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CS255 Module 6 Assignment

The UML diagrams both show how a user withdraws money from an ATM. The activity diagram lays out the steps from the ATM's point of view, while the sequence diagram shows more of the detailed process, like how the ATM connects to the bank servers to verify the PIN.

First, let's look at the activity diagram:

1. It starts with the user inserting their card.

2. The ATM asks for the PIN and checks if it's correct.

3. If the PIN is wrong, the process ends right away.

4. If the PIN is correct, the ATM asks for cash.

5. If the amount is valid, the ATM dispenses the cash.

6. If the amount is invalid, the cash isn't dispensed.

7. The ATM generates a receipt, even if no cash was dispensed.

8. The receipt is printed.

9. The process ends.

Now, for the sequence diagram:

1. The user inserts their card into the ATM.

2. The ATM asks for the PIN.

3. The user enters the PIN on the keypad.

4. The ATM contacts the bank servers to verify the PIN.

5. The bank verifies the PIN.

6. The ATM asks the user how much cash they want to withdraw.

7. The user enters the amount into the ATM.

8. The ATM dispenses the cash.

One issue with the activity diagram is that it doesn't show the bank servers being involved in verifying the PIN, which the sequence diagram does include.

The sequence diagram includes the bank, but it doesn't show what happens if the PIN is wrong. This could be fixed by having the ATM send a message to the user when their PIN is incorrect.

Another issue with both diagrams is that they don't show any checks for how many times the PIN is entered incorrectly.

Here's how the improved sequence UML diagram could look: