LAB 1– Value Model & BPMN Modeling

Ingegneria dei Processi Aziendali

Module 2 - Lab

Unit 1 – Process Modeling

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Outline

Analyzed Process: Expense Reimbursement

Value Model

BPMN Model

Analyzed Process - 1

The process is a sample expense reimbursement process:

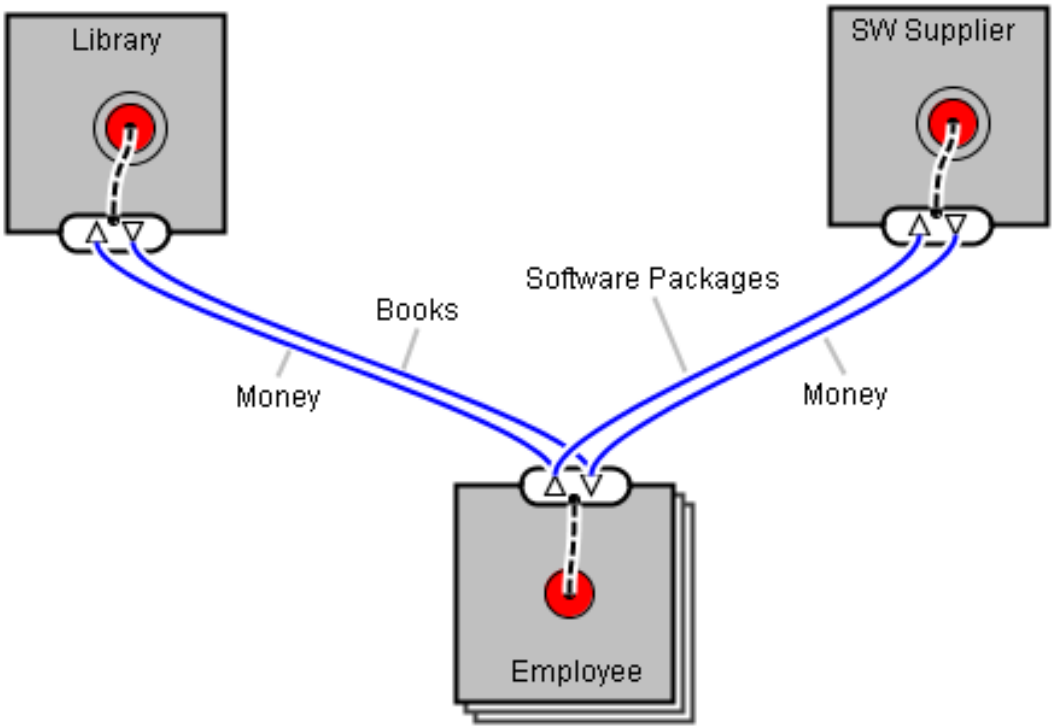
- **It provides for reimbursement of expenses incurred by employees for the company. E.g. buying a technical book, office supplies or software**

- **In a normal day there are several hundreds of instances of this process created**

Three Actors

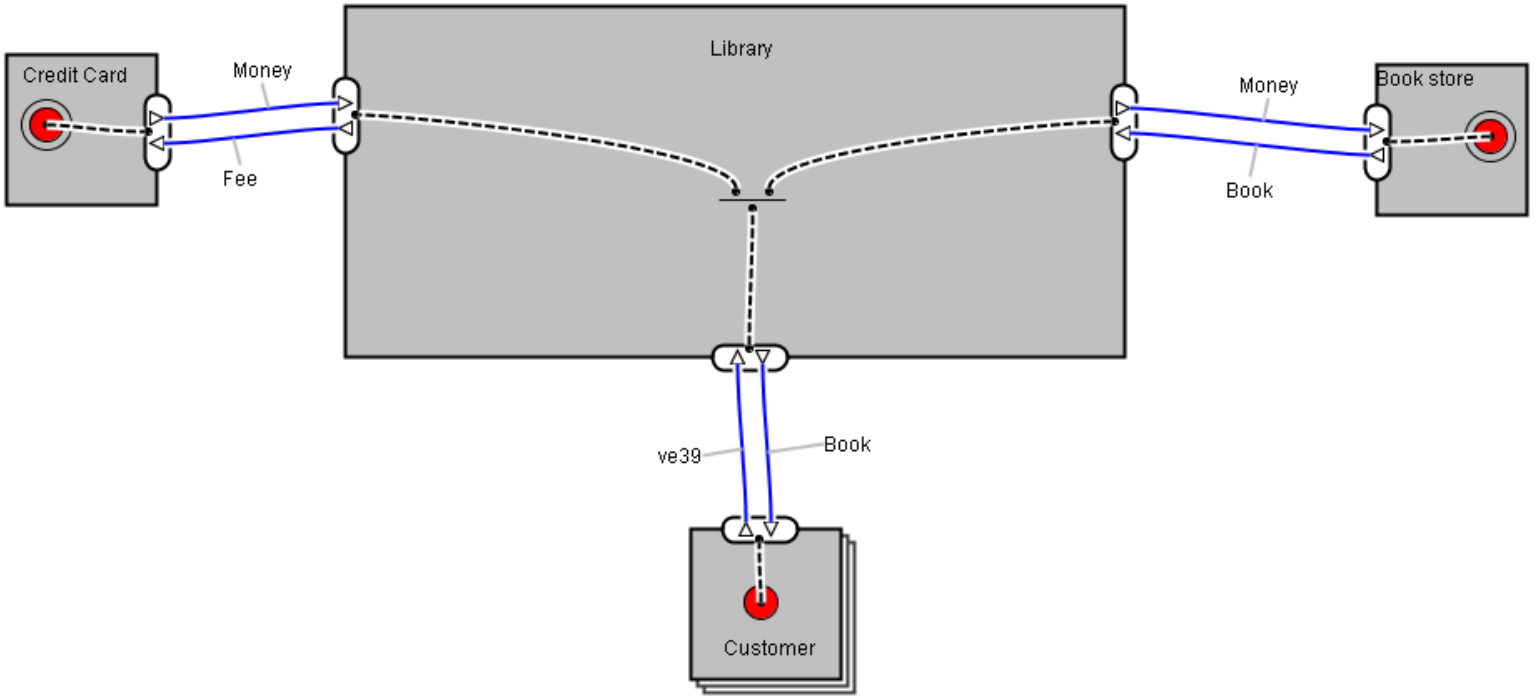
- **Employee**
- **Reimbursement Office**
- **Supervisor**

Value Model - 1



- **Employees buying goods**
- **Employee considered as a *Market Segment***

Value Model - 2



- **E3value can model complex value flows**
- **AND/OR splits are supported by the model**

Analyzed Process - 2

1. **The employee create a reimbursement request. After the Expense Report is received by the Office, a new account must be created if the employee does not already have one**

2. **The report is then reviewed by the Office for automatic approval**
   - **Amounts under $200 are automatically approved**
   - **Amounts equal to or over $200 require approval of the supervisor**
   - **In case of rejection, the employee must receive a rejection notice by email**

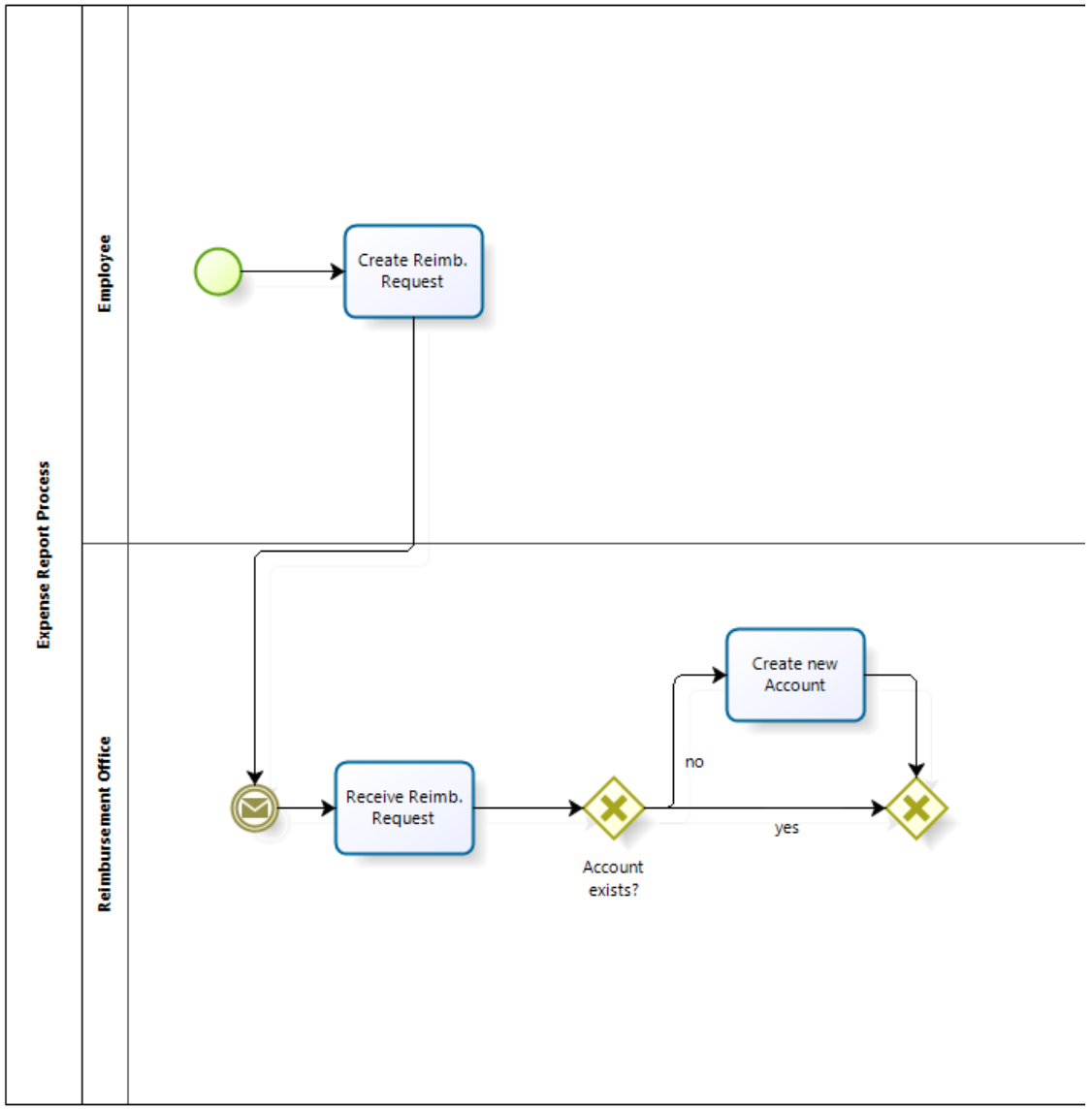
3. **The reimbursement goes to the employee's direct deposit bank account**

4. **If no action has happened in 7 days, then the employee must receive an approval in progress email**

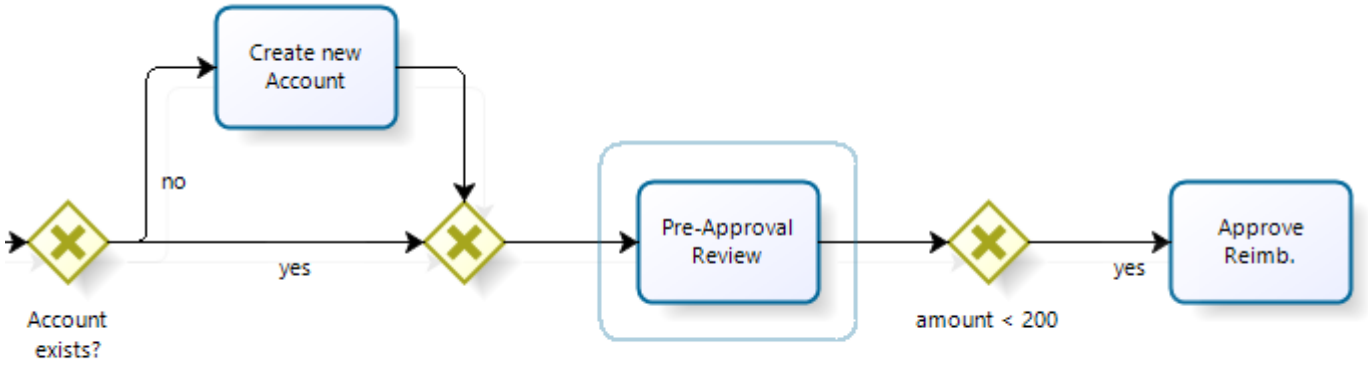
5. **If the request is not finished within 30 days, then the process is stopped and the employee receives an email cancellation notice and must re-submit the expense report**

BPMN Diagram: Create Account

1. **The employee create a reimbursement request.**
   After the Expense Report is received by the Office, a new account must be created if the employee does not already have one



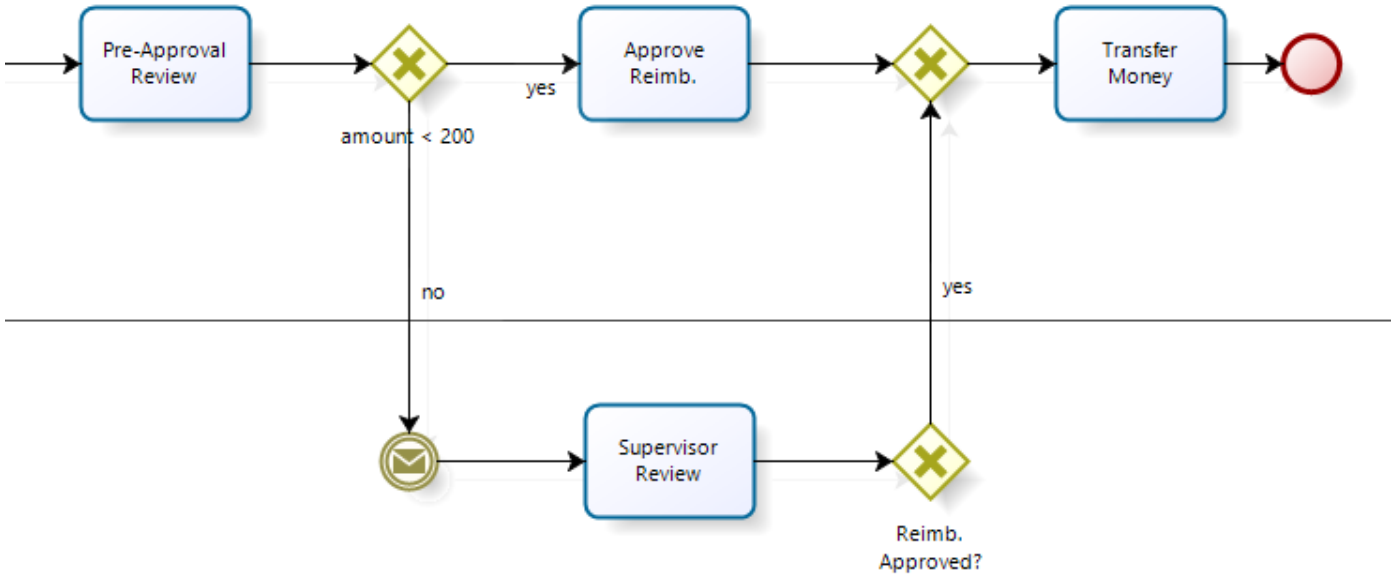
BPMN Diagram: Auto-approve



2. The report is then reviewed by the Office for automatic approval

- **Amounts under $200 are automatically approved**

BPMN Diagram: Supervisor Approval



2. The report is then reviewed by the Office for automatic approval

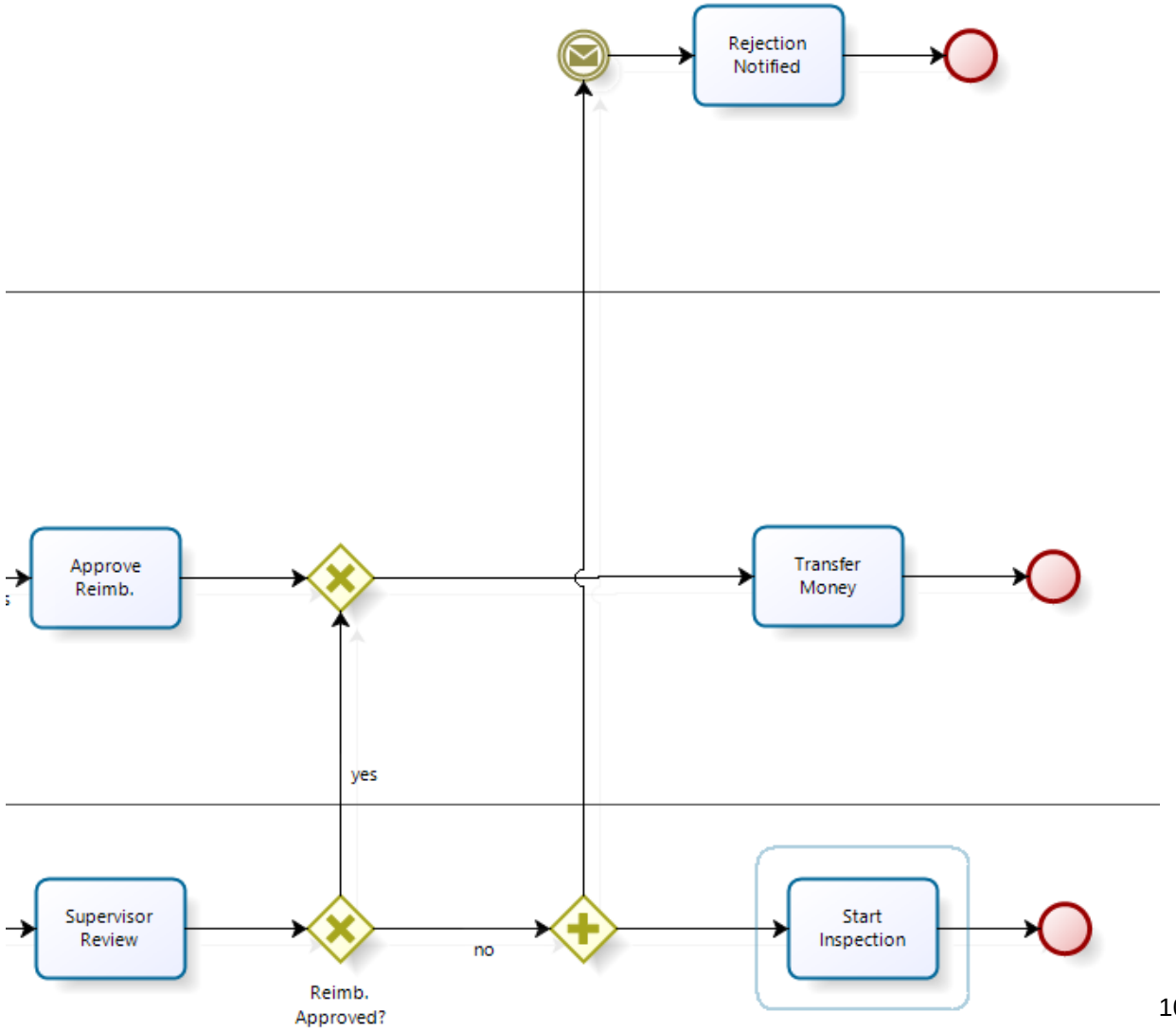
- **Amounts equal to or over $200 require approval of the supervisor**

3. The reimbursement goes to the employee's direct deposit bank account

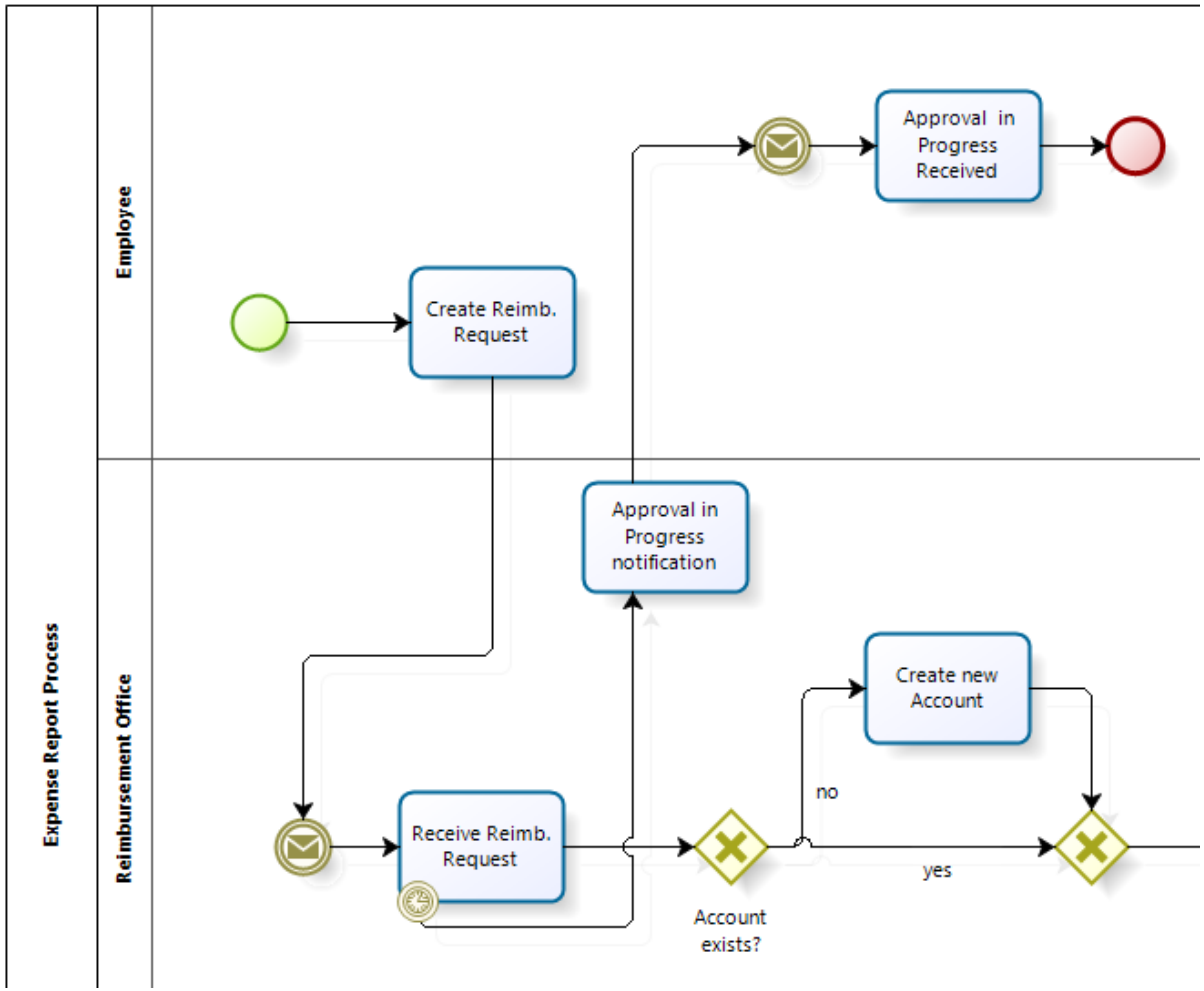
BPMN Diagram: Start Inspection

2. The report is then reviewed by the Office for automatic approval

- **In case of rejection, the employee must receive a rejection notice by email**

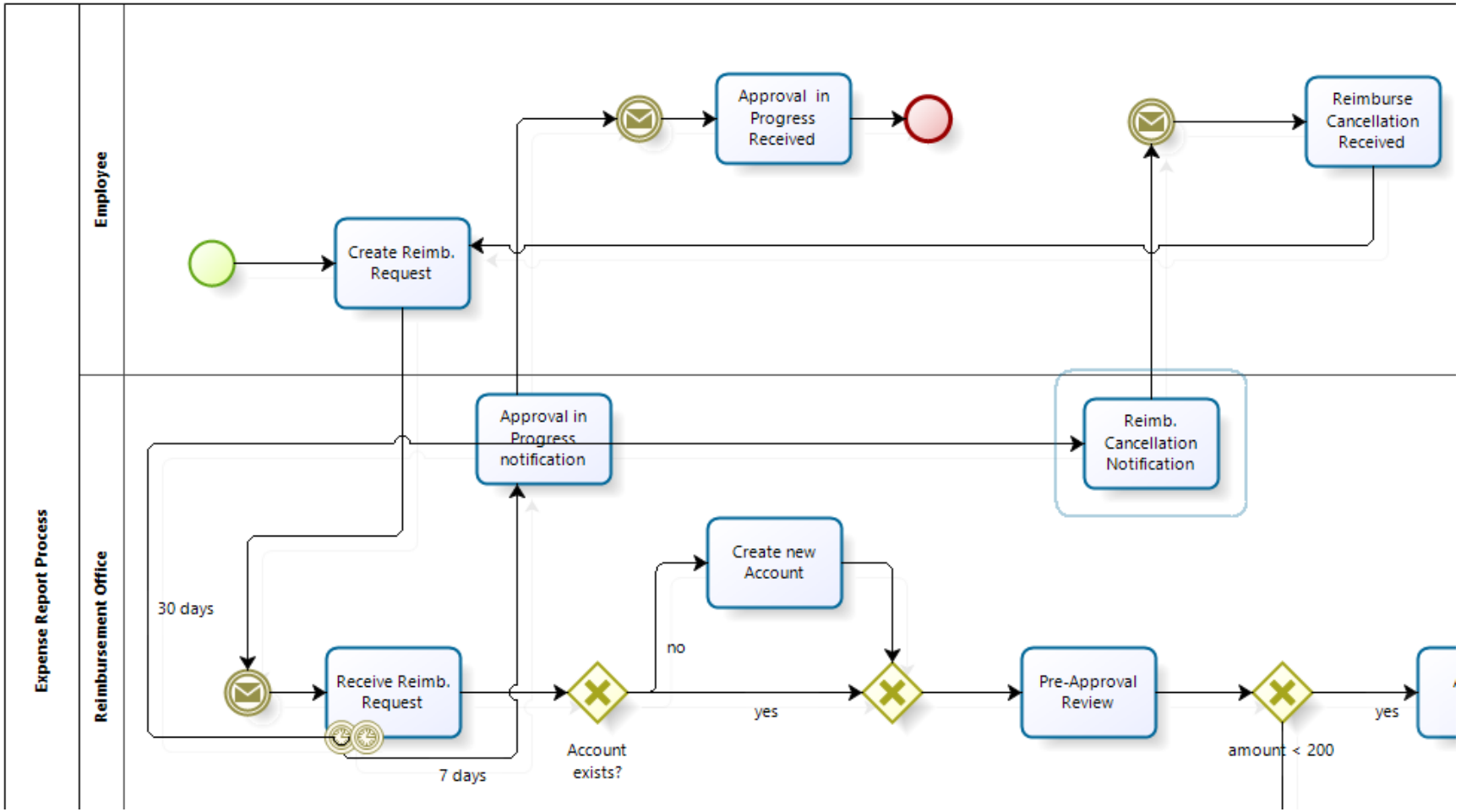


BPMN Diagram: Approval in Progress



4. If no action has happened in 7 days, then the employee must receive an approval in progress email

BPMN Diagram: Cancellation Notice



5. If the request is not finished within 30 days, then the process is stopped and the employee receives an email cancellation notice and must re-submit the expense report

BPEL MODELING

BPEL Modeling

In the Lab we concentrate only in the visual modeling of the process

Different modeling steps

- **Define the partners list**
- **Define the type of data in input to the process**
- **Define (or import) the partner WSDL**
- **Build the process**

BPEL: Create client's XSD - 1

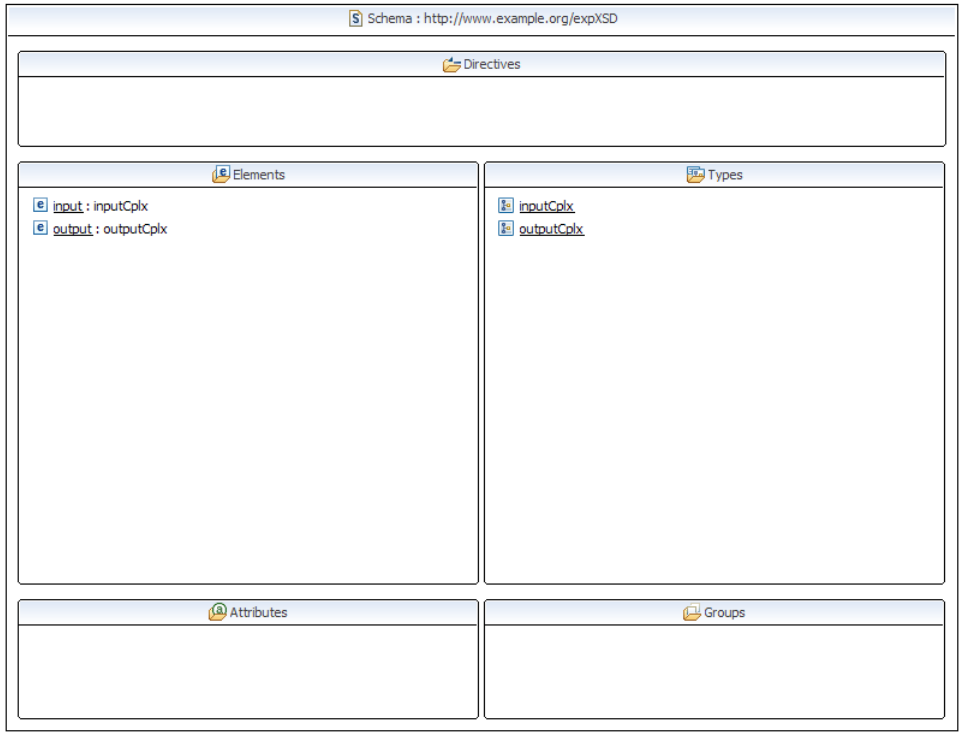
XSD define types of the data exchanged

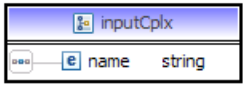
Define types for the client application

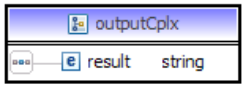
Important to design the type of operation to execute and data to exchange

- Data are defined as XML complex types

BPEL: Create Client's XSD - 2







Define the type of data given as input to the process

BPEL: Create Employee WSDL - 1

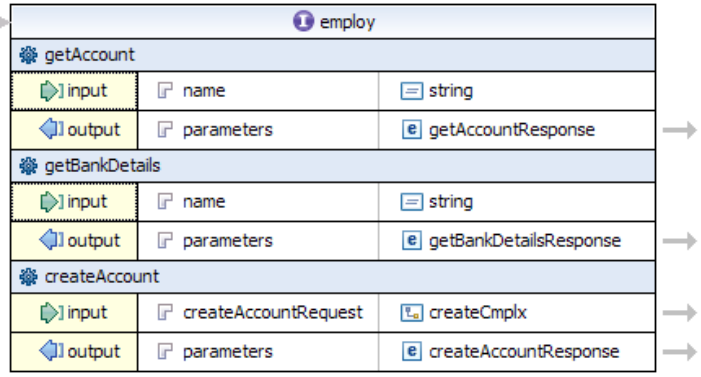
Define the WSDL for the employee management web service

Generally WSDLs are directly imported from source applications

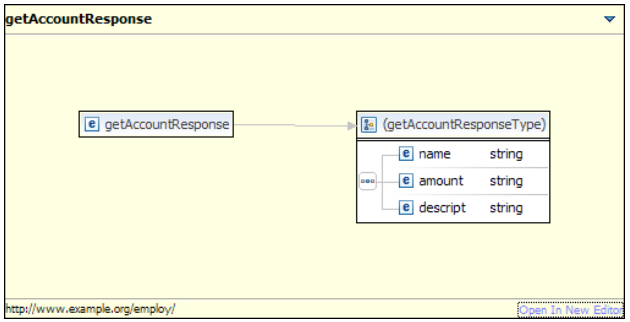
The service provides the following operations:

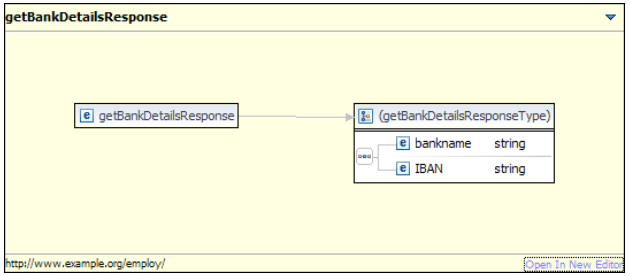
- getAccount
- createAccount
- getBankDetails

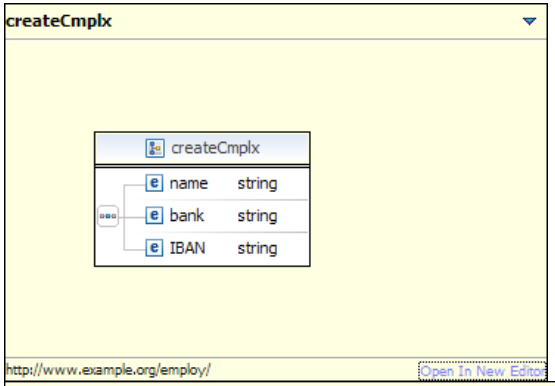
BPEL: Create Employee WSDL - 2

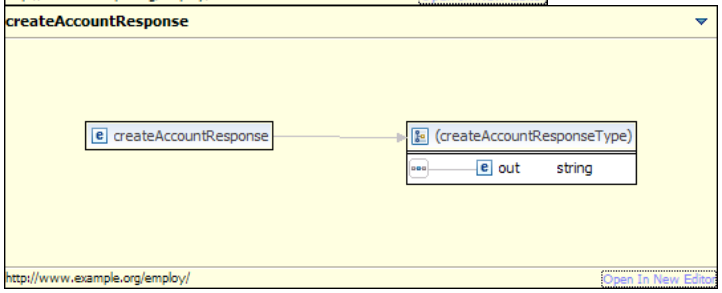


Define the operation and the type of data exchanged









BPEL: Create Supervisor WSDL

Define the supervisor service

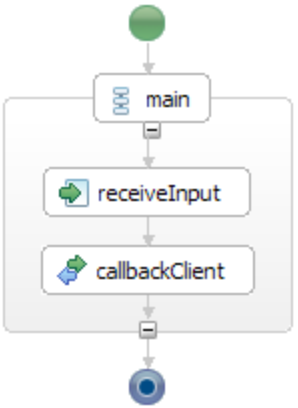
Operation:

- approve
  - Input: name – amount – description
  - Output: decision
- makePayment
  - Input: amount – bank – IBAN
  - Output: result

BPEL: Create a new process

Create an empty structure for the process

Each process starts with a *receiveInput*, to receive input from the client, and ends with *callbackClient*, to return results



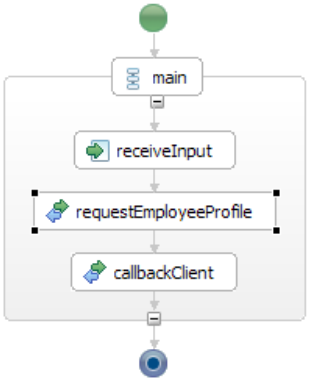
Define the type of input and output variables importing the client XSD

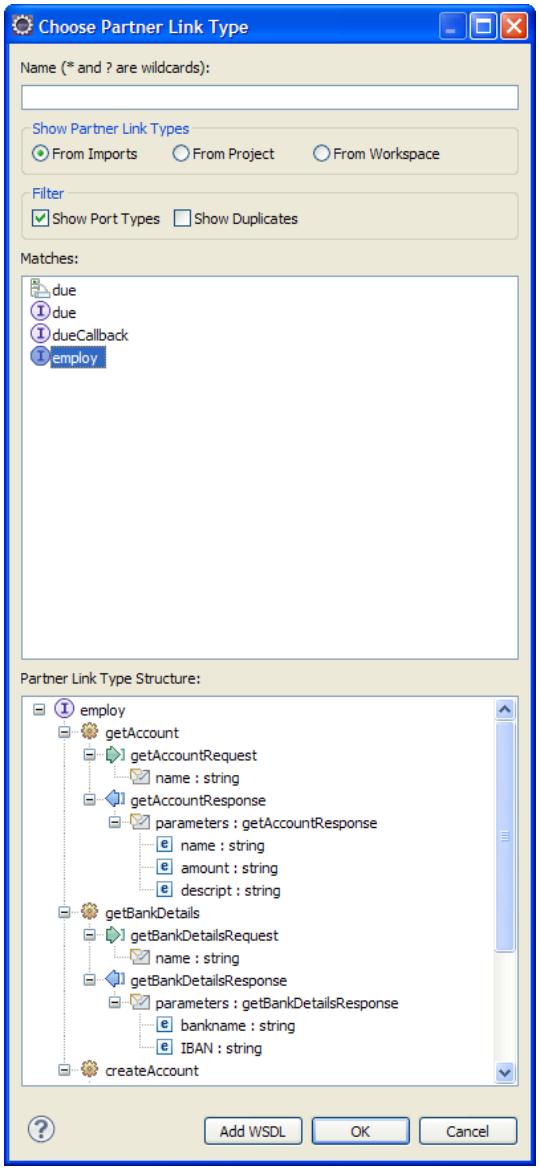
BPEL: call Partner Operation

Import the partner WSDL to be called by the process

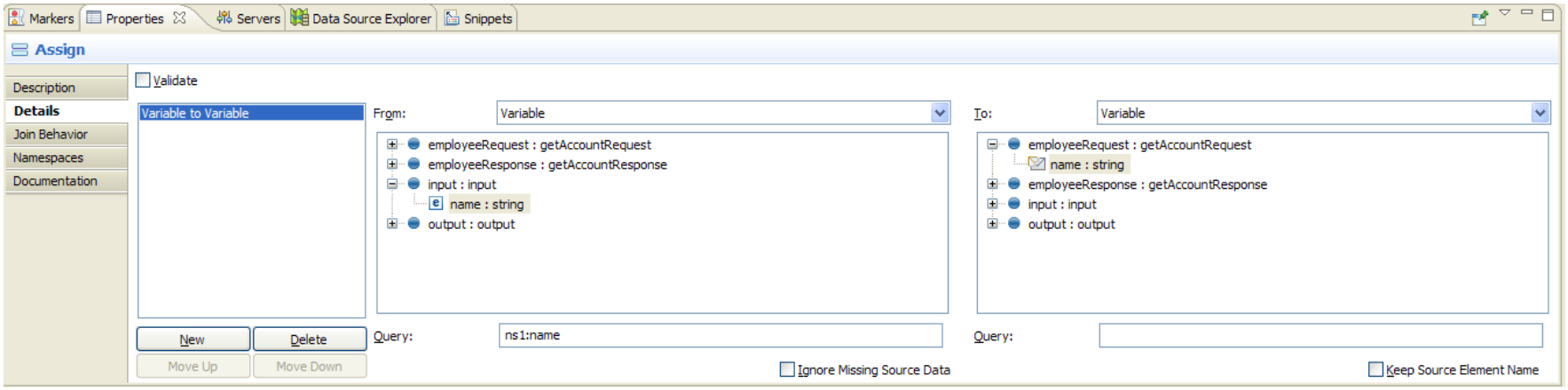
Define the partner role

Add the *requestEmployeeProfile* and select the operation (*getAccount*)



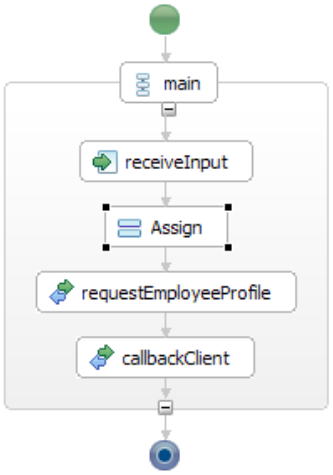


BPEL: assign Value to Parameters

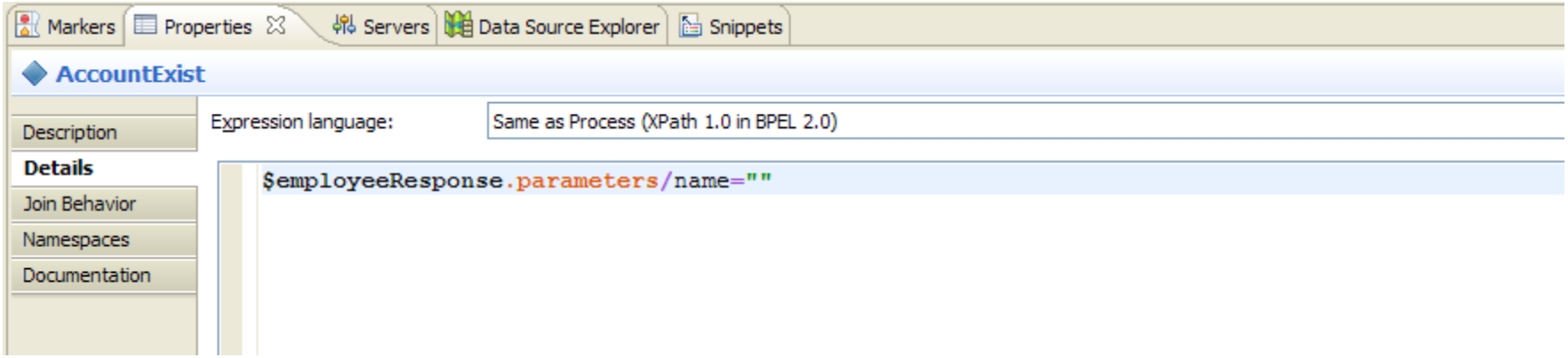


BPEL uses the *assign* task to map value from client to operation parameters

Select the source and destination of parameter values



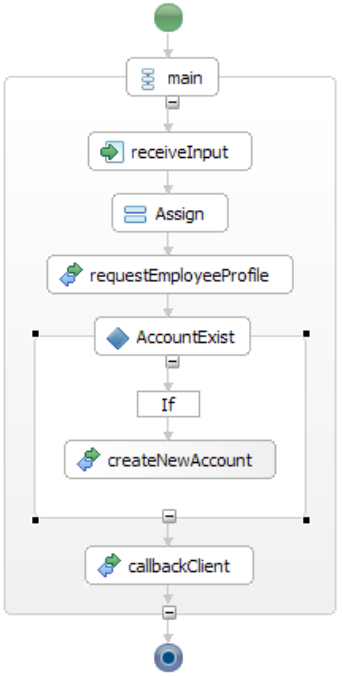
BPEL: insert IF statement



Add the IF statement

Define the condition: use the XPath sintax

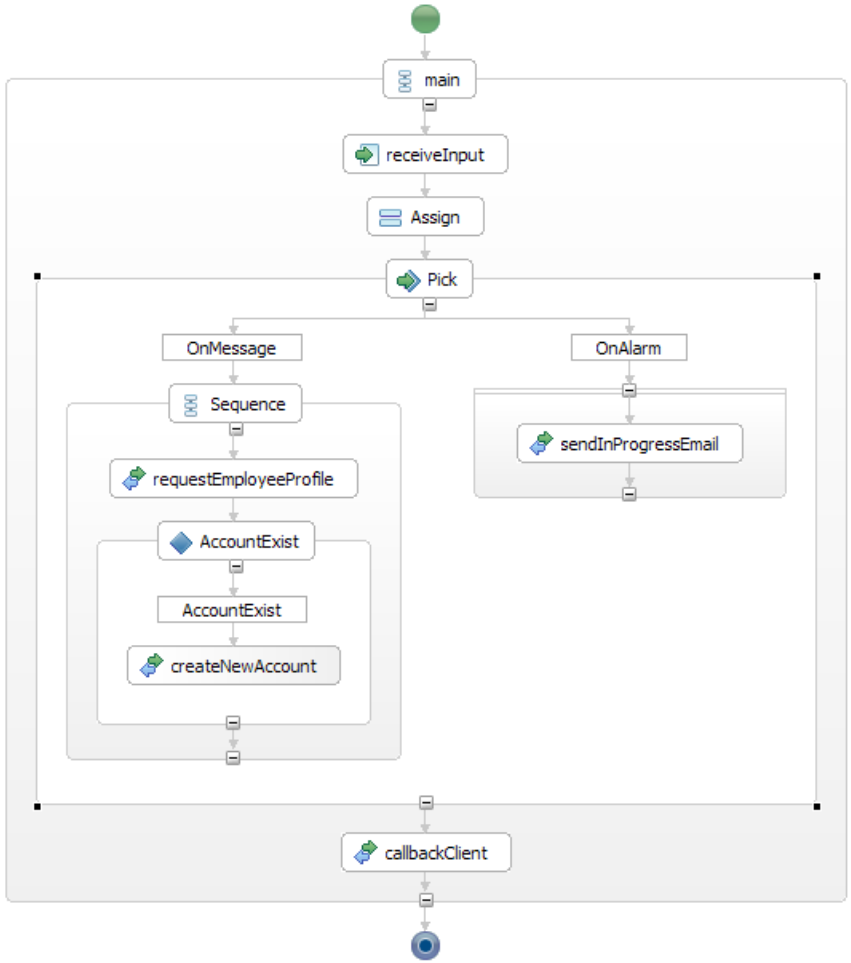
Call the createAccount operation if the account does not exist



BPEL: Wait 7 days

Use the Pick element: wait until the first event applies:

- **The getAccount Web Service returns → process continues**
- **The 7 days timer lasts → send mail**



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