## Use Case Flows or Scenarios –

There are many formats used to specify the detail flows of use cases. Generally, the format is based on the level of formality needed for the particular project. The Style and Form are generally refined based on project and company needs.

Here is an example of a formal Use Case – once again, not All Fields are necessary for all projects.

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| **Label** : UC\_WdMonOC |
| **TITLE** : Use Case: WithdrawMoney(our customer) : Withdraw money from ATM (our bank customer) |
| **PRIMARY ACTOR**: ATM customer (CUSTOMER)  **SECONDARY ACTOR(s):** ATM machine (ATM) |
| **GOAL IN CONTEXT**: ATM customer receives funds from an ATM machine |
| **SCOPE**: {{*Subsystem Name if this were a bigger system}}* |
| **LEVEL:** main**/**detail, extends/includes |
| **STAKEHOLDERS and INTERESTS**:  ATM customer (CUSTOMER): desires money, desires security of access to his/her account  BANK: desires authentication that customer is a bank customer and has funds to cover withdrawal; desires that ATM machine remains secure. |
| **PRECONDITION**: Our bank customer must have ATM card |
| **TRIGGER**: User starts transaction by inserting an ATM card |
| **MAIN SUCCESS SCENARIO:**   * + 1. Customer inserts ATM card.     2. ATM runs BIT.     3. ATM reads information on the card.     4. ATM validates information on the card.     5. ATM displays prompts for PIN.     6. Customer enters PIN.     7. ATM validates PIN by checking a MD5 hash.     8. ATM displays prompt asking “Which operation do you want to perform?”     9. Customer selects “Cash withdrawal”     10. ATM displays prompt for amount to withdraw.     11. Customer enters amount     12. ATM displays prompt requesting from which account to withdraw.     13. Customer selects the account type (checking, saving, credit).     14. ATM communicates with the ATM network to authorize user by validating account ID, PIN, and availability of the amount requested.     15. The ATM displays prompt asking the Customer whether he/she wants a receipt.     16. ATM asks the client to withdraw the card.     17. Customer withdraws the card. (This is a security measure to ensure that Customers do not leave their cards in the machine.)     18. ATM sends a message over the ATM Comm link to the main bank computer commanding that the amount to be dispensed is deducted from the Customer’s account.     19. ATM dispenses the requested amount of cash.     20. ATM prints receipt.     21. The use case ends. |
| **EXTENSIONS: (Note: often extensions are complex. You will want to define the entry level condition here and reference the label for the Extension Use Case following the entry condition.)**  2a. If BIT fails ATM displays “out of order message” to user and sends message to main bank computer requesting service. (see UC\_RequestService)  4a. If ATM cannot validate information on card the ATM displays message that indicates bad card and halts scenario. (see UC\_RejectCard)  7a. If ATM cannot validate PIN the ATM keeps the card, displays a message that indicates PIN failure, and then halts scenario. (see UC\_RejectPin)  11a. If the ATM does not have sufficient funds to cover withdrawal, a message indicating this and the maximum amount that can be funded is displayed to the CUSTOMER and then the Scenario is restarted at step 9.  14a. If the Customer does not have sufficient funds, but has more than $20, the ATM displays the maximum amount the user can withdraw and the Scenario is restarted at step 9.  14b. If the Customer has less in their account than the minimal amount that the machine can fund, then the ATM displays a message indicating this and the Scenario is halted after the card is ejected.  15a. This step is performed only if there is paper left to print the receipt.  20a. Receipt is printed only if Customer requests one. |
| **Inclusions:**  2a. RunBIT the BIT will be run for each transaction and includes: UC\_CheckPower, UC\_CheckPrinter, UC\_CheckTamper, UC\_CheckMoney, UC\_CheckCommLink, …  4a. AuthenticateUserCard checks the information on the card against bank records to make sure the user has an account from which they may perform a transaction.  . . . |
| **ISSUES and TBDs:**   1. Maximum withdrawal amount 2. Minimum withdrawal amount 3. Timeout interval for canceling session. 4. Maximum number of withdrawal transactions per 24 hour period. 5. . . . |
| **TRACING TO SYSTEM-LEVEL REQUIRES:**  R-Security-023  R-Security-064  . . . |
| **RELATED USE CASES:**  **UC\_Deposit** |
| **KNOWLEDGE SOURCE:** where did the information come from like***: Bobob the bank VP in charge of nickels.*** |
| **REQUIREMENTS ENGINEER: *Bertha*** |
| **REVISION HISTORY:**   * **Created: *Who and when*** * **Reviewed: *Who and when engineer’s name/ customer’s name*** * **Revised: *Who and when engineer’s name*** * **Revisions Reviewed: *Who and when engineer’s name*** * **Signed Off: *Who and when customer’s name*** |
| **. . .** |