BPMN 2.0
Descriptive Constructs

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Watch this lecture and download the slides from

http://jarrar-courses.blogspot.com/2015/01/dataandbusinessprocessmodelling.html

Some content in this lecture are based on [4]
http://www.bpmn-tool.com/en/tutorial/

Reading and practice

[1] Every material in these slides.

[2] Chapter three of Mathias Weske BPM book.

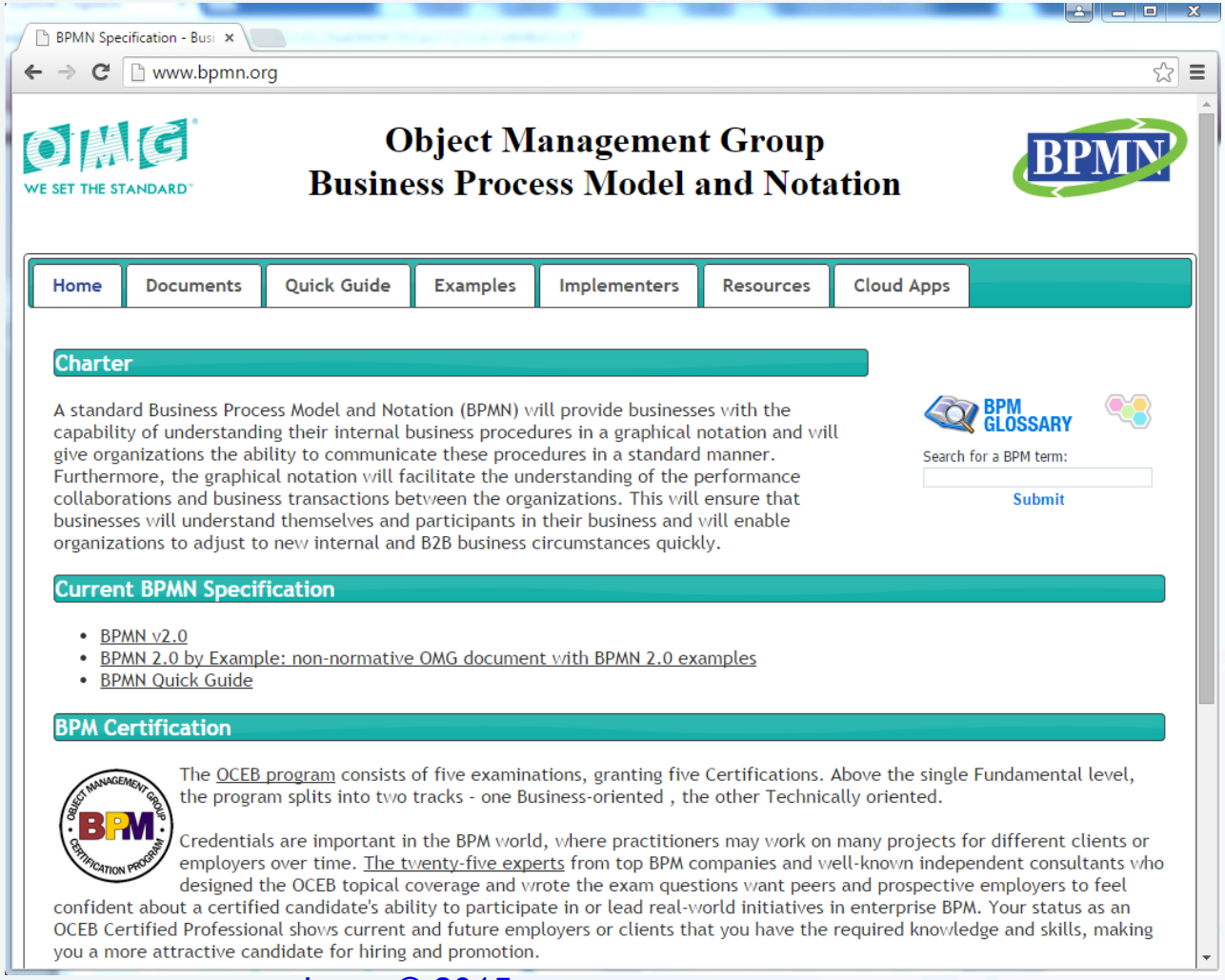
[3] Practice on using Signavio process editor.

[4] Signavio Process Editor (Academic BPM initiative)

Keywords: Data Engineering, Data Modeling, Conceptual Data Modeling, ORM, Object Role Modeling, Information Modeling, Schema engineering, Business Rules, integrity constraints, Derivation rules, Logic, verbalization of business rules, rules contradictions, rules implications, Business Process Engineering, Business Process Management, Business Process Modelling, Process Mapping, Process identification, process re-engineering, process re-engineering, Process Optimization, Process execution.
هندسة البيانات، مخطط بيانات الهيمية الهرمية، نماذج البيانات الهيمية، هندسة البيانات العلائقية، إعادة هندسة العمليات الإدارية

Business Process Model and Notation

BPMN 2.0 is a MOG since in 2011 as a process modeling and notation language. http://www.bpmn.org/



OMG Certified Expert in BPM 2

OCEB program consist of five examination, which grant five certifications.

Two fundamental exams, then three certifications split into either business or technical track.

Image source http://www.omg.org/

BPMN 2.0 Modeling Constructs

BPMN 2.0 has a set of modeling elements such as:

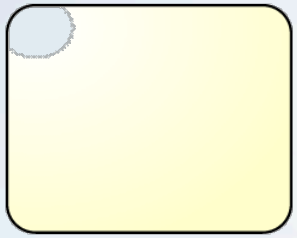
- Activities
- Connecting objects
- Start events
- End events
- Artifacts
- Gateways
- Swimlanes (pool/lane, …)
- Data objects
- Throwing intermediate events
- Catching intermediate events

BPMN Descriptive Elements

The selected BPMN 2.0 descriptive elements in this course are contained in this lecture slides.

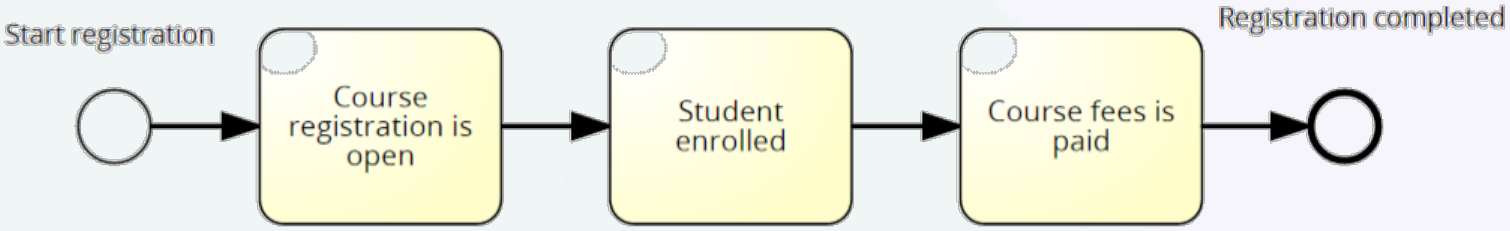
Descriptive elements are the basic BPMN symbols that can be used to model a business process.

Activities



The **task** is a unit of work – the job to be performed.

Task can be performed by human, system or even it can be an entire process.

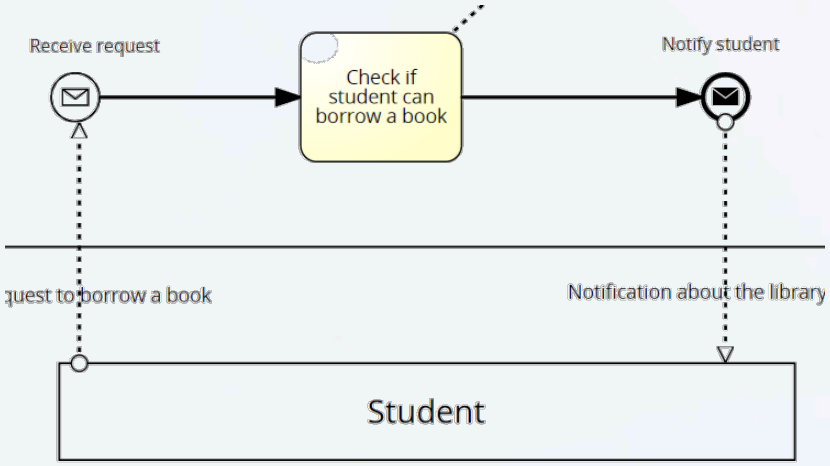


Connecting Constructs

Sequence Flow define the execution order of activities.

Message Flow symbolizes information flow across organizational boundaries.
Basic rules: attached to pools, activities or message events.

The order of message exchanges can be specified by combining the message flow and sequence flow.

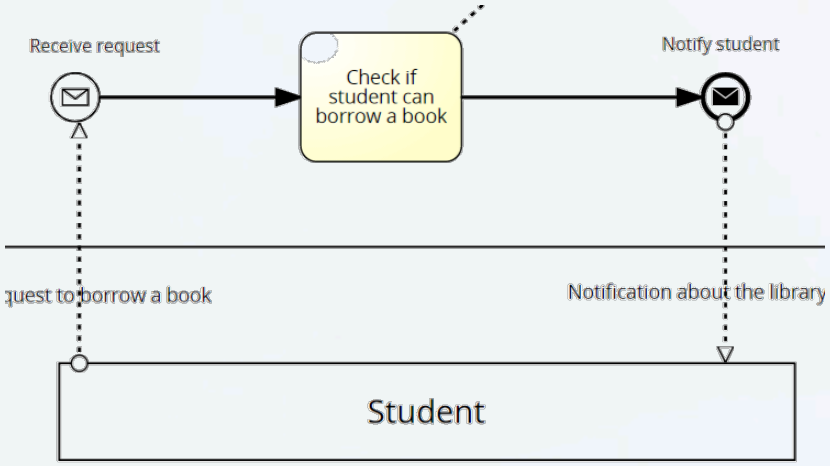


Start Events

Un-typed **start event** typically marks the standard start of a process.

Start Message Event, a process instance is started on receive of a message.

Start Timer Event, a process instance is started on cyclic timer events, points in time, after time spans or time outs.

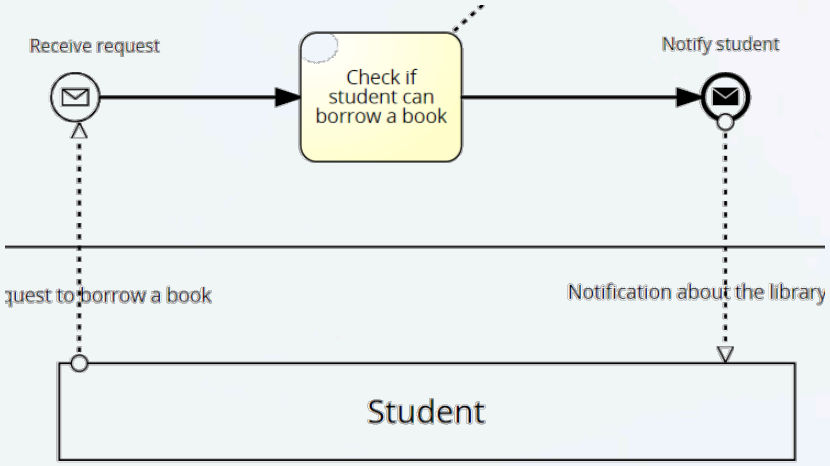


End Events

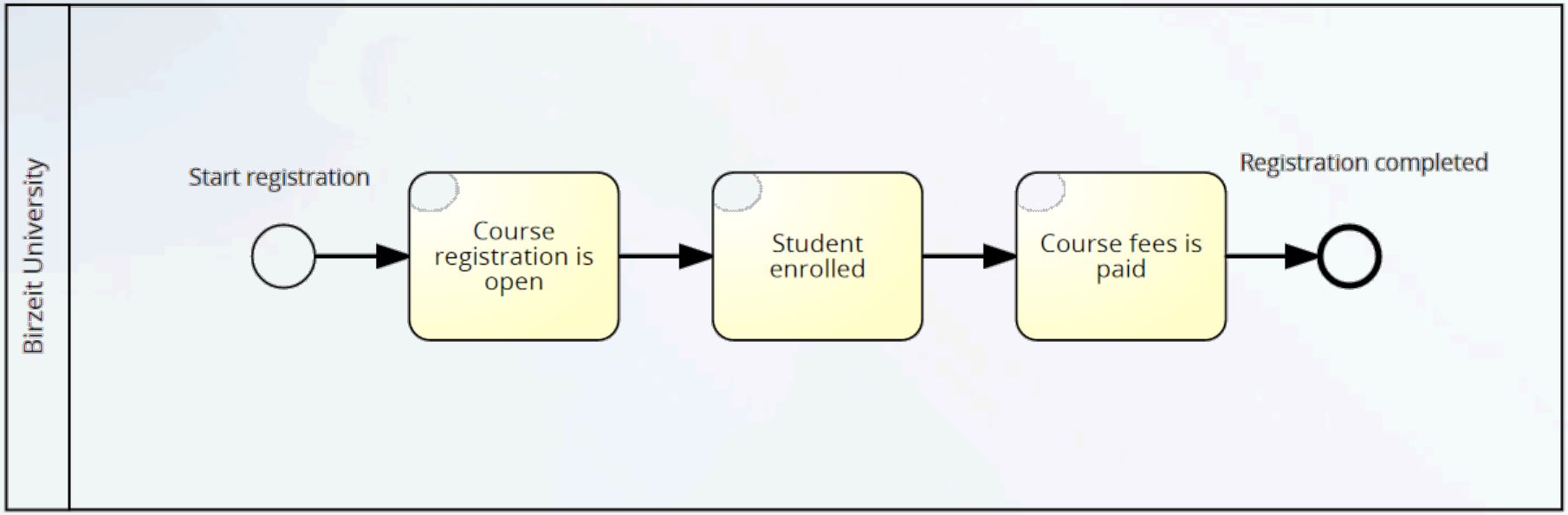
The un-typed **end event** typically marks the standard end of a process.

End Message Event, at the end of the process, a message is sent.

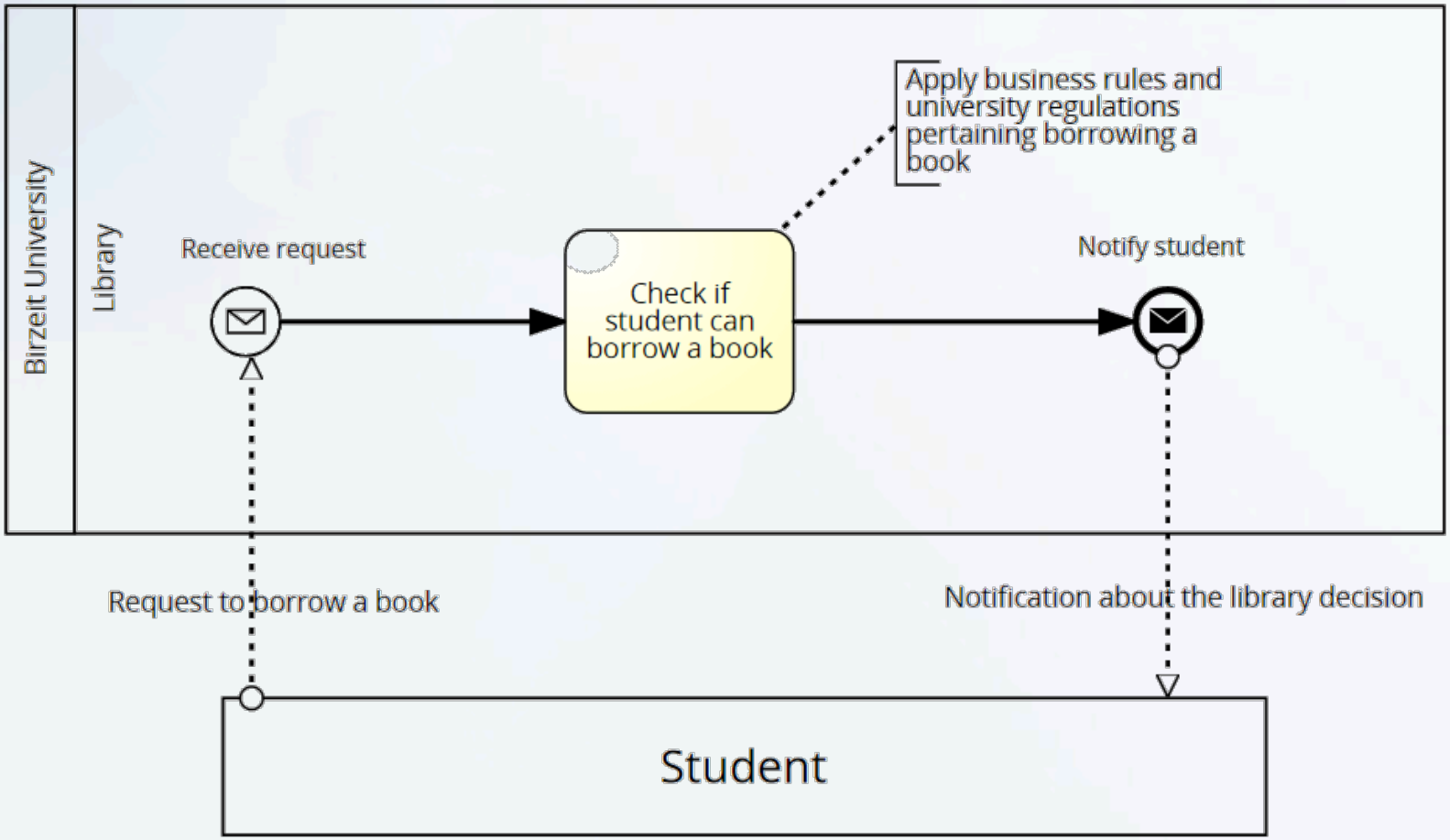
Terminate End Event, triggering the immediate termination of a process instance. All steps in execution of parallel branches are terminated.



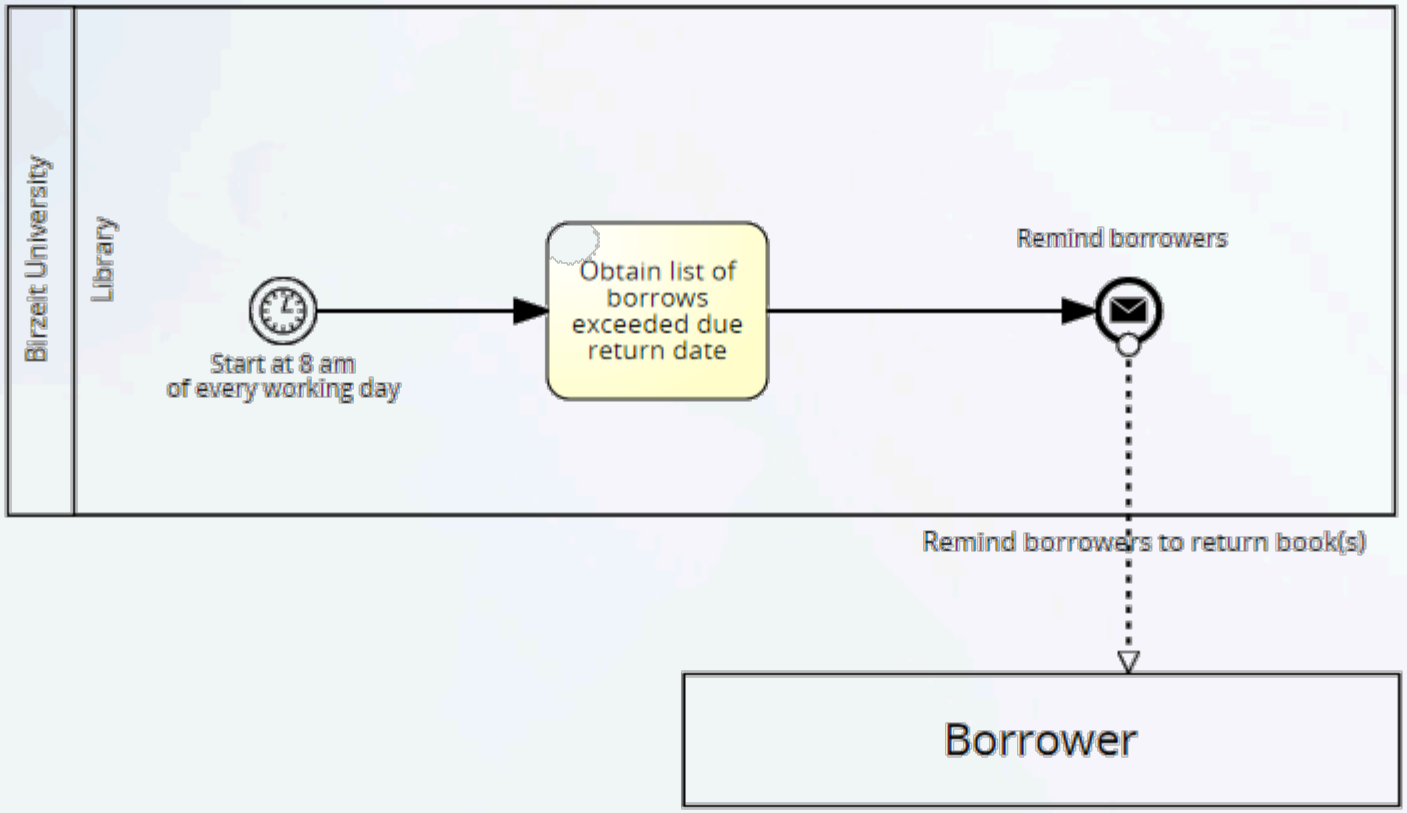
Example: Course Enrollment



Example: Book Borrowing Validation



Example: Start Timer Event



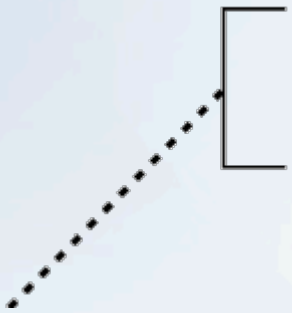
Some Rules of Thumb

There are a set of tips and rules to have a valid process models, below are two of them:

- Process model should have start and end event.
- All process branches should be closed.

More rules to be provided as progressing with the course.

Artifacts



Any text can be associated with a **text annotation** to provide additional documentation.

Group

Any arbitrary set of objects can be defined as group to show that they are logically together.

Gateways

Data-based exclusive (XOR) gateway

When splitting, it routes the sequence flow to exactly one of the outgoing branches based on conditions.

When merging, it waits one incoming branch to complete before triggering the outgoing flow .

Gateways

Parallel Gateway

When splitting, the sequence flow, all outgoing branches are activated simultaneously.

When merging, parallel branches it waits for all incoming branches to complete before triggering the outgoing flow.

Pool

Pools represent responsibilities for activities in a process.

Pool represent whole organization units.

Lanes

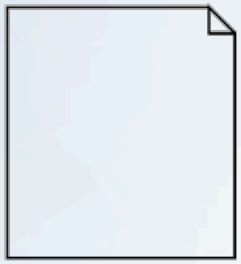
Lanes same as pools represent responsibilities for activities in a process.

However, **lanes subdivide pools or other lanes hierarchically**.

Collapsed Pool

Collapsed pools hide all internals of the contained processes.

Data Objects

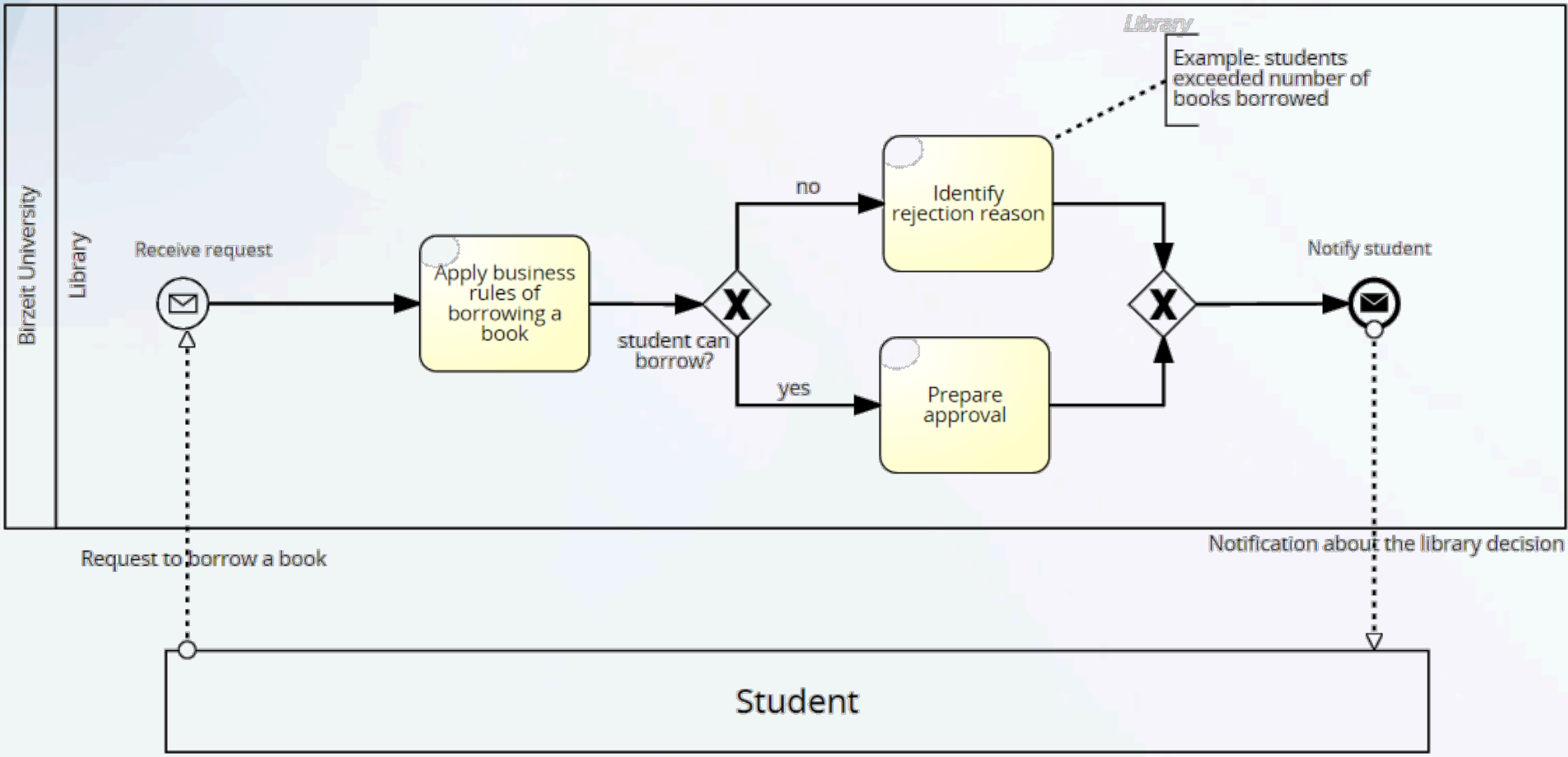


Data object represents information flowing through the process, such as business documents, emails or letters.

Data store, a place where the process can read or write data, e.g. a database or a filling cabinet.

It persists beyond the lifetime of the process instance.

Example: Book Borrow - elaborated



Example: Book Borrow - elaborated