, lanes)
- Modeling the relevant business objects (data object, data store) is not required.