Assignment No:02

Experiment Name: Design Activity Diagram for ATM System & Design Sequence Diagram for Online Shopping System.

Course Title: System Analysis & Design

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Introduction

In this post we discuss Sequence Diagrams. Unified Modelling Language (UML) is a modeling language in the field of software engineering which aims to set standard ways to visualize the design of a system. UML guides the creation of multiple types of diagrams such as interaction , structure and behavior diagrams.
A sequence diagram is the most commonly used interaction diagram.

What is Sequence Diagram?

UML Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration. Sequence Diagrams are time focus and they show the order of the interaction visually by using the vertical axis of the diagram to represent time what messages are sent and when.

Sequence Diagrams captures:
- the interaction that takes place in a collaboration that either realizes a use case or an operation (instance diagrams or generic diagrams)
- high-level interactions between user of the system and the system, between the system and other systems, or between subsystems (sometimes known as system sequence diagrams)

Purpose of Sequence Diagram
- Model high-level interaction between active objects in a system
- Model the interaction between object instances within a collaboration that realizes a use case
- Model the interaction between objects within a collaboration that realizes an operation
- Either model generic interactions (showing all possible paths through the interaction) or specific instances of a interaction (showing just one path through
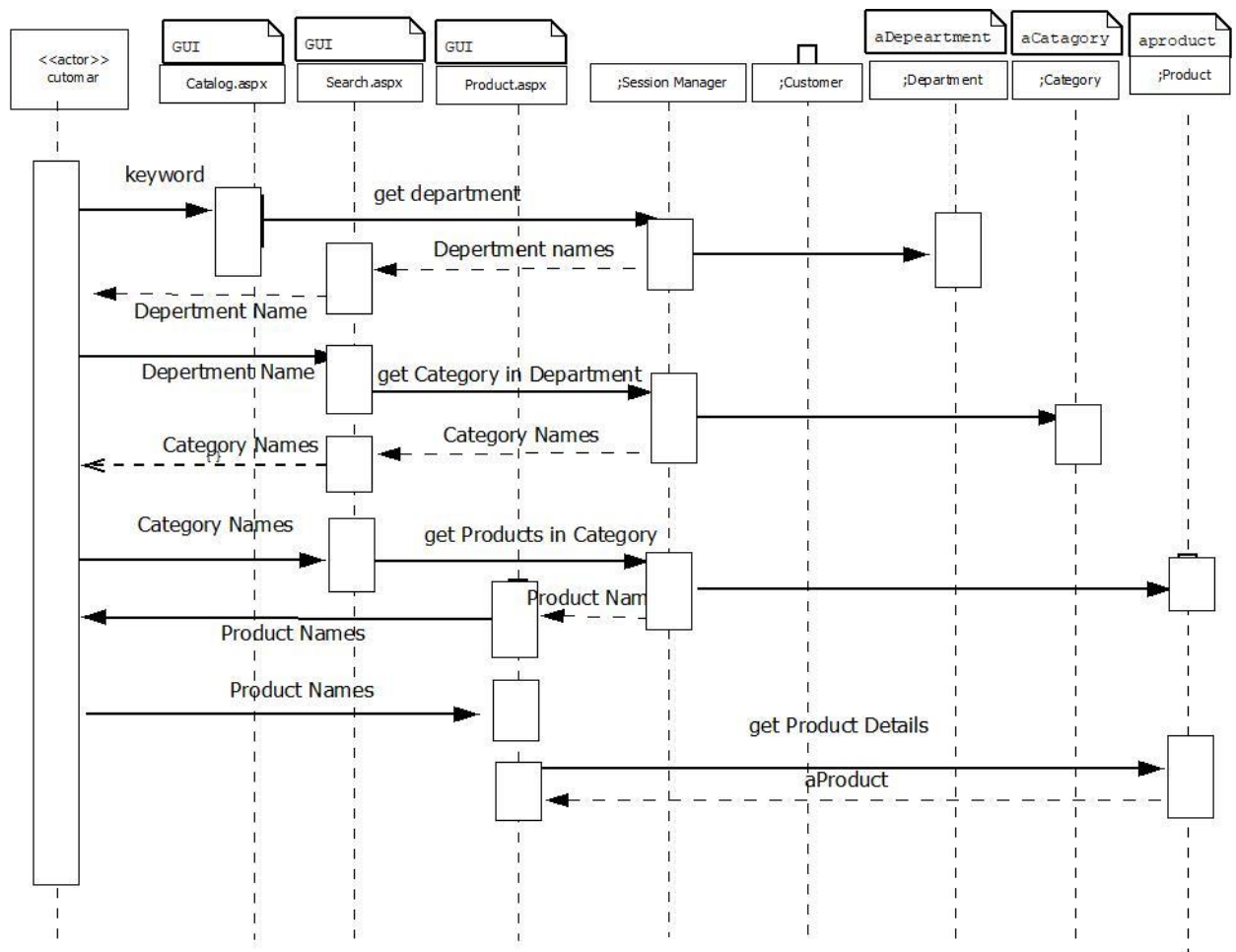
the interaction)

Activations

- A thin rectangle on a lifeline) represents the period during which an element is performing an operation.
- The top and the bottom of the of the rectangle are aligned with the initiation and the completion time respectively

https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-sequence-diagram/
https://www.geeksforgeeks.org/unified-modeling-language-uml-sequence-diagrams/
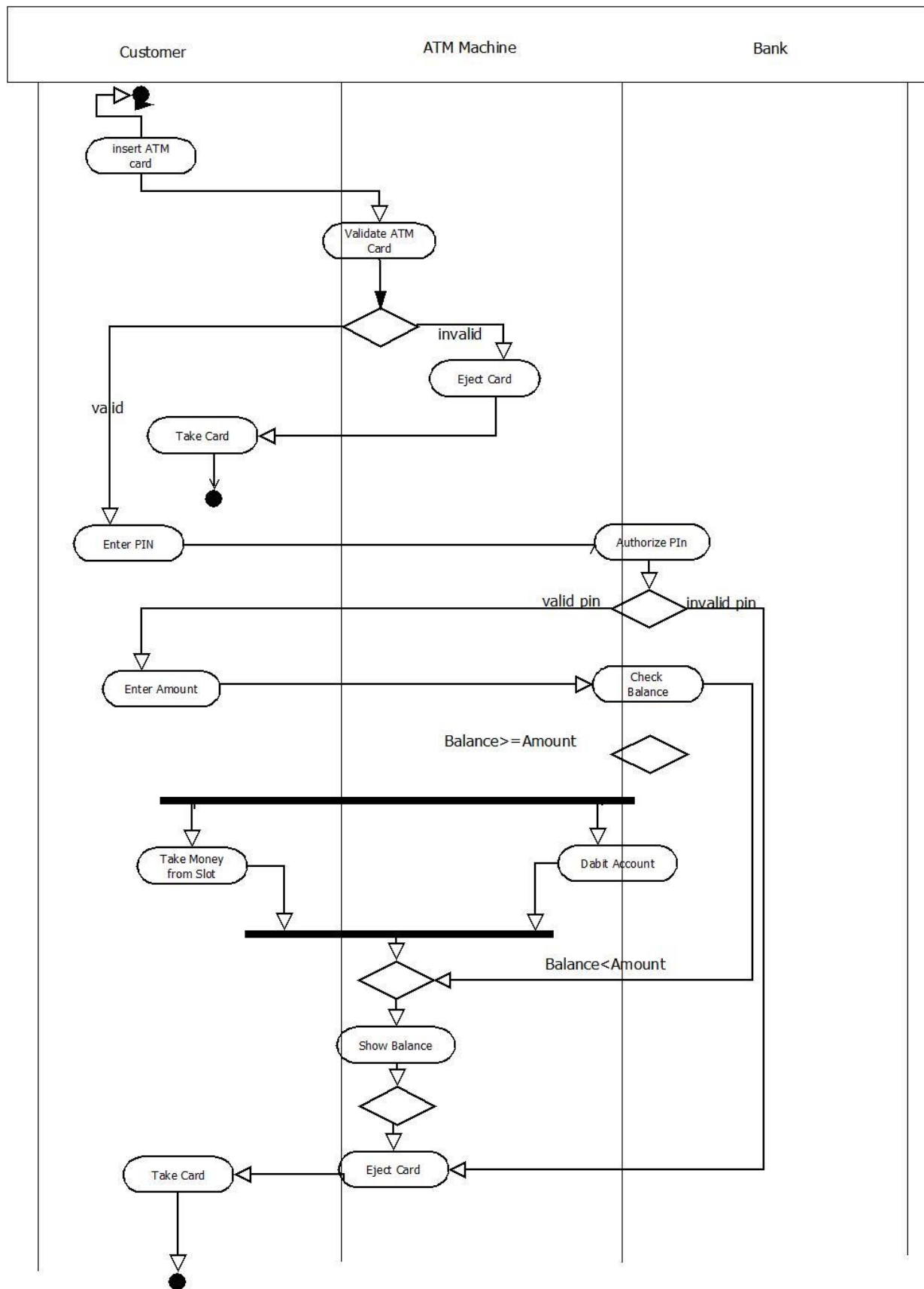
Introduction

Activity diagram is another important diagram in UML to describe the dynamic aspects of the system.

Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent

What is an Activity Diagram?

An activity diagram visually presents a series of actions or flow of control in a system similar to a <u>flowchart</u> or a <u>data flow diagram</u>. Activity diagrams are often used in business process modeling. They can also describe the steps in a <u>use case diagram</u>. Activities modeled can be sequential and concurrent. In both cases an activity diagram will have a beginning (an initial state) and an end (a final state).

Customer	ATM Machine	Bank

insert ATM card

Validate ATM Card

invalid

Eject Card

valid

Take Card

Enter PIN → Authorize PIn

valid pin | invalid pin

Enter Amount → Check Balance

Balance>=Amount

Take Money from Slot

Dabit Account

Balance<Amount

Show Balance

Eject Card

Take Card

https://www.smartdraw.com/activity-diagram/
https://www.tutorialspoint.com/uml/uml_activity_diagram.htm