

CSCI 3060U – Course Project (Winter 2026)

Phase #3: Front End Requirements Testing

Group Members:

Mansi Kandoi - 100821953

Sneh Patel - 100950609

Jolly Soni - 100876863

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GitHub Repository:

<https://github.com/Jollysoni/SQA-2026>

Objective :

In this phase, the Front End prototype developed in Phase 2 was tested using the acceptance tests created in Phase 1. Automated scripts were used to execute and validate all test cases. Several failures were observed relating to transaction constraints, formatting, and validation logic. Each failure was analyzed and corrected, and all tests were re-executed until they passed successfully.

Failure Test Table :

Test Name	What Was Being Tested	Nature of Failure Observed	Error in Code	Action Taken to Fix
04_standard_withdrawal_at_500_limit	Standard user withdrawal limit (\$500)	Withdrawal above \$500 was recorded instead of rejected	Transaction was appended before validating session limit	Moved validation logic before creating Transaction object and added session_withdraw_total tracking
05_standard_withdrawal_above_500_rejected	Rejection of withdrawal exceeding limit	Console output showed "Withdrawal recorded" instead of error	No enforcement of withdrawal session limit	Implemented standard withdrawal limit check (max \$500 per session)
06_withdrawal_creating_negative_balance_rejected	Preventing negative account balance	Withdrawal allowed even when balance insufficient	No available balance tracking during session	Introduced available_balance's dictionary and added negative balance validation
08_deposit_not_available_within_same_session	Deposits should not be usable in same session	Withdrawal after deposit was allowed	Deposit increased session available balance	Removed balance update inside handle_deposit (deposit does not update available balance)
09_standard_transfer_up_to_1000_allowed	Transfer ATF formatting + misc field	ATF record incorrectly formatted (extra space and truncated misc field)	ATF record length incorrectly constructed (41 chars trimmed to 40)	Removed extra space before misc field in TransactionWriter and enforced exact 40-char format
10_standard_transfer_above_1000_rejected	Standard transfer limit (\$1000)	Transfer above \$1000 was recorded	No transfer session limit enforcement	Added session_transfer_total tracking and validation before recording

11_paybill_valid_company_within_limit	Valid paybill transaction with sufficient funds	Test failed due to insufficient balance	Test input used account with only \$1200 balance for \$2000 paybill	Corrected test input to use account 00201 (balance \$2500) and updated expected ATF file
12_paybill_invalid_company_rejected	Invalid company code rejection	Paybill recorded instead of rejected	No company code validation implemented	Added validation for company codes (EC, CQ, FI only)
13_paybill_above_200_rejected	Standard paybill limit (\$2000)	Paybill exceeding limit recorded	No session paybill limit enforcement	Added session_paybill_total tracking and validation
14_transaction_on_disabled_account_rejected	Disabled account protection	Withdrawal allowed on disabled account	No is_disabled() validation in AccountStore	Implemented is_disabled() method and added validation in transaction handlers
15_admin_withdrawal_from_other_user_account	Admin withdrawal validation	Ownership mismatch not properly validated	Missing cross-check between account holder name and account number	Added owner_name validation inside _reject_if_invalid_account_for_user()
Multiple Tests (initial runs)	ATF End-of-Session formatting	“00” record formatted incorrectly	TransactionWriter did not generate fully formatted fixed-width record	Rewrote TransactionWriter to enforce strict 40-character record format
Script Execution	Output comparison automation	Console outputs mismatched due to script naming issue (.out.out)	check_all.sh appended extension twice	Corrected filename handling in script

Test Summary Section :

- 1) Total acceptance tests executed: 20
- 2) Initial failing tests: 11
- 3) Types of failures encountered:
 - a) Missing session constraint enforcement
 - b) Incorrect ATF fixed-width formatting
 - c) Invalid company validation is missing
 - d) Negative balance protection is missing
 - e) Deposit availability logic is incorrect
 - f) Disabled account validation is missing
 - g) Incorrect test input (insufficient balance case)
 - h) Script filename handling error
- 4) All failures were corrected.
- 5) Final execution: **All 20 tests passed successfully.**
- 6) Both ATF outputs and console outputs match expected results using automated validation scripts.