**6-3 Assignment: Interpreting UML Diagrams**

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CS-255 System Analysis and Design

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August 5th, 2023

**Interpreting the Diagrams**

**UML Activity Diagram**

The UML activity diagram visually represents how an activity links to another. The use cases involved are Verifying PIN, Ask for Amount, Dispense Cash, Generate Receipt, and Print Receipt. The activity diagram shows in chronological order how the customer can gain access to their account to retrieve and dispense cash, if any, to the end of the process, where the ATM prints a receipt. The customer must verify their pin correctly, or else the process ends. Once the user has successfully entered their pin, the customer can withdraw money if there are enough funds to be retrieved. Once the money can or cannot be obtained, the ATM will generate and print a receipt of the balance to end the process of the UML diagram.

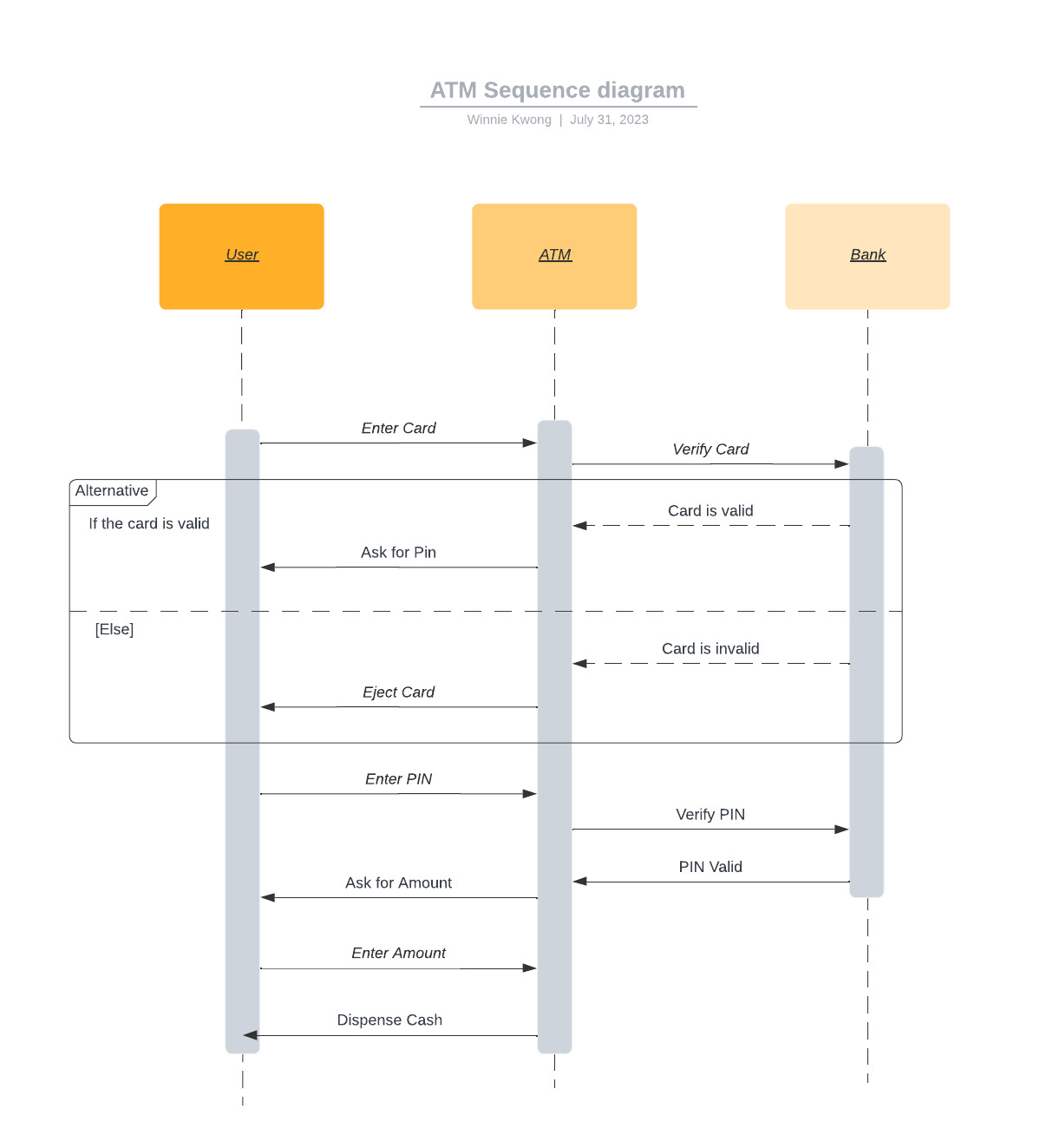
**UML Sequence Diagram**

The UML sequence diagram visually represents the sequence of messages that are exchanged between objects. The objects in this diagram are the User, ATM, and Bank. The first message is when the customer enters the card, and the ATM reply message is to ask for the PIN verification. The second message is when the customer inputs the PIN into the ATM and gets verified by the Bank. Once the Bank verifies the PIN, the ATM will ask how much money is requested to be withdrawn. The customer will then input an amount, and the ATM will dispense the cash, ending the sequence diagram process.

**Analyzing Deficiencies of the Current Design**

Two areas for improvement in the logic or functionality of the current design are whether the bank card is acceptable and the limit of money that can be withdrawn daily. In both diagrams, both events assume the user provides a valid bank card. However, the user cannot complete any transactions if the card’s expiration date has passed. To resolve this issue, the ATM must include an action to verify the expiration date to request the PIN to be submitted. Also, most ATMs can only dispense a limited amount of funds before the request is rejected, and the user must wait for the next day or to go to the bank and speak to a teller. This deficiency can be resolved by adding this use case after the customer inputs the amount requested to be withdrawn and before the amount is dispensed.

**Reconstruction of the Diagram**

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