



School of Science and Technology
B.Sc. in Computer Science and Engineering

Lab Report : 04

Designing a Sequence Diagram for Metrorail Ticket Vending Machine System

Submitted By	Submitted To
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Objective:

The objective of this report is to design a sequence diagram (which is a type of UML Interaction Diagram) for the Metrorail Ticket Vending Machine (TVM) system. This diagram will illustrate the interactions between various components of the system when a user purchases a ticket.

Theory:

A sequence diagram is a type of interaction diagram that depicts the interactions between objects or components in a system over time. In the context of the Metrorail TVM system, the sequence diagram will demonstrate the sequence of messages exchanged between the user, the TVM machine, and other relevant components during the ticket purchasing process.

Required Software:

For designing the flowchart of the General Problem Solution Approach, EdrawMax or any equivalent software capable of creating flowcharts can be used.

Procedures:

Identify Actors: Determine the primary actors involved in the ticket purchasing process. This typically includes the user and the TVM machine.

Identify Use Case: Define the specific use case to be represented in the sequence diagram. In this case, it would be the "Purchase Ticket" use case.

Identify Objects and Messages: Identify the objects or components involved in the use case, such as the User Interface, Ticket Dispenser, Payment Processor, and the TVM Controller. Determine the messages exchanged between these objects during the execution of the use case.

Define Sequence of Interactions: Determine the sequence of interactions between the identified objects based on the flow of events in the "Purchase Ticket" use case. This includes actions such as selecting ticket type, entering payment information, processing payment, and dispensing the ticket.

Create Sequence Diagram: Utilize eDrawMax or equivalent software to construct the sequence diagram based on the identified objects and sequence of interactions. Represent the objects as lifelines and the messages exchanged between them as arrows.

Refine and Validate: Review the sequence diagram to ensure accuracy and completeness. Validate the diagram against the requirements of the Metrorail TVM system to ensure that it accurately represents the intended functionality..

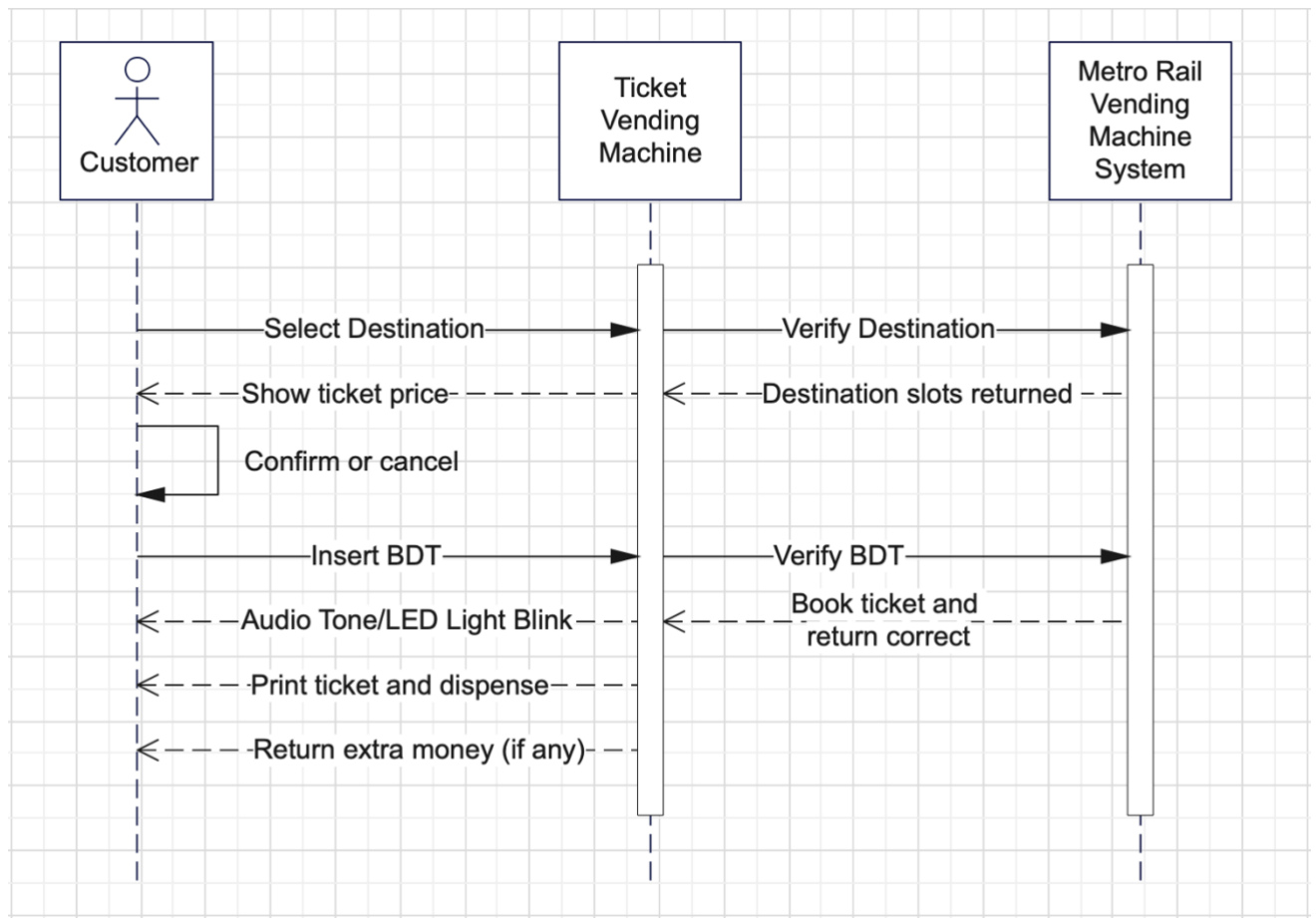


Figure: UML Sequence Diagram for Metro rail Ticket Vending Machine System

Conclusion:

The sequence diagram provides a visual representation of the interactions between components of the Metrorail Ticket Vending Machine system during the ticket purchasing process. By systematically identifying actors, defining use cases, and illustrating the sequence of interactions, we have created a detailed depiction of the system's behavior. This diagram serves as a valuable tool for understanding the flow of events and communication within the system, aiding in system design, implementation, and testing efforts.