# ATM Analysis Models

Use Case Example - ATM
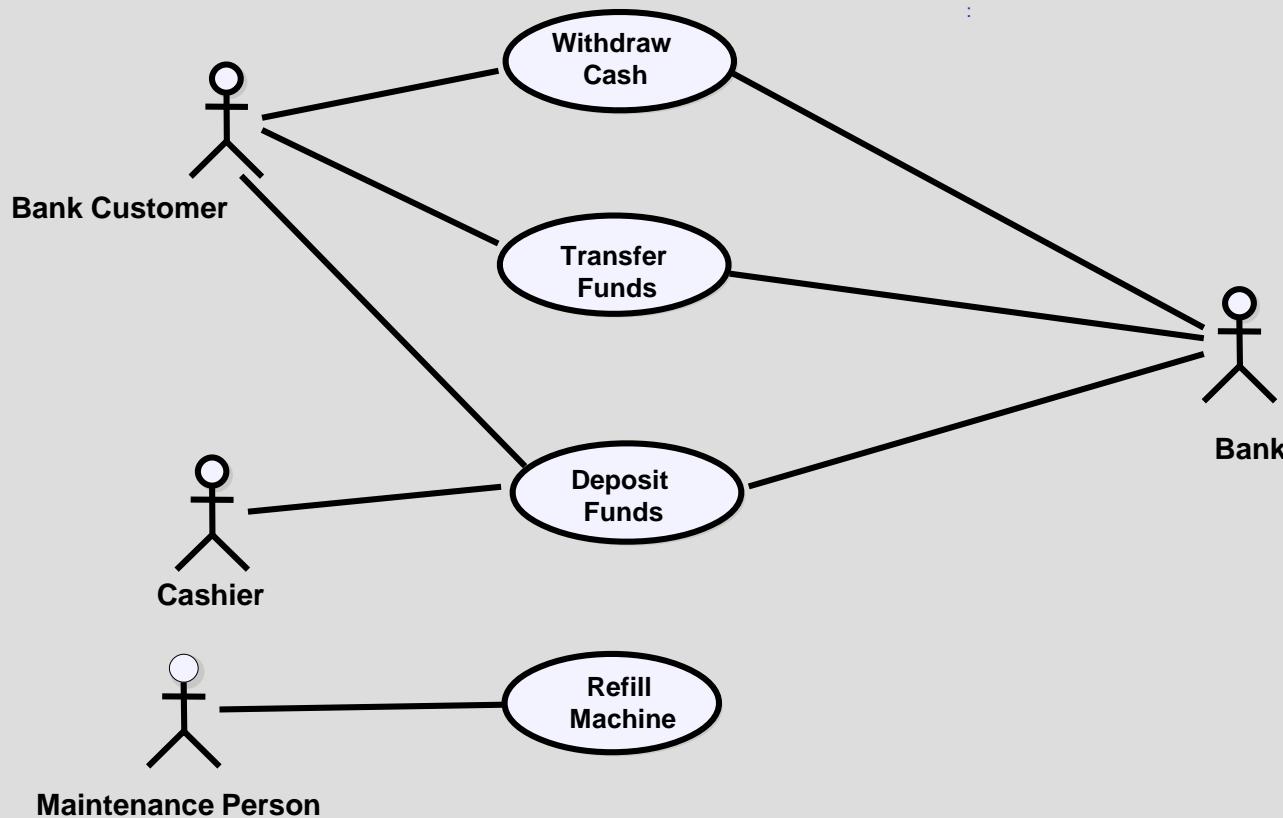
ATM Model: Withdraw Cash Use Case

1 **Brief Description**

This use case describes how the Bank Customer uses the ATM to withdraw money his/her bank account.

2 **Actors**

2.1 Bank Customer

2.2 Bank

3 **Preconditions**

There is an active network connection to the Bank.

The ATM has cash available.

4 **Basic Flow of Events**

1. The use case begins when Bank Customer inserts their Bank Card.
2. Use Case: Validate User is performed.
3. The ATM displays the different alternatives that are available on this unit. [See Supporting Requirement SR-xxx for list of alternatives]. In this case the Bank Customer always selects "Withdraw Cash".
4. The ATM prompts for an account. See Supporting Requirement SR-yyy for account types that shall be supported.
5. The Bank Customer selects an account.
6. The ATM prompts for an amount.
7. The Bank Customer enters an amount.
8. Card ID, PIN, amount and account is sent to Bank as a transaction. The Bank Consortium replies with a go/no go reply telling if the transaction is ok.
9. Then money is dispensed
10. The Bank Card is returned.
11. The receipt is printed
12. The use case ends successfully

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ATM Model: Withdraw Cash Use Case (cont)

5 **Alternative Flows**

5.1 Invalid User

    If in step 2 of the basic flow Bank Customer the use case: Validate User does not complete successfully, then

    1. the use case ends with a failure condition

5.2 Wrong account

    If in step 8 of the basic flow the account selected by the Bank Customer is not associated with this bank card, then

    1. The ATM shall display the message "Invalid Account – please try again"

    2. The use case resumes at step 4

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7 **Post-conditions**

    7.1 Successful Completion

    The user has received their cash and the internal logs have been updated.

    7.2 Failure Condition

    The logs have been updated accordingly.

ATM Example – Analysis Classes

Use Case: Withdraw Cash

WithDrawForm

Boundary Class

CardReaderPrinter

Boundary Class

Bank Customer

Withdrawal

Control Class

BankActAccessor

Boundary Class

Bank

Account

Entity Class

Transaction

Entity Class
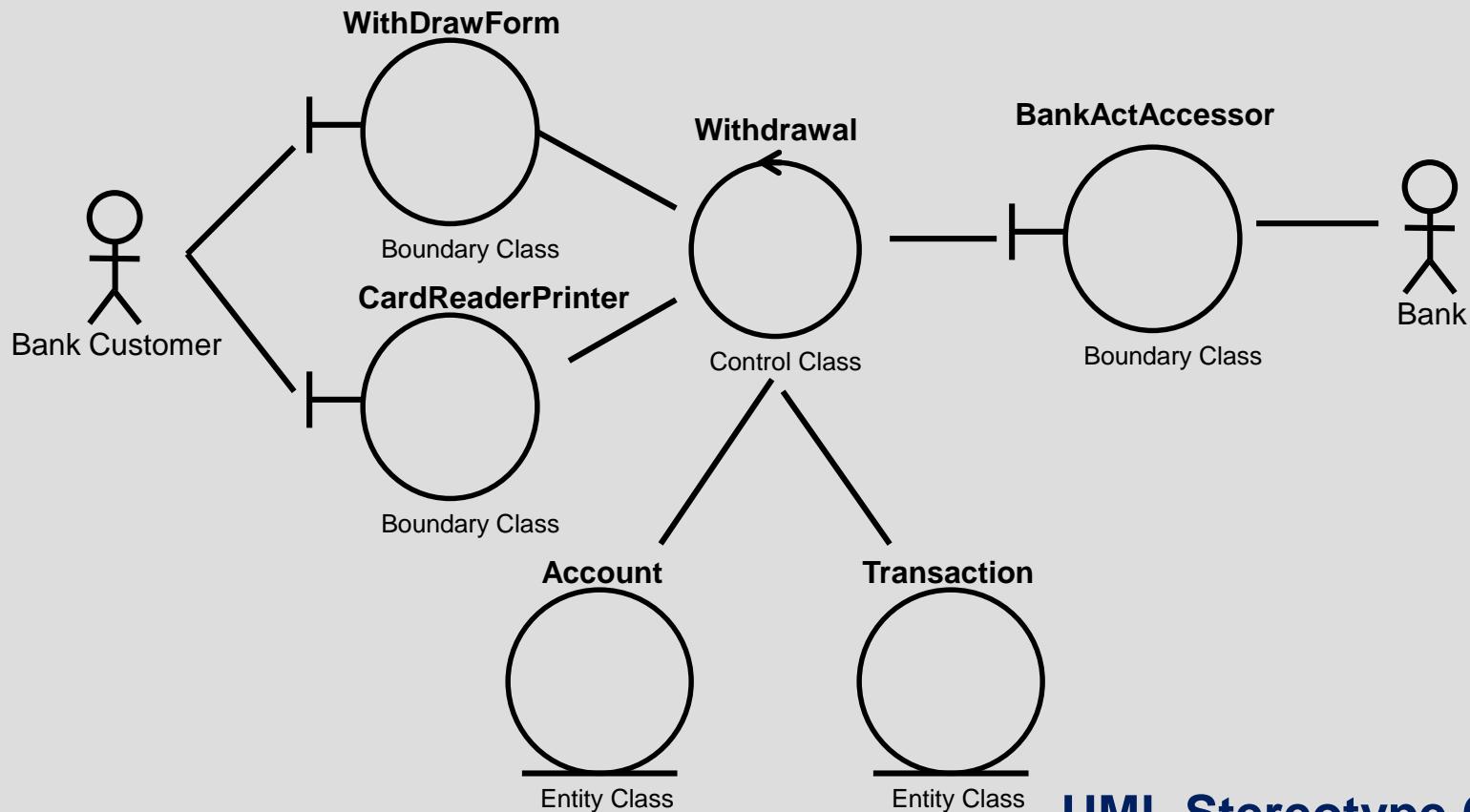
UML Stereotype Classes

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ATM - Sequence Diagram

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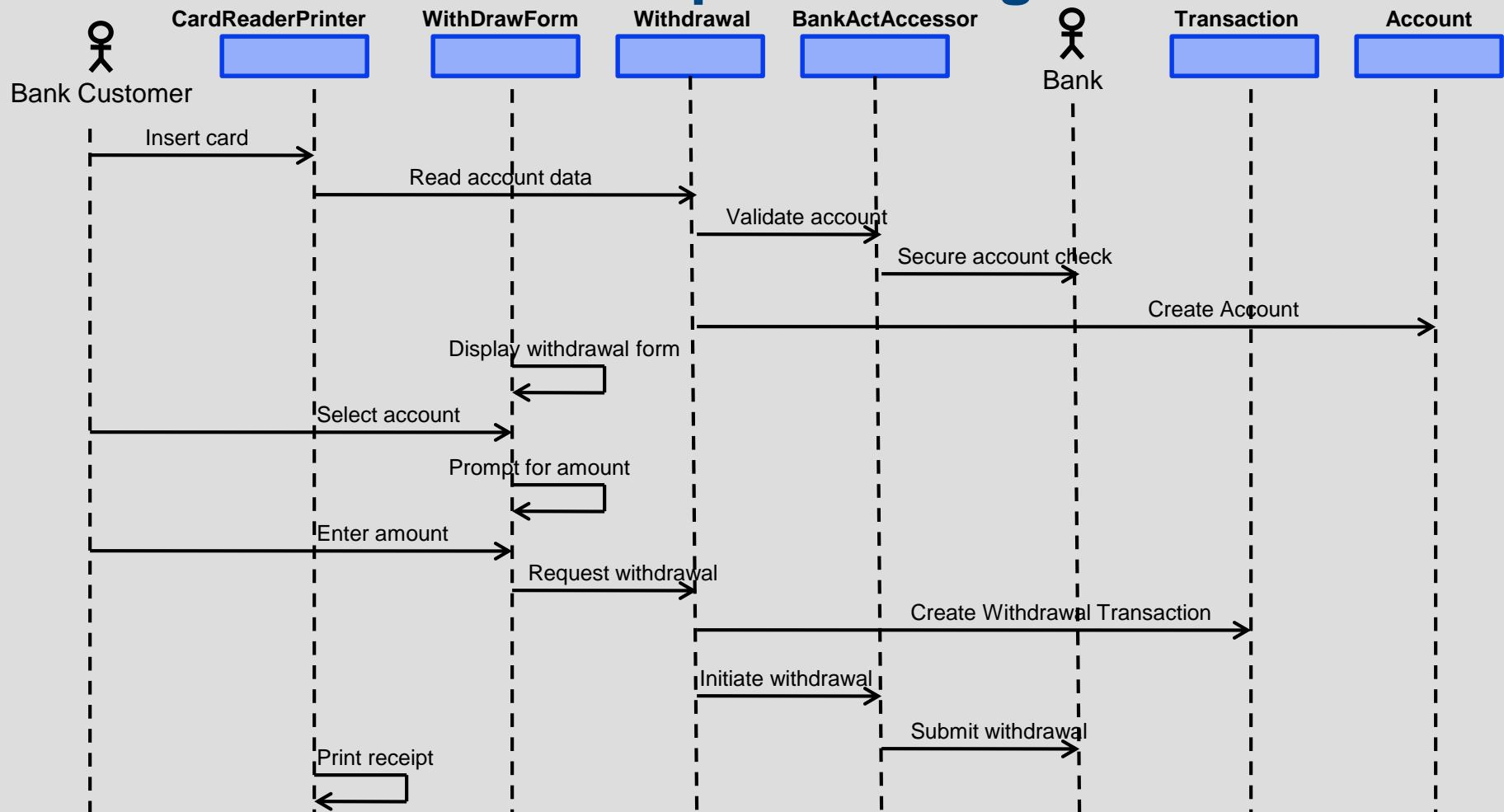
ATM – Communications Diagram
with Responsibilities

3:// Validate Account()
12:// Initiate Withdrawal()

7:// Select Account()
9:// Enter Amount()

<<boundary>>
WithdrawalForm

// Display Withdrawal Form()
// Prompt for Amount()
// Request Withdrawal()

6:// Display Withdrawal Form()
8:// Prompt for Amount()
10:// Request Withdrawal()

<<boundary>>
BankActAccessor

// Secure Account Check()
// Submit Withdrawal()

Bank

Bank Customer

<<boundary>>
CardReaderPrinter

// Read Card()
// Print Receipt()

2:// Read Account Data()

1:// Insert Card()
14:// Print Receipt()

4:// Secure Account Check()
13:// Submit Withdrawal()

<control>
Withdrawal

// Read Account Data()
// Validate Account()
// Create Account()
// Initiate Withdrawal()
// Create Withdrawal Transaction

5:// Create Account()

11:// Create Withdrawal Transaction()

<<entity>>
Account

// Create Account()
// Save Account()

<<entity>>
Transaction

// Create Transaction()
//Save Transaction()

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