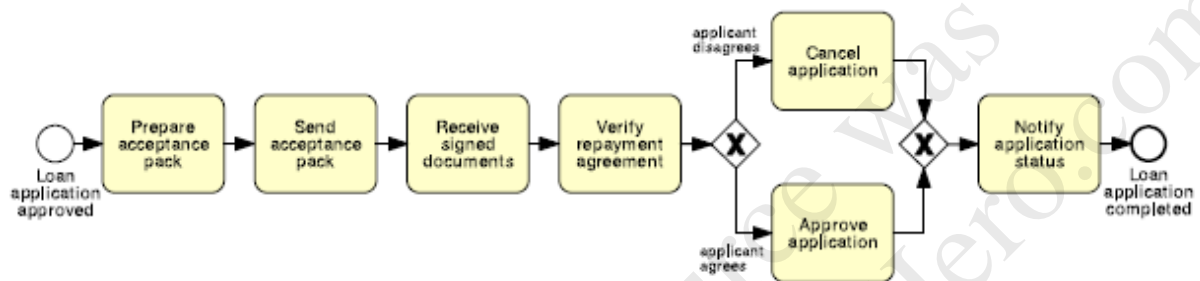


Exercises 3

Exercise 3.1 Model the following fragment of a business process for assessing loan applications.

Once a loan application has been approved by the loan provider, an acceptance pack is prepared and sent to the customer. The acceptance pack includes a repayment schedule which the customer needs to agree upon by sending the signed documents back to the loan provider. The latter then verifies the repayment agreement: if the applicant disagreed with the repayment schedule, the loan provider cancels the application; if the applicant agreed, the loan provider approves the application. In either case, the process completes with the loan provider notifying the applicant of the application status.

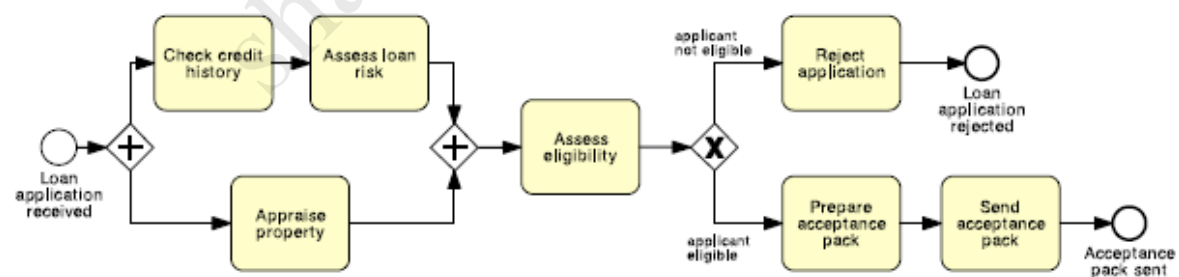
Solution 3.1



Exercise 3.2 Model the following fragment of a business process for assessing loan applications.

A loan application is approved if it passes two checks: (i) the applicant's loan risk assessment, done automatically by a system, and (ii) the appraisal of the property for which the loan has been asked, carried out by a property appraiser. The risk assessment credit history check on the applicant, which is performed by a financial officer. Once both the loan risk assessment and the property appraisal have been performed, a loan officer can assess the applicant's eligibility. If the applicant is not eligible, the application is rejected, otherwise the acceptance pack is prepared and sent to the applicant.

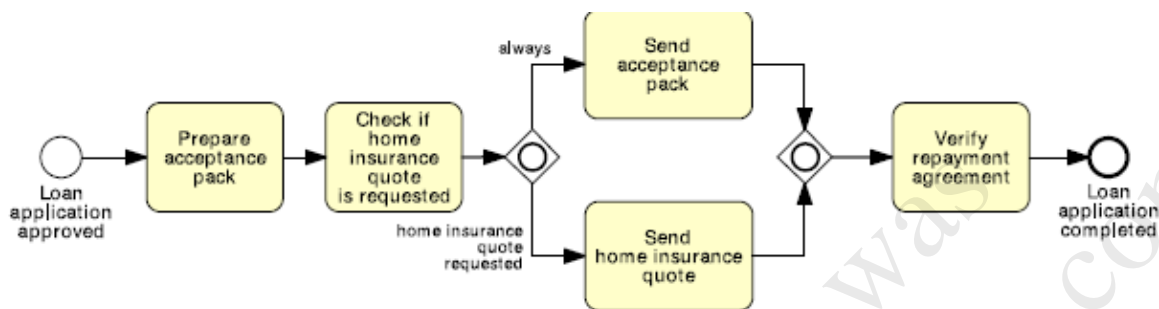
Solution 3.2



Exercise 3.3 Model the following fragment of a business process for assessing loan applications.

A loan application may be coupled with a home insurance which is offered at discounted prices. The applicant may express their interest in a home insurance plan at the time of submitting their loan application to the loan provider. Based on this information, if the loan application is approved, the loan provider may either only send an acceptance pack to the applicant, or also send a home insurance quote. The process then continues with the verification of the repayment agreement.

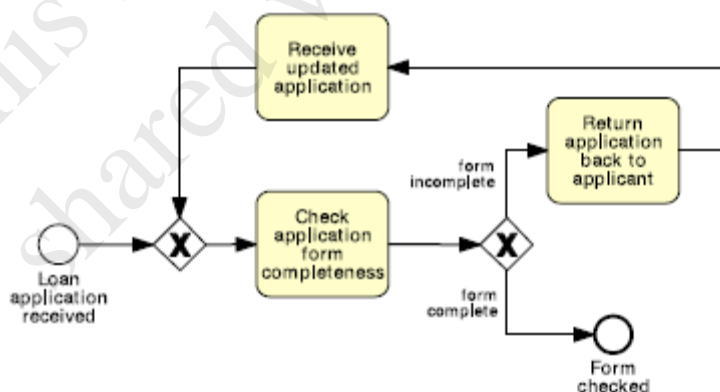
Solution 3.3



Exercise 3.4 Model the following fragment of a business process for assessing loan applications.

Once a loan application is received by the loan provider, and before proceeding with its assessment, the application itself needs to be checked for completeness. If the application is incomplete, it is returned to the applicant, so that they can fill out the missing information and send it back to the loan provider. This process is repeated until the application is found complete.

Solution 3.4



Exercise 3.5 Put together the four fragments of the loan assessment process that you created in Exercises [3.1](#)–[3.4](#).

Solution 3.5

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Exercise 3.6 Extend the business process for assessing loan applications that you created in Exercise 3.5 by considering the following resource aspects.

The process for assessing loan applications is executed by four roles within the loan provider: a financial officer takes care of checking the applicant's credit history; a property appraiser is responsible for appraising the property; an insurance sales representative sends the home insurance quote to the applicant if this is required. All other activities are performed by the loan officer who is the main point of contact with the applicant.

Solution 3.6

See the Loan Provider pool in the model of Solution 3.7.

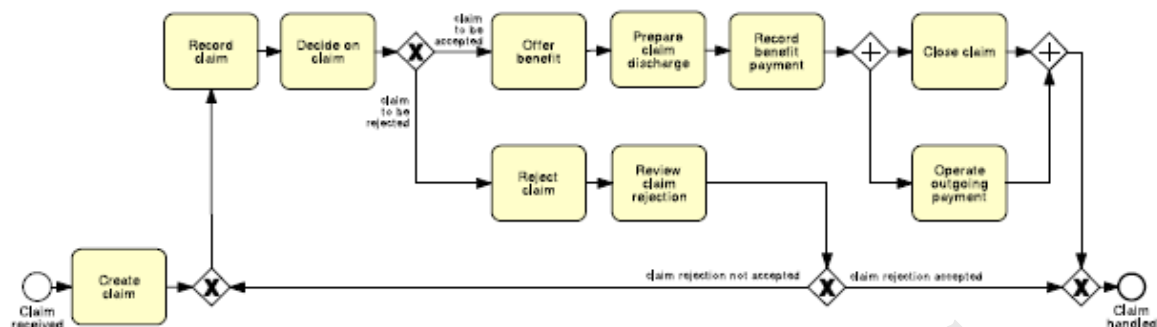
Exercise 3.7 Extend the model of Exercise 3.6 by representing the interactions between the loan provider and the applicant.

Solution 3.7

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Exercise 3.8 What types of splits and joins can we model in a process? Make an example for each of them using the security check at an airport as a scenario.

Exercise 3.9 Describe the following process model.



Exercise 3.10 Model the following business process for handling down payments.

The process for handling down payments starts when a request for payment has been approved.

It involves entering the down payment request into the system, the automatic subsequent payment, emission of the direct invoice and the clearance of the vendor line items. The clearing of the vendor line items can result in a debit or credit balance. In case of debit balance, the arrears are processed, otherwise the remaining balance is paid.

Exercise 3.11 Model the following business process for assessing credit risks.

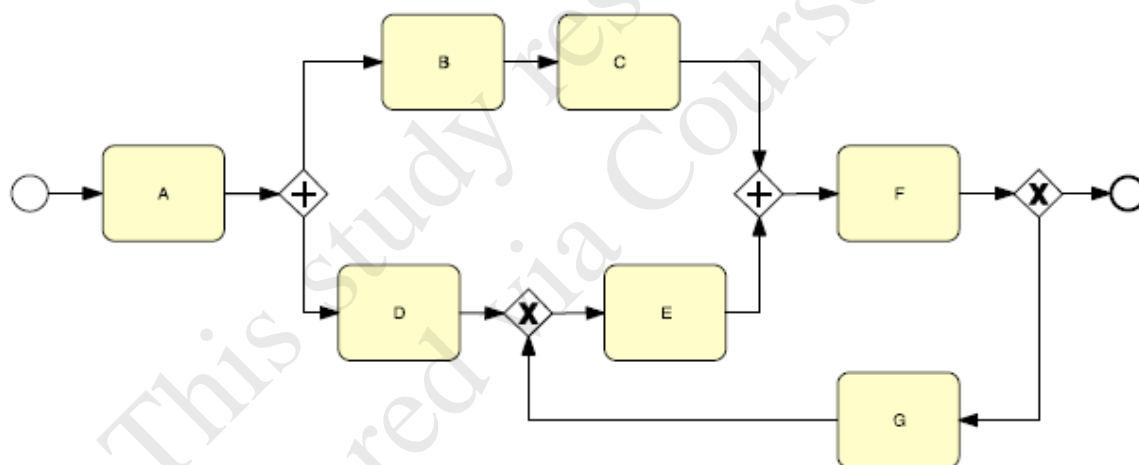
When a new credit request is received, the risk is assessed. If the risk is above a threshold, an advanced risk assessment needs to be carried out; *otherwise* a simple risk assessment will suffice. Once the assessment has been completed, the customer is notified with the result of the assessment and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

Exercise 3.12 Model the following fragment of a business process for insurance

claims. After a claim is registered, it is 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.

Exercise 3.13 Model the control flow of the following business process for damage compensation. 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 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 both the request is acceptable for filing, and compliant with the description of the premises on file. 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. It may be that additional fees are required, but the owner has already paid also those fees. In this case the cashier generates a receipt for the additional fees and proceeds with allocating the hearing date. Finally, 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.

Exercise 3.14 Can the process model below execute correctly? If not, how can it be fixed without affecting the cycle, i.e. such that “F”, “G”, and “E” all remain in the cycle?



Exercise 3.15 Write a BPMN model for the process described in Exercise 1.1.

Make sure to include artefacts and annotations where appropriate.

Exercise 3.16 Extend the model of Exercise 3.13 by adding the artefacts that are manipulated.

Exercise 3.17 Extend the model of Exercise 3.16 by adding the involved resources.

Is there any non-human resource?

Exercise 3.18 Model the following business process. Use gateways and data objects where needed. In a court each morning the files that have yet to be processed are checked to make sure they are in order for the court hearing that day. If some files are missing a search is initiated, otherwise the files can be physically tracked to the intended location. Once all the files are ready, these are handed to the Associate; meantime the judge's law list is distributed to the relevant people. Afterwards, the directions hearings are conducted.

Exercise 3.19 Model the following business process. Use pools/lanes where needed. 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. 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.

Exercise 3.20 Model the following business process. Use pools/lanes where needed. 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, and so on.