Dubon, Katerine

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Professor Eppenger

6-3 Assignment: Interpreting UML Diagrams

The UML activity diagram illustrates a scenario involving an ATM cash withdrawal. The process initiates with a user commencing a transaction and includes the steps for withdrawing funds from the user's account. The interactions commence with the validation of the user's Personal Identification Number (PIN). If the PIN is incorrect, the system will likely provide another opportunity for input. Upon entering the correct PIN, the system will prompt the user to specify the withdrawal amount. Disseminating information is crucial for this situation. The user initially inputs their PIN, which is subsequently authenticated by the system. Upon successful verification of the user, they input the withdrawal amount, which the system subsequently validates against the available funds. If sufficient funds are available, the machine will dispense the requested cash without requiring verification of the "Amount Available." The system generates a receipt by compiling transaction details such as the date, time, amount, and account balance. The transaction is completed with the printing and delivery of the receipt to the user. At each stage, specific details are required and produced, facilitating a seamless process and establishing a transaction history for the user. The UML activity diagram for the ATM system requires refinement, particularly concerning PIN verification and session management. The diagram presently permits unlimited PIN attempts without consequences, presenting potential security vulnerabilities. To rectify this issue, the system must limit the number of incorrect PIN attempts and implement a session timeout feature. After a specified number of unsuccessful attempts, the ATM is required to terminate the session and may confiscate the card, in accordance with the bank's policies. Furthermore, to prevent potential fraud or unauthorized access, the system must incorporate a session timeout feature that terminates the session after a specified duration of inactivity. This will safeguard the user's account and maintain the system's integrity. Integrating these factors would significantly enhance the security protocols of the ATM operation.

