SouthWest Bank - Test Plan

Purpose:

This Test Plan document for "**SouthWest Bank - A Secure Banking System**" will be used to document and define the testing approach and plan in regards to an overall project as well as identify which testing phases and types of testing will be required.

Scope:

SouthWest Bank website will be used by the bank employees and customers for basic banking functionalities. This application uses Java, Spring STS, Apache Tomcat and MySQL database

The below sections are considered as in scope for testing.

Functional requirements:

- Login functionalities
- Bank employee(regular user) functionalities
- Bank manager functionalities
- External User(Customer) functionalities
- Merchant functionalities

Security requirements:

- Secure login
- Cross site scripting
- SQL injection
- URL manipulation

Intended audience:

- Team members(Developers) to understand, design and develop the application and also to plan and manage the project activities
- Team members(Testers) to develop the test data and test the application

Reference documents:

- Software requirements and specification
- UML Diagram
- Class Diagram
- Database schema
- User guide

Preparation of Test cases and Test data:

- The test cases shall be prepared based on the requirements in the SRS
- The test data will be prepared once the environment is ready for testing

Test execution flow:

5 cycles of testing shall be done

- Cycle 1: System testing: Testing of all functional requirements in section
- Cycle 2: Security testing: Testing of all security requirements listed in section
- Cycle 3: Defect retesting: Once the defects found in Cycle 1 and 2 are fixed, they shall be retested.
- Cycle 4: Regression testing: After Cycle 3, regression testing shall be performed to test all the functional and security requirements
- Cycle 5: Once all the defects found in the regression testing is fixed one more round of testing shall be done

Assumptions:

- Only the requirements listed in the SRS shall be tested
- Testing shall be done only on desktop PC browsers
- Test cases will over only the requirements in scope
- Any defects found in the third party applications would not be considered as defects but will still be tracked.

Test Deliverables

- Test Plan
- Test cases
- Defect report
- Test execution report

Defect management

All defects shall be logged and tracked to completion for all the 5 cycles of testing

Test cases:

1. Login Functionalities – Common for all users		
Step	**Expected result**	
1.1 User enters correct username and password	User should be able to login successfully and the home page should be displayed	
1.2 User enters incorrect username/password	An appropriate alert message should be displayed	
1.3 User enters invalid characters, empty input, garbage data, very long inputs etc.(negative testing)	Appropriate error message should be displayed	
1.4 User clicks on forgot password link	An email with the password should be sent to the email id setup for the user account	
1.5 User enters incorrect username/password for 3 times	The user account should be disabled(locked) for 2 hrs and an appropriate message should be displayed	
1.6 User tries using the autofill option in the browser	The user should not be allowed to use the autofill username/password fields	
1.7 User enters username	User should be able to type in	

password using the onscreen keyboard	successfully using the on-screen keyboard	
1.8 User opens a new tab when logged into his account	A new login window should be displayed	
1.9 User tries to copy-paste the password into the field	The user should not be able to paste the password	
Recorded by:		

2. Regular Employee functionalities		
Step	**Expected result**	
2.1 Regular Employee logs in with correct username and password	The user should be presented with the home page with the following sections 1. Pending transactions pool 2. Simple search box find user profiles 3. Pending account updates list 4. Create new user accounts	
2.1 User clicks on a transaction in the transaction list	More details about the transaction should be displayed with the following options 1. Verify 2. Approve 3. Decline(with message)	
2.2 The user clicks on the Verify button for the transaction	The user should be presented with the message whether the current transaction can go through or not(based on the balance)	
2.3 The user clicks on Approve button for the transaction(for customer's first third-party transfer)	If the transaction satisfies all conditions, a success message should be displayed to the user, an email confirmation should be sent to the requestor(customer) If there are any issues with the transaction, the user should be displayed the appropriate message and the option to decline the transaction should be displayed	
2.4 The user clicks on Decline button for the transaction	The user should be able to type in the reason for declining the transaction, once the submit button is clicked, a notification	

	should be sent to the customer with the user's message	
2.5 User clicks on a pending profile update request (from the customers)	More details about the request should be displayed with current data and new changes the following options 1. Approve 2. Decline(with message)	
2.6 User clicks on Approve button for the selected pending request	The changes should be saved in the database and a notification should be sent to the customer	
2.7 User clicks on the Decline button for pending request	The user should be able to type in the reason for declining the request, once the submit button is clicked, a notification should be sent to the customer with the user's message	
2.8 The user searches for the customer and requests for the customer's account preference update using the "Request Access" button	The request should be sent to the user. once the user approves it, the "Edit" button should be enabled for the bank employee.	
2.9 The user clicks on the edit button for the user, makes the changes and clicks on "Update"	The request should be forwarded to the manager Once the manager approves, changes should be saved, the customer should be notified and the "Edit" button should be disabled.	
2.10 The user clicks on the "Create New User" button	The user should be provided with the page to enter all details related to the new user account	
2.11 User fills in all the details for the new account creation and clicks on the "Submit" button	The new user account request should be sent to the manager should be created and the customer should be able to login to the account	
Recorded by:		

3. Manager functionalities		
Step	**Expected result**	
3.1 Manager logs in with correct username and password	The user should be presented with the home page with the following sections 1. Pending transactions pool 2. Search box find user profiles 3. Pending account updates list 4. Approve new User accounts list 5. Savings account requests from customers	
3.2 The user searches for the customer and requests for the customer's account preference update using the "Request Access" button	The request should be sent to the user. once the user approves it, the "Edit" button should be enabled for the bank employee.	
3.3 The user clicks on the edit button for the user, makes the changes and clicks on "Update"	The request should be forwarded to the manager Once the manager approves, changes should be saved, the customer should be notified and the "Edit" button should be disabled.	
3.5 User clicks on a transaction in the transaction list (for customer's first third-party transfer)	More details about the transaction should be displayed with the following options 1. Verify 2. Approve 3. Decline(with message)	
3.6 The user clicks on the Verify button for the transaction	The user should be presented with the message whether the current transaction can go through or not(based on the balance)	
3.7 The user clicks on Approve button for the transaction	If the transaction satisfies all conditions, changes should be made, a success message should be displayed to the user, an email confirmation should be sent to the requestor(customer) If there are any issues with the transaction, the user should be displayed the appropriate message and the option to decline the transaction should be displayed	

3.8 The user clicks on Decline button for the transaction	The user should be able to type in the reason for declining the transaction, once the submit button is clicked, a notification should be sent to the customer with the user's message	
3.9 User clicks on a pending profile update request (from the customers)	More details about the request should be displayed with current data and new changes the following options 3. Approve 4. Decline(with message)	
3.10 User clicks on Approve button for the selected pending request	The changes should be saved in the database and a notification should be sent to the customer	
3.11 User clicks on the Decline button for pending request	The user should be able to type in the reason for declining the request, once the submit button is clicked, a notification should be sent to the customer with the user's message	
3.12 User clicks on a pending new account creation and clicks on "Approve"	The new user account should be created and the customer should be able to login to the account	
3.13 User clicks on a pending new account creation and clicks on "Decline"	The new user account should not be created.	
3.14 User clicks on a pending new customer savings account request and clicks on "Approve"	The new savings account should be added to the customer's user account	
3.15 User clicks on a pending new customer savings account request and clicks on "Decline"	The new savings account should not be added to the customer's user account and the customer should be notified	
3.16 User clicks on a pending remove customer savings account request and clicks on "Approve"	The savings account for the customer should be made as inactive	
3.17 User clicks on a pending remove customer savings account request and clicks on "Decline"	The savings account should not be changed	
Recorded by:		

4. System Admin functionalities		
Step	**Expected result**	
4.1 System admin logs in with correct username and password	The user should be presented with the home page with the following sections 1. Console to create, update employee, manager accounts 2. View system logs 3. Extract PII	
4.2 User clicks on the 'Create Employee' button	The user should be provided with the page to put in details to create a new employee.	
4.3 User selects the employee from the current list and clicks on update	The user should be able to update the employee account information. The changes should be reflected on the employee account	
4.4 User clicks on the view logs button	The user should be able to view and download the detailed system logs	
4.5 User clicks on the pending PII request and clicks on approve	PII should be extracted and should be available for the government user login	
4.6 User selects the customer from the customer from the PII search results and click on extract button	The user's request should be sent for government authorisation and should be displayed in the pending PII section for the government user login should be able to view/download the PII information for the customer.	
4.7 The government user approves the PII requested	The request result is displayed in the PII section for the System admin	
Recorded by:		

5. External User(Customer) functionalities		
Step	**Expected result**	
5.1 Customer logs in with correct username and password	The user should be presented with the home page with the following sections 1. Account information section 2. Transfers - Personal 3. Transfers - Third party 4. Account preferences 5. Approve account updates 6. Create/edit savings account	
5.2 User clicks on the account information section	The following information should be displayed in the account information section 1. View balance 2. View Statement	
5.3 User clicks on the View balance button	The latest balance should be displayed on the page	
5.4 User clicks on the View statement button	The pdf of the account statement should be displayed. The user should be allowed to download the statement	
5.5 The user clicks on the dropdown “Transfer To” in the Transfers-personal section	The list of bank accounts associated with the user should be displayed	
5.6 The user clicks on the dropdown “Transfer To” in the Transfers-third party section	If any previous user has been registered, the list should be displayed in the dropdown. or else the option to add a new beneficiary should be displayed	
5.7 The user clicks on the add new beneficiary and enters the new beneficiary details, amount to be transferred and clicks on submit	Since the beneficiary is a new one, it must be placed into the transaction pool for the regular employee. Once the bank employee approves it, the transaction should be completed and the changes should reflect in the balance and the statement	
5.8 For a registered beneficiary, transfer an amount greater than the set limit	The transaction should go into the transaction pool for the bank employee, once he approves it, the transaction completes	
5.9 For a registered user the user transfers the the amount below the critical limit	The user should be able to complete the transaction successfully if the sufficient balance is available	
5.10 The user clicks on the edit	All the fields in the account	

account preference button in the account preference section	preference section should be made editable	
5.11 User makes changes in the account preference section and clicks on submit	Once the user submits, if any sensitive data has been changed, the request shall be sent to the bank employee for the approval. If not sensitive data, it shall be updated immediately	
5.12 User clicks on the approve button for the account info update initiated by the bank employee	The account info process should continue and the update should be reflected in the account info section	
5.13 The user clicks on the create savings bank account and enters all the details required for a bank account and clicks submit	The request should be sent to the bank manager for approval. Once approved the new bank account should be displayed in the account info section and all the info like balance, statement should be available for the new account	
5.14 The user selects the savings bank account and clicks on the edit bank account to close the savings account and submit it for approval	Once the bank manager approves the changes should reflect in the user's page. The balance amount should be transferred to the primary/checking account	
Recorded by:		

6. Merchant functionalities		
Step	**Expected result**	
6.1 Merchant logs in with correct username and password	The user should be presented with the home page with the following sections 1. Account information section 2. Transfers - Personal 3. Transfers - Third party 4. Account preferences 5. Approve account updates 6. Create/edit savings account 7. Accept money	
6.2 User clicks on the View balance button	The latest balance should be displayed on the page	
6.3 User clicks on the View statement button	The pdf of the account statement should be displayed. The user should be allowed to download the statement	
6.4 The user clicks on the dropdown “Transfer To” in the Transfers-personal section	The list of bank accounts associated with the user should be displayed	
6.5 The user clicks on the dropdown “Transfer To” in the Transfers-third party section	If any previous user has been registered, the list should be displayed in the dropdown. or else the option to add a new beneficiary should be displayed	
6.6 The user clicks on the add new beneficiary and enters the new beneficiary details, amount to be transferred and clicks on submit	Since the beneficiary is a new one, it must be placed into the transaction pool for the regular employee. Once the bank employee approves it, the transaction should be completed and the changes should reflect in the balance and the statement	
6.7 For a registered beneficiary, transfer an amount greater than the set limit	The transaction should go into the transaction pool for the bank employee, once he approves it, the transaction completes	
6.8 For a registered user the user transfers the the amount below the critical limit	The user should be able to complete the transaction successfully if the sufficient balance is available	
6.9 The user clicks on the edit account preference button in the account preference section	All the fields in the account preference section should be made editable	
6.10 User makes changes in the account preference section and clicks on submit	Once the user submits, if any sensitive data has been changed, the request shall be sent to the	

	bank employee for the approval. If not sensitive data, it shall be updated immediately	
6.11 User clicks on the approve button for the account info update initiated by the bank employee	The account info process should continue and the update should be reflected in the account info section	
6.12 The user clicks on the create savings bank account and enters all the details required for a bank account and clicks submit	The request should be sent to the bank manager for approval. Once approved the new bank account should be displayed in the account info section and all the info like balance, statement should be available for the new account	
6.13 The user selects the savings bank account and clicks on the edit bank account to close the savings account and submit it for approval	Once the bank manager approves the changes should reflect in the user's page. The balance amount should be transferred to the primary/checking account	
6.14 Merchant clicks on a transaction in the transaction list.	The merchant can either 1. Approve (or) 2. reject	
6.15 The Merchant clicks on the approve button for the transaction review request	The transaction should proceed and the money should be transferred to the merchant's account	
6.16 The merchant clicks on the decline button for the transaction review request	The transaction should not proceed and a message should be sent to the customer	
Recorded by:		

7. Security Testing Test Cases		
Step	**Expected result**	
7.1 Connect to the application website using https://…. on the web browser(Test for SSL)	The website should load up with the signed certificate.	
7.2 Open a known application url in a new tab when a current tab has a valid session (Test for single session)	If the url belongs to a different user role, it should not load, instead a standard error message should be displayed	
7.3 Login and then Logout of the application and try to access any of the known application URLs (Test for session invalidation)	Login page should be displayed.	
7.4 Access any of the known application URLs without logging into the application	Login page should be displayed	
7.5 Add or remove characters from the URL and try to access the higher level folders in the website	An error message should be displayed	
7.6 Apply SQL injection on the fields which are linked to SQL queries	An appropriate error message should be displayed	
7.7 Enter non-alphanumeric characters like some script in the username textbox of login page.	Non-alphanumeric characters should be filtered out before processing the request.	
7.8 Check if autocomplete is done for username/password.	Autofill shouldn't be done.	
7.9 In transfer page, add negative transfer amount or any amount above the balance amount.	An appropriate error message should be displayed.	
7.10 Try multiple failed login attempts.	The user account should be locked and the webpage should be redirected to reset process	
7.11 Analyze Error messages	Any error message shouldn't reveal information which could break the system.	
Recorded by:		

8. Government Agent Login		
Step	**Expected result**	
8.1 Government agent logs in with correct username and password	The user should be presented with the home page with the following sections 1. Accept PII request from System admin	
8.2 The user clicks on approve for a PII request from the System admin	The system admin should be able to view the requested PII information	
8.3 The user clicks on approve for a PII request from the System admin	The system admin should not be able to view the requested PII information	
Recorded by:		