**Exploratory (Manual Non-scripted) Testing – Abdul, Azmath**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case #** | **Use Case** | **Function Being Tested** | **Initial System State** | **Input** | **Expected Output** | **The actual outcome** | **How to recreate** |
| 1 | System Startup | System is started when the switch is turned "on" | System is off | Activate the "on" switch | System requests the initial cash amount | System requested the initial cash amount | N/A |
| 2 | Session | System reads a customer's ATM card | System is on and idle | Insert a readable card | Card is accepted; system asks for entry of PIN | Card was accepted; system asked for entry of PIN | N/A |
| 3 | Session | System accepts customer's PIN | System prompts for PIN entry | Enter correct PIN (e.g., 42) | System displays a menu of transaction types | System displayed a menu of transaction types | N/A |
| 4 | Session | System handles an invalid PIN | System prompts for PIN entry | Enter an incorrect PIN | Error message is displayed; system prompts for re-entry of PIN | Error message was displayed; system prompts for re-entry of PIN | N/A |
| **5** | Withdrawal | System performs a legitimate withdrawal transaction properly | System displays withdrawal options | Select a withdrawal amount within account balance and ATM cash | Cash is dispensed; receipt printed with correct amount and updated balance; transaction logged | Wrong amount of cash is dispensed than what is selected; receipt printed with incorrect amount requested but correct correlating updated balance; transaction logged with incorrect amount | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 1.  Press 1.  Press 1. |
| 6 | Withdrawal | System verifies sufficient ATM cash for withdrawal | ATM is started with limited cash relative to request | Select a withdrawal amount greater than available ATM cash | System displays a message indicating insufficient ATM cash; prompts user to choose a different amount | System displays a message indicating insufficient ATM cash; prompts user to choose a different amount | N/A |
| **7** | Withdrawal | System verifies sufficient account balance for withdrawal | System prompts for withdrawal amount | Select a withdrawal amount exceeding account balance | System displays a message indicating insufficient funds; offers the option to perform another transaction | System proceeds with transaction then offers the option to perform another transaction | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 1.  Press 1.  Press 5. |
| **8** | Deposit | System performs a legitimate deposit transaction properly | System prompts for deposit amount and envelope insertion | Enter a valid deposit amount; simulate envelope insertion | Envelope accepted; receipt printed showing deposit amount and updated balance; transaction logged | Envelope accepted; receipt printed shows correct deposit amount but updated wrong balance amount and wrong amount available; transaction logged correctly | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 2.  Press 1.  Enter $50  Press enter.  Click insert envelop. |
| **9** | Transfer | System performs a legitimate transfer transaction properly | System prompts for transfer details (source, destination, amount) | Select valid source and destination accounts; enter a valid transfer amount | Transfer completed; receipt printed with correct details and updated balances; transaction logged | can’t transfer from or to money market | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 3.  Press 3.  Press 2.  Enter $50  Press enter. |
| **10** | Inquiry | System performs a legitimate balance inquiry transaction | System displays the transaction menu | Choose balance inquiry; select an account (e.g., Checking) | Receipt printed showing correct account balance; transaction logged | Receipt printed showing incorrect card number card 1 shows card 2 card 2 shows card 3 | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 4.  Press 1. |
| 11 | Transaction Cancellation | Customer cancels a transaction before completion | System is in the middle of a transaction (e.g., during withdrawal) | Press the "Cancel" key | System displays a cancellation message; transaction aborted; returns to the transaction menu or ejects card | System does not display a cancellation message; transaction aborted; ejects card | N/A |
| **12** | Transaction | System handles an invalid menu option | Menu of transactions being displayed | Press menu option that is not 1,2,3,4 | An appropriate message is displayed and re-entry of transaction type is again requested | The system dispenses $20 | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 0. |
| **13** | Transaction Cancellation | Customer cancels any transaction | System displays any Transaction e.g Withdraw, Deposit, Money Transfer, Balance Inquiry | Press the "Cancel" key | System displays a would you like to do another transaction message | Spelling mistake would is spelled as “wood” | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 1.  Press cancel. |
| **14** | Balance Inquiry | user selects Balance Inquiry | Menu of balance Inquiry | User presses 4 for balance inquiry | All accounts should be displayed | Only "Checking" and "Money Market" menu options are displayed. | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 4. |
| **15** | Invalid PIN Extension | Leading Zeros in PIN | System is asking for entry of PIN | For card 1 user enters 0042 | Card Ejection with error message "FAILURE invalid card" or "PIN was incorrect" | Card is accepted | Enter 10 in number of $20 bills.  Insert card.  Enter card number 1.  Enter pin 0042. |
| **16** | Balance Inquiry | user selects money market | Menu of balance Inquiry | User presses 2 | Displays account information | Displays Unknown Error on the green screen and $500 appears right below the green screen and the receipt prints | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 4.  Press 2 |
| **17** | Transaction | Transaction finished | System displays any Transaction e.g Withdraw, Deposit, Money Transfer, Balance Inquiry | User finishes a transaction | System displays a would you like to do another transaction message | Spelling mistake would is spelled as “wood” | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 1.  Press 1.  Press 1. |

**Exploratory (Manual Non-scripted) Testing – Hashir, Taiwu**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case** | **Use Case** | **Function Being Tested** | **Initial System State** | **Input** | **Expected Output** | **The actual outcome** | **How to recreate Bug** |
| 1 | System Startup and Cash Initialization | ATM startup and cash initialization | ATM is off | Press the power “on” button and enter $20 bills | ATM powers on and indicating the next step | ATM powers on and asks for inserting card | N/A |
| 2 | Valid Card Insertion | Card recognition and acceptance | ATM is on and idle | Insert a valid card (card number “1”) | Card is accepted; system prompts for PIN entry | Same as expected | N/A |
| 3 | Unreadable/Invalid Card Insertion | Handling of an invalid or unreadable card | ATM is on and idle | Insert an unreadable or invalid card | Card is ejected | Asking for PIN | N/A |
| 4 | Correct PIN Entry | PIN validation | After valid card insertion, PIN prompt is displayed | Enter correct PIN “42” | PIN is validated; transaction menu is displayed | Same as expected | N/A |
| 5 | Incorrect PIN Entry and Re-Entry | Handling of incorrect PIN and re-entry process | After valid card insertion; PIN prompt is displayed | Enter an incorrect PIN then re-enter the correct PIN “42” | First attempt rejected with an error; on correct re-entry, the transaction menu is displayed | Same as expected | N/A |
| 6 | Withdrawal - Valid | Processing a withdrawal transaction | Transaction menu is displayed; account and ATM have sufficient funds | Select withdrawal; enter a valid amount within account balance and ATM cash limits | Correct amount of cash is dispensed | cash dispensed is the amount entered + $20, which is correct | N/A |
| 7 | Withdrawal – Insufficient Account Funds | Withdrawal processing when account funds are low | Transaction menu is displayed; account balance is lower than the requested amount | Select withdrawal; enter an amount exceeding the account balance | Error message “Insufficient funds” is displayed; no cash is dispensed | No error message is displayed, charged $20 | Select withdrawal  Select checking  Select $200 |
| 8 | Withdrawal – Cancellation | Ability to cancel a withdrawal transaction | Withdrawal process initiated | Begin a withdrawal and press “Cancel” at the account or amount selection stage | no cash is dispensed | no cash is dispensed, Showing “Insufficient available balance”, Typo “Wood” | When withdrawing, click “Cancel” button |
| 9 | Deposit - Valid | Processing a deposit transaction | Transaction menu is displayed; deposit option is available | Select deposit; choose an account; enter a valid deposit amount; simulate envelope insertion | Correct Amount is deposited into respective account, ATM adds deposited number to the overall balance. | Incorrect Value is displayed, every deposit amount is added but then it subtracts $10 from balance | When depositing notes down inputted value, click the input envelope button, when the display information shows the updated balance, it will display the number that was added - $10 |
| 10 | Deposit - Cancellation | Cancelling a deposit transaction | Deposit process initiated | Press “Cancel” during the deposit process | The deposit process is cancelled; prompts user on another transaction | Same as expected, however the only defect is the incorrect spelling of “would”. | When initiating for deposit, press the cancel button through the process. When it is cancelled it will show on the green screen, “ wood you like to do another transaction”. |
| 11 | Balance Inquiry | Displaying the account balance | Transaction menu is displayed; account is available | Select balance inquiry; choose the account | Shows account balance of the respective account; Shows an accurate number | Outcome as expected. | N/A |
| 12 | Transfer - Valid | Transferring funds between accounts | Transaction menu is displayed; both source and destination accounts are active | Select transfer; choose source and destination accounts; enter a valid transfer amount | Transfers correct amount from bank A to bank B, maintaining correct values. | Incorrect amount transferred. Deducts $0.50 from input transfer amount. | When transferring note down inputted value, click the input enter button, when the display information shows the updated balance, it will display the number that was added –$0.50 |
| 13 | Transfer Insufficient Account Funds | Handling invalid input during transfer | Transfer process initiated | Enter an invalid (e.g., negative) amount | If invalid amount is inputted, notifies user and directs user for next step | **ATM Freezes with blank screen** | After arriving at the transfer screen, input an extremely large number, such as “600000”, when you press the enter button the app should freeze |
| 14 | Transfer – Cancellation | Handling cancellation  during transfer | Transfer process initiated | Start a transfer then press “Cancel” | Transferring of balance is cancelled leaving both accounts unaffected | Cancel button does not work, transfer goes through regardless. | During the transfer process press the “cancel” button, note that the button becomes unresponsive and the transfer continues. |
| 15 | Multiple Transactions | Managing multiple transactions in one session | Transaction menu is displayed after successful authentication | Execute a series of transactions sequentially (e.g., deposit, then withdrawal, then balance inquiry) | Consistent balance account throughout the process | Multiple transactions break logic, will show insufficient funds when withdrawing even if there is | Firstly deposit any number(eg.$20) into the checking's account. Afertwards make it to the withdraw screen and try to withdraw an amount that is less than current balance (eg,$10), it will prompt the user with insufficient funds. |

**Manual Scripted Testing**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case #** | **Use Case** | **Function Being Tested** | **Initial System State** | **Input** | **Expected Output** | **The actual outcome** | **How to recreate** |
| 2 | System Startup | System accepts initial cash amount | System is requesting cash amount | Enter a legitimate amount | System is on | System is on | N/A |
| 3 | System Startup | Connection to the bank is established | System has just been turned on | Perform a legitimate inquiry transaction | System output should demonstrate that a connection has been established to the Bank | System output demonstrates that a connection has been established to the Bank | N/A |
| 4 | System Shutdown | System is shut down when the switch is turned “off” | System is on and not servicing a customer | Activate the "off" switch | System is off | System is off | N/A |
| 6 | Session | System rejects an unreadable card | System is on and not servicing a customer | Insert an unreadable card | Card is ejected; System displays an error screen; System is ready to start a new session | Card is ejected; System displays an error screen; System is ready to start a new session | N/A |
| 8 | Session | System allows customer to perform a transaction | System is displaying menu of transaction types | Perform a transaction | System asks whether customer wants another transaction | System asks whether customer wants another transaction | N/A |
| 9 | Session | System allows multiple transactions in one session | System is asking whether customer wants another transaction | Answer yes | System displays a menu of transaction types | System displays a menu of transaction types | N/A |
| 10 | Session | Session ends when customer chooses not to do another transaction | System is asking whether customer wants another transaction | Answer no | System ejects card and is ready to start a new session | System ejects card and is ready to start a new session | N/A |
| 12 | Withdrawal | System asks customer to choose an account to withdraw from | Menu of transaction types is being displayed | Choose Withdrawal transaction | System displays a menu of account types | System displays a menu of account types | N/A |
| 13 | Withdrawal | System asks customer to choose a dollar amount to withdraw | Menu of account types is being displayed | Choose checking account | System displays a menu of possible withdrawal amounts | System displays a menu of possible withdrawal amounts | N/A |
| 17 | Withdrawal | Withdrawal transaction can be cancelled by the customer prior to choosing amount | System is displaying menu of account types | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 18 | Withdrawal | Withdrawal transaction can be cancelled by the customer prior to choosing amount | System is displaying menu of dollar amounts | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 19 | Deposit | System asks customer to choose an account to deposit to | Menu of transaction types is being displayed | Choose Deposit transaction | System displays a menu of account types | System displays a menu of account types | N/A |
| 20 | Deposit | System asks customer to enter a dollar amount to deposit | Menu of transaction types is being displayed | Choose checking account | *System displays a request for the customer to type a dollar amount* | System displays a request for the customer to type a dollar amount | N/A |
| 21 | Deposit | System asks customer to insert an envelope | System is displaying a request for the customer to type a dollar amount | Enter a legitimate dollar amount | System requests that the customer insert an envelope | System requests that the customer insert an envelope | N/A |
| 23 | Deposit | Deposit transaction can be cancelled by the customer prior to inserting an envelope | System is displaying menu of account types | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 24 | Deposit | Deposit transaction can be cancelled by the customer prior to inserting an envelope | System is requesting customer to enter a dollar amount | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 25 | Deposit | Deposit transaction can be cancelled by the customer prior to inserting an envelope | System is requesting customer to insert an envelope | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 26 | Transfer | System asks customer to choose an account to transfer from | Menu of transaction types is being displayed | Choose Transfer transaction | System displays a menu of account types specifying transfer from | System displays a menu of account types specifying transfer from | N/A |
| 27 | Transfer | System asks customer to choose an account to transfer to | Menu of account types to transfer from is being displayed | Choose checking account | System displays a menu of account types specifying transfer to | System displays a menu of account types specifying transfer to | N/A |
| 28 | Transfer | System asks customer to enter a dollar amount to transfer | Menu of account types to transfer to is being displayed | Choose savings account | System displays a request for the customer to type a dollar amount | System displays a request for the customer to type a dollar amount | N/A |
| 30 | Transfer | Transfer transaction can be cancelled by the customer prior to entering amount | System is displaying menu of account types specifying transfer from | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 31 | Transfer | Transfer transaction can be cancelled by the customer prior to entering amount | System is displaying menu of account types specifying transfer to | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 32 | Transfer | Transfer transaction can be cancelled by the customer prior to entering amount | System is requesting customer to enter a dollar amount | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| **33** | Inquiry | System asks customer to choose an account to inquire about | Menu of transaction types is being displayed | Choose Inquiry transaction | System displays a menu of account types | System displays incomplete menu of account types saving account missing | Enter 10 in number of $20 bills.  Insert card.  Enter card number.  Enter pin.  Press 4. |
| 35 | Inquiry | Inquiry transaction can be cancelled by the customer prior to choosing an account | System is displaying menu of account types | Press "Cancel" key | System displays an appropriate message and offers the option to do another transaction | System displays an appropriate message and offers the option to do another transaction | N/A |
| 36 | Invalid PIN Extension | Customer is asked to reenter PIN | System is asking for entry of PIN | Enter an incorrect PIN; attempt an inquiry transaction | Customer is asked to re-enter PIN | Customer is asked to re-enter PIN | N/A |
| **37** | Invalid PIN Extension | Correct re-entry of PIN is accepted | Request to re-enter PIN is being displayed | Enter correct PIN | Original transaction completes successfully | Requests to enter PIN again | Enter 10 in number of $20 bills.  Insert card.  Enter card number 1.  Enter pin 1.  Enter pin 42. |
| 38 | Invalid PIN Extension | Incorrect re-entry of PIN is not accepted | Request to re-enter PIN is being displayed | Enter incorrect PIN | Appropriate message is displayed and re-entry of PIN is requested | Appropriate message is displayed and re-entry of PIN is requested |  |
| **39** | Invalid PIN Extension | Correct re-entry of PIN on the second try is accepted | Request to re-enter PIN is being displayed | Enter incorrect PIN first, then correct PIN | Original transaction completes successfully | Asks for pin again after correct PIN Second time | Enter 10 in number of $20 bills.  Insert card.  Enter card number 1.  Enter pin 1.  Enter pin 42. |
| **40** | Invalid PIN Extension | Correct re-entry of PIN on the third try is accepted | Request to re-enter PIN is being displayed | Enter incorrect PIN twice, then correct PIN | Original transaction completes successfully | Asks for pin again after correct PIN third time | Enter 10 in number of $20 bills.  Insert card.  Enter card number 1.  Enter pin 1.  Enter pin 1.  Enter pin 42 |

**Regression Testing (Version 1.1)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case #** | **Use Case** | **Function Being Tested** | **Initial System State** | **Input** | **Expected Output** | **The actual outcome** | **Status** |
| 5 | Withdrawal | System performs a legitimate withdrawal transaction properly | System displays withdrawal options | Select a withdrawal amount within account balance and ATM cash | Cash is dispensed; receipt printed with correct amount and updated balance; transaction logged | Cash is dispensed; a receipt is printed showing the correct amount and updated balance; the transaction is logged. | RESOLVED |
| 6 | Withdrawal | System verifies sufficient ATM cash for withdrawal | ATM is started with limited cash relative to request | Select a withdrawal amount greater than available ATM cash | System displays a message indicating insufficient ATM cash; prompts user to choose a different amount | The system displays a message indicating insufficient cash in the ATM and prompts the user to select a different amount. | RESOLVED |
| 7 | Withdrawal | System verifies sufficient account balance for withdrawal | System prompts for withdrawal amount | Select a withdrawal amount exceeding account balance | System displays a message indicating insufficient funds; offers the option to perform another transaction | The system displays a message indicating insufficient funds and provides the option to proceed with another transaction. | RESOLVED |
| 8 | Deposit | System performs a legitimate deposit transaction properly | System prompts for deposit amount and envelope insertion | Enter a valid deposit amount; simulate envelope insertion | Envelope accepted; receipt printed showing deposit amount and updated balance; transaction logged | The envelope is accepted; a receipt is printed displaying the correct deposit amount but an incorrect updated balance, which is one less than the actual amount, and the wrong available balance is shown; however, the transaction is logged correctly. | IN-PROGRESS |
| 9 | Transfer | System performs a legitimate transfer transaction properly | System prompts for transfer details (source, destination, amount) | Select valid source and destination accounts; enter a valid transfer amount | Transfer completed; receipt printed with correct details and updated balances; transaction logged | The transfer is completed; a receipt is printed containing the correct details and updated balances; the transaction is logged. | RESOLVED |
| **10** | Inquiry | System performs a legitimate balance inquiry transaction | System displays the transaction menu | Choose balance inquiry; select an account (e.g., Checking) | Receipt printed showing correct account balance; transaction logged | Receipt printed showing incorrect card number card 1 shows card 2 card 2 shows card 3 | IN-PROGRESS |
| 11 | Transaction Cancellation | Customer cancels a transaction before completion | System is in the middle of a transaction (e.g., during withdrawal) | Press the "Cancel" key | System displays a cancellation message; transaction aborted; returns to the transaction menu or ejects card | The system displays a cancellation message, aborts the transaction, and either returns to the transaction menu or ejects the card. | RESOLVED |
| **12** | Transaction | System handles an invalid menu option | Menu of transactions being displayed | Press menu option that is not 1,2,3,4 | An appropriate message is displayed and re-entry of transaction type is again requested | The system dispenses $20 | IN-PROGRESS |
| **13** | Transaction Cancellation | Customer cancels any transaction | System displays any Transaction e.g Withdraw, Deposit, Money Transfer, Balance Inquiry | Press the "Cancel" key | System displays a would you like to do another transaction message | Spelling mistake would is spelled as “wood” | RESOLVED |
| **14** | Balance Inquiry | user selects Balance Inquiry | Menu of balance Inquiry | User presses 4 for balance inquiry | All accounts should be displayed | Only "Checking" and "Money Market" menu options are displayed. | RESOLVED |
| **15** | Invalid PIN Extension | Leading Zeros in PIN | System is asking for entry of PIN | For card 1 user enters 0042 | Card Ejection with error message "FAILURE invalid card" or "PIN was incorrect" | Card is accepted | IN-PROGRESS |
| **16** | Balance Inquiry | user selects money market | Menu of balance Inquiry | User presses 2 | Displays account information | Displays Unknown Error on the green screen and $500 appears right below the green screen and the receipt prints | IN-PROGRESS |
| **17** | Transaction | Transaction finished | System displays any Transaction e.g Withdraw, Deposit, Money Transfer, Balance Inquiry | User finishes a transaction | System displays a would you like to do another transaction message | Spelling mistake would is spelled as “wood” | RESOLVED |
| **33** | Inquiry | System asks customer to choose an account to inquire about | Menu of transaction types is being displayed | Choose Inquiry transaction | System displays a menu of account types | System displays incomplete menu of account types saving account missing | RESOLVED |
| **37** | Invalid PIN Extension | Correct re-entry of PIN is accepted | Request to re-enter PIN is being displayed | Enter correct PIN | Original transaction completes successfully | Requests to enter PIN again | RESOLVED |
| **39** | Invalid PIN Extension | Correct re-entry of PIN on the second try is accepted | Request to re-enter PIN is being displayed | Enter incorrect PIN first, then correct PIN | Original transaction completes successfully | Asks for pin again after correct PIN Second time | RESOLVED |
| **40** | Invalid PIN Extension | Correct re-entry of PIN on the third try is accepted | Request to re-enter PIN is being displayed | Enter incorrect PIN twice, then correct PIN | Original transaction completes successfully | Asks for pin again after correct PIN third time | RESOLVED |