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An Introduction to BPMN 2.0

A guide to the core elements within the business process modeling notation

Contents
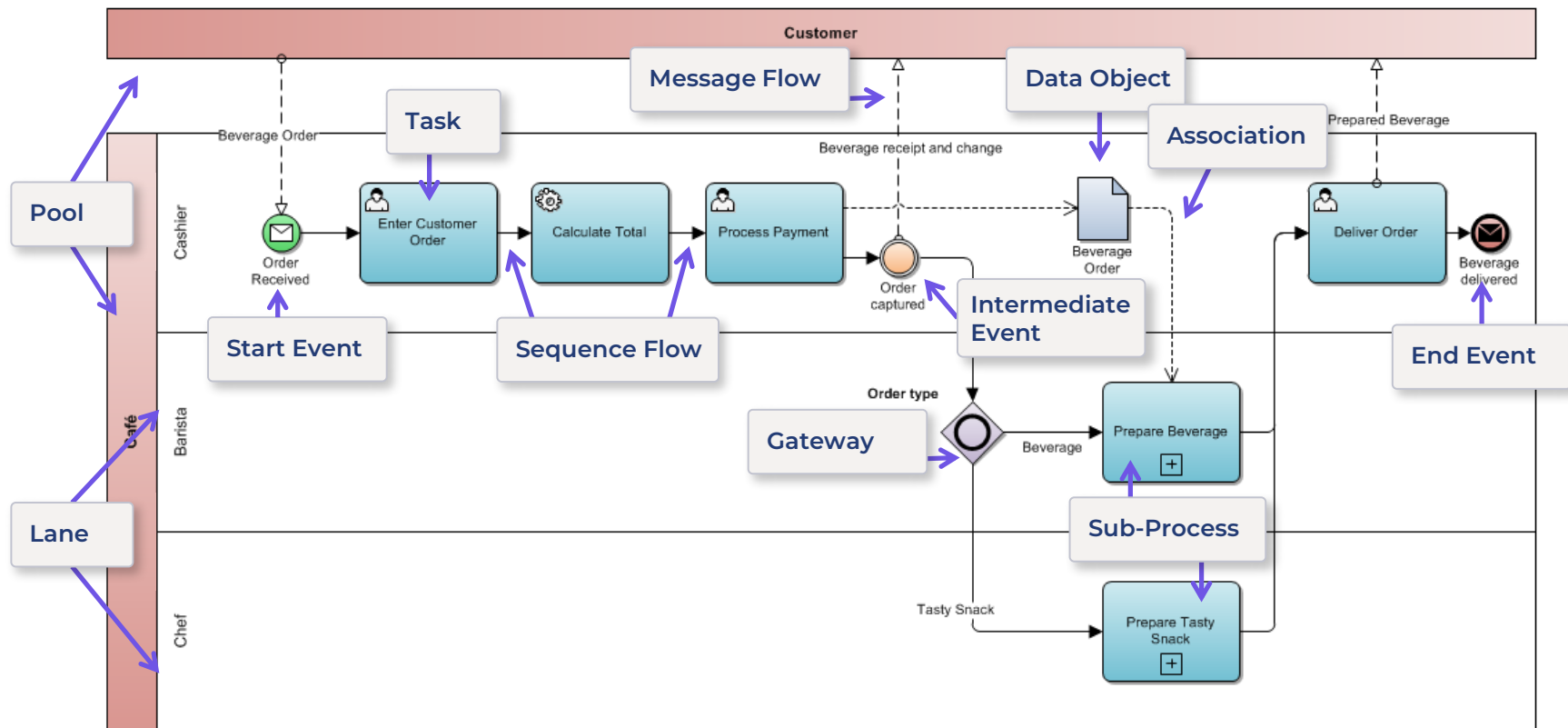
The Anatomy of a Process Model

Core BPMN Elements

Three Levels of BPMN

The BPMN specification defines three levels of BPMN:

1 **Descriptive Process Models**

Suitable for high-level modeling – should be comfortable for analysts that have used flowcharts.

2 **Analytic Process Models**

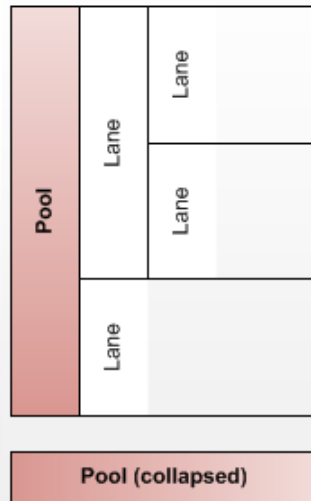Contain the concepts most commonly used and covered in BPMN training.

3 **Common Executable Process Models**

Focus on the elements required for executable process models.

Notation: Descriptive Process Models

Pools and Lanes
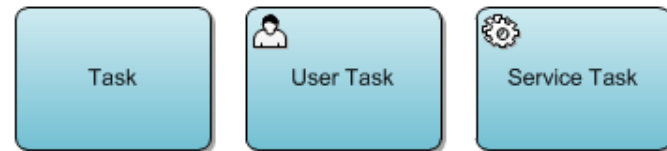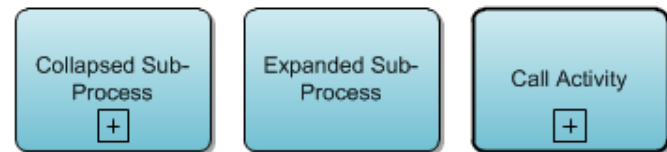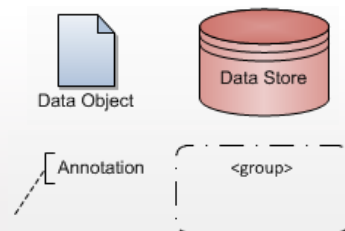

Events

Start Events

None — Timer — Message

End Events

None — Message — Terminate

Activities

Tasks

Task — User Task — Service Task

Sub-processes

Collapsed Sub-Process — Expanded Sub-Process — Call Activity

Gateways

Exclusive — Parallel

Artifacts

Data Object — Data Store — Annotation — <group>

Flow

Sequence Flow — Message Flow — Association
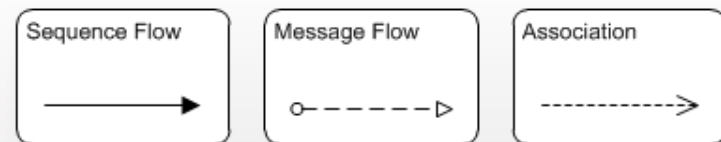
Notation: Analytic Process Models

Pools and Lanes

Pool (collapsed)

Gateways

Exclusive Parallel

Inclusive Event Based

Event Based: Start Event Based: Parallel

Events

Start Events

None Timer Message

Signal Conditional

Intermediate Events

None Message Timer

Link Error Escalation

Signal Conditonal

End Events

None Message Terminate

Signal Error Escalation

Activities

Tasks

Task User Task Service Task Send Task Receive Task

Loop Multiple Instance

Sub-processes

Collapsed Sub-Process Expanded Sub-Process Call Activity Loop Multiple Instance

Flow

Sequence Flow Conditional Default

Message Flow Message

Association

Artifacts

Data Object Data Store <group> Annotation

Pools and Lanes

Pools

A pool is used to define either a group of participants – such as an area within an organization – or an external entity that collaborates within a process.

A process model is normally created from the perspective of a single participant – the **white box pool**, and contains the detail of that process. **Black box pools** are considered external to the scope of the process (although not necessarily outside of the organization), and do not show flow and activities. Black box pools may be collapsed and rotated, but do not have to be.
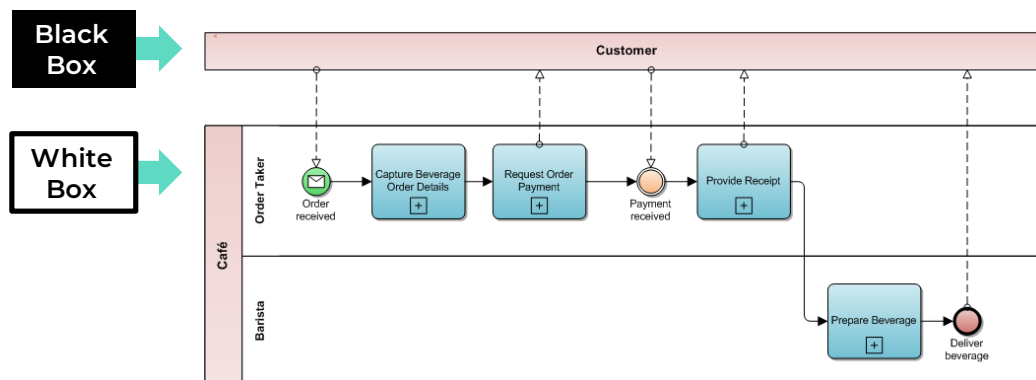
Lanes

A lane is used to define a specific participant or role within a process.

A lane may be contained within a pool...

... or may itself be broken down into other lanes.

Events

An event is an indicator that something has happened within a process.

Start event

A process commences because something has happened, such as a message received or a date is reached.
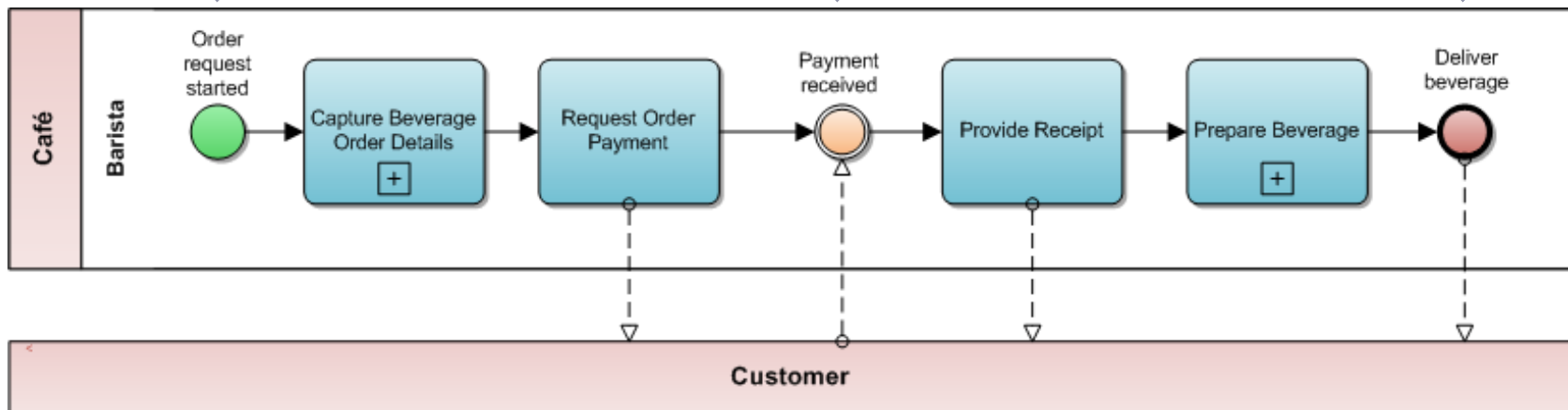
Intermediate events

Intermediate events happen within the flow of the process (between the start and end events).

End event

A process finishes when an end is reached. Because a process may have several outcomes, there may be multiple end events.
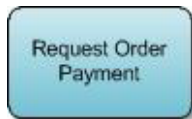
Activities

Within the flow of a process, one or more lanes (roles) will perform a number of activities.
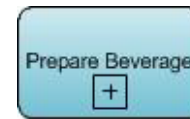
Task

A task is something that a lane (role) does during the process. A task is a granular (atomic) activity that cannot or does not need to be broken down any further.
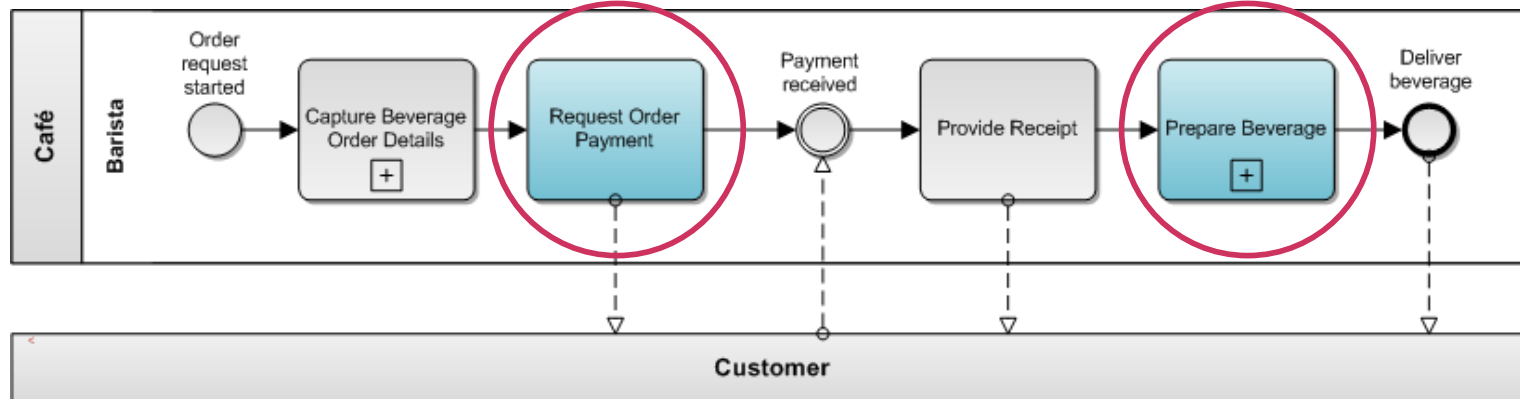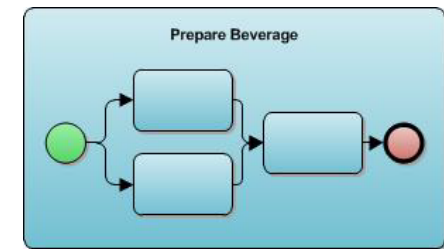

Sub-process

A Sub-process summarizes a group of activities and can be expanded out into further detail. Sub-processes can be shown as collapsed (with the [+] symbol), or expanded.
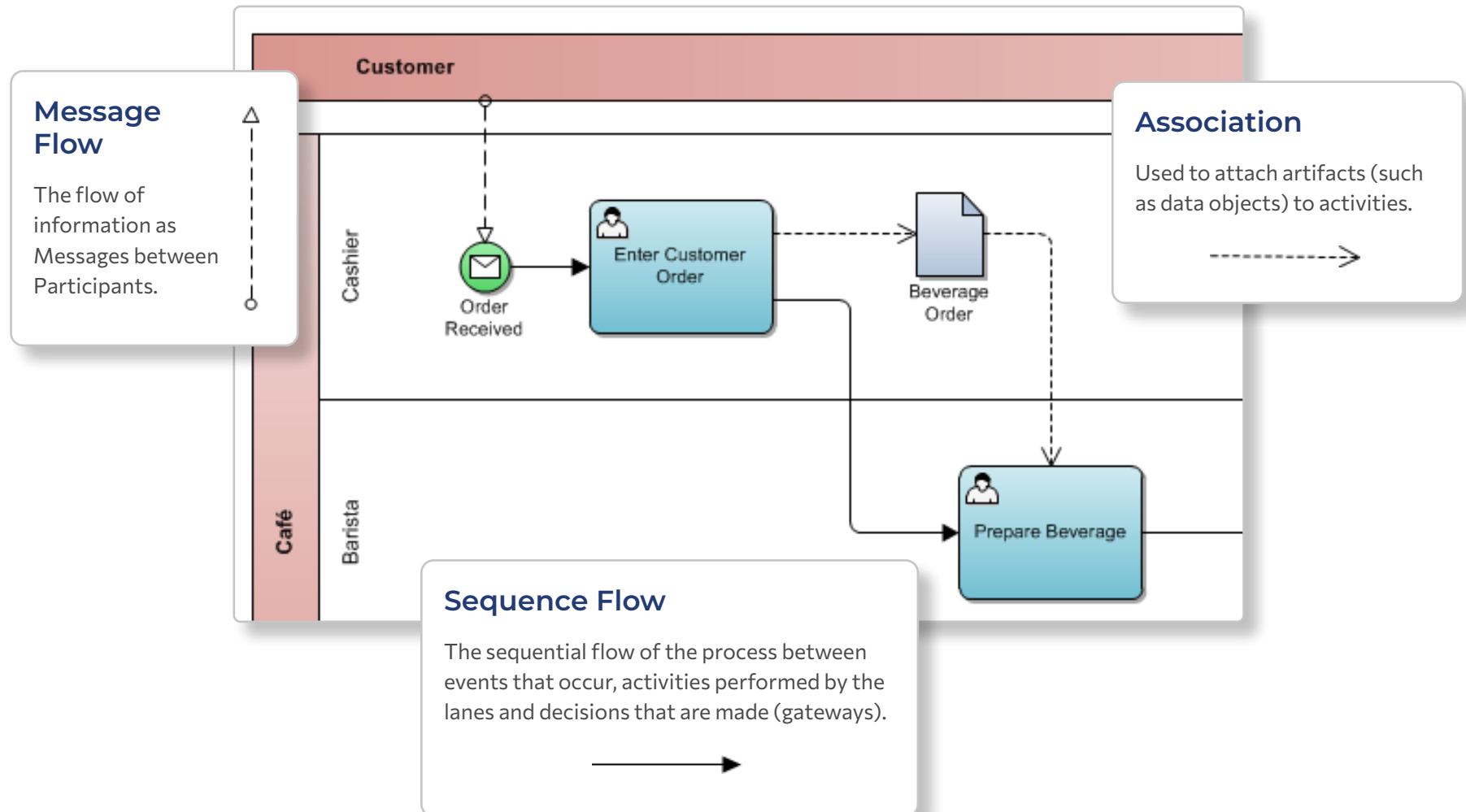
Collapsed

Expanded

# Flow

Sequence Flow, Message Flow, and Associations.

Message Flow

The flow of information as Messages between Participants.

Association

Used to attach artifacts (such as data objects) to activities.

Customer

Cashier

Order Received

Enter Customer Order

Beverage Order

Café

Barista

Prepare Beverage

Sequence Flow

The sequential flow of the process between events that occur, activities performed by the lanes and decisions that are made (gateways).

Gateways

Gateways represent decisions within the process, and control the splitting and merging of sequence flow.

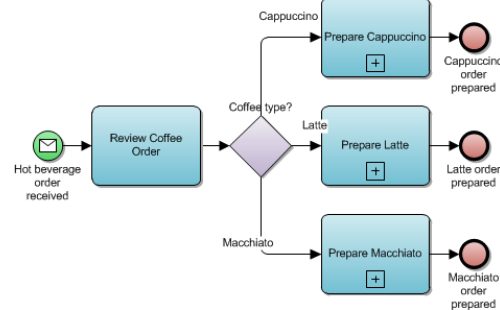The simplest examples are shown:

Inclusive
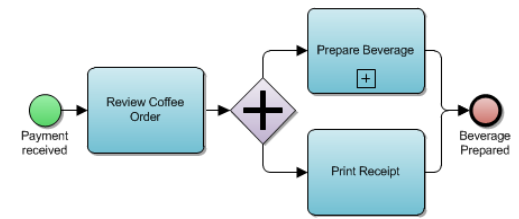
Follow one or more paths
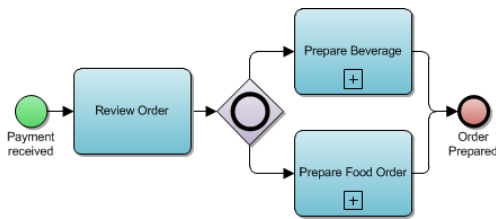
Exclusive

Follow only one path
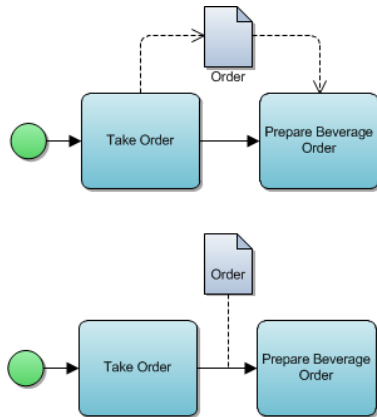

Parallel

Follow all paths

Artifacts

Artifacts allow additional information to be provided on a process model.
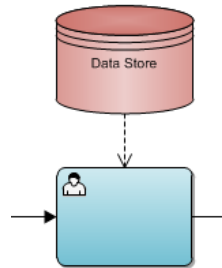
Data Object

Data objects are inputs to and outputs from activities. Data objects could be used to represent documents, data, or other objects that are passed between the activities in a process.

Data Store

A data store is somewhere that the process can read or write data, that persists beyond the scope of the process.
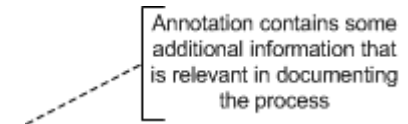

Group

A visual way of informally grouping items on a diagram, for example to highlight an area that requires further analysis.

Annotation

Annotations allow additional information relevant in documenting the process to be shown on the diagram.

Download the BPMN 2.0 Visio Stencil and Template

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