

Sequence Diagram of a ATM Machine

A sequence diagram is a visual representation of interactions between different objects or actors in a system over a specific period of time. In the context of an ATM (Automated Teller Machine) scenario involving the actors Customer, ATM, Account, and Checking Account, a sequence diagram would illustrate how these entities interact during a typical ATM transaction. Here's a description of such a sequence diagram:

Sequence Diagram Elements:

Customer: The customer is the user of the ATM who initiates the transaction. They input their card and provide authentication details to access their account.

ATM: The ATM represents the automated teller machine itself, which serves as the interface for the customer to access their bank account. It receives input from the customer, communicates with the bank's systems, and dispenses cash or performs other transactions.

Account: The Account object represents a generic bank account, which can be associated with various customers. It interacts with the ATM to verify the customer's identity and handle transactions.

Checking Account: The Checking Account is a specific type of account that the customer may interact with during the transaction. It is a subtype of the Account object, and this distinction allows the system to process specific checking account operations.

Sequence of Interactions:

1. The sequence diagram starts with the customer inserting their ATM card into the ATM and providing their Personal Identification Number (PIN) for authentication.
2. The ATM receives the card and PIN, verifying the customer's identity by communicating with the bank's systems.
3. Once authenticated, the ATM presents a menu of options to the customer, which may include actions related to checking accounts.
4. The customer selects a checking account operation (e.g., balance inquiry, cash withdrawal, funds transfer, etc.) from the menu.
5. The ATM communicates with the bank's systems to process the selected transaction.

6. The bank's systems interact with the specific checking account, deducting or depositing funds as needed and updating the customer's account balance.
7. The ATM dispenses cash or provides confirmation of the transaction to the customer.
8. The ATM also logs the transaction and returns the customer's card.
9. The sequence diagram concludes with the customer receiving their card and any cash, completing the ATM transaction.

Here is the Sequence Diagram:

