

Operation	Test Case	Scenario	Expected Result
Login	Valid_Standard_Login	User logs in as a standard user.	Successfully logs in as a standard user. Accepts unprivileged transactions only.
	Valid_Admin_Login	User logs in as an admin.	Successfully logs in as an admin. Accepts all transactions.
	Invalid_Login_Type	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Missing_Session_Type	User omits the session type during login.	Error: "Session type is required. Please choose 'standard' or 'admin'."
	Standard_Login Without_Name	User logs in as a standard user without providing a name.	Error: "Account holder's name is required for standard login."
	Multiple_Logins	User tries to log in again without logging out.	Error: "You are already logged in. Please log out before starting a new session."
	Transaction_Without_Login	User tries to perform a transaction before logging in.	Error: "You must log in before performing any transactions."
	Admin_Transactions_After_Standard_Login	A standard user attempts privileged actions.	Error: "This action is not allowed in standard mode."
	File_Reading_After_Log in	System reads the current bank accounts file.	Successfully logs in and reads the current bank accounts file to begin accepting transactions.
Logout	Valid_Logout_After Standard_Login	Standard user logs out after a valid session.	Successfully logs out. Writes out the bank account transaction file. No transactions are accepted afterward except for login.
	Valid_Logout_After Admin_Login	Admin logs out after a valid session.	Successfully logs out. Writes out the bank account transaction file. No transactions are accepted afterward except for login.
	Logout_Without_Login	User tries to log out without being logged in.	Error: "You must log in before logging out."

	Logout_After_Admin_Login	Admin logs out and then attempts privileged actions.	Error: "You must log in before performing any transactions."
Withdrawal	Valid-Withdrawal_as_Standard_User	Standard user withdraws within the \$500 limit and valid account.	Successfully withdraws \$200.00. Updated account balance is displayed. Transaction information is saved to the bank account transaction file.
	Valid-Withdrawal_as_Admin	Admin withdraws money from a valid account for another user.	Successfully withdraws \$300.00 from Jane Smith's account. Updated account balance is displayed. Transaction information is saved to the bank account transaction file.
	Invalid_Login_Type_Transaction	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Exceeds_\$500-Withdrawal_Limit	Standard user tries to withdraw more than \$500.00 in one transaction.	Error: "Withdrawal limit exceeded. The maximum withdrawal amount is \$500.00 for standard users."
	Insufficient_Balance_for-Withdrawal	User tries to withdraw more than the available balance.	Error: "Insufficient balance. Your account balance is lower than the withdrawal amount."
	Account_Holder_Not_Found	User tries to withdraw from a non-existent account.	Error: "Account not found."
	Valid-Withdrawal_with_Zero_Balance	Standard user withdraws the entire account balance (leaving \$0.00).	Successfully withdraws the entire balance. Updated account balance is displayed as \$0.00. Transaction information is saved to the bank account transaction file.
	Withdrawal_After_Account_Disabled	User tries to withdraw from a disabled account.	Error: "The account is disabled and cannot perform transactions."
	Withdrawal_Without_Login	User tries to withdraw without being logged in.	Error: "You must log in before performing any transactions."

Transfer	Valid_Transfer_Standard_User	The standard user transfers money within the \$1000 limit.	Verify successful transfer when all inputs are valid and constraints are satisfied in standard mode.
	Valid_Transfer_Admin	Admin transfers money between two different accounts.	Verify successful transfer when logged in as admin and inputs are valid.
	Invalid_Login_Type_Transfer	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Exceeds_Session_Limit_Standard Mode	Standard user tries to transfer more than \$1000.00 in one transaction.	Ensure transfer fails if the amount exceeds the \$1000 session limit in standard mode.
	Insufficient_Balance_for_Transfer	User tries to transfer more than the available balance in the source account.	Error: "Insufficient balance. Your account balance is lower than the transfer amount."
	Invalid_From_Account	User tries to transfer from an invalid account.	Error: "The account number does not belong to the logged-in account holder."
	Invalid_To_Account	User tries to transfer money to an invalid account number.	Error: "The destination account number does not exist."
	Transfer_After_Account_Disabled	User tries to transfer money from a disabled account.	Error: "The account is disabled and cannot perform transactions."
Paybill	Valid_Bill_Payment_as_Standard_User	Standard user pays a bill within the \$2000 limit.	Successfully pays \$1500.00 to "The Bright Light Electric Company (EC)". Updated account balance is displayed. Transaction information is saved to the bank account transaction file.
	Invalid_Login_Type_Transaction	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."

	Valid_Bill_Payment_as_Admin	Admin pays a bill with all constraints met.	Successfully pays \$1000.00 to "Credit Card Company Q (CQ)". Updated account balance is displayed. Transaction information is saved to the bank account transaction file.
	Exceeds_\$2000_Payment_Limit	Standard user tries to pay more than \$2000.00 in one transaction.	Error: "Payment limit exceeded. The maximum payment amount is \$2000.00 for standard users."
	Insufficient_Balance_for_Payment	User tries to pay a bill greater than the available balance in the account.	Error: "Insufficient balance. Your account balance is lower than the payment amount."
	Invalid_Company_Name	User tries to pay a bill to an invalid company.	Error: "Invalid company. The company must be one of: 'The Bright Light Electric Company (EC)', 'Credit Card Company Q (CQ)', or 'Fast Internet, Inc. (FI)'"
	Payment_After_Account_Disabled	User tries to pay a bill from a disabled account.	Error: "The account is disabled and cannot perform transactions."
	Payment_Without_Login	User tries to pay a bill without logging in.	Error: "You must log in before performing any transactions."
Deposit	Valid_Deposit_as_Standard_User	Standard user deposits money into their valid account.	Successfully deposits \$500.00 into the account. Deposited funds are not available for use in the current session. Transaction information is saved to the bank account transaction file. Updated balance displayed (but funds not usable yet).
	Invalid_Login_Type_Transaction	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Valid_Deposit_as_Admin	Admin deposits money into the valid account.	Successfully deposits \$1000.00 into the account. Deposited funds are not available for use in the current session. Transaction information is saved to the bank account transaction file. Updated balance displayed (but funds not usable yet).

	Deposit_Into_Non-Existent_Account	The user tries to deposit into a non-existent account.	Error: "Invalid account number. The account does not exist."
	Deposit_with_Insufficient_Permissions	Non-admin tries to deposit into an account without permission.	Error: "Only an admin can perform this transaction."
	Deposit_Negative_Amount	User tries to deposit a negative amount.	Error: "Deposit amount cannot be negative."
	Deposit_After_Account_Disabled	User tries to deposit into a disabled account.	Error: "The account is disabled and cannot perform transactions."
	Deposit_with_Invalid_Account_Holder	Admin tries to deposit into an account that does not belong to them.	Error: "The account number does not belong to the logged-in account holder."
	Deposit_Without_Login	User tries to deposit without logging in.	Error: "You must log in before performing any transactions."
	Deposit_into_Zero_Balance_Account	User deposits money into an account with zero balance.	Successfully deposits \$200.00 into the account. Deposited funds are not available for use in the current session. Transaction information is saved to the bank account transaction file. Updated balance displayed.
	Deposit_After-Withdrawal_in_Same_Session	User deposits after making a withdrawal in the same session.	Successfully deposits \$300.00 into the account. Deposited funds are not available for use in the current session. Transaction information is saved to the bank account transaction file. Updated balance displayed.
	Valid_Deposit_with_Valid_Account_and_Non-Zero_Balance	Admin deposits into a non-zero balance account.	Successfully deposits \$500.00 into the account. Deposited funds are not available for use in the current session. Transaction information is saved to the bank account transaction file. Updated balance displayed.
	Deposit_After_Account_Disabled	Admin tries to deposit into a disabled account.	Error: "The account is disabled and cannot perform transactions."
Create	Valid_Create_Account_as_Admin	Admin creates a new account with valid details.	Successfully creates a new account with account holder "Alice Smith" and initial balance of \$500.00. Account number is unique. Information is saved to the bank

			account transaction file. This new account is not available for transactions in this session.
	Create_Account_with_Invalid_Admin_Login	Non-admin tries to create a new account.	Error: "Only admin users are allowed to create accounts."
	Invalid_Login_Type_Transaction	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Create_Account_with_Invalid_Account_Holder_Name	Admin tries to create an account with a name exceeding 20 characters.	Error: "Account holder's name must be at most 20 characters."
	Create_Account_with_Invalid_Initial_Balance	Admin tries to create an account with an initial balance exceeding \$99999.99.	Error: "Initial balance cannot exceed \$99999.99."
	Create_Account_Without_Login	User tries to create an account without being logged in as admin.	Error: "You must be logged in as admin to create an account."
	Create_Account_with_Zero_Balance	Admin creates an account with a zero initial balance.	Successfully creates a new account with account holder "Charlie Brown" and initial balance of \$0.00. Account number is unique. Information is saved to the bank account transaction file. This new account is not available for transactions in this session.
	Create_Account_with_Negative_Balance	Admin tries to create an account with a negative initial balance.	Error: "Initial balance cannot be negative."
	Create_Account_with_Special_Characters_in_Name	Admin tries to create an account with special characters in the name.	Error: "Account holder name cannot contain special characters."
Delete	Valid Delete Account as Admin	Admin successfully deletes an existing account.	Successfully deletes the account with account holder "Alice Smith" and account number "12345678." The account is no longer available for further transactions.

			Information is saved to the bank account transaction file.
	Delete_Account_with_Invalid_Admin_Login	Non-admin tries to delete an account.	Error: "Only admin users are allowed to delete accounts."
	Delete_Account_with_Invalid_Account_Holder_Name	Admin tries to delete an account with a non-existing account holder name.	Error: "Account holder name must match an existing account holder."
	Invalid_Login_Type_Transaction	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Delete_Account_with_Invalid_Account_Number	Admin tries to delete an account with an account number that doesn't match the holder's name.	Error: "Account number must match the account holder's account number."
	Delete_Account_and_Prevent_Further_Transactions	Admin deletes an account and then tries to perform transactions on that account.	Error: "No transactions can be performed on a deleted account."
Disable	Valid_Disable_Account_as_Admin	Admin successfully disables an existing account.	Successfully disables the account with account holder and account number. The account status is changed to disabled (D) and no further transactions are allowed on this account. Information is saved to the bank account transaction file.
	Disable_Account_with_Invalid_Admin_Login	Non-admin tries to disable an account.	Error: "Only admin users are allowed to disable accounts."
	Invalid_Login_Type_Transaction	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Disable_Account_with_Invalid_Account_Holder_Name	Admin tries to disable an account with a non-existing account holder name.	Error: "Account holder name must match an existing account holder."

	Disable_Account_with_Invalid_Account_Number	Admin tries to disable an account with an account number that doesn't match the holder's name.	Error: "Account number must match the account holder's account number."
	Disable_Account_and_Prevent_Further_Transactions	Admin disables an account and then tries to perform transactions on that account.	Error: "No transactions can be performed on a disabled account."
	Disable_Account_with_Invalid_Name_and_Number	Admin tries to disable an account with an invalid combination of name and account number.	Error: "Account holder name and account number combination is invalid."
ChangePlan	Valid_Change_Plan_to_Non-Student_as_Admin	Admin successfully changes the transaction payment plan for an account holder from student to non-student.	Successfully changes the transaction plan for the account with account holder and account number from student (SP) to non-student (NP). The change is saved in the bank account transaction file.
	Invalid_Login_Type_Transaction	User enters an invalid session type.	Error: "Invalid session type. Please choose 'standard' or 'admin'."
	Change_Plan_Without_Admin_Login	Non-admin tries to change the transaction payment plan of an account.	Error: "Only admin users are allowed to change account plans."
	Change_Plan_with_Invalid_Admin_Login	Admin tries to change the transaction plan for a non-existing account holder.	Error: "Account holder name must match an existing account holder."

	Change_Plan_with_Invalid_Account_Number	Admin tries to change the plan for an account holder with a mismatched account number.	Error: "Account number must match the account holder's account number."
	Change_Plan_with_Account_Not_in_Student_Plan	Admin tries to change the plan of an account that is already set to non-student.	Error: "Account is already set to non-student (NP). No change is needed."
	Change_Plan_With_Blank_Account_Holder_Name	Admin attempts to change the transaction payment plan but leaves the account holder name blank.	Error: <i>"Account holder name cannot be blank. Please enter a valid name."</i>