Use Case Documentation for ATM

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1. About the document

This document describes the use case narratives for a simple ATM system. The user accounts are assumed to exist already and hence there will not be any use case for creating, modifying or deleting an account. The system will include four transactions – deposit, withdraw, check balance and transfer. While withdrawing an amount from an account, a user is not permitted to withdraw more than the balance available in that account. The use case diagram, shown in Figure 1, includes two additional use cases – validate account and update account. These two use cases are not accessible directly by the user but are used by other use cases.

1.1 Assumptions

1. Each account is assumed to be associated with a unique account identifier and a password so that a user will login to the account using these two identifications.

2. The use case ‘check balance’ can be invoked independently by the user. It will also be included in the use cases ‘withdraw’ and ‘transfer’ because these two transactions need to check the balance in the account first.

3. The database is assumed to be available all the time and hence there is no use case to connect to the database and/or to check the connection. This will be taken care of in the design phase.
Figure 1: Use Case Diagram for ATM
2. Use Case Narratives

Use Case #: ATM-L1
Use Case name: Login
Purpose: To login into an account.
Scope: System
Priority: High
Primary actor: Customer
Secondary actor: None
Input parameters: Account number, password
Output parameters: None
Precondition: Input parameters must be in appropriate format.
Both input parameters must be given.
Post-condition: If successful, a confirmation is sent to the user for successful login.
Successful scenario:
1. User submits the two parameters.
2. The two parameters are validated for format and completeness.
3. The two parameters are passed to the ‘Validate account’ functionality to validate user access.
4. The result of ‘Validate account’ is passed back to the user.

Is this use case extended? No
If yes, what are the extensions?
Does this use case extend another use? No
If yes, what are they?
Does this use case include another use case? Yes
If yes, what are they? Validate account
Is this use case included in another use case? No
If yes, what are they?
Exceptions: One or both parameters are missing.
One or both parameters are in incorrect format.
Additional remarks: A welcome page may be displayed after successful login.
Depending on the type of user, each such welcome page may be different.

Use Case #: ATM-L2
Use Case name: Logout
Purpose: To logout from an account.
Scope: System
Priority: High
Primary actor: Customer
Secondary actor: None
Input parameters: None
Output parameters: None
Precondition: User must have logged in.
Post-condition: If successful,
user will be logged out of the system and will not be able to access
any functionalities.
Successful scenario:
1. User submits request for logout.
2. The system will terminate all accesses for this user.

Is this use case extended? No
If yes, what are the extensions?
Does this use case extend another use? No
If yes, what are they?
Does this use case include another use case? No
If yes, what are they?
Is this use case included in another use case? No
If yes, what are they?
Exceptions: User did not login.
Additional remarks: None.

Use Case #: ATM-D
Use Case name: Deposit
Purpose: To deposit a positive amount into an account.
Scope: System
Priority: Very high
Primary actor: Customer
Secondary actor: None.
Input parameters: Amount to be deposited
Output parameters: None
Precondition: User must have logged into an account.
Amount must be numeric and must be positive.
Post-condition: If successful,
the given amount is added to the balance of the account.
Successful scenario:
1. User requests for deposit and provides a positive amount.
2. User request and amount parameters are validated.
3. If the parameters are valid, the current balance is updated by
adding the amount to the balance. The updated account is stored
back into the database.

Is this use case extended? No
If yes, what are the extensions?
Does this use case extend another use? No
If yes, what are they?
Does this use case include another use case? Yes
If yes, what are they? Update account
Use Case #: ATM-W
Use Case name: Withdraw
Purpose: To withdraw a positive amount from an account.
Scope: System
Priority: Very high
Primary actor: Customer
Secondary actor: None.
Input parameters: Amount to be withdrawn
Output parameters: None
Precondition: User must have logged into an account.
Amount must be numeric and must be positive.
Amount must be less than or equal to the available balance in the account.
Post-condition: If successful, the given amount is subtracted from the balance of the account.
Successful scenario:
1. User requests for withdrawal and provides a positive amount.
2. User request and amount parameters are validated.
3. If the parameters are valid, the current balance is updated by subtracting the amount from the balance. The updated account is stored back into the database.

Is this use case extended? No
Does this use case extend another use? No
Does this use case include another use case? Yes
Update account
Is this use case included in another use case? No
Exceptions: User did not login into any account.
Format error in amount parameter.
Amount is zero or negative.
Amount is more than the available balance in the account.
Additional remarks: None
Use Case #: ATM-C
Use Case name: Check Balance
Purpose: To retrieve the balance in an account.
Scope: System
Priority: Very high
Primary actor: Customer
Secondary actor: Database
Input parameters: None
Output parameters: Balance
Precondition: User must have logged into an account.
Post-condition: If successful, the balance in the account is displayed to the user.
Successful scenario:
1. User requests for check balance transaction.
2. System displays the balance in the account currently logged in.

Is this use case extended? No
If yes, what are the extensions?
Does this use case extend another use? No
If yes, what are they?
Does this use case include another use case? No
If yes, what are they?
Is this use case included in another use case? No
If yes, what are they?
Exceptions: User did not login into any account.
Additional remarks: None

Use Case #: ATM-T
Use Case name: Transfer
Purpose: To transfer a positive amount from one account to another account.
Scope: System
Priority: Very high
Primary actor: Customer
Secondary actor: None.
Input parameters: Destination account number, Amount to be transferred
Output parameters: None
Precondition: User must have logged into an account.
Destination account number must be in proper format.
Amount must be numeric and must be positive.
Post-condition: If successful, the given amount is subtracted from the balance of the logged in account and added to the balance of the destination account.
Successful scenario:
1. User requests for transfer, and provides the destination account
number and a positive amount as parameters.

2. User request and amount parameters are validated.
3. System checks whether the destination account exists. The functionality ‘Validate account’ is invoked for this check.
4. If the parameters are valid, the balance in the logged in account is updated by subtracting the amount from the balance. In addition, the balance in the destination account is updated by adding the amount to the balance. Both the logged in account and the destination account are stored back into the database.

Is this use case extended? No
   If yes, what are the extensions? No
Does this use case extend another use? No
   If yes, what are they?
Does this use case include another use case? Yes
   Validate account, Update account
Is this use case included in another use case? No
   If yes, what are they?

Exceptions: User did not login into any account.
Format error in amount parameter.
Format error in destination account number.
Destination account does not exist.
Amount is zero or negative.
Amount is more than the available balance in the logged in account.

Additional remarks: None