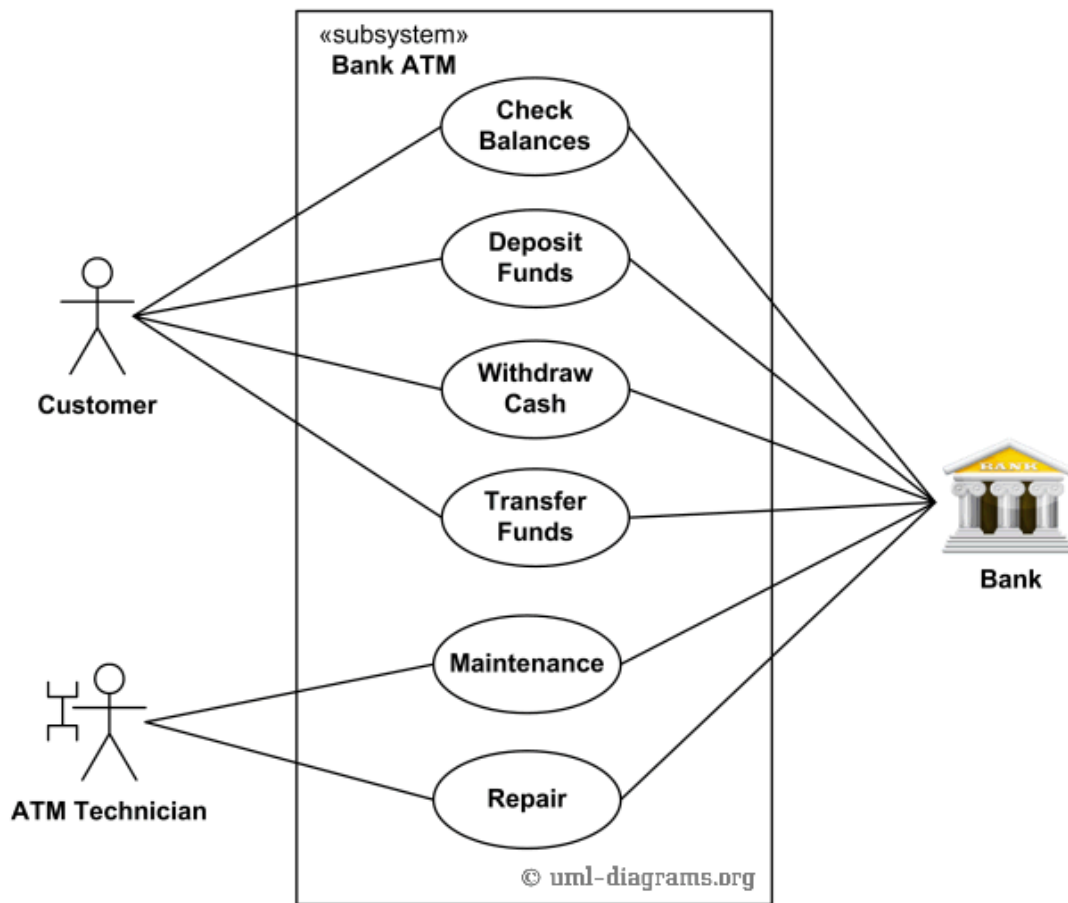


Bank ATM

An automated teller machine (ATM) or the automatic banking machine (ABM) is a banking subsystem (**subject**) that provides bank customers with access to financial transactions in a public space without the need for a cashier, clerk, or bank teller.

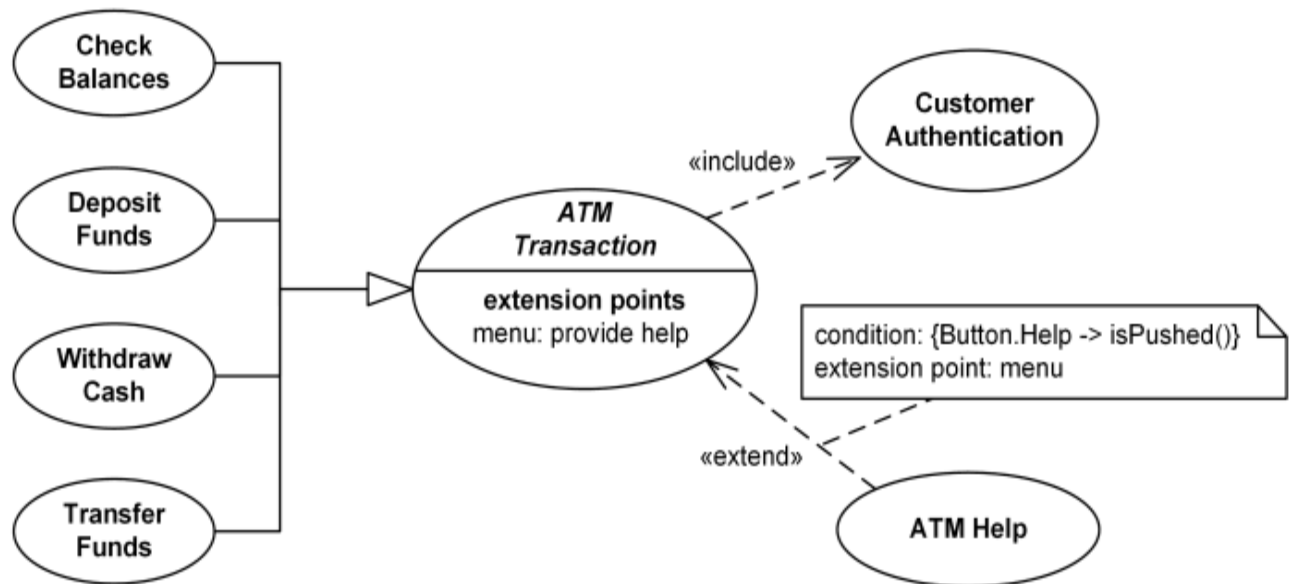
Customer (actor) uses bank ATM to Check Balances of his/her bank accounts, Deposit Funds, Withdraw Cash and/or Transfer Funds (use cases). ATM

Technician provides Maintenance and Repairs. All these use cases also involve Bank actor whether it is related to customer transactions or to the ATM servicing.



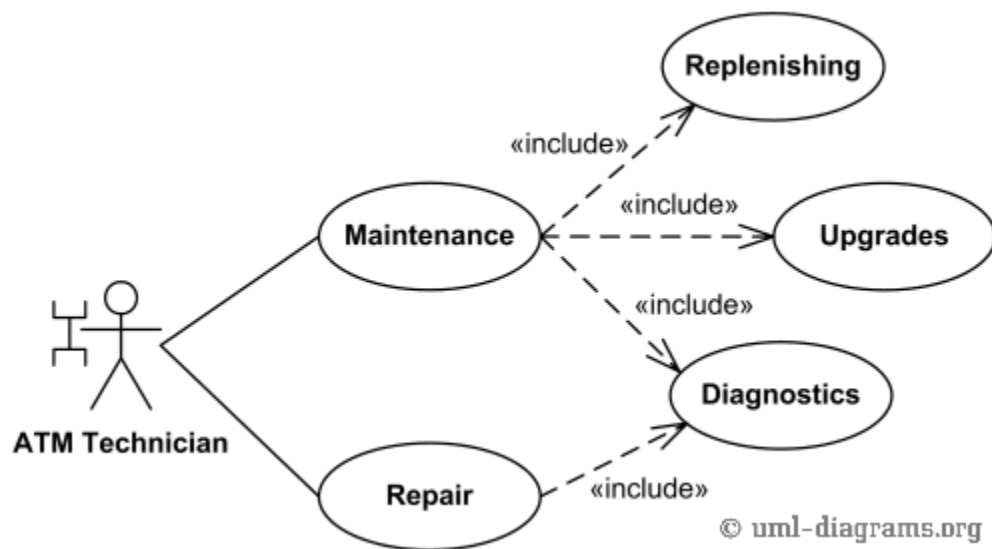
An example of use case diagram for Bank ATM subsystem - top level use cases.

On most bank ATMs, the customer is authenticated by inserting a plastic ATM card and entering a personal identification number (PIN). *Customer Authentication* use case is required for every ATM transaction so we show it as **include** relationship. Including this use case as well as transaction **generalizations** make the *ATM Transaction* an **abstract use case**.



Bank ATM Transactions and Customer Authentication Use Cases Example.

Customer may need some help from the ATM. *ATM Transaction* use case is **extended** via **extension point** called *menu* by the *ATM Help* use case whenever *ATM Transaction* is at the location specified by the *menu* and the bank customer requests help, e.g. by selecting Help menu item.



Bank ATM Maintenance, Repair, Diagnostics Use Cases Example.

ATM Technician maintains or repairs Bank ATM. *Maintenance* use case includes *Replenishing* ATM with cash, ink or printer paper, *Upgrades* of hardware, firmware or software, and remote or on-site *Diagnostics*. *Diagnostics* is also **included** in (shared with) *Repair* use case.

Credit Card Processing System

Credit Card Processing System (aka Credit Card Payment Gateway) is a **subject**, i.e. system under design or consideration. Primary **actor** for the system is a **Merchant's Credit Card Processing System**. The merchant submits some credit card transaction request to the credit card payment gateway on behalf of a customer. Bank which issued customer's credit card is actor which could approve or reject the transaction. If transaction is approved, funds will be transferred to merchant's bank account.

Authorize and Capture use case is the most common type of credit card transaction. The requested amount of money should be first authorized by **Customer's Credit Card Bank**, and if approved, is further submitted for settlement. During the settlement funds approved for the credit card transaction are deposited into the **Merchant's Bank** account.

In some cases, only **authorization** is requested and the transaction will not be sent for settlement. In this case, usually if no further action is taken within some number of days, the authorization expires.

Merchants can submit this request if they want to verify the availability of funds on the customer's credit card, if item is not currently in stock, or if merchant wants to review orders before shipping.

Capture (request to capture funds that were previously authorized) use case describes several scenarios when merchant needs to complete some previously authorized transaction - either submitted through the payment gateway or requested without using the system, e.g. using voice authorization.

