

SouthWest Bank

A Secure Online Banking

USER GUIDE

GROUP 15

VERSION 1

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1. OVERVIEW OF THE USER GUIDE

1.1 PURPOSE OF THE USER GUIDE

The User guide serves as a manual to help guide the users with the proper documentation so as to use the product in a step by step procedure.

This also serves as a document which would help in navigating through the website which would otherwise be a more tedious operation when used without.

1.2 HOW TO USE THIS GUIDE

This guide can be used in a page specific manner where each of the specific page is printed out with appropriate screenshots in convenience with the end user in perspective.

To use a specific page the user need to go to the particular page and follow the instructions given accordingly.

2. OVERVIEW OF THE SYSTEM

2.1 INTRODUCTION

Welcome to the Secure Online Banking System.

We are proud to have you as part of the most secure online banking systems. Now you can manage your finances with just a few clicks, wherever you are, whenever you want.

We offer you real time account management, fund transfers and other tools in a safe and secure manner all from your favourite browser.

Safe

By using SSL in our site, we take pride in saying that all the transactions happen in the most secure fashion. Our security features are designed to thwart any hacking attempts. Any attempt for illegal access will be notified immediately via email.

Fast

With our Online Banking System, you can be assured that all transactions are performed in real time and you get instant email notifications.

Convenient

By going online we have made the banking experience a very convenient option where you don't need to leave your place to access banking functionalities. All the pages are very user-friendly and easy to navigate.

For any other assistance call 1-800-555-1234.

Triple security system

We are proud to announce that we have the Triple security system in place when you use our online banking system.

1. SSL Encryption
2. Unique code during login (optional)
3. Logout based Inactivity Timeout.

With these three systems in place, you are assured a very secure banking experience.

3. WEB PAGES

3.1 LOGIN

This is a page which would be common for all the Users - internal ones (regular employees, bank manager and System Administrator) as well as external ones (end users and the Merchants).

Here the user gets to enter his email and password for authentication. User clicks the “Login” button to authenticate with the system. He can enter both the username and password using the virtual keyboard as well.

1. User accesses site using the site url <https://group15.mobicloud.asu.edu>
2. User is presented with the login page where he has provision for typing in username and password field, Captcha and Login button.
3. User clicks the submit/login/button for authentication.
4. Start login with user “sysadmin” and password “Password@123”

(For testing purpose, a test Manager and a few test Employee accounts are created and the details are below in Username / Password format. It is strongly recommended that users create new Employee accounts for testing)

TestEmployee1 / TestEmployee@1 [Internal Employee 1]

TestEmployee2 / TestEmployee@2 [Manager]

TestEmployee3 / TestEmployee@3 [Internal Employee 2]

If you need to reset any of the above email ids, contact us at southwestbank.tech@gmail.com

The image shows a web browser window with a login form. The form is titled "Login" and contains three main sections: "UserName:" with a text input field, "Password:" with a text input field, and a CAPTCHA section titled "Are you a Sun Devil?". The CAPTCHA section displays a grid of characters and a "Refresh" button. Below the CAPTCHA is another text input field labeled "Enter Captcha". At the bottom of the form are two buttons: "Login" and "Reset Password".

Fig 3.1.1 Login Page

“Reset password” button is for the cases where the user has forgotten his password and wants to generate a new one.

1. User clicks on the the link of Reset password button.
2. User has to enter the OTP key which he receives in his email.
3. User clicks Login button for authentication.



Reset Password

Home Logout

Email:

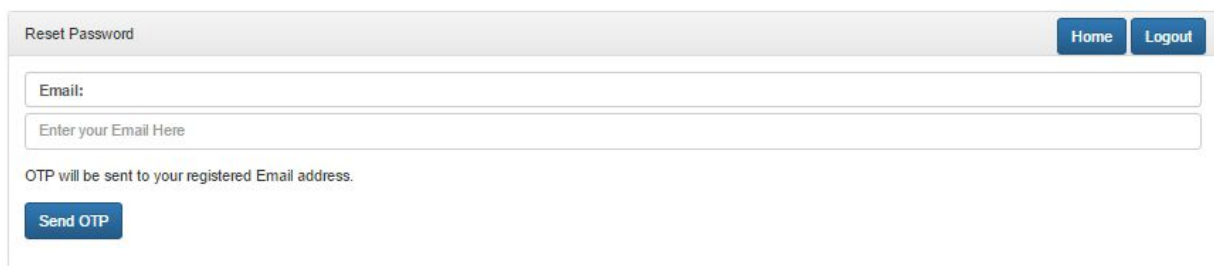
Enter your Email Here

OTP will be sent to your registered Email address.

Send OTP

Fig 3.1.2 Reset Password

After the user hits Reset password, the user is prompted to enter the OTP generated.



Reset Password

Home Logout

Email:

Enter your Email Here

OTP will be sent to your registered Email address.

Send OTP

Fig 3.1.3 OTP entry window

When the User enters wrong password for 3 times, he gets locked out for the next 1 hour.

1. User logs onto site.
2. User enters username
3. User enters wrong password or wrong captcha 3 times in total.
4. User gets locked out with prompt message.

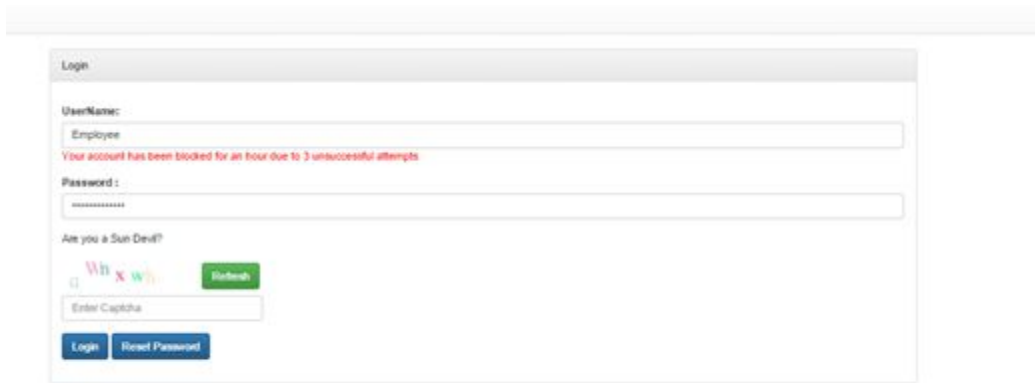


Fig 3.1.4 Locked Account .

3.2 REGULAR EMPLOYEE

Regular employee is one who works like a normal employee performing the day to day transactions like approving the customer's transactions, editing/viewing his profile, perform new customer/merchant registration, show the pending transactions, search users by account numbers etc. He has few web pages he can access from.

When regular employee logs into his account he gets list of options that he can perform

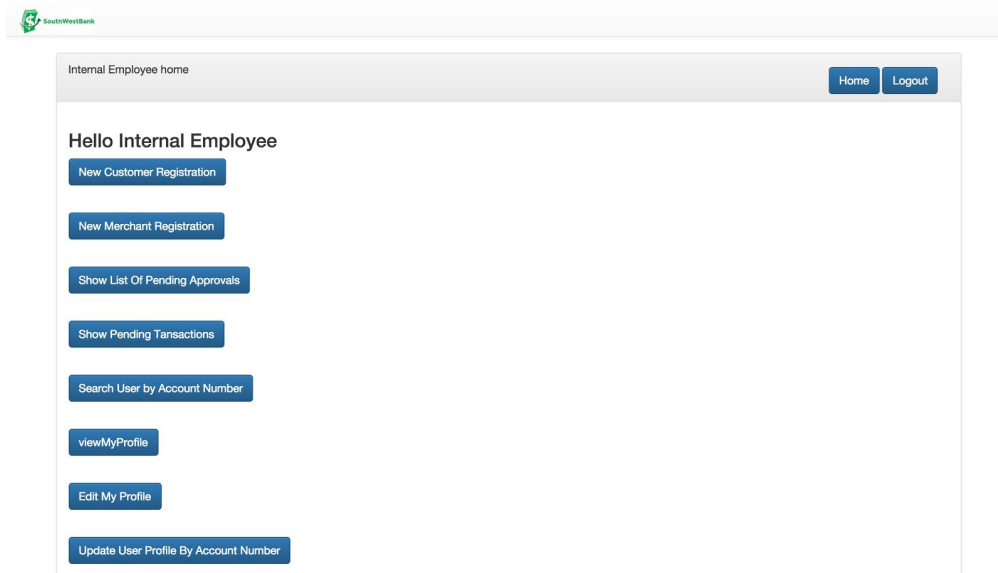


Fig 3.2.1 Regular Employee Homepage

1. Regular employee has a table where he views the pending transactions from the pool.
2. He selects 1 of the transactions and then clicks approve/decline button.

Fig 3.2.2 PKI verification to access pending approvals (Step 1)

Page 7

Fig 3.2.3 PKI verification to access pending approvals (Step 2).

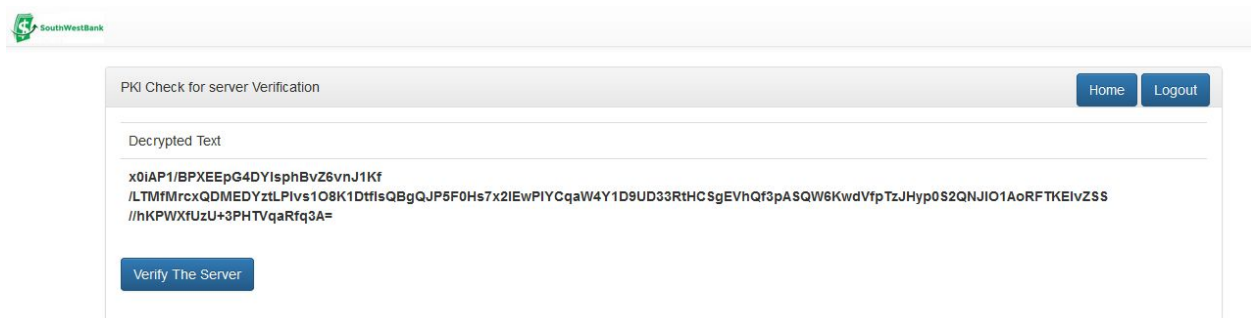


Fig 3.2.4 PKI verification to access pending approvals (Step 3)

After PKI verification is successful employee will see the list of pending transactions approval if there are any.

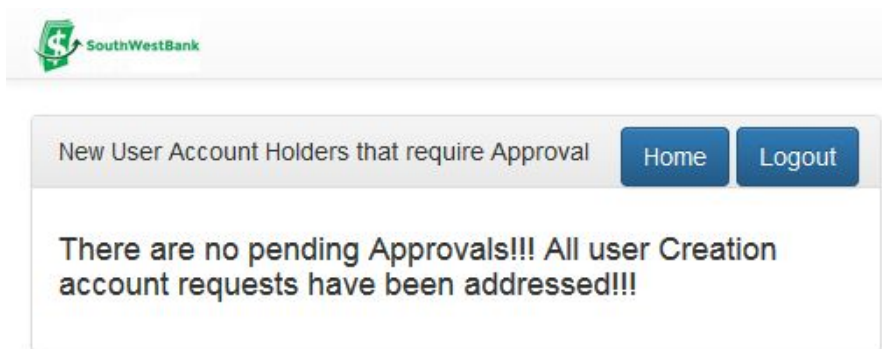


Fig 3.2.5 Pending approvals page (case: No pending approvals)

View my profile allows internal employee to see his own profile and option Edit my profile allows internal employee to access his own profile and make the necessary and allowed changes in it.

The figure consists of two side-by-side screenshots of a web application interface for SouthWestBank. Both screenshots have a header with the bank's logo and navigation links for 'Home' and 'Logout'.

The left screenshot, titled 'User Information', displays a form with the following fields and values:

- Bank User Id:** 987477
- Username:** raghav
- E-mail:** mahathi.shakthi@gmail.com
- First Name:** Raghav
- Last Name:** Shakthidharan
- Date of Birth (yyyy/mm/dd):** 1993/12/19
- Phone Number:** 815645648
- Mailing Address:** 32480, Willoughby road
- Residential Address:** 32480, Willoughby road

The right screenshot shows the same form but in an 'Edit' state. It includes an 'Update' button at the bottom. The values in the fields are identical to the left screenshot.


Fig 3.2.7 View and Edit My profile

Search user by account number is a section where regular employee can search external user of bank if he knows the account number of user.

The figure shows a single screenshot of a web application interface titled 'Search for User'. It includes navigation links for 'Home' and 'Logout'.

The main section is titled 'Enter the account Number' and contains a text input field with the placeholder text 'Enter the account Number you want to retrieve the details for'. Below the input field is a 'Search' button.

Fig 3.2.8 Search user by account number




View User Details [Home](#) [Logout](#)

User Information	
Bank User ID	987478
Username	chi
Email	chithras.1963@gmail.com
First Name	Chithra
Last Name	Shakthidharan
Date of Birth	1963-05-23 00:00:00.0
Phone Number	484561
User Created on Date	2015-10-25 03:07:11.0
Account Status	Active
Mailing Address	32480,Willoughby roaad
Residential Address	32480,Willoughby roaad
Assigned to Employee	raghavs

Fig. 3.2.9 View user details

Edit user accounts is a section where the regular employee can access the user details for viewing and also for modification.

1. Regular employee searches for the required user to access his details by entering the name
2. He requests for access and the request goes to the External user.
3. Upon External User's authorization, the regular employee can view/access the external user's details.
4. He can now modify the details as required.
5. He then clicks the update button.



Search Results [Home](#) [Logout](#)

User Details

Bank User ID	987478
Username	chi
E-mail	<input type="text" value="chithras.1963@gmail.com"/>
Phone Number	<input type="text" value="484561"/>
First Name	<input type="text" value="Chithra"/>
Last Name	<input type="text" value="Shakthidharan"/>
Date of Birth(Enter in Format("MM-dd-yyyy"))	<input type="text" value="06/23/1963"/>
Residential Address	<input type="text" value="32480,Willoughby roaad"/>
Mailing Address	<input type="text" value="32480,Willoughby roaad"/>

[Update](#) [Reset](#)

Fig 3.2.10 User account modification.

Regular employee can create new external user accounts and send to manager for approval.

1. Regular employee enters the details of the user to create the account.
2. He chooses the type of account to create.
3. He hits create button.
4. New user account will be created after manager's approval.

Create a New Customer

HomeLogout

Username

Enter User Name

Email

Enter Email Id

Phone Number

Enter Phone Number

First Name

Enter First Name

Last Name

Enter Last Name

Date of Birth

Enter the Date of Birth (mm/dd/yyyy)

SSN

Enter SSN

Residential Address

Enter Residential Address

Mailing Address

Enter Mailing Address

CreateReset

Create a New Merchant

HomeLogout

Username

Enter your User Name Here

Email

Enter Your Email Id

Phone Number

Enter Your Phone Number

Company Name

Enter Company Name

Company CEO

Enter Company CEO Name

Company Launch Date

Enter the Date (mm/dd/yyyy)

Company Unique Registration ID

Enter SSN of Company

Headquarters Address

Enter HQ Address

Local Mailing Address

Enter Your Mailing Address

CreateReset

Fig 3.2.11 Creation of new user or merchant.

3.3 BANK MANAGER

A Bank Manager has all the views of a regular employee and he gets to perform the modification of the account information, search for a particular external user. He also has the authority to Approve/Decline the Critical transactions.

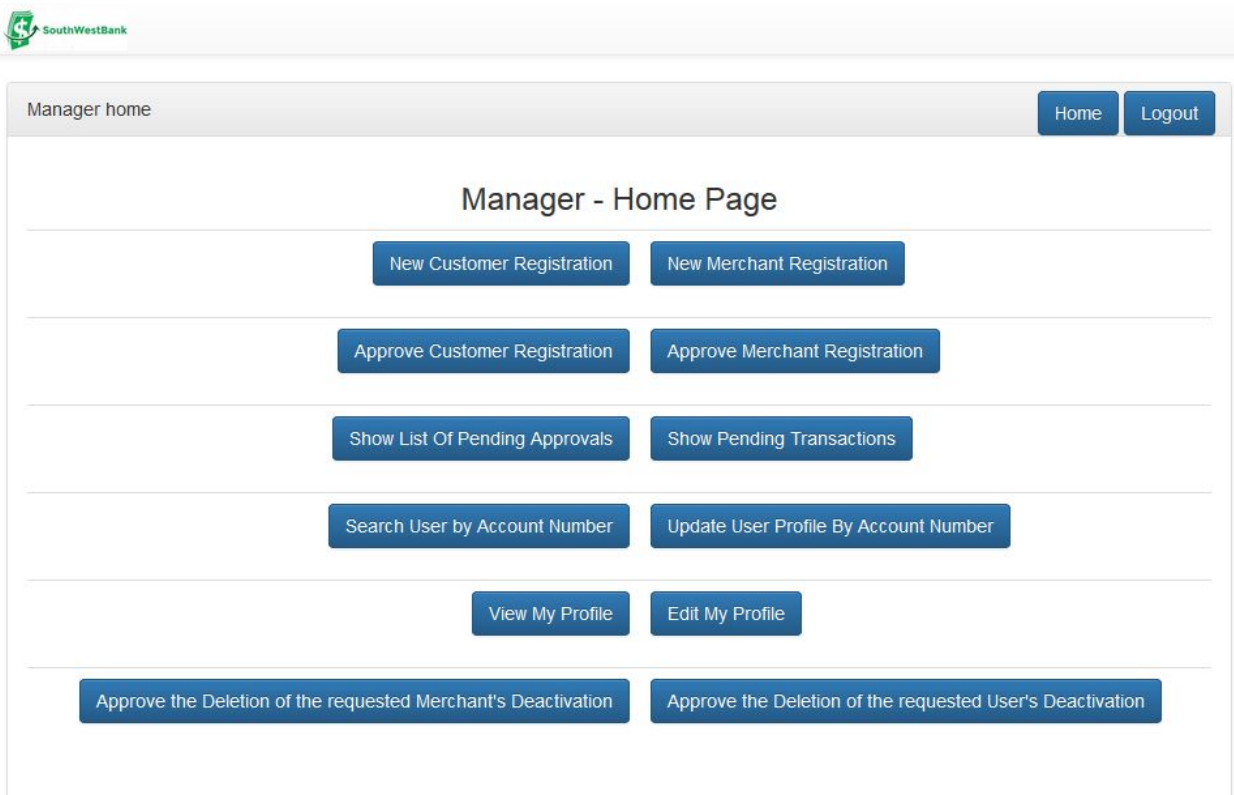


Fig 3.3.1 Bank Manager home page.

Manager has the access to approve/decline the transactions as follows

1. Manager has a table where views the list of critical and normal transactions which he must authorize/decline.
2. He picks 1 of the transactions and hits the approve/decline button.
3. If he does not have anything to approve, we see nothing to approve page.



Fig 3.3.2 Approve/Decline Transactions (includes normal and critical)

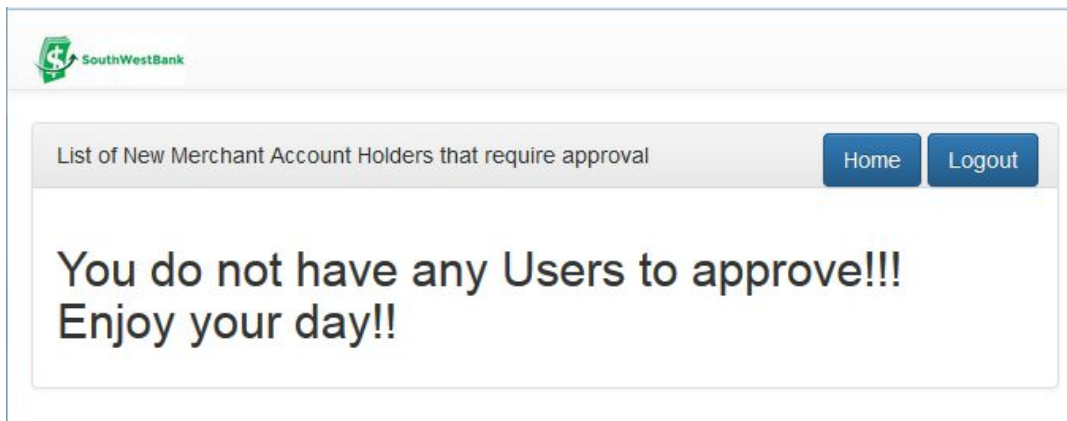



Fig 3.3.3 Requests for merchant account approval

Manager can also search for users to view information about them using account number.

1. Manager enters details of the user in the fields
2. He clicks the Search button.
3. He gets the required information for viewing.

The screenshot shows the SouthWestBank logo in the top left corner. Below it, a header bar contains the text "Search for User" and two buttons labeled "Home" and "Logout". The main content area features a section titled "Enter the account Number" with a text input field containing the placeholder text "Enter the account Number you want to retrieve the details for". Below the input field is a button labeled "Search".

Fig 3.3.4 Search user using account number



View User Details

HomeLogout

User Information

Bank User ID	987478
Username	chi
Email	chithras.1963@gmail.com
First Name	Chithra
Last Name	Shakthidharan
Date of Birth	1963-05-23 00:00:00.0
Phone Number	484561
User Created on Date	2015-10-25 03:07:11.0
Account Status	Active
Mailing Address	32480,Willoughby roaad
Residential Address	32480,Willoughby roaad
Assigned to Employee	raghavs

Fig 3.3.5 View user details

Manager can also modify the user information upon access from external user.

1. Manager searches for an external user.
2. He requests for access if not already.
3. On receiving access, he finds the information for editing.
4. He edits and hits update button.

Search Results

HomeLogout

User Details

Bank User ID	987478
Username	chi
E-mail	<input type="text" value="chithras.1963@gmail.com"/>
Phone Number	<input type="text" value="484561"/>
First Name	<input type="text" value="Chithra"/>
Last Name	<input type="text" value="Shakthidharan"/>
Date of Birth(Enter in Format("MM-dd-yyyy"))	<input type="text" value="06/23/1963"/>
Residential Address	<input type="text" value="32480,Willoughby roaad"/>
Mailing Address	<input type="text" value="32480,Willoughby roaad"/>

Update

Reset

Fig 3.3.6 Modify User Details

Manager can register new customer or a merchant.

1. Manager enters the New Customer/Merchant Page.
2. He enters the required fields.
3. He hits Create button to create the new customer/merchant.
4. He also has the option to clear all the fields by pressing the Reset button.

Home

Logout

Create a New Customer

Username

Enter User Name

Email

Enter Email Id

Phone Number

Enter Phone Number

First Name

Enter First Name

Last Name

Enter Last Name

Date of Birth

Enter the Date of Birth (mm/dd/yyyy)

SSN

Enter SSN

Residential Address

Enter Residential Address

Mailing Address

Enter Mailing Address

Create

Reset

Home

Logout

Create a New Merchant

Username

Enter your User Name Here

Email

Enter Your Email Id

Phone Number

Enter Your Phone Number

Company Name

Enter Company Name

Company CEO

Enter Company CEO Name

Company Launch Date

Enter the Date (mm/dd/yyyy)

Company Unique Registration ID

Enter SSN of Company

Headquarters Address

Enter HQ Address

Local Mailing Address

Enter Your Mailing Address

Create

Reset

Fig 3.3.7 Create a new customer or a new merchant.

Manager can also Approve the customer/merchant registration. Once they are registered manager will be able to approve or deny their registration information.

Note : Here, we have the customer creation requests coming from both the manager and the regular employees have been assigned to the manager. This manager will have the authorization to

1. Manager clicks on Approve customer/merchant registration.
2. He now selects the users to accept or deny through checkbox.
3. Then he hits the Approve button or Deny button to perform the required task.

Manager can view as well as edit his profile.

1. Manager clicks the View My profile or Edit

3.4 SYSTEM ADMINISTRATOR

System Administrator has all access to the database and the records. He has the rights to perform the various operations on internal users' accounts like creating user account, updating info for a user, reading user information; verify the internal users' requests; view the log file and access PII with authorization from Government agencies.

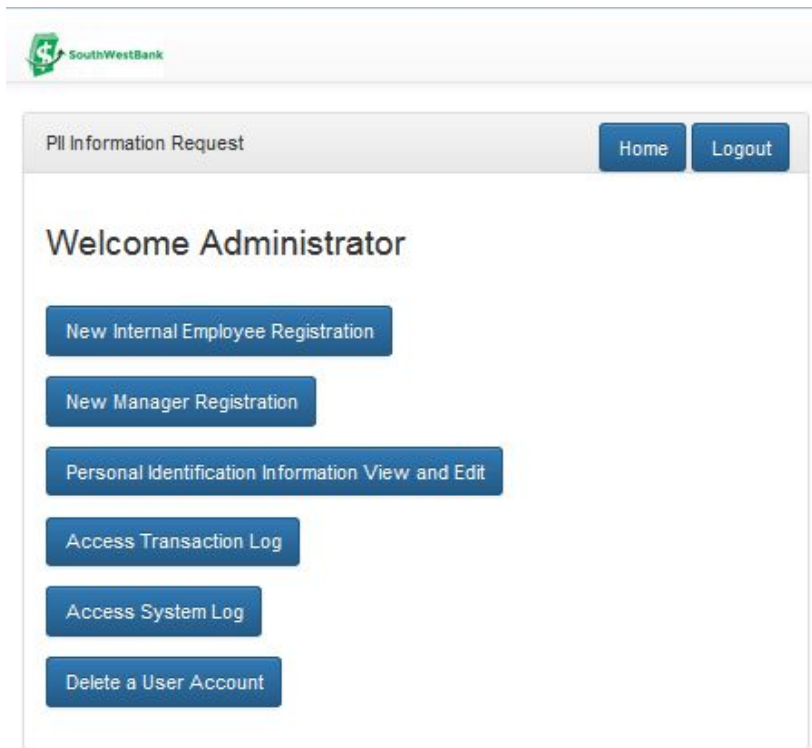



Fig 3.4.1 Home page of System administrator

Admin can create users.

1. He clicks on 'Create Employee' Button
2. He enters the details required for the account creation.
3. He hits submit and user is created.



Create a New Internal User

[Home](#) [Logout](#)

Username

Email

Phone Number

First Name

Last Name

Date Of Birth

SSN

Residential Address

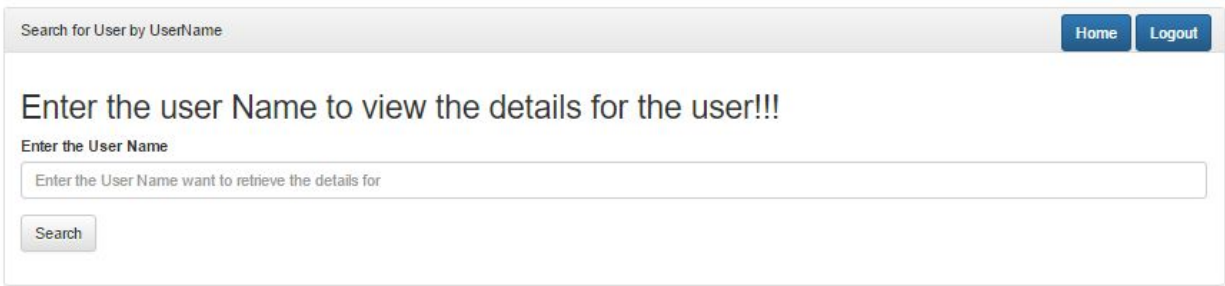
Mailing Address

[Create](#) [Reset](#)

Fig 3.4.2 User creation

Admin can modify the user's information as well.

1. Admin searches for the required user.
2. He enters the required information for update purpose.
3. He hits 'update' button and the user is updated with the new information.



Search for User by UserName

Home Logout

Enter the user Name to view the details for the user!!!

Enter the User Name

Enter the User Name want to retrieve the details for

Search

Fig 3.4.3 search user by user name

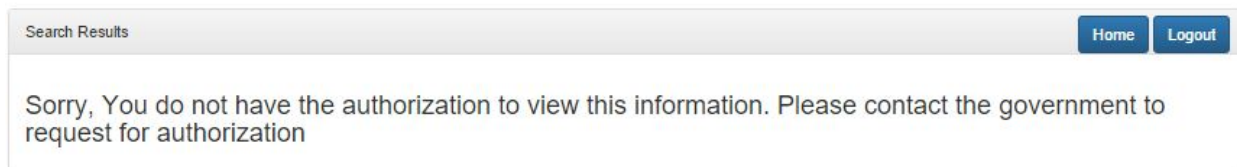
User Information

Bank User Id	5
Email	sagarsangani29@gmail.com
Phone Number	12345678
First Name	Sagar
Last Name	Sangani
Residential Address	N/A
Mailing Address	N/A

Fig 3.4.4 User account viewing

Admin can also get PII from External user .

1. Admin asks for permission from government to access a particular user's information
2. After permission, Admin searches for the user and gets the information about the required user.



Search Results

Home Logout

Sorry, You do not have the authorization to view this information. Please contact the government to request for authorization

Fig 3.4.5 PII tab

Admin can also view the system logs

1. Admin gets the logs and gets option to download as pdf.

System Logs

HomeLogout

Glossary for the suspicious Activity

0	NONSUSPICIOUS
1	WRONGCAPTCHA
2	WRONGUSERNAME
3	WRONGPASSWORD
4	INACTIVEACCOUNT
5	REQUIREACTIVATION
6	SECURITYALERTUSER
7	SECURITYALERTDEVICE

System Access Log Information

accessLogId	userName	IPAddress	deviceId	accessedOn	suspiciousActivity
1	sysadmin	10.143.17.228		2015-10-29 21:25:34.0	0
2	sysadmin	10.143.6.56		2015-10-29 21:35:48.0	0
3	Employee	10.143.6.56		2015-10-29 21:40:35.0	5
4	Employee	10.143.6.56		2015-10-29 21:42:14.0	0
5	Employee	10.143.6.56		2015-10-29 21:43:25.0	1
6	Employee	10.143.6.56		2015-10-29 21:43:54.0	0

Fig 3.4.6 Admin view of System logs

3.5 INDIVIDUAL USER

Once the login is successful, the user is presented with the home page which shows all the accounts associated with the given user and short summary including balance.

Welcome chitra!
Download Statement
Home
Logout

Checking

Account Number :
5

Balance :
0.0

\$ Enter amount .00 Transfer to Saving Account

\$ Enter amount .00 Debit

\$ Enter amount .00 Credit

\$ Enter amount .00 Email of Receipient Transfer

View Pending Approvals To be Authorized for Merchant

DeActivate Account

Edit My Profile

Savings

Create Savings Account

Fig 3.5.1 . User Home Page.

User Information	
Bank User Id	7
Bank user Name	aneesh26
Email	aneesh26@asu.edu
Phone Number	4805121420
First Name	Aneesh
Last Name	Shastry
Residential Address	625 W 1st St
Mailing Address	Apt 257

Fig 3.5.1 Summary tab

There is a transfers tab which takes in account numbers of both the user and the

intended person and the amount field. There is a slot for both internal and external account transfers.

1. User enters the account numbers and the amount
2. User hits transfer and funds get transferred when the amount is under the limit.

There is option to perform the account field updates where the user can edit his personal details

1. User accesses his profile and selects the fields for updation.
2. User enters the new information and hits update.
3. The information based on criticality is updated.

Username	<input type="text" value="Aneesh26"/>
Email	<input type="text" value="Aneesh26@gmail.com"/>
Phone Number	<input type="text" value="987654321234"/>
First Name	<input type="text" value="Aneesh"/>
Last Name	<input type="text" value="Enter Your Last Name"/>
Date Of Birth	<input type="text" value="10/05/2015"/>
SSN	<input type="text" value="1234567"/>
Residential Address	<input type="text" value="asdf"/>
Mailing Address	<input type="text" value="sadfg"/>

Fig 3.5.2 Update Info tab

1. There is an option to approve/deny transactions made by merchant on his behalf.
2. User gets the request to view the transaction made by merchant from his account.
3. User can now accept/reject the request.

4. The decision is sent to internal employees for approval.

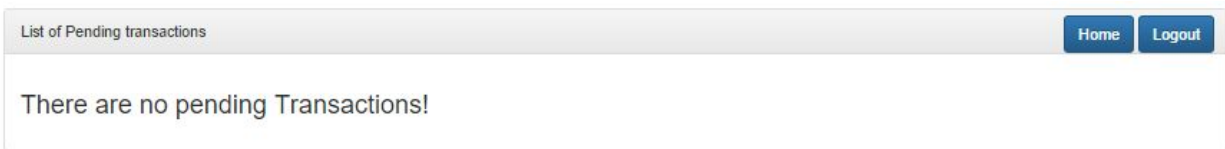


Fig 3.5.3 Authorization tab

User is able to generate the transaction summary and he is able to download the statement for each of his accounts.

1. User hits on download statement button.
2. User gets the result as desired.

A screenshot of a web application interface showing a table of pending transactions. The header bar at the top has the text 'view Pending transactions' on the left and two blue buttons labeled 'Home' and 'Logout' on the right. Below the header, there is a table with three columns: 'Recipient', 'Amount', and 'Decision'. The table is currently empty of data rows.

Recipient	Amount	Decision
-----------	--------	----------

Fig 3.5.4 Statements tab


User can request for new saving account type creation.

1. User clicks on create new account.
2. User has to wait for approval from regular employer/manager.

3.6 MERCHANT

Merchant can perform login, make transactions on behalf of customer/merchant, transfer funds to user and log out.

He will have a home-page where he will be shown his balance.

SouthWestBank

Welcome amazon!

Download StatementHomeLogout

Checking

Account Number: 6

Balance: 0.0

\$Enter amount.00

Email of Benefactor

TransferToMerchant

\$Enter amount.00

Debit

\$Enter amount.00

Credit

\$Enter amount.00

Email of Receipient

Transfer

View Pending Approvals To be Authorized for Merchant

Delete Account

Edit My Profile

Fig 3.6.1 Home page

Merchant can make customer/merchant's transaction request by clicking the appropriate button.

1. Merchant enters valid email id and the amount to transfer to himself and hit transfer.
2. The transaction is sent to that particular customer for approval.

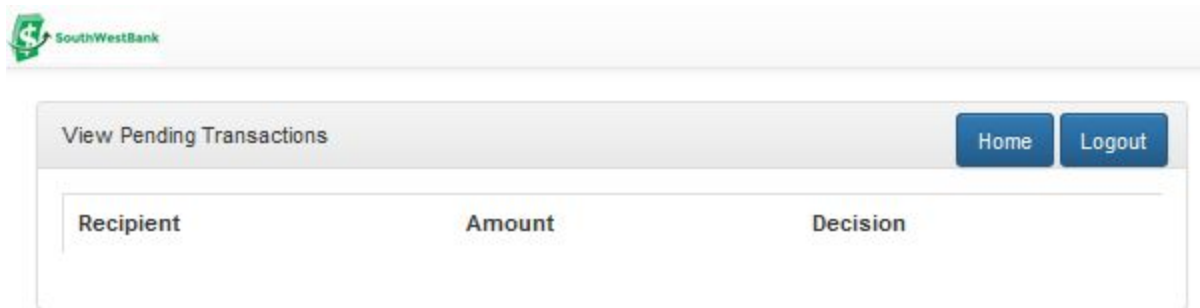


Fig 3.6.2 Transactions on behalf of customer/merchant

If merchant has transactions to approve:

1. There is an option to approve/deny transactions made by merchant on his behalf.
2. Merchant gets the request to view the transaction made by another merchant from his account.
3. Merchant can then accept/reject the request.
4. The decision is sent to internal employees for approval.


Merchant can transfer funds to external user just like another external user.

1. Merchant enters the account numbers and the amount.
2. He hits transfer and funds get transferred when the amount is under the limit.

Merchant can edit account details just like a normal external user can.

1. User accesses his profile and selects the fields for updation.
2. User enters the new information and hits update.
3. The information based on criticality is updated.

Fig 3.6.4 PKI verification for account deletion(Step 1)



PKI Decrypt text -Step 2 Verification [Home](#) [Logout](#)

Decrypted Text


BJvtQtHjN7zBCK5DZesN

Enter the servers public key

MTYwMDI4NTUxNDk4MTkyOTIyMTY3NjMzMzQ2NTAzODQ4MzM5MDI4
NDA1OTU2MDc4NTEyNTQ1ODMwMjc1MzcwOTg3OTQxMjA5NDkzMtM
3OTY2ODAzODYzMzQ5MTAxNDI3OTYzNzU0MjI1Mjg2MTI1NjU4Njk3OT
YxMjQ0MzQ2NTcwMjg3OTYyNzY1NzEwMjg3OTU3MDgyNjM5OTY1OTg
2NDY5NTk1MjYwOTE2Nzc0Njg1NDQzOTY4MTc3NjQyNTU3MTE3ODA
2NDY1MDUxMDg0ODc5NzgxNzUzODgxMzc3MDQ5NDUwNDEzNTIyNDM
xNDM2NTk5Mjc1MjU2NTcwNzQwNzNmNDEwMTQyODQzNDY0ODkxMT
MyMzgwNTY3NjI2MDMzOTE5MTAxNTI5NTY4MDIzMTI5MjYzZDY1NTM3
|

[Encrypt with Servers Key](#)

Fig 3.6.5 PKI verification for account deletion (Step 2).



PKI Check for server Verification [Home](#) [Logout](#)

Decrypted Text

x0iAP1/BPXEepG4DYIsphBvZ6vnJ1Kf
/LTMfMrcxQDMEDYztLPivs1O8K1DtflsQBgQP5F0Hs7x2IEwPIYCqaW4Y1D9UD33RtHCsgEVhQf3pASQW6KwdVfpTzJHyp0S2QNJO1AoRFTKEIvZSS
//hKPWXfUzU+3PHTVqaRfq3A=

[Verify The Server](#)

Fig. 3.6.6 PKI verification to access pending approvals (Step 3)

4. REQUIREMENTS

4.1 BROWSER

Mozilla Firefox 40.0 or above

Google Chrome 45.0.2454.98 or above (stable version)

Internet Explorer 10 or above

Safari 6.2.8 or above

4.2 OPERATING SYSTEMS

Microsoft Windows 7, 8, 8.1

Apple OS X 10.8 or above

Ubuntu 14.04 or above

5. Limitations and Assumptions

- We assume that the sysadmin and the government accounts has already been created. The mail accounts control is with the team to monitor the changes.
- Here we assume that the SSL trust connection used to send the keys for encryption and decryption between the server and the client is secure.
- We can only create a new customer or merchant when there is at least one manager has been created.
- We can only approve a new customer or merchant when there is at least one Internal regular employee has been created
- When the manager approves a transactions, he assumes that the system has internally already validated the transactions based on the user's available balance and credit and debit limit
- The critical transactions are handled internally at the banking level. Anything above the standard limit of 10,000 is considered as critical and can be approved only by manager.