ProcessMaker™ BPMN Designer

BPMN 2.0 Fundamentals

Basic BPMN concepts

What is BPMN?

Business Process Model and Notation (BPMN) is a standard for business process modeling, and provides a graphical notation for specifying business processes based on a flowcharting technique.

What is Business Process Modeling?

Business Process Modeling is the activity of representing processes of an enterprise, so that the current process may be analyzed and improved by other professionals.

Why use BPMN to design processes?

BPMN 2.0 is official way to design and share processes between almost all BPMS in the market. BPMN is an OMG Standard.

BPMN 2.0 Diagrams

BPMN can represent Business Models by 4 kinds of diagrams:

- **Process Diagrams**
  Represents regular flow between tasks, events and decision points to complete a process in the company.

- **Collaboration Diagrams**
  Represents message flows or communication routes between process or entities like customers or partners.

- **Conversation Diagrams**
  Represent groups of messages called "communications" and its relation between process and participants.

- **Choreography Diagrams**
  Represent participant interaction between task and users or resources and the messages result of this interaction.
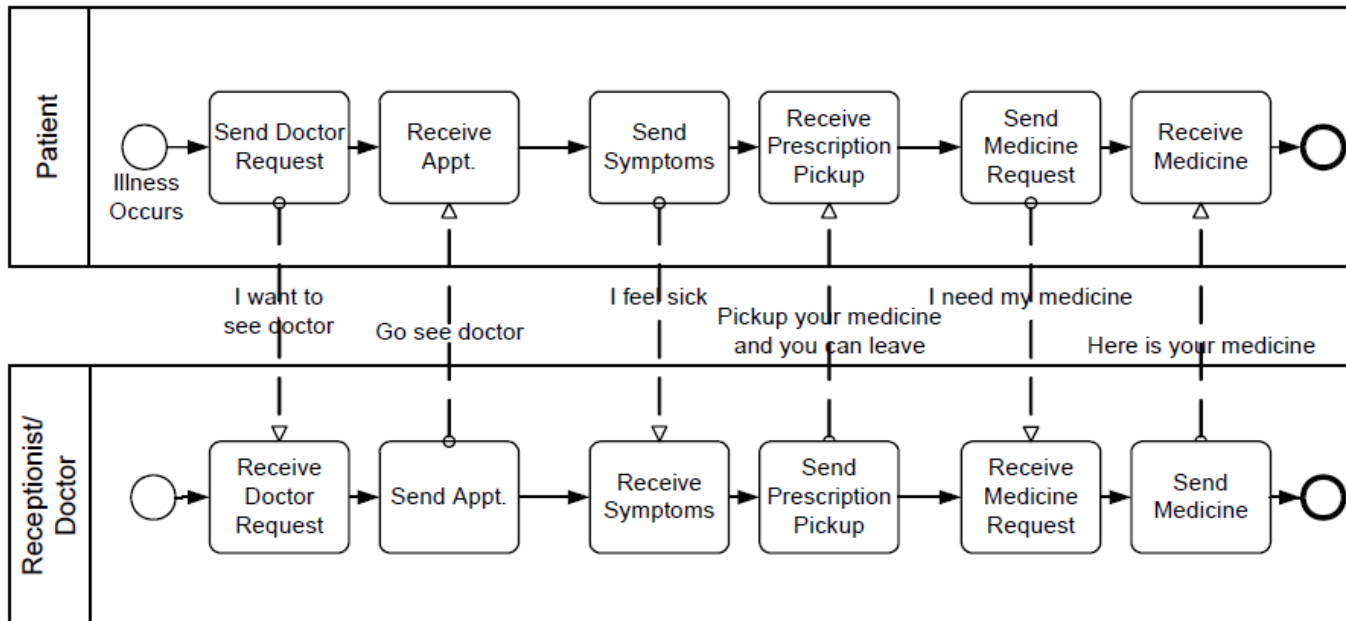
  Note: *PM BPMN Designer supports Process and Collaboration diagram modeling.*
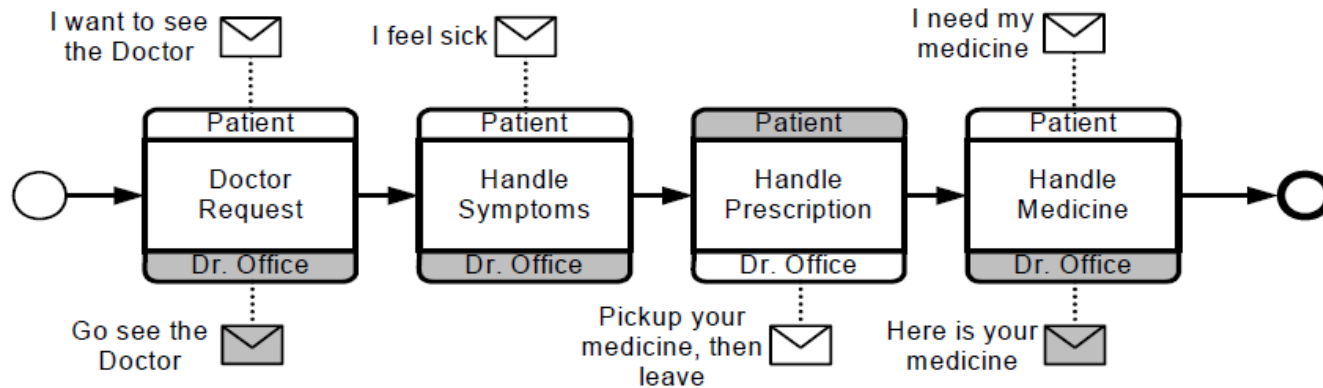
Types of BPMN Diagrams
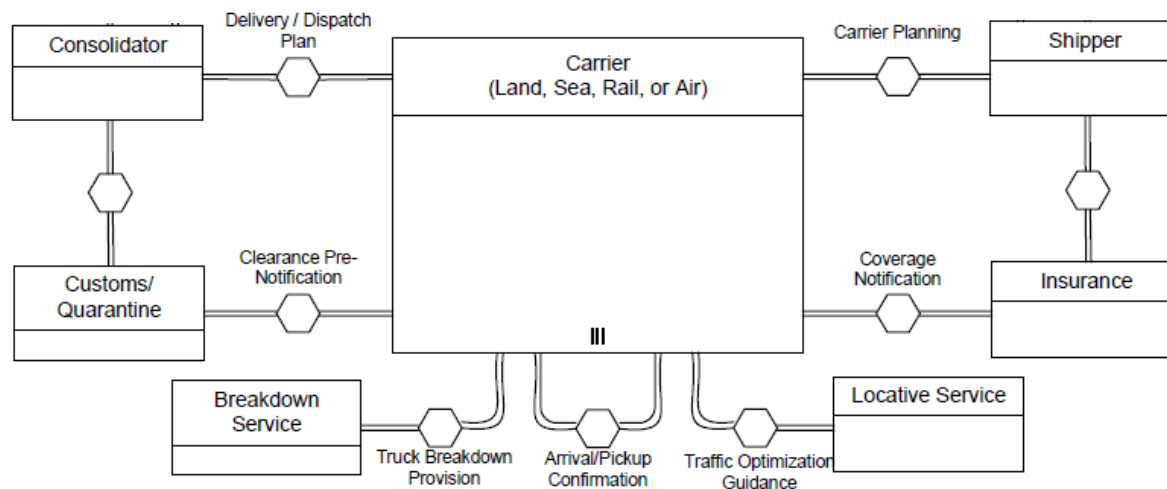
Process Diagram

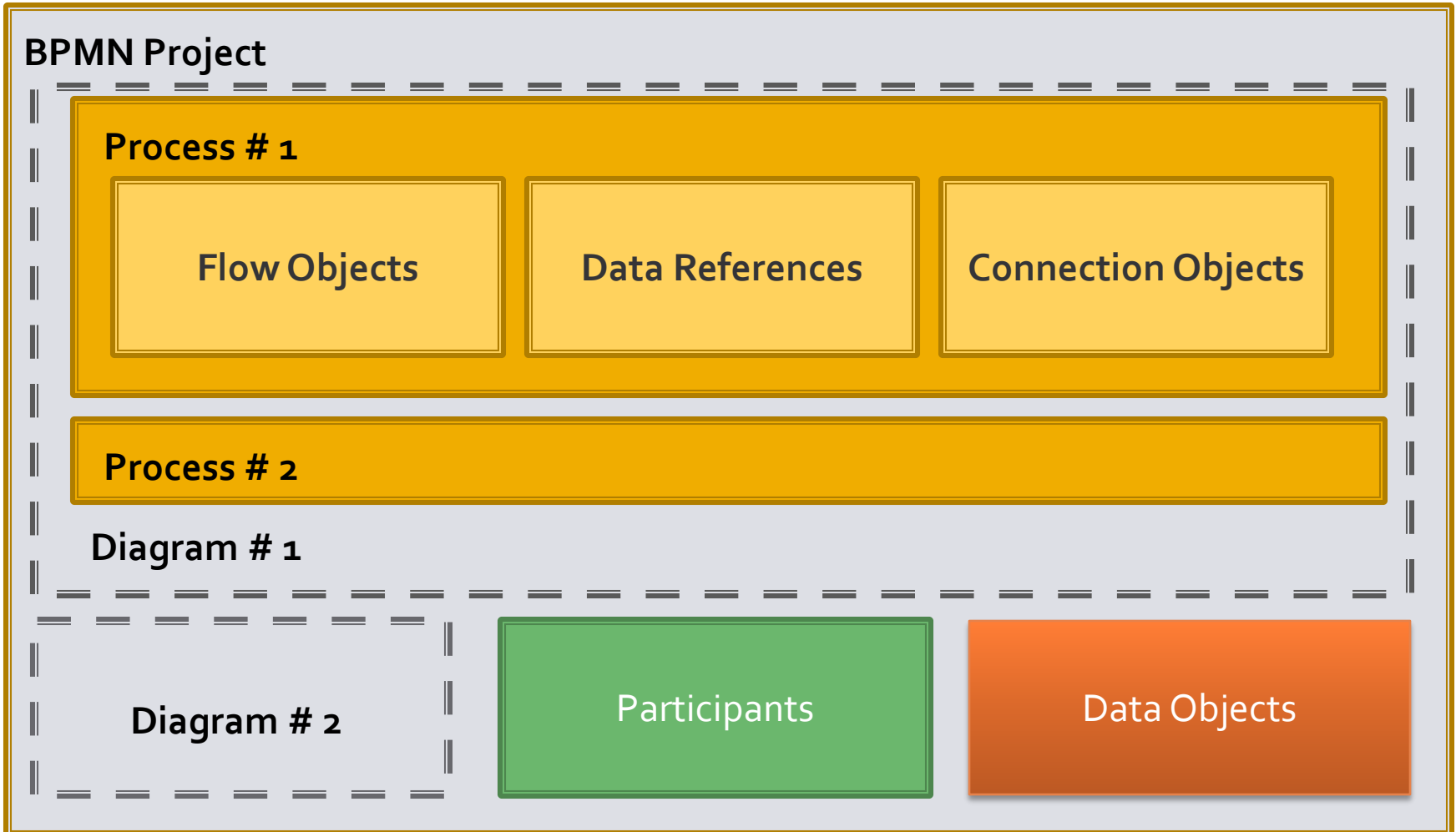Collaboration Diagram

Types of BPMN Diagrams (cont.)

Choreography Diagram

Conversation Diagram

ProcessMaker™ BPMN Project

BPMN Project

Process # 1

| Flow Objects | Data References | Connection Objects |

Process # 2

Diagram # 1

Diagram # 2

Participants

Data Objects

Core BPMN Design Elements

Flow Objects

Event Activity Gateway

Connecting Objects

SequenceFlow

MessageFlow
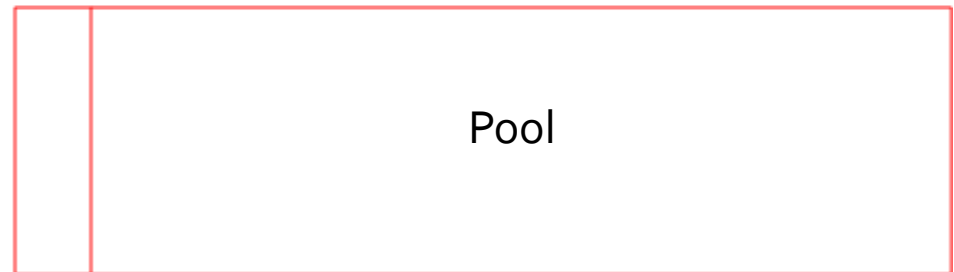
Association

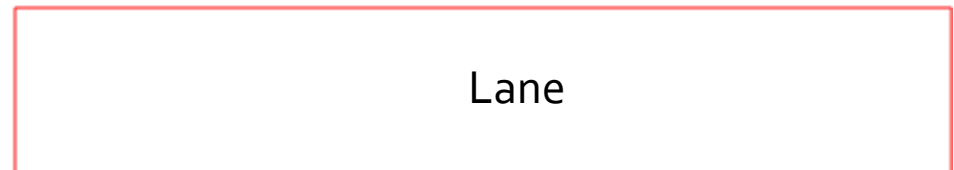## Data Objects & Artifacts

DataObject

DataStore

Group

Text Annotation

Swimlanes

Pool

Lane

Swimlanes

Pool or Laneset is an element representing a process into an organization or company.

Lane is a representation of an area or department of the company. Some times can represent a role into a process scope.

Participant or Empty Pool is a representation of a process or entity that does not have any action within the process.
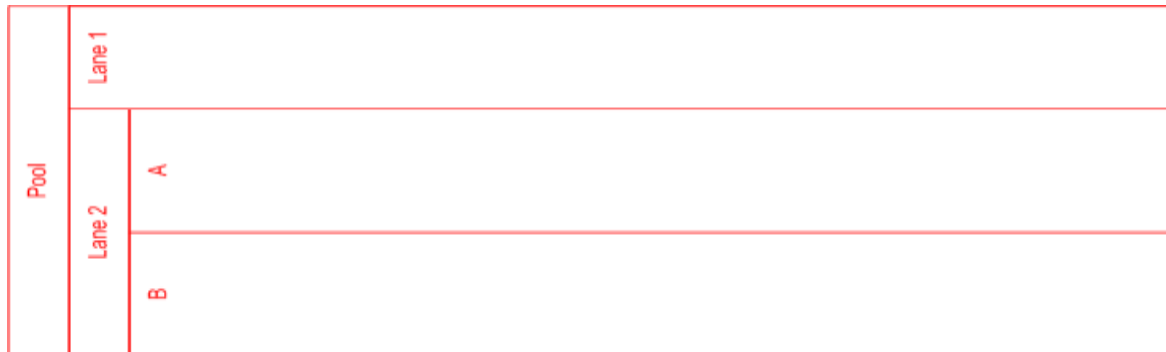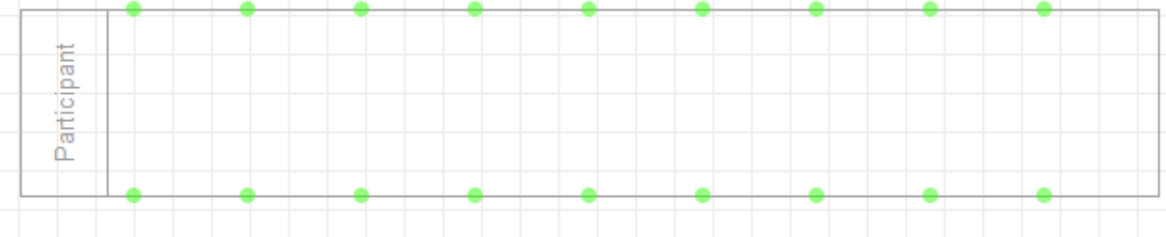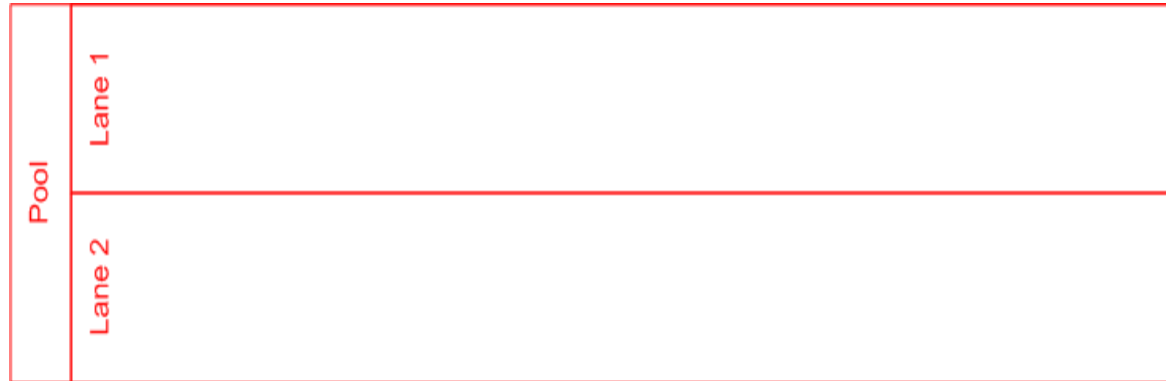
Events

An **Event** is something that "happens" during the course of a Process or a Choreography. An Event affects the flow of the model and usually have a cause (Trigger) or an impact (Result).

Event graphical representation is a circle.

There's 3 types of events: **Start** Events, **Intermediate** Events and **End** Event.

Intermediate Events can be used in regular process diagrams and can be used as **Boundary** Events attached to an activity.

Start Events and Intermediate Events can be **Interrupting** and **Non-interrupting**.
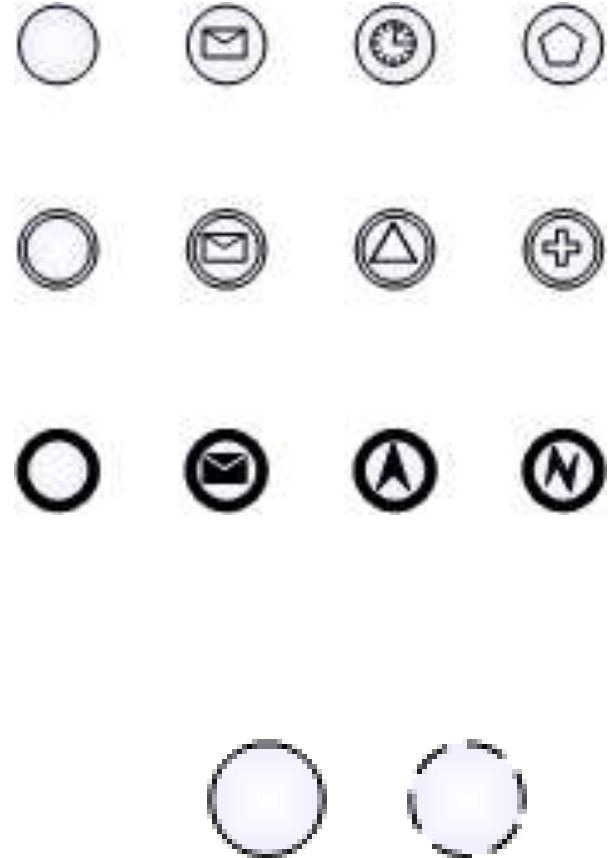
Activities

Activity is a generic term for work that company performs in a Process. An Activity Can be atomic or non-atomic.

The type of activities that are part of the process are: **Task** and **Sub-Process**.

A task can be differenced by markers that represent its type or associated resource.

Sub-Process can be Collapsed or Expanded, and can be differenced by the kind of elements that join in: **Sub-process**, **Transactions**, **Event Sub Process** and **Call Activities**.
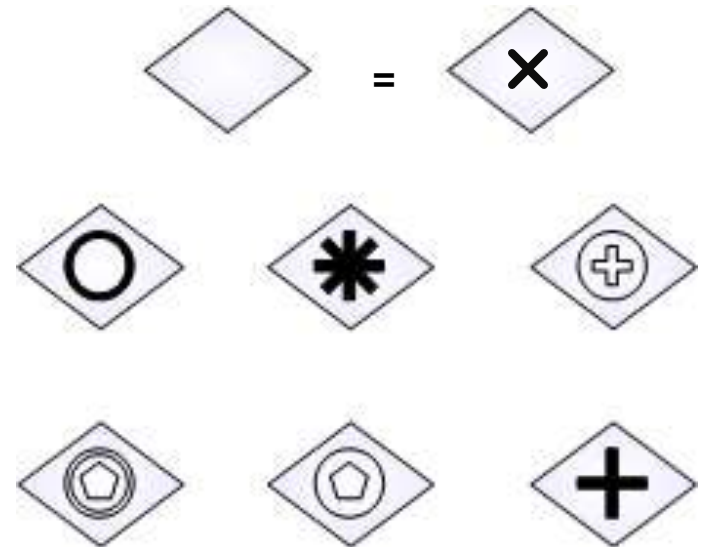
Expanded Activity
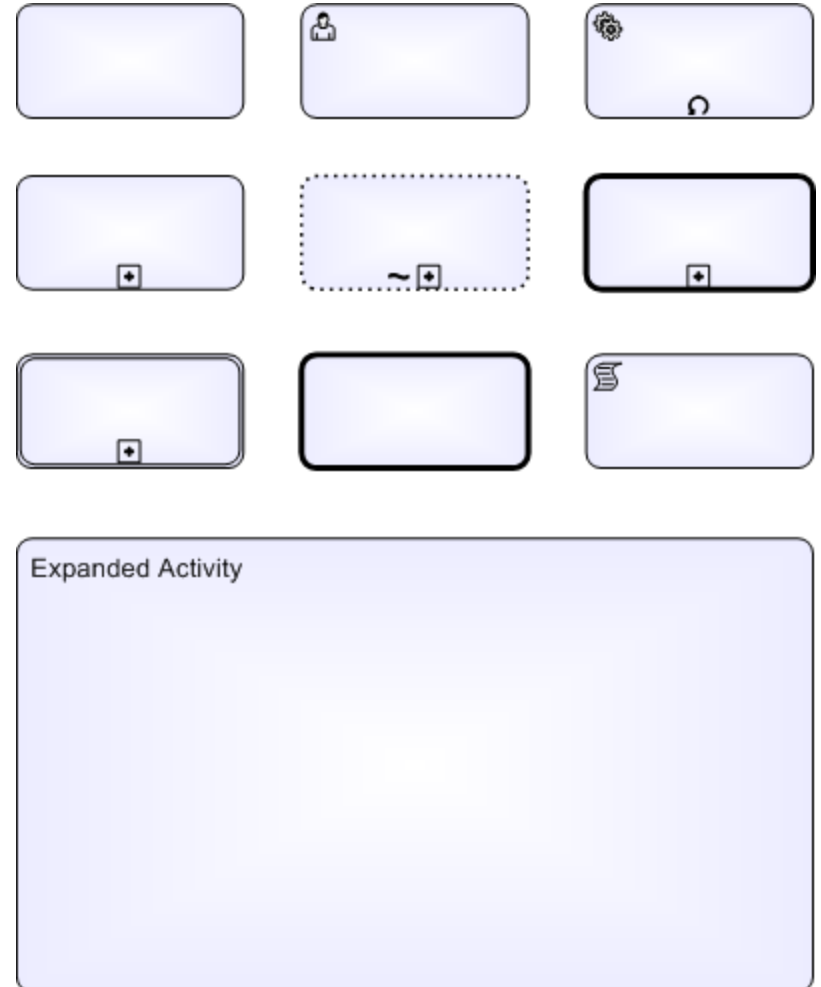
Gateways

A **Gateway** is used to control the divergence and convergence of sequence flows in a Process or in a choreography.

Gateway will determine branching, forking, merging or joining.

There's 7 kinds of gateways differed by its internal marker:
Exclusive, Inclusive, Parallel, Complex , Event-based, Parallel Event-based and **Exclusive Event-based**.

Connection Objects

There's 6 types or connection objects. All of them are represented for a line.

Sequence Flow can be **Normal, Default** and **Conditional**, and always have direction, source and target.

Message Flows are a type of connection object that is used to represent collaboration between two process.

Data Association is a line between a Data Object and An element.

Normal

Default

Conditional

Association

Text Annotation Sample

Data Association

Message
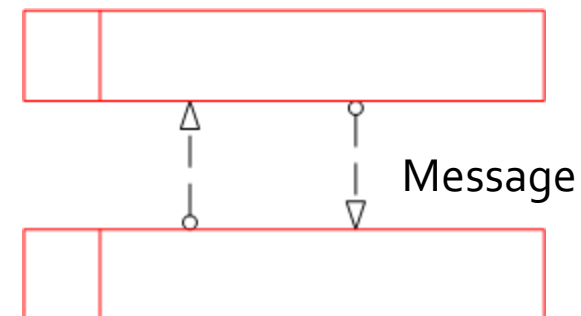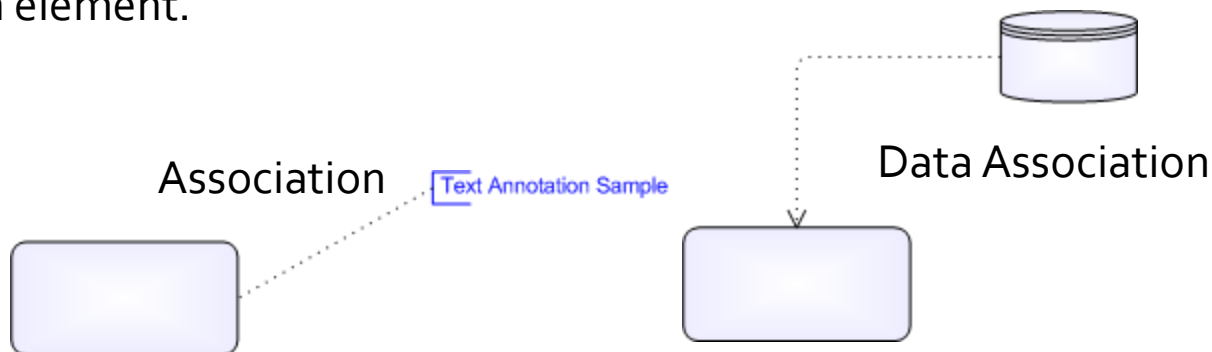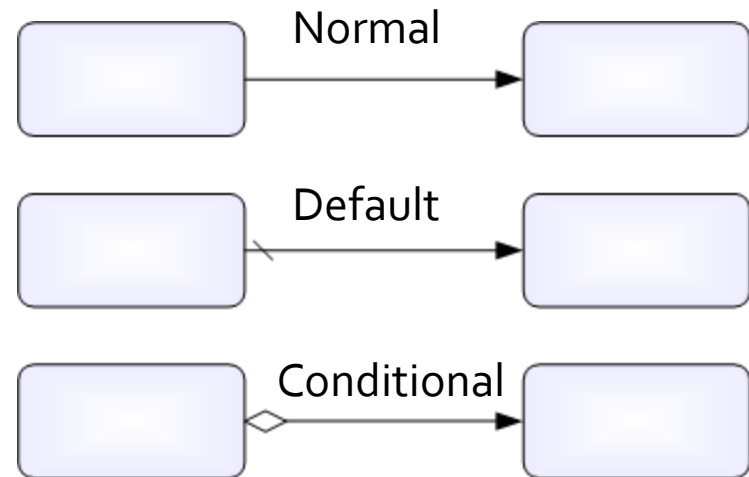
Data Objects

BPMN 2.0 can represent Data in two ways: **Data Stores** and **Data Objects.**

A **Data Store** provides a mechanism for Activities to retrieve or update stored information that will persist beyond the scope of the Process. The same Data Store can be visualized, through a Data Store Reference, in one or more places in the Process.

Data Objects provide information about what Activities require to be performed and/or what they produce, Data Objects can represent a singular object or a collection of objects.

Data Objects can be separated in **Data Input** and **Data Output** only considering direction of the information.
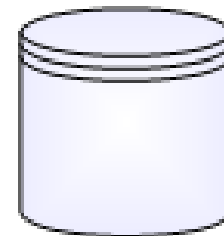
Artifacts

BPMN 2.0 considers 2 types of artifacts: **Groups** and **Text Annotations.**

A **Group** is a grouping of graphical elements that are within the same Category. This type of grouping does not affect the Sequence Flows within the Group. The Category name appears on the diagram as the group label. Categories can be used for documentation or analysis purposes. Groups are one way in which Categories of objects can be visually displayed on the diagram.

Text Annotations are a mechanism for a modeler to provide additional text information for the reader of a BPMN Diagram.
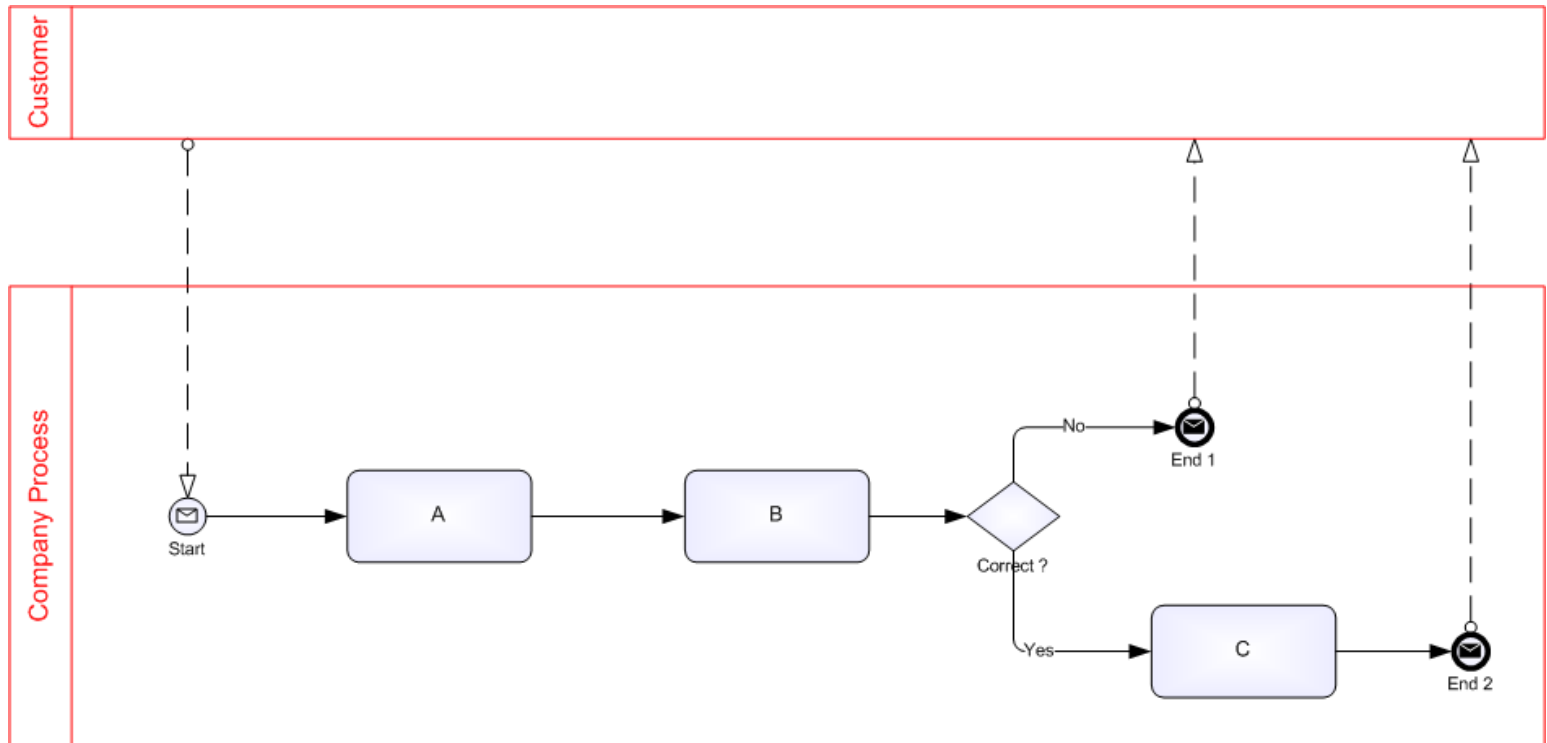
Group

Text Annotation Sample

Process Diagram Sample
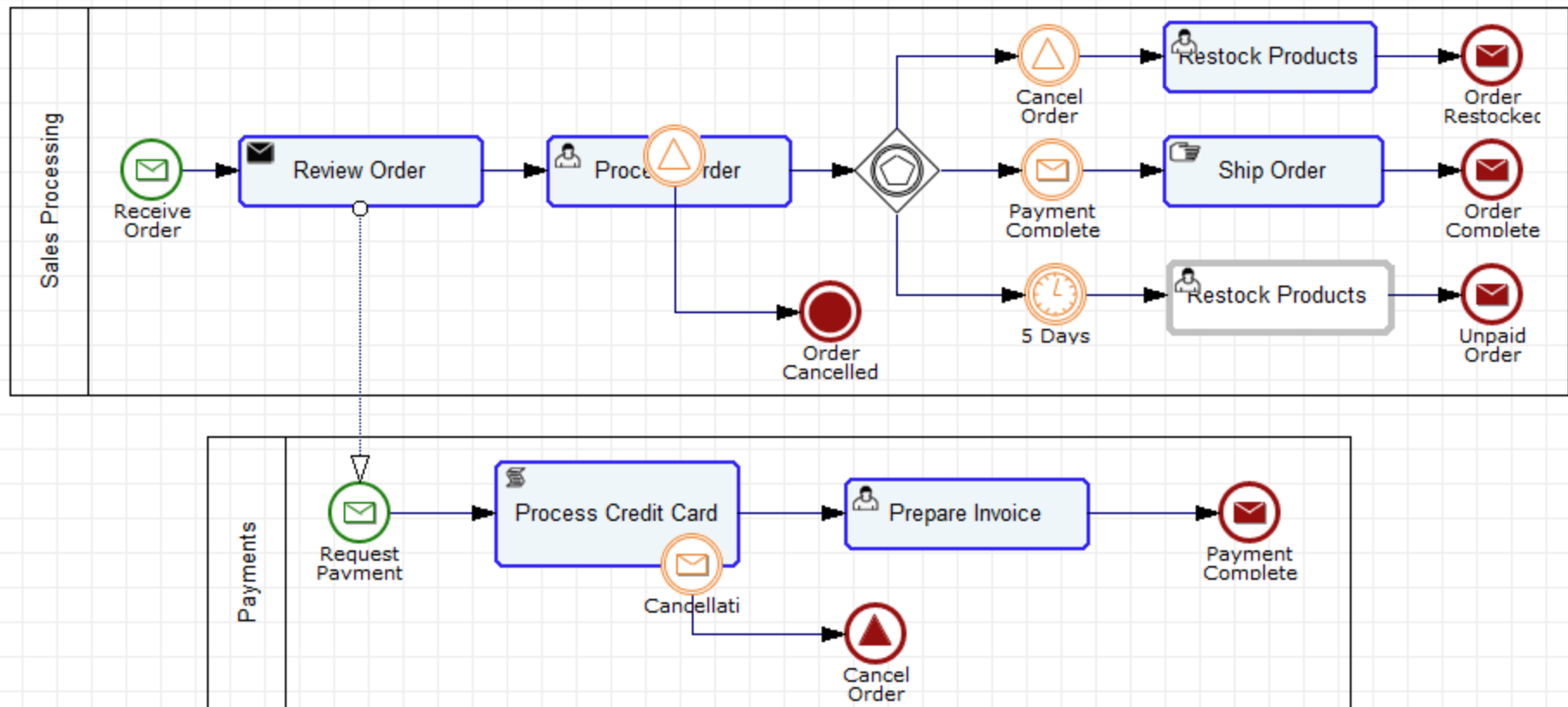
Collaboration

Into collaboration diagrams there's a main concept to consider: "A **PARTICIPANT**".
BPMN considers a participant an entity or process involved into a collaborative relation .

Participants

Useful References

Object Management Group/Business Process Management Initiative

www.bpmn.org

Documents Associated with Business Process Model and Notation (BPMN) Version 2.0

http://www.omg.org/spec/BPMN/2.0/

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August, 2011