

Process Modeling and BPMN

Group session 6



Agenda

- Quiz
- Quick recap
- Exercises
- Previous exam questions

Quiz!

Repetition from lecture

BPMN - Business Process Modeling Notation

- BPMN is a flow chart method
- Used for Business Process Management
- Models the steps of a planned business process
 - Detailed sequence of business activities and information flows needed to complete a process

Activities



A **Task** is a unit of work, the job to be performed. When marked with a [] symbol it indicates a Sub-Process, an activity that can be refined.

A **Transaction** is a set of activities that logically belong together; it might follow a specified transaction protocol.

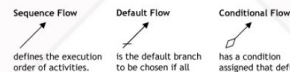
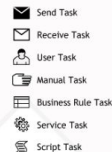
An **Event Sub-Process** is placed into a Process or Sub-Process. It is activated when its start event gets triggered and can interrupt the higher level process context or run in parallel (non-interrupting) depending on the start event.

A **Call Activity** is a wrapper for a globally defined Task or Process reused in the current Process. A call to a Process is marked with a [] symbol.

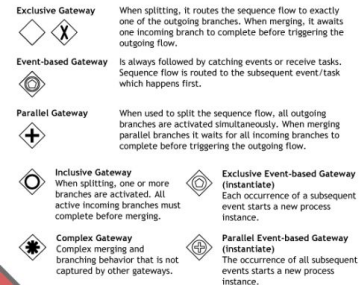
Activity Markers



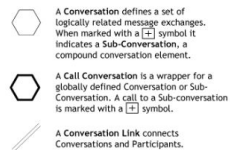
Task Types



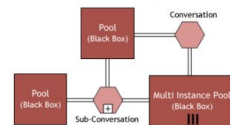
Gateways



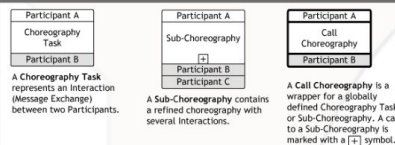
Conversations



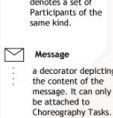
Conversation Diagram



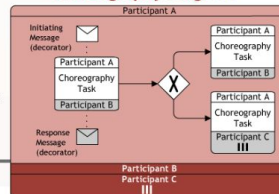
Choreographies



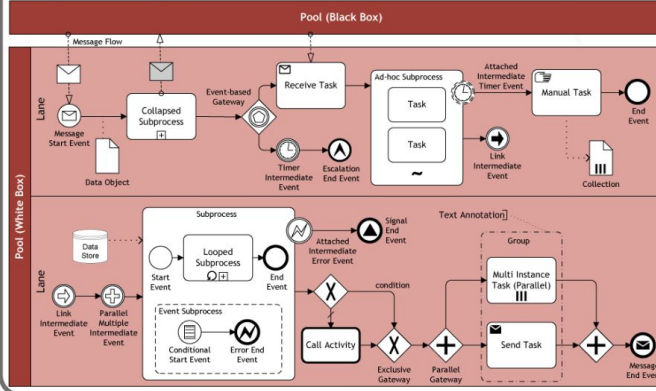
Multiple Participants Marker



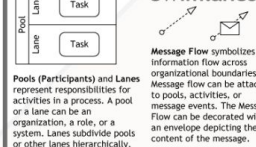
Choreography Diagram



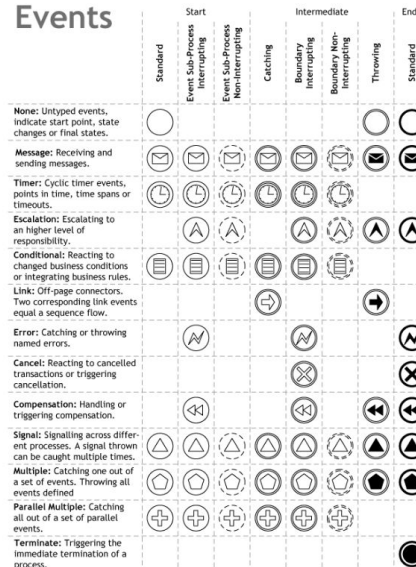
Collaboration Diagram



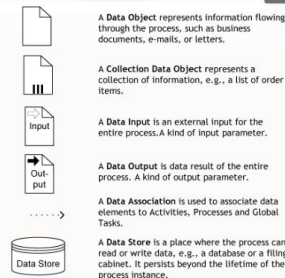
Swimlanes



Events

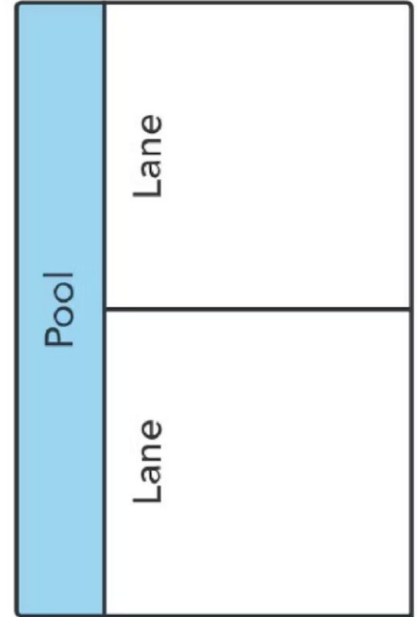


Data



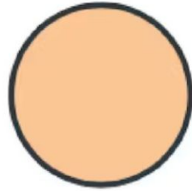
Pools and Swimlanes

- A pool represents major participants in a process
 - A different pool may be in a different company or department but still involved in the process
- Swimlanes within a pool show the activities and flow for a certain role or participant, defining who is accountable for what parts of the process

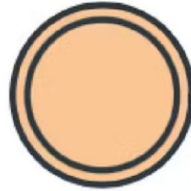


Events

- A trigger that starts, modifies or completes a process.
- They are shown by circles containing other symbols based on event type.



Start



Intermediate



End

Activities

- A particular activity or task performed by a person or system
 - It's shown by a rectangle with rounded corners.
- They can become more detailed with for example sub-processes



Gateways

- Decision point that can adjust the path based on conditions or events
 - They are shown as diamonds
- Gateways can also be an empty diamond



Exclusive



Event based



Parallel



Inclusive



Exclusive
event based



Complex



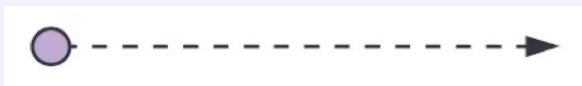
Parallel
event based

Flow

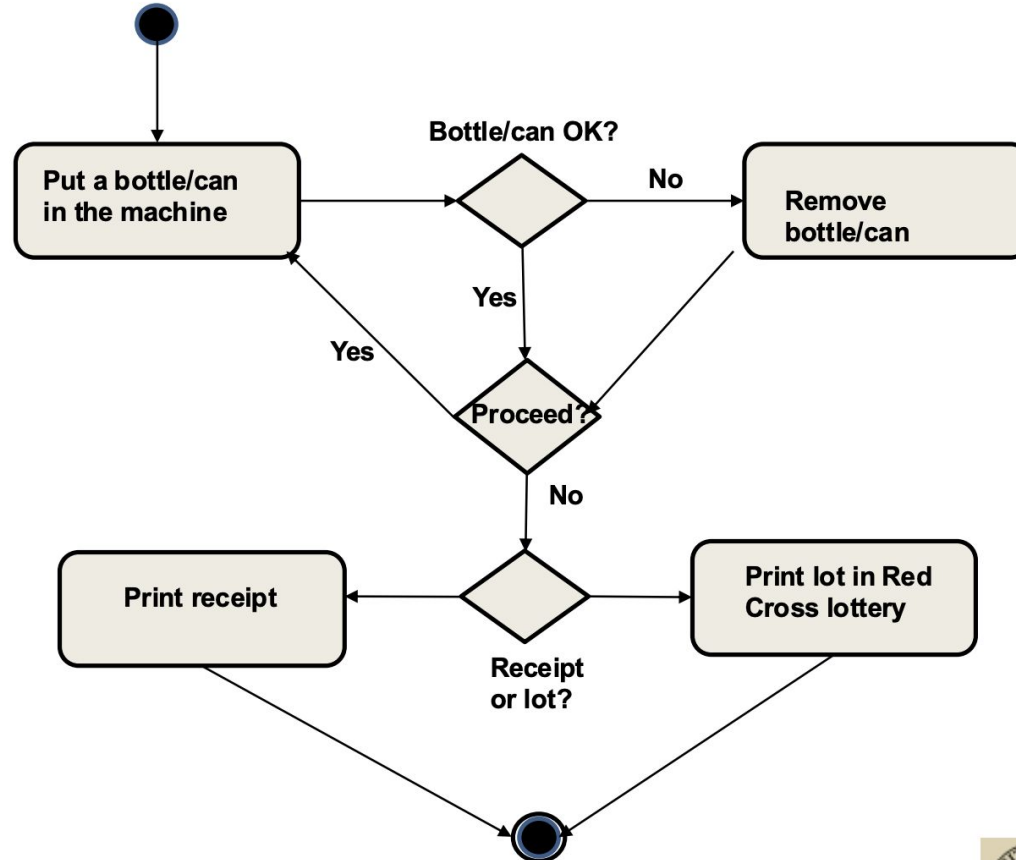
- Sequence flow: shows the order of activities to be performed



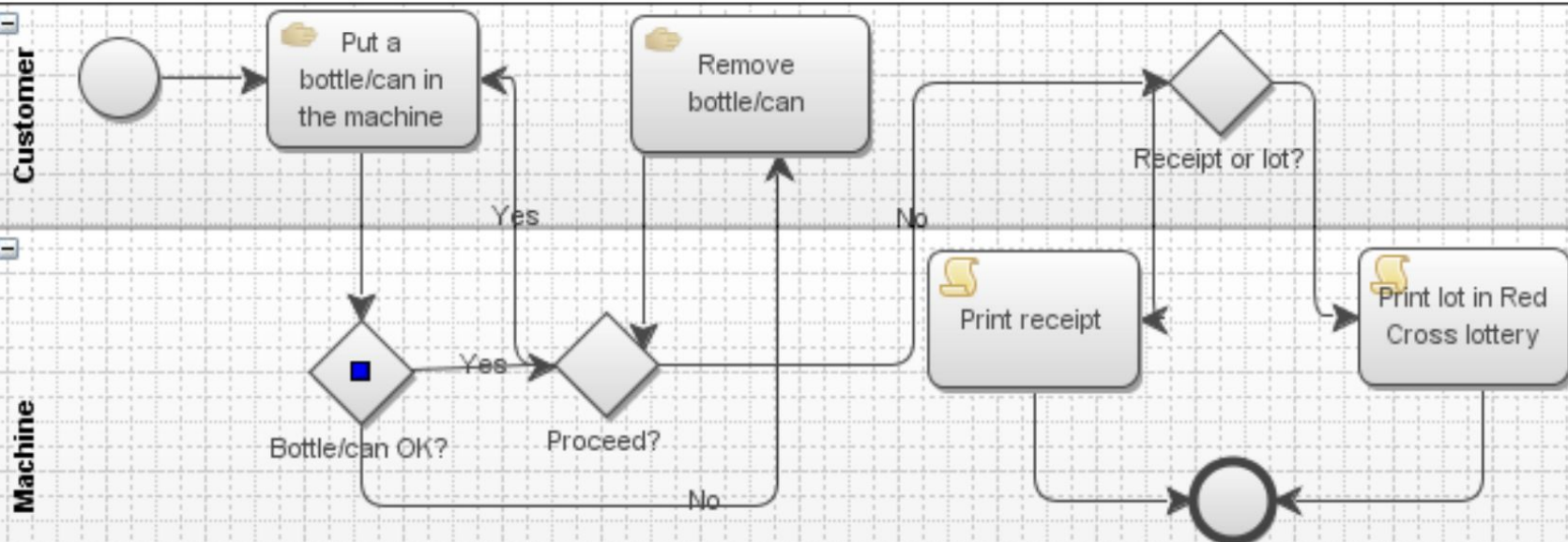
- Message flow: depicts messages that flow across “pools,” or organization boundaries such as departments. It shouldn’t connect events or activities within a pool



From INF1050/IN1030: Activity Diagram (UML) – Deliver bottles/cans in a machine (“pante flasker”)



Deliver bottles/cans system



Tutorial from Lucidchart

- <https://www.youtube.com/watch?v=6Juh83sxKkQ>

Resources

- Diagrams.net / Draw.io
 - <https://www.diagrams.net/>
- Lucidchart
 - <https://www.lucidchart.com/>
- yEd Graph Editor
 - <https://www.yworks.com/downloads#yEd>
- Yaoqiang BPMN Editor - Open Source
 - <https://sourceforge.net/projects/bpmn/>
- Signavio
 - <https://www.signavio.com/> (free 30-day trial)
- Pen and paper

How to make a BPMN

1. Skim through the textual description.
2. Identify pools: which companies or organizations are involved.
3. Identify swimlanes: which roles are present in each pool.
 - a. Identify the tasks occurring in each swimlane
 - b. What dependencies can you identify
4. Model the tasks with metadata
5. Check that you are still answering the exercise and accounted for all major occurrences of the process.

Don't make it too complicated!

- You do not need to make the BPMN diagram too extensive or complicated. Most importantly, it should be **readable and understandable!**
- Key elements to check:
 - Correct lanes and pools
 - Activities and gateways
 - Start and stop event
 - Sequence flow
 - Collaborations

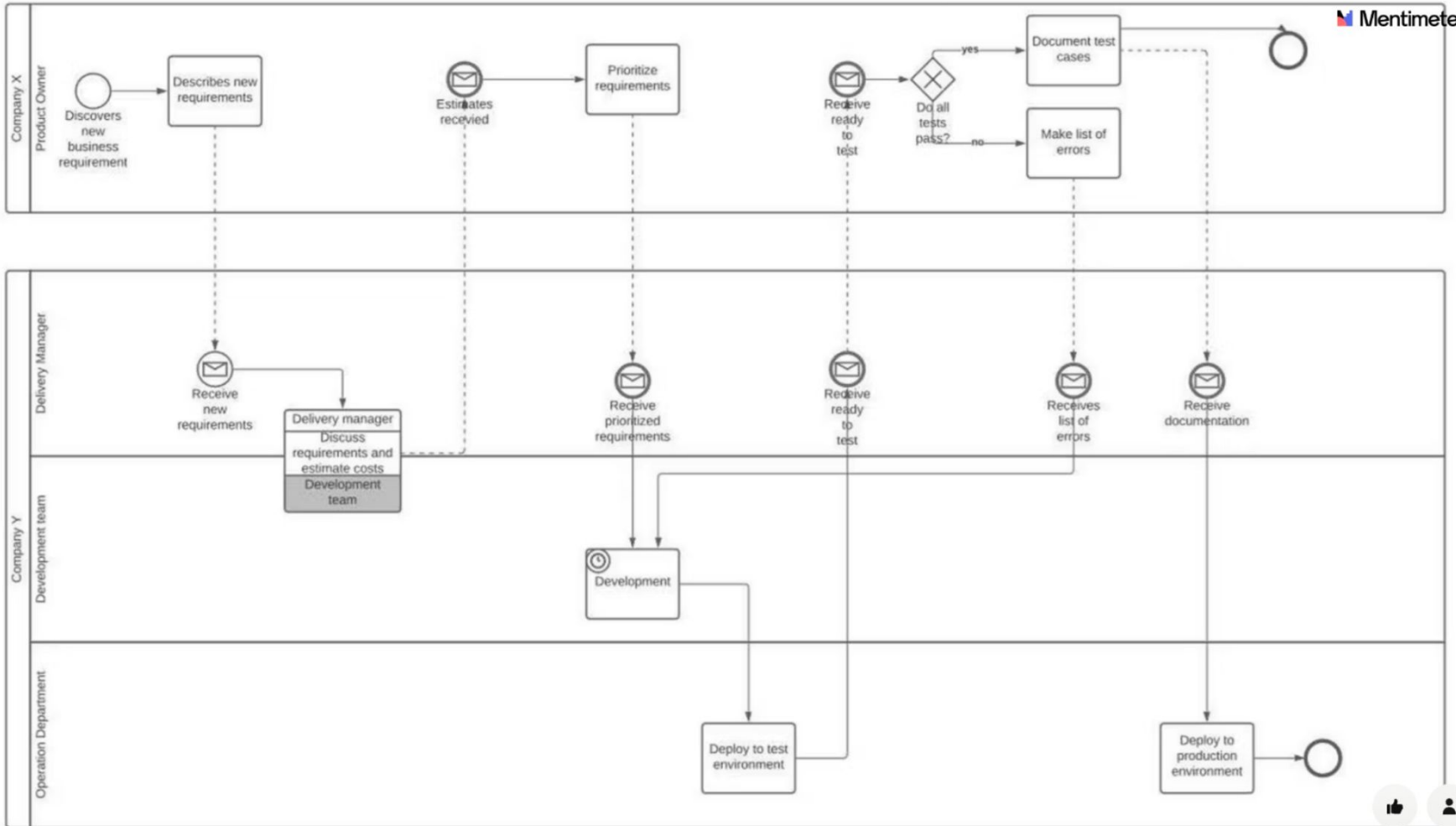
Exercises

Case 1: Ordering coffee in Escape

A customer enters Escape and orders a coffee. The barista checks whether the coffee is available or not. If the coffee is available, the customer can pay. If the coffee is not available, then the customer can choose another option. After payment the barista will make the coffee and the customer will receive it.

Background: Company X uses a web application to support its business. **The web application was developed and is currently maintained by Company Y.** The two companies work together on improvements and further development; X identifies needs for new functionality and orders this from Y, and Y regularly delivers new versions of the web application with the requested functionality to X.

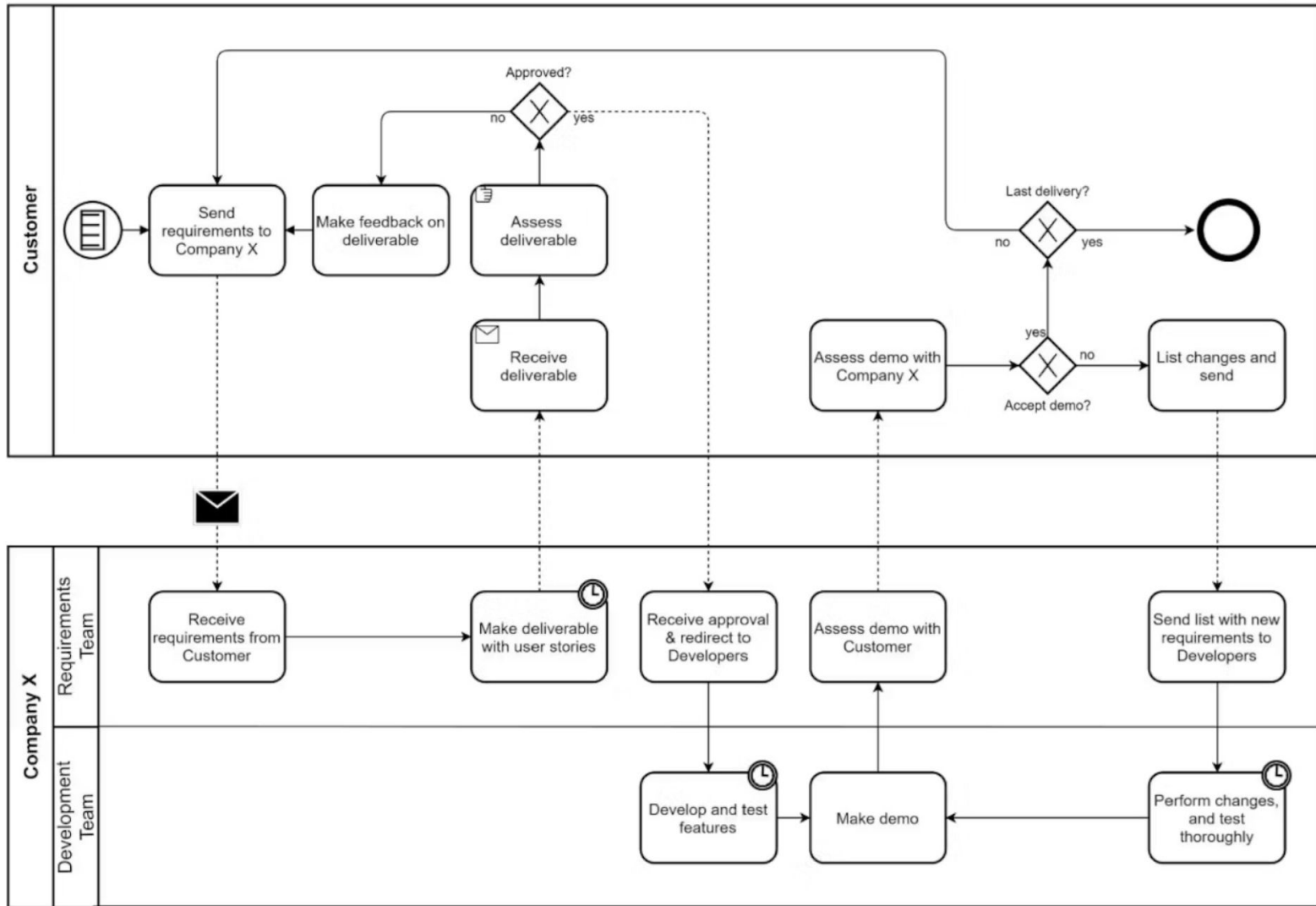
The process of developing new functionality: Company X has a Product owner for the web application who is responsible for identifying new business opportunities, for describing new requirements and for testing. The Product owner regularly hands over a requirement specification to the Delivery manager at Company Y. The Delivery manager is responsible for the successful delivery of new versions of the application. The Delivery manager cooperates with a team of developers in company Y. They discuss the requirements from company X and estimate the tasks. Then the Delivery manager informs the Product owner about the estimates and costs. Based on this information, the Product owner decides which requirements should be prioritized for the new version of the system and communicates this back to the Delivery manager. Then the developers start development. When the new features have been developed, they are deployed to the test environment by the Operation department at Company Y. The Delivery manager requests the Product owner to test that implemented features correspond to the specified requirements. If some of the features do not pass the test, the Product owner makes a list of errors and informs the Delivery manager, who in turn informs the developers of the necessary changes and error corrections. When all tests are passed, the test cases are documented and sent to the Delivery manager, who requests the Operation department to deploy the new version to the production environment. The Operation department deploys the new version.



Previous exam questions

[2017]

A software company in Norway (Company X) is developing an administrative system for the Norwegian public sector (the customer). The current development process is as follows: Company X receives a fixed list of requirements from the customer. Company X then first rewrites the requirements into user stories and then groups them into a set of deliverables. For example, requirements that deal with profile administration are grouped into a deliverable entitled “User Profile”. After defining a deliverable, Company X sends it to the customer representatives for approval. Once the customer approves the deliverable, Company X sends the deliverable to a development team in Ireland that is owned by company X. The Irish team codes the requested functionality and sends back a demo to Company X. Company X and the customer assess in collaboration the work of the Irish development team. If the deliverable (demo) is accepted by the customer, Company X starts to plan a new deliverable. However, if the deliverable (demo) is rejected, Company X must ensure the necessary changes, including fixing bugs, performed by the Irish development team. After implementation, they return a new demo for approval. This cycle is repeated until the customer finally approves the deliverable.



Have a nice weekend! :D

isabelrl@uio.no

