



PARABANK TEST CLOSURE REPORT

SHARE THE PAIN AND FIND TOGETHER
THE SOLUTION

<https://parabank.parasoft.com/parabank>



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PROJECT OVERVIEW



ParaSoft Demo Website

ParaBank is a demo site used for demonstrations of Parasoft software solutions.

All materials herein are used solely for simulating a realistic online banking website.

In other words: ParaBank is not a real bank!

For more information about Parasoft solutions please



Protect Data



Enhance Reputation



Requirements

Registration Module

Authentication Module

Account Management Module
&
Transaction History

Profile Management Module &
Loan Management Module &
System Module



OBJECTIVE

Test Objective – Test Closure Phase (ParaBank Project)

The objective of the Test Closure phase for the ParaBank project is to formally conclude all testing activities by verifying that each requirement across all modules (Registration, Authentication, Account Management, Transaction History, Profile Management, Loan Management, and System Functions) has been fully validated, all test deliverables are completed, and the application meets the defined quality benchmarks for release.



- › **Validate Completion of All Testing Activities**
- › **Assess Test Results and Defect Metrics**
- › **Validate Requirement Coverage**
- › **Confirm System Readiness for Release**
- › **Produce Final Test Documentation**



Validate Completion of All Testing Activities

Ensure that every requirement defined in the ParaBank system, including REG, AUTH, ACC, TRX, PROF, LN, and SYS modules—has been fully covered by corresponding test cases, executed, and documented.

This includes:

- Registration (REG-001 to REG-040)
- Field validations, form behavior, submission rules, and error handling.
- Authentication & Password Recovery (AUTH-001 to AUTH-010)
- Login rules, credential validation, session handling, and recovery workflows.
- Account Management (ACC-001 to ACC-018)
- Overview accuracy, account creation, security actions, switching accounts, and statement generation.
- Transaction History & Transfers (TRX-001 to TRX-017)
- Filtering, transaction ID lookup, transfer validations, and account balance updates.
- Profile Management (PROF-001 to PROF-003)
- Updating personal info with validation and OTP-based security.
- Loan Management (LN-001 to LN-003)
- Loan input validation, down payment checks, and source account validation.
- System Controls (SYS-001 to SYS-005)
- Session termination, navigation behavior, and language support.



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Assess Test Results and Defect Metrics

- Confirm that all critical and high-severity defects are Discovered.
- Ensure retesting and regression testing have been completed.
- Verify that no open defects block core flows:
 - Login
 - Registration
 - Account operations
 - Transaction and balance updates
- Confirm defect logs, screenshots, and evidence are properly documented.



Validate Requirement Coverage and Acceptance Criteria

- Ensure traceability from requirements (REG-SYS) to test cases and actual results.
- Confirm that all functional, UI, usability, validation, negative, and security-related checks were executed.
- Validate that the system adheres to:
- Field validation rules
- Business logic rules
- Navigation rules
- Data accuracy rules
- Error-handling standards



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Confirm System Readiness for Release

- Based on executed tests and defect status:
- Assess overall product stability and readiness for deployment.
- Evaluate remaining risks and provide final go/no-go recommendations.
- Ensure no compliance or security-critical gaps remain (Sessions, OTP, Login, Transfers).



Produce Final Test Documentation

- Compile and deliver all closure documents, including:
- Test Execution Summary
- Defect Summary Report
- Test Evidence (screenshots)
- Environment & tool configuration details
- Lessons Learned (process improvements and gaps)

Ensure documents are archived for future regression or audit



Test planning & Tools

Phase	Date	Description
Requirement Analysis	22/09 – 29/09	Requirements collected, reviewed, and divided across the team.
Sprint Setup (JIRA)	29/09	Sprint created, and all tasks assigned to testers.
Manual Test Case Design & Execution Start	30/09	Testers began creating test cases and executing them module by module.
Weekly Team Meetings	Every Week (Saturday)	Team held weekly sync meetings to review progress, clarify requirements, discuss blockers, and align on next sprint goals.
Bug Reporting & Tracking	01/10 – 15/11	Defects logged continuously in JIRA throughout all sprints.
Regression & Retesting	05/11 – 12/11	Executed regression on core flows + retesting major fixes.
Final Consolidation & Documentation	15/11	All modules combined into the final Test Closure Report.

- Weekly meetings
- Tools (Jira , Excel , Google Docs , Discord , Github)



SCOPE

Registration Module (REG) – In Scope

Testing includes full coverage of:

- Access to registration page
- Form opening functionality
- Required fields verification
- All detailed field validation rules:

oLength rules

oFormat rules

oCharacter restrictions

oBlank-field handling

oLeading space validation

oError message specificity

- Username uniqueness and password rules
- Confirm-password matching
- Registration success flow
- Disabled register button until all validations pass

Requirements Covered: REG-001 to REG-040

AUTHENTICATION MODULE (AUTH) – IN SCOPE

TESTING INCLUDES:

- LOGIN WITH VALID AND INVALID CREDENTIALS
- ERROR HANDLING FOR BLANK FIELDS
- MANDATORY FIELD VERIFICATION IN PASSWORD RECOVERY
- RECOVERY USING REGISTERED VS. UNREGISTERED DATA
- SESSION PERSISTENCE AND LOGOUT BEHAVIOR

OUT OF SCOPE

- UI styling and layout testing.
- Performance, load, and stress testing.
- External email/SMS system performance (only functional check is included).
- Penetration testing and advanced security testing.

Requirements Covered: AUTH-001 to AUTH-010

Account Management Module (ACC) – In Scope

Testing includes:

- Display and correctness of Account Overview
- Account number formatting and links
- Real-time reflection of balances
- New account creation flow
- Freeze/close account actions with confirmation
- Account details page validation
- Multi-account handling and switching
- Default account behavior retention
- Account statements and filtering

Requirements Covered: ACC-001 to ACC-018



SCOPE

Transaction History & Transfer Module (TRX) – In Scope

Testing includes:

- New account creation (Savings / Checking, success message, account generation)
- Account Overview display (Account, Balance, Available Amount)
- Fund Transfer between accounts.
- Transaction history filters (Date, Date Range, Amount, Transaction ID)
- Account filtering and data validation.
- Account-to-same-account restrictions
- Balance updates for debit/credit after transfer
- Confirmation message and TRX logging
- Bill Pay Sending and Receiving Validation

Out of scope

- Backend database testing and verification.
- Integration with external payment gateways.
- Performance, Load, and Stress Testing
- Security penetration testing

Requirements Covered: TRX-001 to TRX-018

Profile Management Module (PROF) – In Scope

Testing includes:

- Pre-populated registration data
 - Field update validation (same rules as registration)
 - Successful profile update messages
- Out of scope
- OTP verification for phone/email/password updates

Requirements Covered: PROF-001 to PROF-003

System Module (SYS) – In Scope

Testing includes:

- Logout functionality
- Navigation via ParaBank logo
- Browser navigation handling (back/forward)
- Auto-logout on browser close
- Multi-language support

Requirements Covered: SYS-001 to SYS-005

Loan Management Module (LN) – In Scope

Testing includes:

- Loan amount field validation
- Down payment vs. loan amount rule
- Validation of source account balance for down payment

Requirements Covered: LN-001 to LN-003



TEST APPROACH

The testing approach is fully requirements-driven, ensuring every functional rule across all modules (REG, AUTH, ACC, TRX, PROF, LN, SYS) is validated. The goal is to confirm correct, secure, and reliable system behavior before release.

1. Requirements Coverage

All requirements (REG-001 to SYS-005) are covered through:

- Positive and negative testing
- Boundary value checks
- Error-handling verification
- A Requirement Traceability Matrix (RTM) ensures complete coverage.

2. Testing Method

A hybrid strategy is used:

- Manual testing for UI validation, form behavior, and exploratory checks
- Automation for stable, high-risk flows such as login, registration, account overview, and fund transfers—mainly for regression

3. Functional Areas Tested

- Registration: Field validation, username uniqueness, password rules
- Authentication: Valid/invalid login, recovery, session handling
- Account Management: Account details, creation, switching, statements
- Transactions: Filtering, numeric validation, balance updates
- Profile Management: Input validation for user updates
- Loans: Numeric rules and down-payment checks
- System: Session handling, navigation, browser behavior, language support

4. Risk-Based Prioritization

Highest priority is given to:

- Authentication
- Account access and balances
- Money transfers
- Security and session requirements

5. Test Data Strategy

Data sets include valid/invalid formats, unique usernames, varied account balances, boundary-value transactions, and recovery inputs.

6. Exit Criteria

Testing ends when:

- All requirements are covered
- All high/critical defects are fixed
- RTM is 100% complete
- All main flows (REG → AUTH → ACC → TRX → PROF) pass



TEST TECHNIQUES

1. Boundary Value Analysis (BVA)

Applied to validate numeric and character-based fields and system limits across multiple modules:

- Registration (REG):
 - oFirst Name, Last Name: 2–30 characters
 - oAddress: 10–45 characters
 - oCity & State: 2–20 characters
 - oZIP Code: 2–20 characters
 - oPhone Number: 12–15 digits
 - oPassword: 8–12 characters
- Transactions (TRX):
 - oTransfer Amount: lower boundary = 0 rejected, upper boundary = available balance accepted
- Loan Module (LN):
 - oLoan Amount & Down Payment: minimum/maximum values validated
- System Limits:
 - oMaximum number of accounts creation

2. Equivalence Partitioning (EP)

Used to group input data into valid and invalid classes for efficient coverage:

- Registration & Profile (REG, PROF):
 - oNames: alphabetic vs. numeric/special characters
 - oAddress/City/State: valid vs. invalid characters, blank, or leading space
 - oUsername: valid/invalid characters, uniqueness, and length
 - oPassword: valid combinations of letters, numbers, special characters
- Authentication (AUTH):
 - oValid/invalid username-password combinations
 - oPassword recovery with correct vs. incorrect customer data
- Transaction History & Transfers (TRX):
 - oNumeric vs. non-numeric amounts
 - oValid vs. invalid account selections
- Loan Module (LN):
 - oValid vs. invalid source account balances



TEST TECHNIQUES

3. Error Guessing

Applied to uncover hidden UI, workflow, and validation issues not explicitly covered by requirements:

- Registration & Profile (REG, PROF):
Special characters, spaces, blank entries, or partially completed forms
- Authentication (AUTH):
Repeated invalid logins, quick navigation, session persistence issues
- Account & Transactions (ACC, TRX):
Same-account transfer attempts
Freezing/closing accounts without confirmation
Unexpected sequence of multiple transfers or account switches
- System (SYS):
o Browser back/forward navigation after logout
Abrupt browser close to test session auto-logout

4. Exploratory Testing

Performed to evaluate behaviors of complex or dynamic features across modules:

- Default Account Selection & Multi-Account Handling (ACC):
Switching between Checking, Savings, and Loan accounts
Retention of default account selection during navigation and transactions
- Statement Filtering (ACC, TRX):
Applying multiple date ranges and transaction types
Behavior when no transactions match filters
- Profile & Security Features (PROF, AUTH, SYS):
OTP verification during password/email/phone updates
Temporary password generation & expiration
Multilingual support verification
- Loan Operations (LN):
Down payment handling edge cases and insufficient balance scenarios

Summary

- BVA ensures boundary correctness for numeric, character, and system limits.
- EP efficiently covers valid vs. invalid inputs across all fields and modules.
- Error Guessing identifies hidden defects, unusual workflows, and security/session gaps.
- Exploratory Testing validates unlisted or dynamic features to ensure robustness and usability.

This combination guarantees full requirement coverage, risk-based prioritization, and confidence in release readiness.



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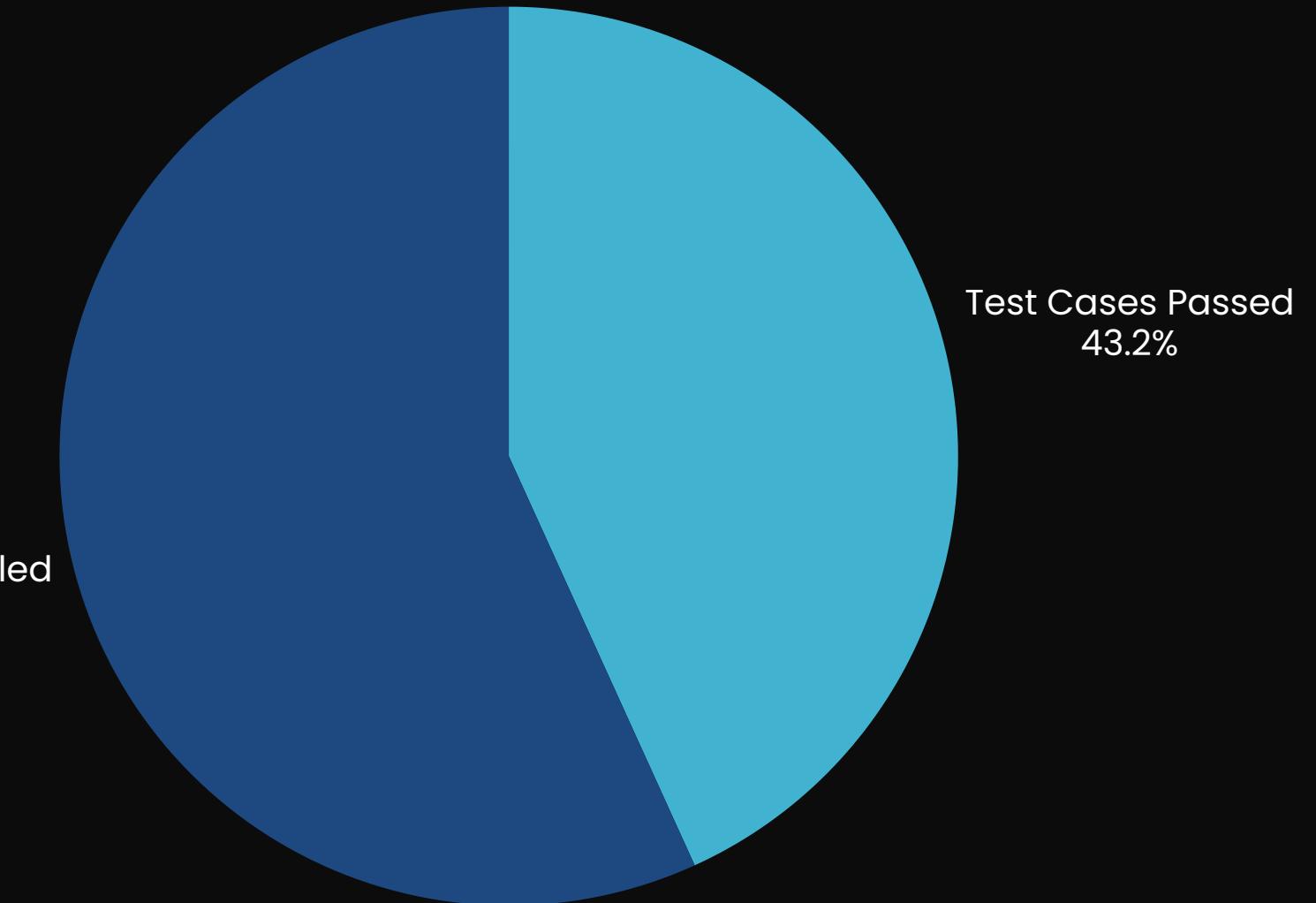
TEST EXECUTION SUMMARY

Registration Module

Total Test Cases 81
Test Cases Passed 35
Test Cases Failed 46
Test Cases Blocked 0
Pass Rate $35/81 \approx 43.70\%$
Total Defects Found 46

priority	Severity
High:15	Critical:0
Medium:66	Major:33
Low:0	Minor: 48

Test Cases Failed
56.8%



Test Cases Passed
43.2%

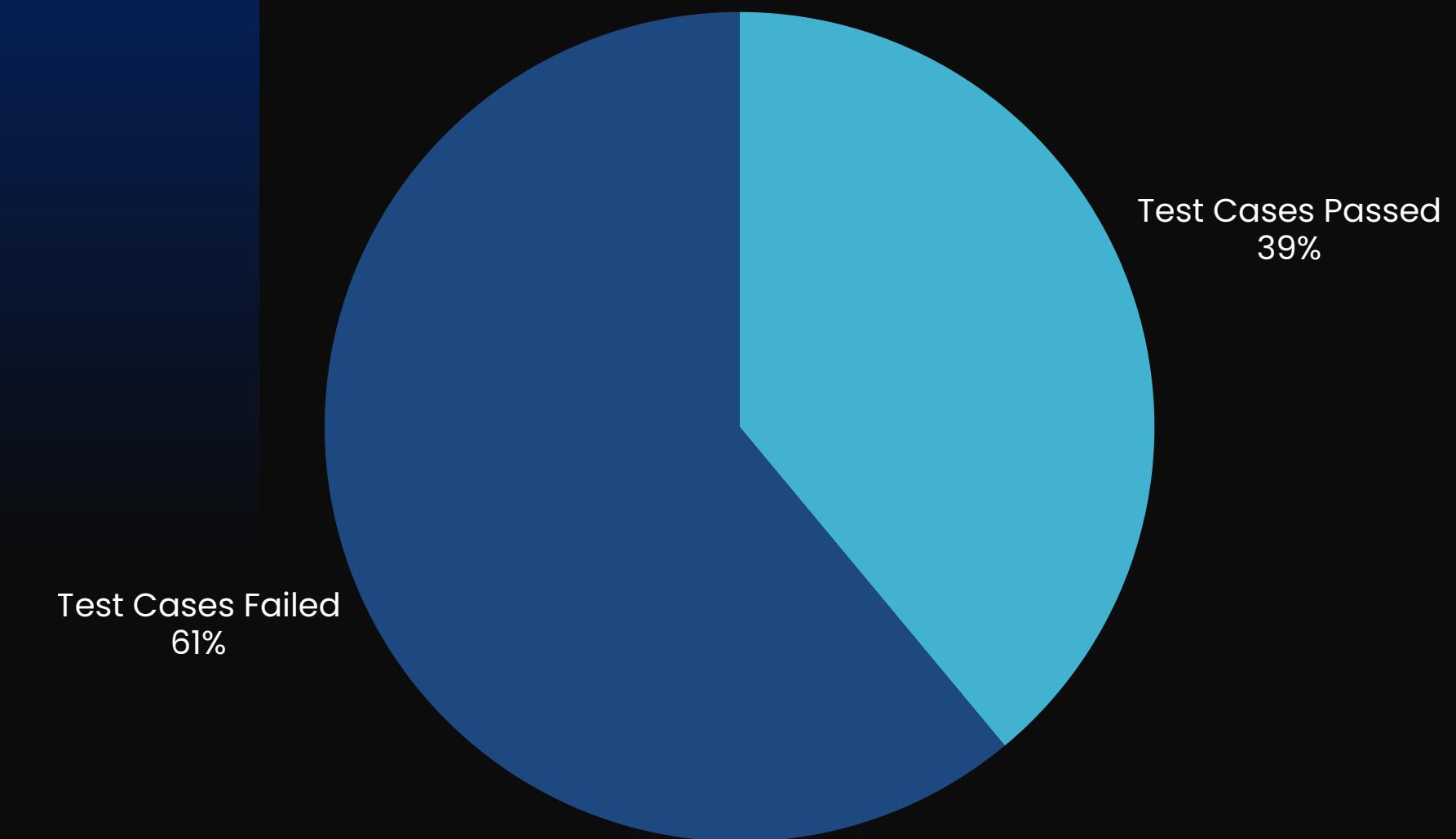


TEST EXECUTION SUMMARY

Authentication Module

Total Test Cases 77
Test Cases Passed 30
Test Cases Failed 47
Test Cases Blocked 0
Pass Rate $30/77 \approx 38.96\%$
Total Defects Found :42

Priority	Severity
High:43	Critical:21
Medium: 31	Major:48
Low:3	Minor: 8





TEST EXECUTION SUMMARY

Account & Transaction Module

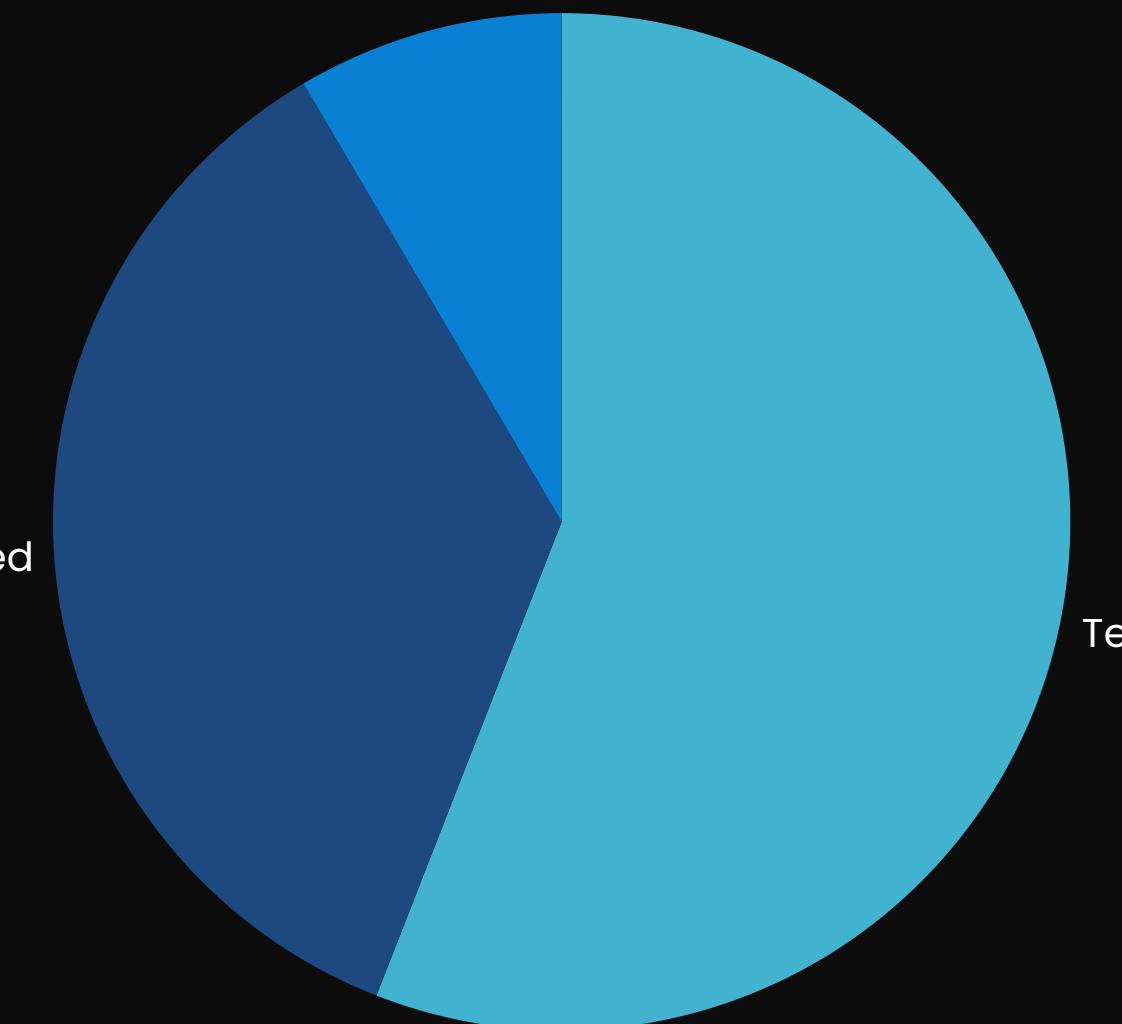
Total Test Cases 60
Test Cases Passed 33
Test Cases Failed 21
Test Cases Blocked 5
Pass Rate $33/60 \approx 55\%$
Total Defects Found 21

Priority	Severity
High:41	Critical:13
Medium: 18	Major:39
Low:1	Minor: 8

Test Cases Failed
35.6%

Test Cases Blocked
8.5%

Test Cases Passed
55.9%



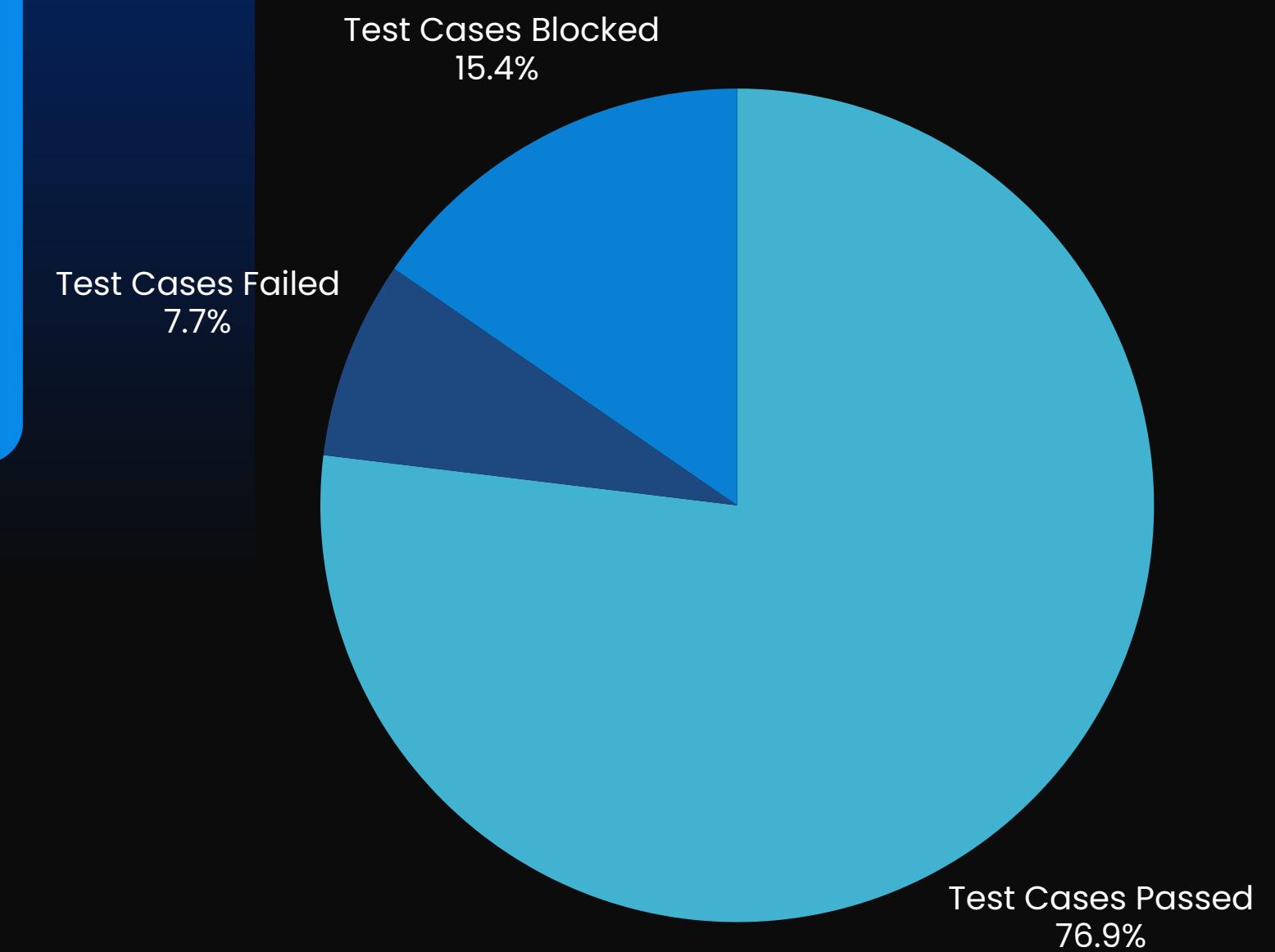


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TEST EXECUTION SUMMARY

Profile & loan & System module

Total Test Cases 26
Test Cases Passed 20
Test Cases Failed 2
Test Cases Blocked 4
Pass Rate $20/26 \approx 76.92\%$
Total Defects Found 2



<u>Priority</u>	Severity
High:19	Critical:7
Medium: 6	Major:15
Low:1	Minor: 4

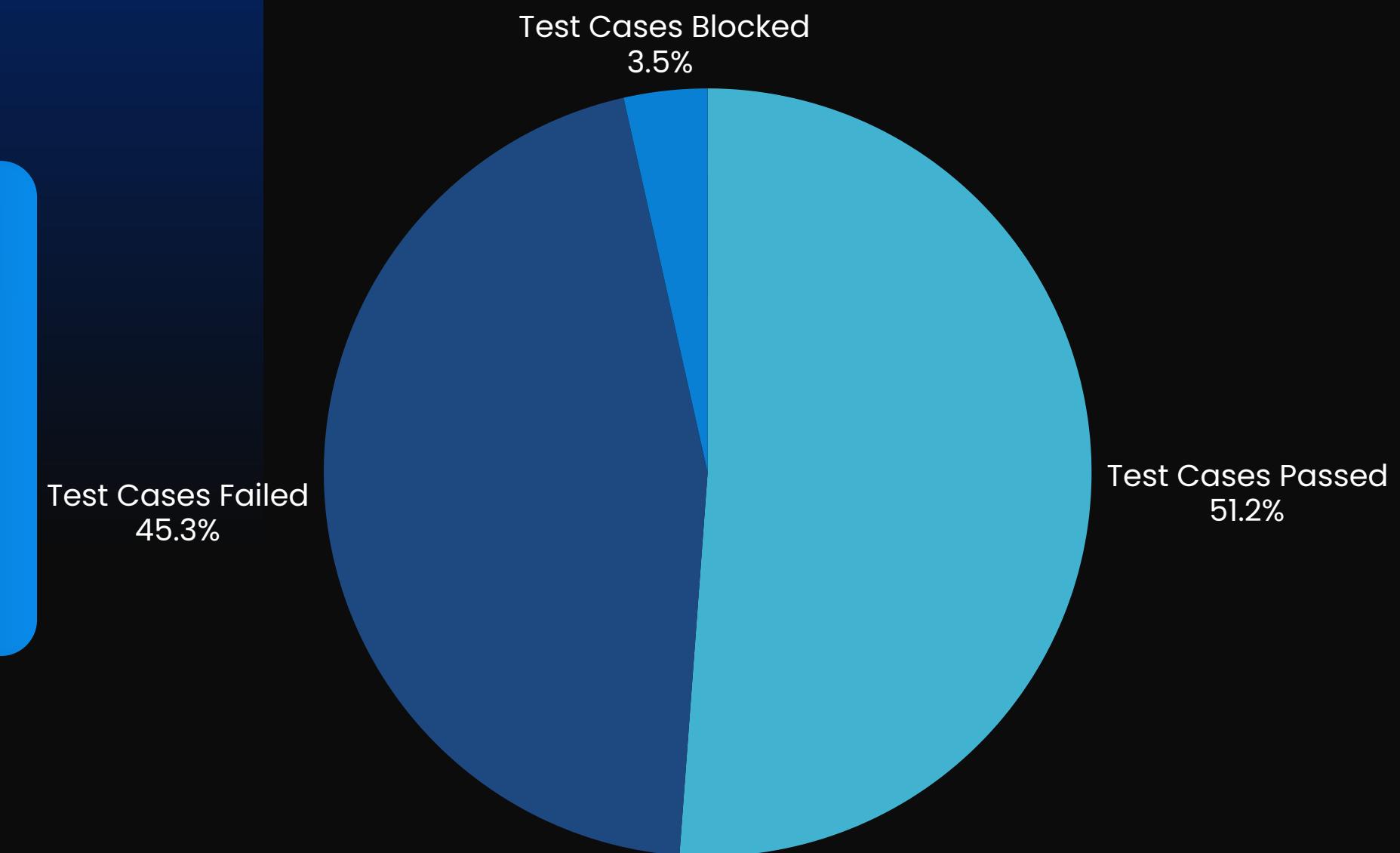


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TEST EXECUTION SUMMARY

Over All

Total Test Cases 256
Test Cases Passed 131
Test Cases Failed 116
Test Cases Blocked 9
Pass Rate 53.7%
Total Defects Found 111





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SPECIAL THANKS FOR OUR INSTRUCTOR ENG \ ABDELRAHMAN RAMADAN



Falcon Testing team.GIT

