



## **Model the following process description using BPMN**

### **Exercise 1**

The Customer Service Representative sends a Mortgage offer to the customer and waits for a reply. If the customer calls or writes back declining the mortgage, the case details are updated and the work is archived prior to cancellation. If the customer sends back the completed offer documents and attaches all prerequisite documents then the case is moved to administration for completion. If all pre-requisite documents are not provided a message is generated to the customer requesting outstanding documents. If no answer is received after 2 weeks, the case details are updated prior to archive and cancellation.

### **Exercise 2**

Every weekday morning, the database is backed up and then it is checked to see whether the "Account Defaulter" table has new records. If no new records are found, then the process should check the CRM system to see whether new returns have been filed. If new returns exist, then register all defaulting accounts and customers. If the defaulting client codes have not been previously advised, produce another table of defaulting accounts and send to account management. All of this must be completed by 230 pm, if it is not, then an alert should be sent to the supervisor. Once the new defaulting account report has been completed, check the CRM system to see whether new returns have been filed. If new returns have been filed, reconcile with the existing account defaulters table. This must be completed by 4:00 pm otherwise a supervisor should be sent a message.

### **Exercise 3**

Design the processes for a client who wants to establish an on-line catering service. The service should be available over the Internet and provide the options to create or change customer profiles, choose and remove goods from a shopping cart, as well as a checkout. The goods are divided into two types: cold and warm. All cold goods are simply taken from the storehouse, whereas warm goods are prepared half an hour before the delivery starts. After the customer has chosen several cold and warm goods, he can proceed to the checkout. The checkout requires the selection of 1) a customer profile, 2) the delivery time, and 3) the credit card number, which is debited at the bank. Afterwards the order is saved and the customer receives confirmation e-mail. The customer should be able to cancel orders at any time until one hour before the delivery time. The catering service has to check open orders frequently to prepare warm goods in time for delivery. After all cold and warm goods have been collected or prepared; they are delivered to the customer. The next day after the delivery an e-mail is sent to the customer asking for feedback about the quality of the service and goods.

### **Exercise 4**

"End-of-study projects in an industrial environment is a mandatory part in the Bachelor curriculum. The students are not yet involved in the planning phase, where each research group interacts with its industry partners. As the project proposals have to be handed in to the faculty by 30 June, the research group starts planning in the beginning of June. The group sends request to all of its partners and waits for their proposals for at most a week. The group selects the two most interesting proposals and starts planning the details for these two proposals. First, the proposal is worked over in several iterations: The group updates the proposal document, before it is sent to the partner who in turn updates it and sends it back. Once the document has reached a final status, it is handed in to the faculty. The faculty decides which of the proposals will be accepted. The outcome of this decision results in one of two messages: Either the project proposal was rejected or it was accepted. In the latter case the group announces this positive result to the corresponding partner". Remark: The internal processes of the faculty and the partners should not be modeled.



### **Exercise 5**

Design the business process regarding a travel agency using BPMN.

### **Exercise 6**

Design the processes for bike travelling considering a Bike Sharing scenario. Please Consider the following requirements:

- BSSs should provide user registration mechanisms in order to access the service. BSSs registration can be done (i) on the fly using docking station located near the bike and Credit Card payment method or (ii) at the offices that could also provide dedicated pre-paid smart card generally referred as Bike Card.
- BSSs should provide a way to lock/unlock bikes from the bike station. Existing BSSs implement different locking mechanisms, we consider here: (i) Bikes can be unlocked using dedicated device (i.e. smart card or credit card) and (ii) Bikes can be unlocked via mobile communication or pay phone to send a Short Message Service (SMS) using a unlocking code delivery.
- BSSs could provide a tracking mechanisms to know the position of the bikes. This could be done via Global Positioning System (GPS) or Radio Frequency IDentification (RFID) technologies, no BSS typically support both.
- BSSs could provide rewarding mechanisms to users. These contribute to facilitate the (re)distribution of bikes among different bike stations, suggesting to the users the docking station to which the bike should be returned, in some case not necessarily the closest one.