Pemograman Berorientasi Objek

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CASE STUDY

UML 2.5 Diagrams Overview

Metode dalam pemodelan secara visual yang digunakan sebagai sarana perancangan sistem berorientasi objek.

Bahasa standar visualisasi, perancangan, dan pendokumentasian sistem, atau dikenal juga sebagai bahasa standar penulisan *blueprint* sebuah *software.*

https://www.uml-diagrams.org/uml-25-diagrams.html

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01

UML

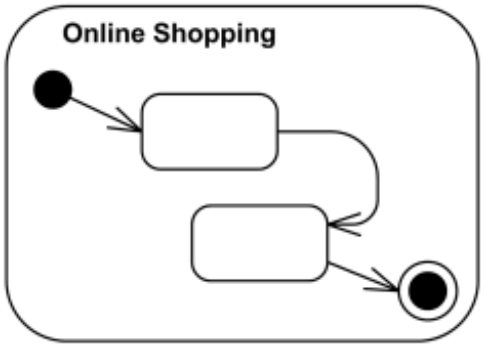
Activity Diagram

UML – Behavior Diagram

ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity diagram is shown as a **flow of control** or **object flow** with emphasis on the sequence and conditions of the flow. The actions coordinated by activity models can be initiated because other actions finish executing, because objects and data become available, or because some events external to the flow occur.



The **flow of execution** is modeled as activity nodes connected by activity edges. A node can be the execution of a subordinate behavior, such as an arithmetic computation, a call to an operation, or manipulation of object contents. Activity nodes also include flow of control constructs, such as synchronization, decision, and concurrency control. Activities may form invocation hierarchies invoking other activities, ultimately resolving to individual actions. In an object-oriented model, activities are usually invoked indirectly as methods bound to operations that are directly invoked.

https://www.uml-diagrams.org/activity-diagrams.html

ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION
2. OBJECT
3. CONTROL

https://www.uml-diagrams.org/activity-diagrams-actions.html

ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION
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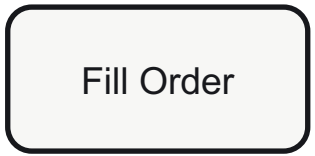
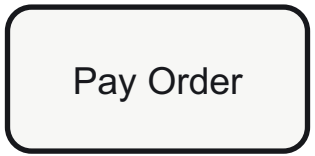
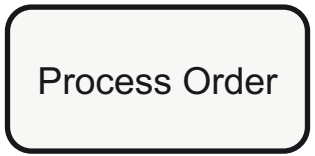
3. CONTROL

Action is a **named element** which represents a single atomic step within **activity**, that is not further decomposed within the activity.







https://www.uml-diagrams.org/activity-diagrams-actions.html

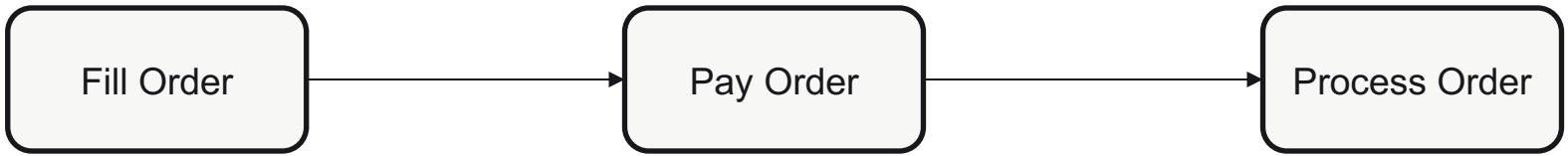
ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION 2. OBJECT 3. CONTROL

An **object** node is an abstract activity node that is used to define **object flows** in an activity.



https://www.uml-diagrams.org/activity-diagrams-objects.html

ACTIVITY DIAGRAM

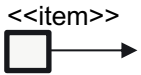
UML-Behavior Diagram

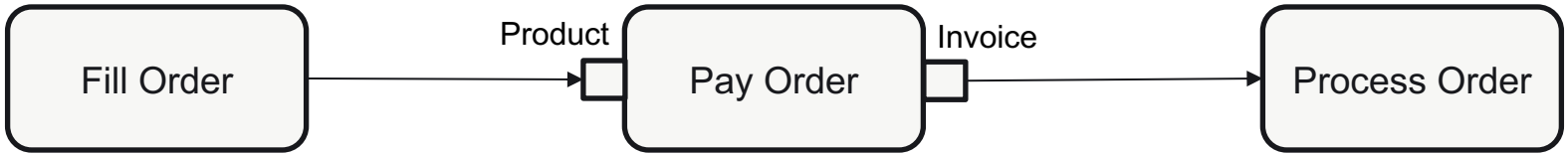
Activity nodes:

1. ACTION
2. OBJECT
3. CONTROL

Type of object:

- PIN : a. Input PIN b. Output PIN





https://www.uml-diagrams.org/activity-diagrams-objects.html

ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION
2. OBJECT
3. CONTROL

Type of object:

- PIN
- Central Buffer

A **central buffer** node is an **object node** for managing flows from multiple sources and destinations. A central buffer node accepts tokens from multiple object in flows, buffers those and passes them along to out flows.

https://www.uml-diagrams.org/activity-diagrams-objects.html

ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION 2. OBJECT 3. CONTROL

Control node is an activity node used to coordinate the flows between other nodes.

Includes:

a. Initial Node
b. Flow Final Node
c. Activity Final Node
d. Decision Node
e. Fork Node

https://www.uml-diagrams.org/activity-diagrams-controls.html

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UML-Behavior Diagram

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Initial Node

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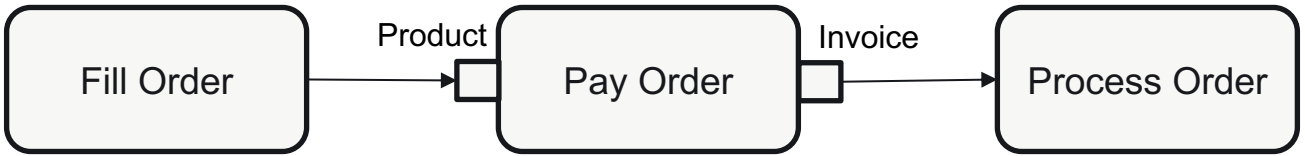
ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION 2. OBJECT 3. CONTROL

a. Initial Node



https://www.uml-diagrams.org/activity-diagrams-controls.html

ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION 2. OBJECT 3. CONTROL

a. Initial Node

https://www.uml-diagrams.org/activity-diagrams-controls.html

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Flow Final Node

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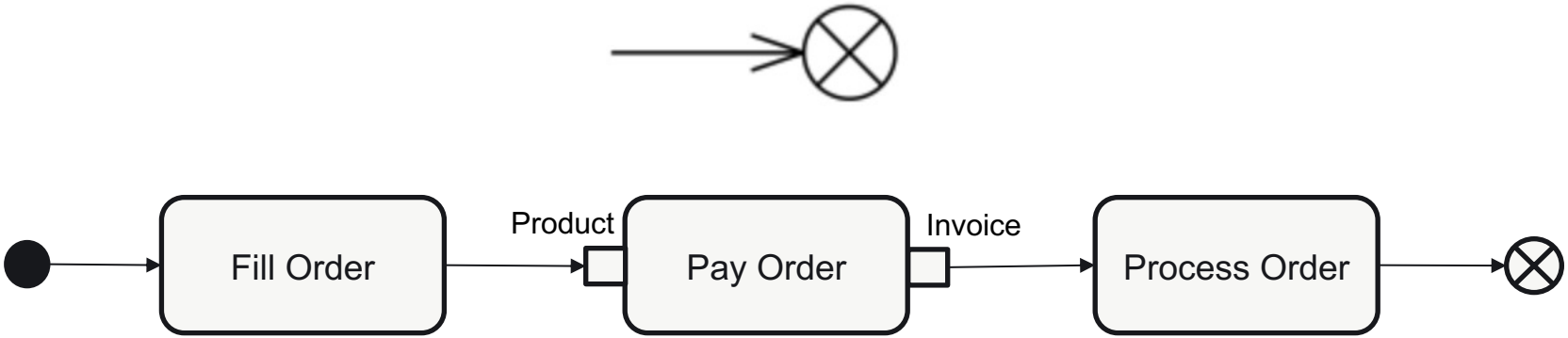
ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION 2. OBJECT 3. CONTROL

b. Flow Final Node



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ACTIVITY DIAGRAM

UML-Behavior Diagram

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e. Fork Node

Activity Final Node

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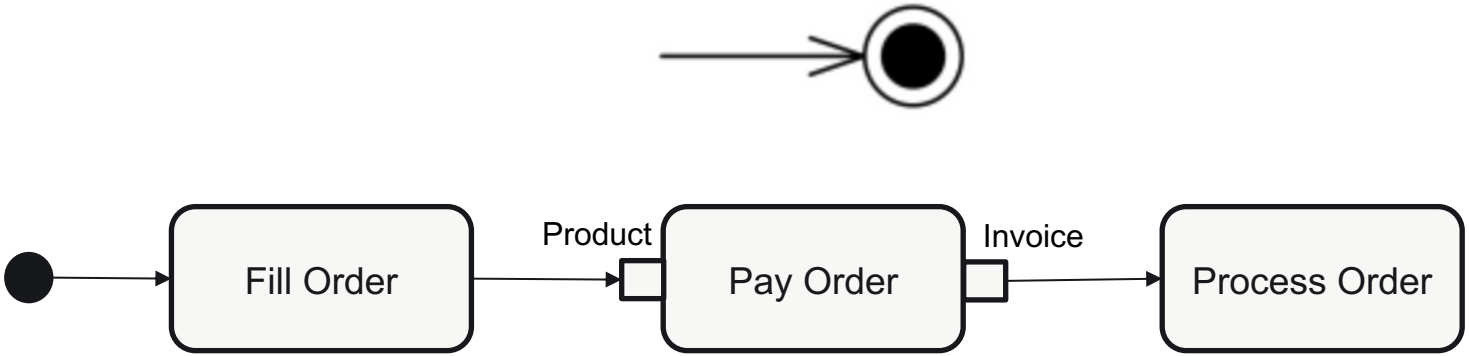
ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION 2. OBJECT 3. CONTROL

c. Activit Final Node



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ACTIVITY DIAGRAM

UML-Behavior Diagram

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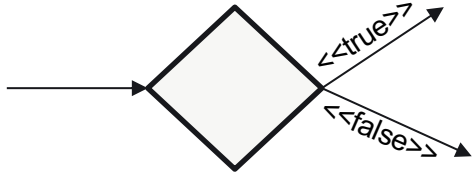

Decision Node

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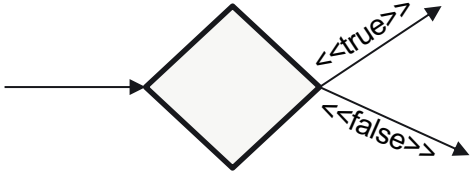
ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION
2. OBJECT
3. CONTROL

d. Decision Node



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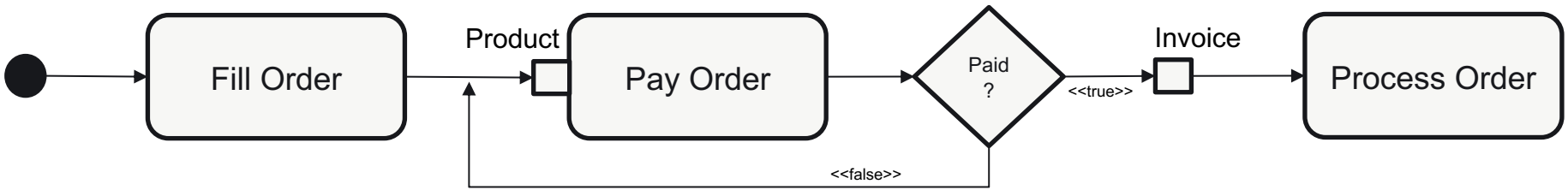
ACTIVITY DIAGRAM

UML-Behavior Diagram

Activity nodes:

1. ACTION 2. OBJECT 3. CONTROL

d. Decision Node



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ACTIVITY DIAGRAM

UML-Behavior Diagram

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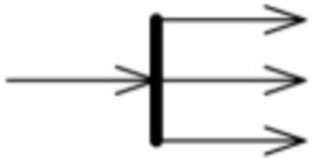

Fork Node

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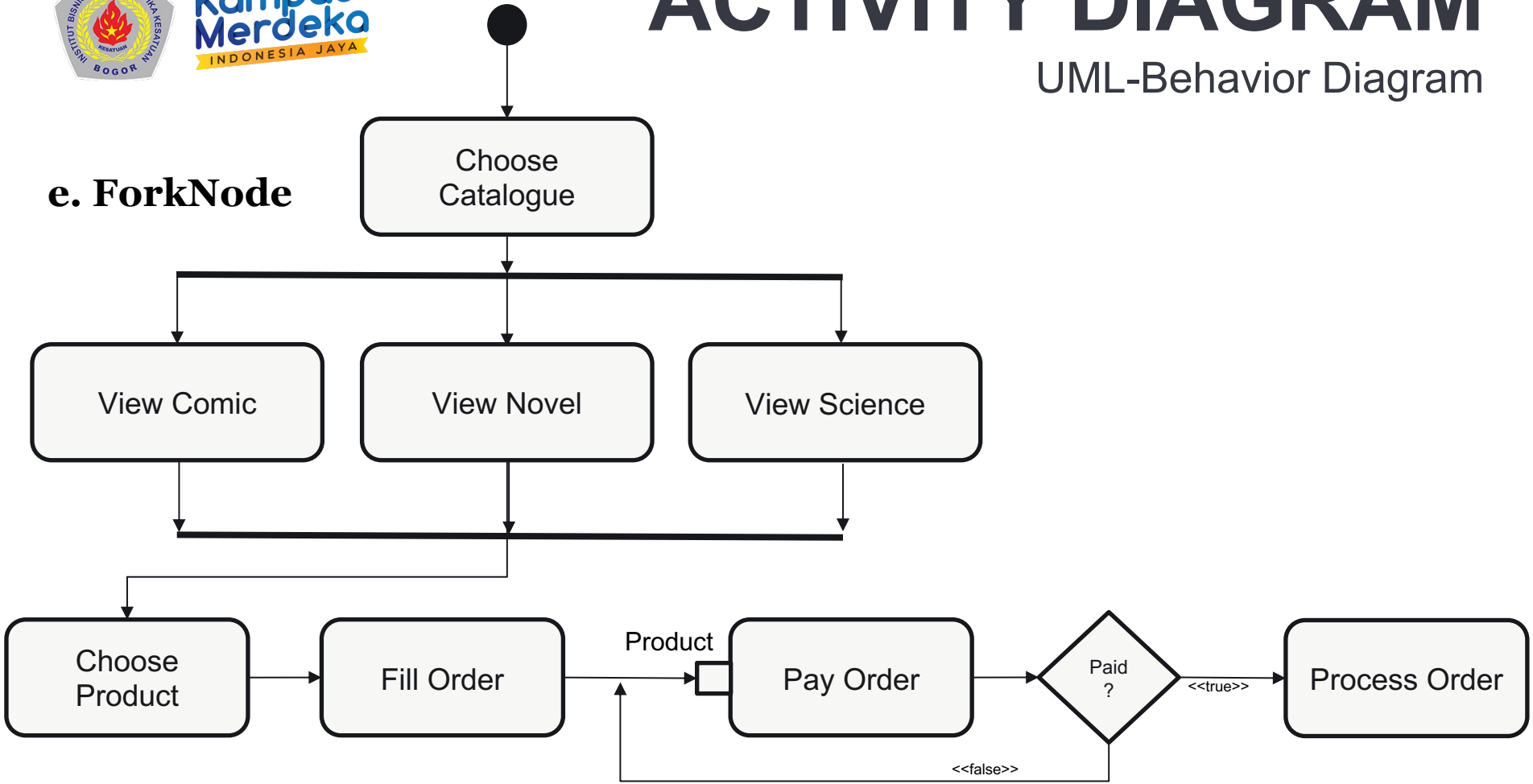
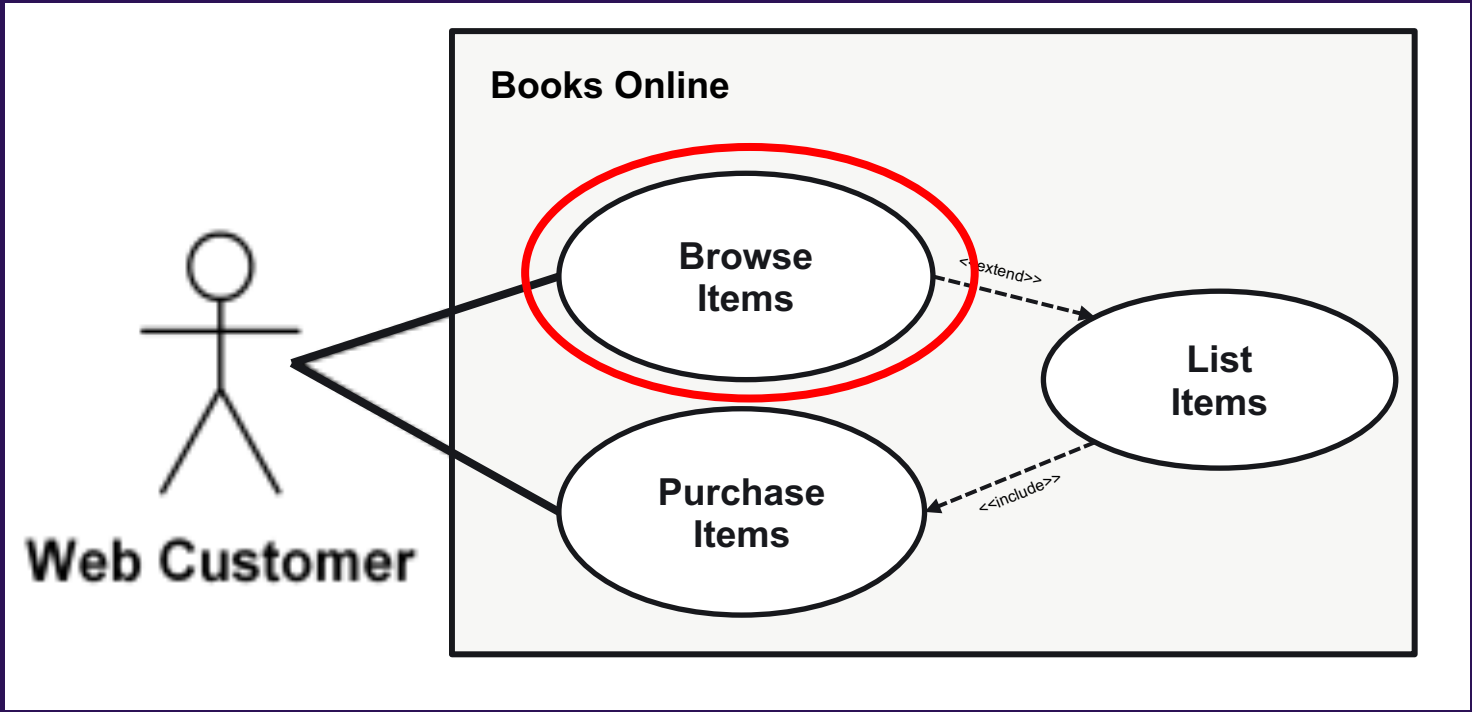
ACTIVITY DIAGRAM

UML-Behavior Diagram

e. ForkNode

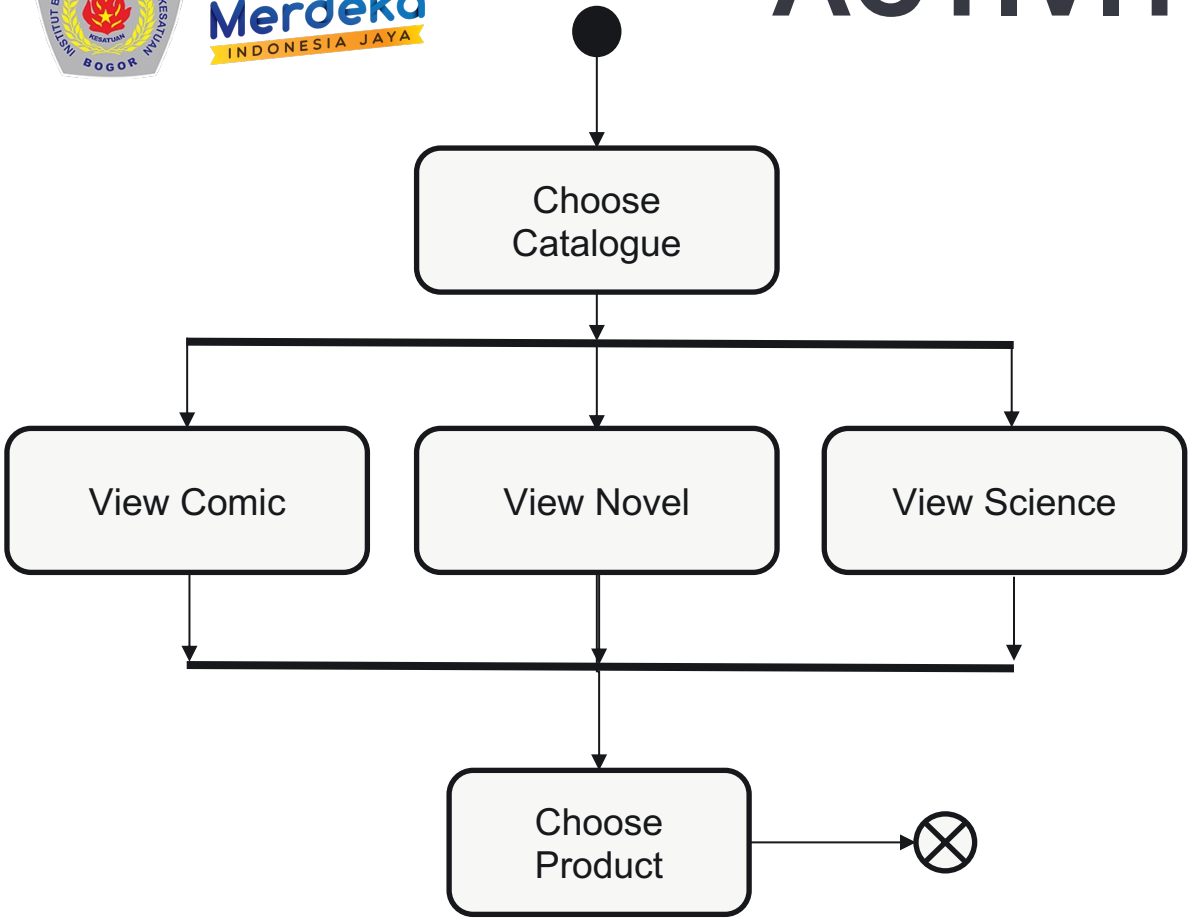


USE CASE – Example



ACTIVITY DIAGRAM

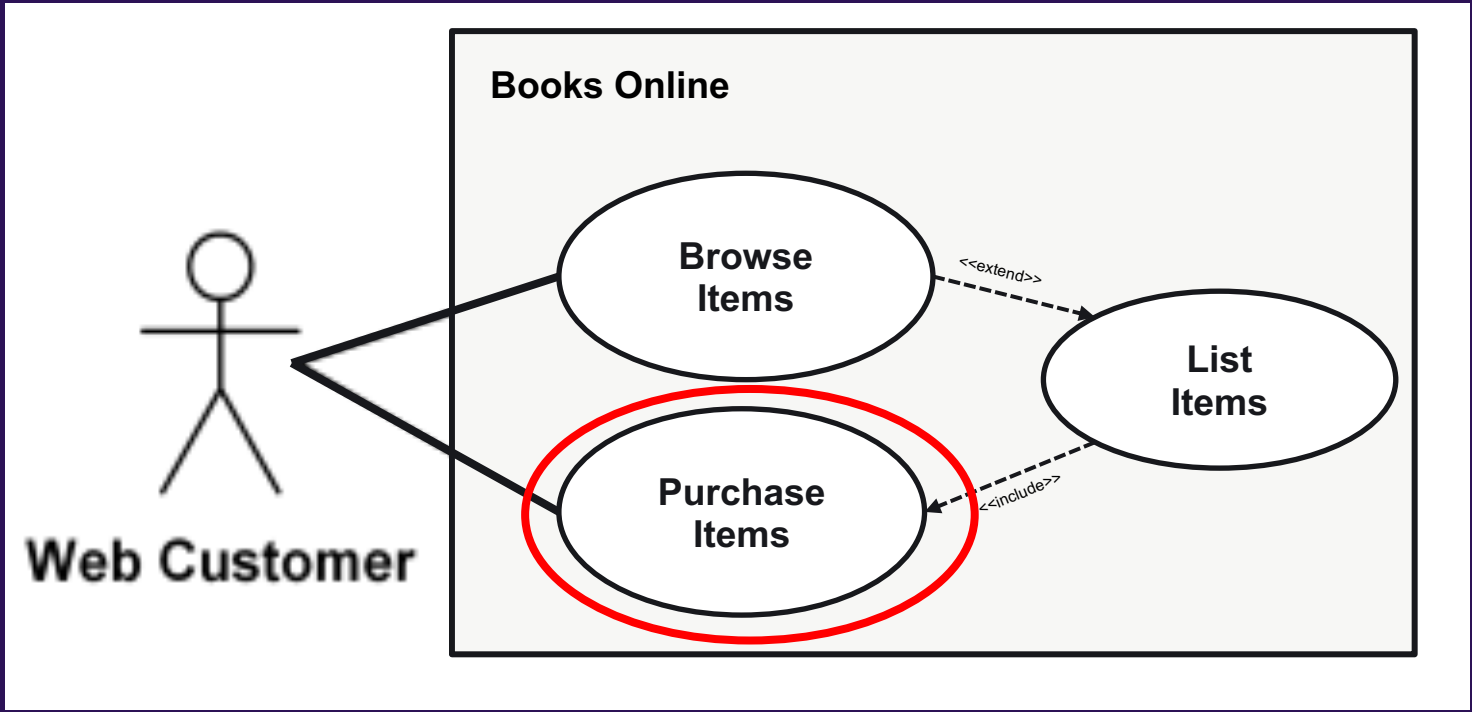
UML-Behavior Diagram



Activity Diagram

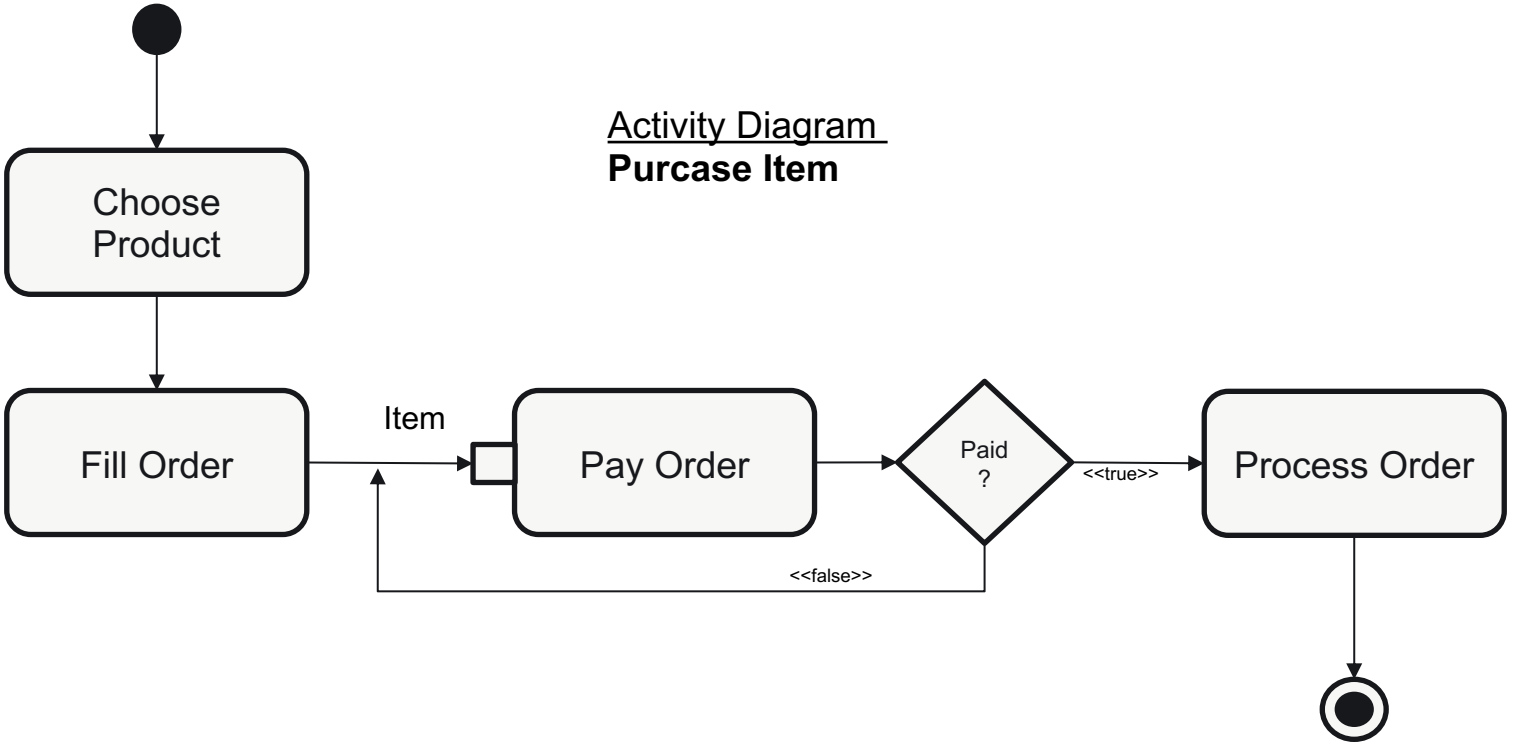
Browse Items

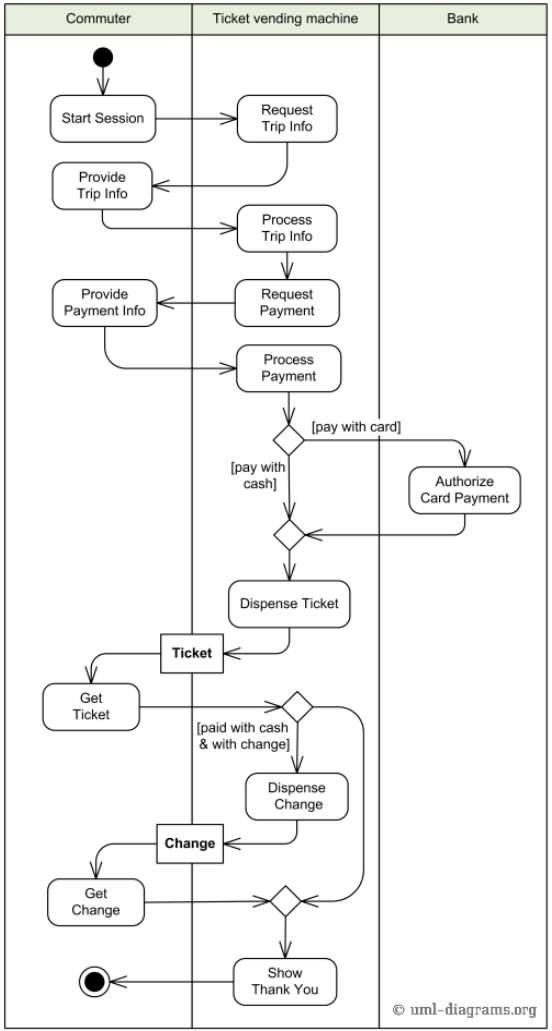
USE CASE – Example



ACTIVITY DIAGRAM

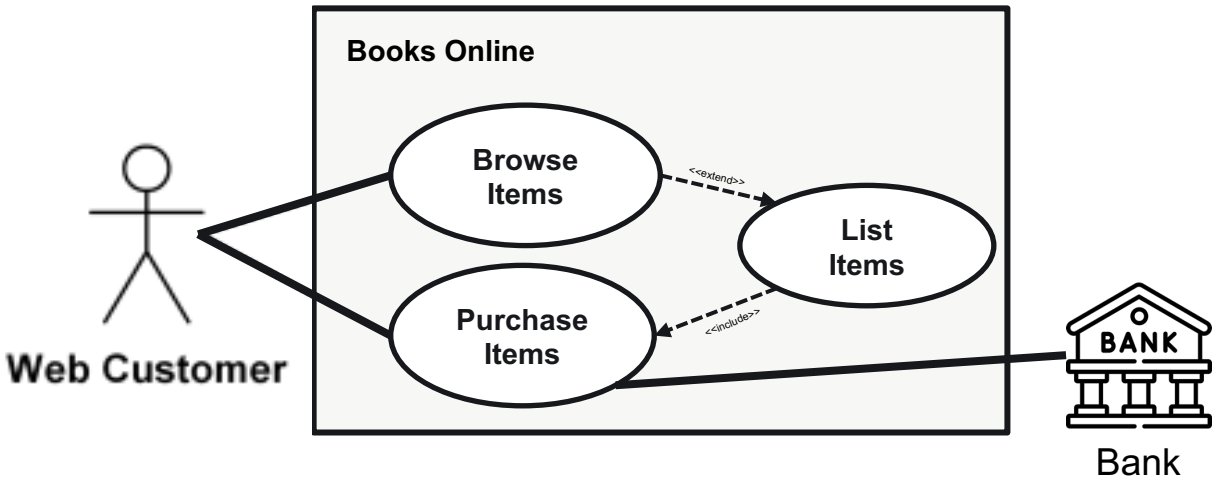
UML-Behavior Diagram





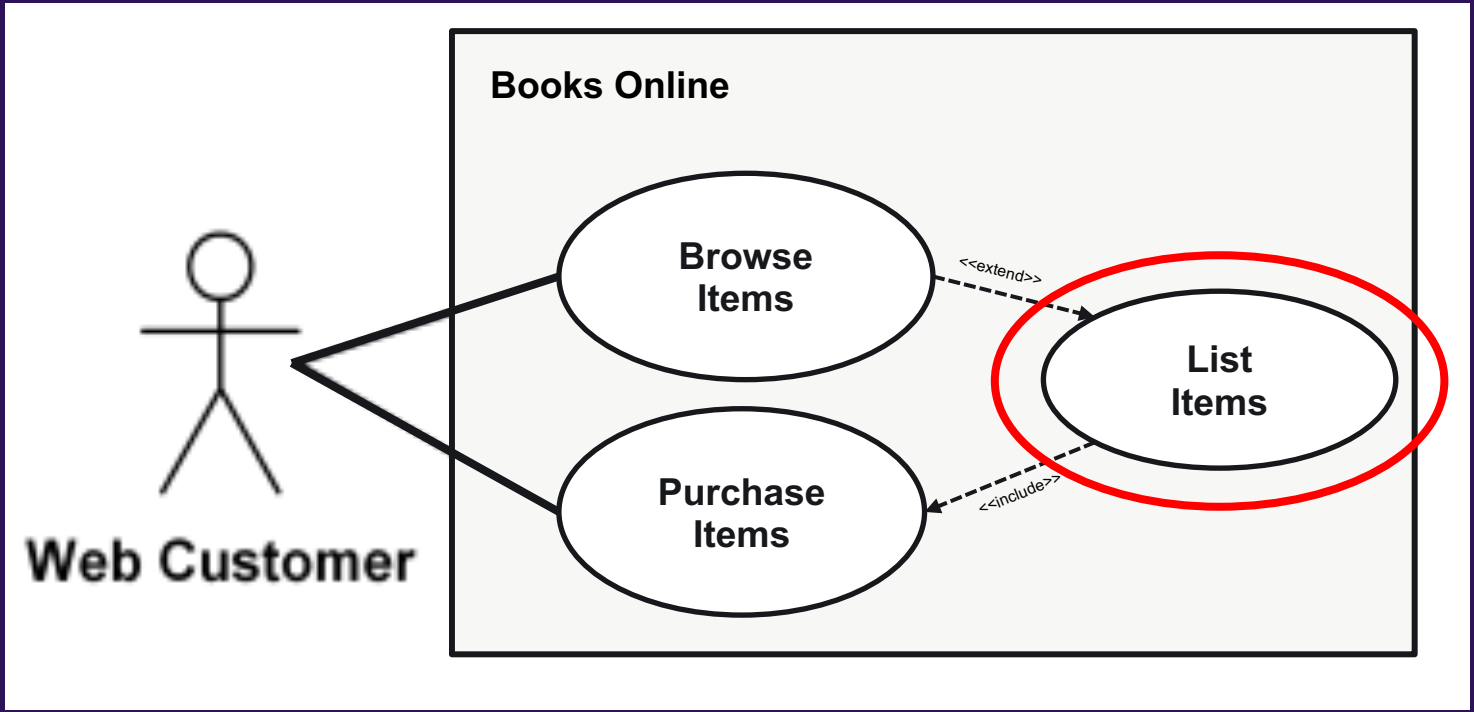
ACTIVITY DIAGRAM

Other Sample – Multiple Actor



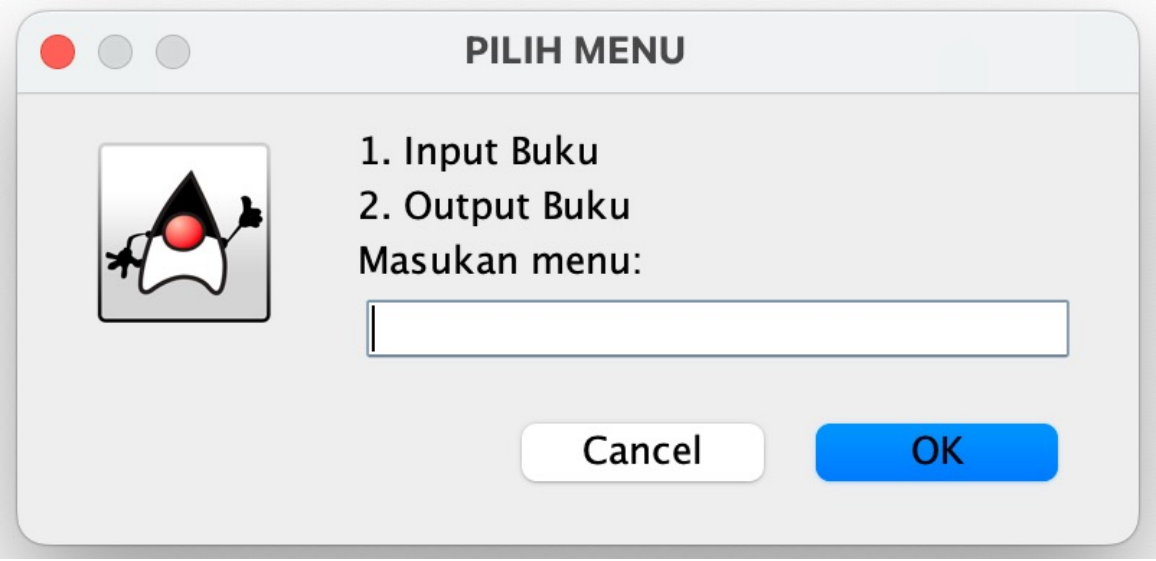
CASE STUDY

USE CASE – Example



SAMPLE PROGRAM

Books Online



THANK YOU