

***Flipped class-room Activity***

***Course: Software Testing & Quality Assurance***

**Course Coordinator: Dr.S.K.Sonkar**

**Amrutvahini College of Engineering**  
**Computer Engineering Department**  
**Flipped class-room Activity Report**

**Activity Title: Black Box Testing of SBI Login Module – Aggregation and Validation of Test Cases**

**Date Conducted: 3rd October 2025**

**Conducted By: Dr. S. K. Sonkar, Faculty In-Charge, STQA (Software Testing and Quality Assurance), Department of Computer Engineering**

**Description:**

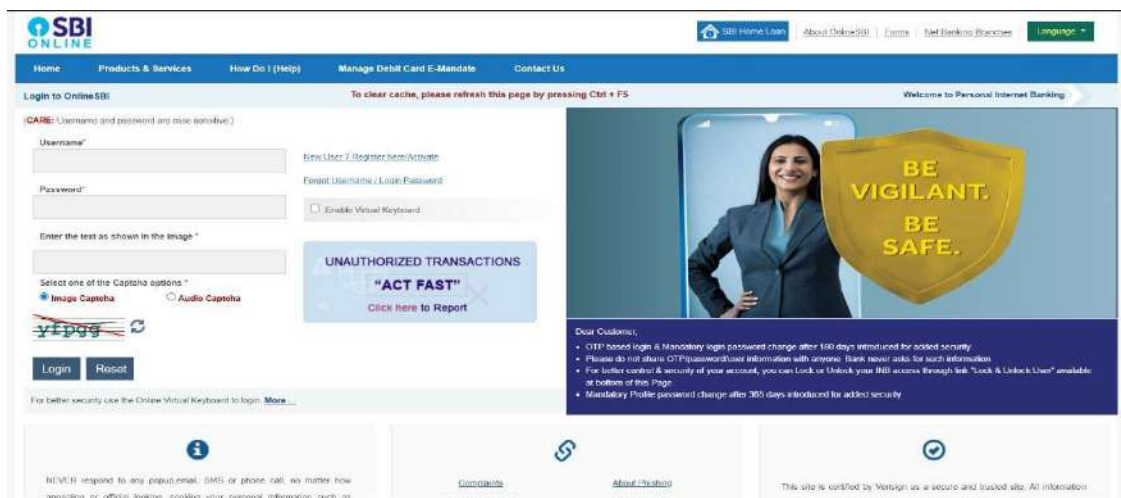
This activity was conducted under the guidance of **Dr. S. K. Sonkar, Faculty In-Charge for STQA**, with the objective of performing **Black Box Testing on the SBI Online Login System**.

The main goal of this exercise was to evaluate the application's functionality by verifying whether it behaved correctly for various input conditions, without inspecting its internal code or logic.

Student teams designed and executed multiple test cases focused on user interactions, error handling, input validation, security, and overall system response. All the team submissions were then aggregated, cross-verified, and standardized to form a unified set of unique and validated test cases.

The testing primarily emphasized external system behavior, ensuring compliance with functional correctness, usability standards, and security principles typically required in an online banking environment.

**State Bank Of India Login Page: -**



Test Case ID	Test Case Description	Expected Result	Actual Result	Remark	Sources
TC-01	Verify the login page loads successfully.	The SBI login page should be displayed with all UI elements.	SBI login page loaded successfully.	Pass	Sachin
TC-02	Verify successful login with valid credentials.	The user is logged in and redirected to the dashboard.	User logged in successfully, and the dashboard was shown.	Pass	Sarthak, Aniket, Sachin, Aditya, Deepak, Rachit, Om
TC-03	Verify login fails with a valid username but an invalid password.	An error message for invalid credentials is displayed.	An 'Invalid username or password' error was displayed.	Pass	Sarthak, Aniket, Sachin, Aditya, Deepak, Rachit, Om
TC-04	Verify login fails with an invalid username but a valid password.	An error message for invalid credentials is displayed.	An 'Invalid username or password' error was displayed.	Pass	Sarthak, Aniket, Sachin, Deepak, Rachit, Om
TC-05	Verify login fails with both an invalid username and an invalid password.	An error message for invalid credentials is displayed.	Error shown for wrong details.	Pass	Aniket, Rachit
TC-06	Verify login fails when the username field is left blank.	An error message prompts the user to enter a username.	The message 'Please enter username' was shown.	Pass	Sarthak, Aniket, Sachin, Rachit, Om
TC-07	Verify login fails when the password field is left blank.	An error message prompts the user to enter a password.	'Please enter password' message was shown.	Pass/Fail	Sarthak, Aniket, Sachin, Aditya,

					Rachit, Om
<b>TC-08</b>	Verify login fails when all input fields are left blank.	Error messages prompt the user to fill all mandatory fields.	An error asking to fill all fields was shown.	Pass	Deepak, Om
<b>TC-0G</b>	Verify login fails with a correct username and password but an incorrect CAPTCHA.	An error message for an invalid CAPTCHA is displayed.	An 'Invalid captcha' error message was displayed.	Pass	Sarthak, Aniket, Sachin, Aditya, Deepak, Rachit, Om
<b>TC-10</b>	Verify login fails when the CAPTCHA field is left blank.	An error message prompts the user to enter the CAPTCHA.	Error for missing captcha was shown.	Pass	Aniket, Sachin, Rachit
<b>TC-11</b>	Verify the CAPTCHA 'Refresh' button loads a new image.	A new and different CAPTCHA image is displayed.	A new CAPTCHA image was displayed.	Pass	Aniket, Sachin, Aditya, Deepak
<b>TC-12</b>	Verify login with an expired password.	The system prompts the user to change their password.	User was redirected to the password reset page.	Pass	Rachit
<b>TC-13</b>	Verify the system forces a password change after a set policy period (e.g., 180 days).	The user is prompted to change their password upon login.	The password change prompt was displayed.	Pass	Sachin
<b>TC-14</b>	Verify username field rejects input exceeding the maximum length.	The system shows a length limit error or truncates the input.	Input was blocked or a length error was shown.	Pass	Sarthak, Aniket, Deepak, Rachit, Sachin, Om
<b>TC-15</b>	Verify password field rejects or accepts input exceeding the maximum length, per policy.	The system shows a length limit error or	One document reported that a long password was	Fail	Aniket, Deepak, Rachit,

		truncates the input.	incorrectly accepted.		Sachin, Om
<b>TC-16</b>	Verify username field rejects input below the minimum length.	The system shows a minimum length error.	An 'Invalid Username' error was shown.	Pass	Om
<b>TC-17</b>	Verify username and password fields are case-sensitive.	Login should fail if the case is incorrect for either field.	Login failed as expected, confirming case sensitivity.	Pass	Aniket, Rachit, Sachin, Om
<b>TC-18</b>	Verify username field rejects special characters (e.g., \$#@!).	An error message for invalid characters is displayed.	An error for invalid username was displayed.	Pass	Sarthak, Aniket, Rachit, Sachin, Deepak, Aditya
<b>TC-1G</b>	Verify username field rejects non-English (Unicode) characters.	The system should show an error or sanitize the input.	An error for the username was shown.	Pass	Aniket
<b>TC-20</b>	Verify username is validated correctly when it contains only numbers.	The system should reject if alphabetic characters are required.	An error message was shown.	Pass	Sarthak, Rachit, Deepak, Sachin
<b>TC-21</b>	Verify password is validated correctly when it contains only numbers.	Password should be accepted if it meets complexity rules.	Password was accepted.	Pass	Sachin
<b>TC-22</b>	Verify behavior when username and password are the same.	Login should succeed or fail based on security policy.	Login was successful.	Pass	Sachin
<b>TC-23</b>	Verify account lockout after multiple (e.g., 5) consecutive failed login attempts.	The account is temporarily locked, and a message is displayed.	The account was locked, and a lock message was shown.	Pass	Sarthak, Aniket, Aditya, Deepak, Rachit, Sachin, Om

TC-24	Verify password field masks characters as they are typed.	Input is displayed as dots or asterisks (e.g., .....).	The password was correctly masked.	Pass	Aniket, Aditya, Om
TC-25	Verify system protection against SQL Injection attacks.	The attempt is blocked, and a generic error is shown.	The login was blocked. One document reported an unhandled error.	Pass/Fail	Sarthak, Aditya, Rachit, Sachin, Om
TC-26	Verify system protection against Cross-Site Scripting (XSS) attacks.	Input with HTML/script tags is sanitized or blocked.	The input was blocked or sanitized.	Pass	Sarthak, Rachit, Sachin, Om
TC-27	Verify the login page is served over a secure (HTTPS) connection.	The URL begins with "https://" and shows a valid SSL certificate.	The page correctly redirected to HTTPS.	Pass	Aniket, Aditya, Sachin, Om
TC-28	Verify passwords are encrypted during network transmission.	Network analysis tools should show encrypted password data.	Transmission was encrypted.	Pass	Aditya
TC-2G	Verify login with an automated script is blocked.	The script should be detected and the attempt blocked.	The script was not allowed to log in.	Pass	Aniket
TC-30	Verify the "Reset" button clears all input fields.	All text in username, password, and CAPTCHA fields is cleared.	Fields were cleared correctly.	Pass	Aniket, Sachin, Aditya
TC-31	Verify all UI links ('Forgot Password', 'New User', etc.) are functional.	Clicking each link redirects to the correct page.	All links are redirected to the correct pages.	Pass	Aniket, Sachin, Aditya, Deepak, Om
TC-32	Verify a warning message appears if the Caps Lock key is active.	A visible warning 'Caps Lock is ON' is displayed.	The warning was shown as expected.	Pass	Deepak
TC-33	Verify the page is responsive and displays correctly on	All UI elements are visible and	The page was mobile-friendly	Pass	Aniket, Aditya,

	mobile devices (portrait and landscape).	functional without distortion.	and adjusted correctly.		Deepak, Om
<b>TC-34</b>	Verify error messages are displayed in a distinct color (e.g., red).	Error text is styled differently from normal text.	Error messages were shown in red.	Pass	Aditya
<b>TC-35</b>	Verify error messages disappear after correcting the input.	The error message is hidden once the user starts typing valid input.	The error cleared on correction.	Pass	Aditya
<b>TC-36</b>	Verify mandatory fields are marked with an asterisk (*).	An asterisk symbol is visible next to required field labels.	Fields were marked correctly.	Pass	Aditya
<b>TC-37</b>	Verify tooltips appear on hover for relevant form elements.	Informative tooltips are displayed when hovering over icons or fields.	Tooltips were shown.	Pass	Aditya
<b>TC-38</b>	Verify the site branding (logo) is visible and correctly placed.	The SBI logo is displayed as expected.	The SBI logo was visible.	Pass	Aniket, Aditya
<b>TC-3G</b>	Verify functionality of the virtual keyboard.	The keyboard appears and correctly enters characters into the password field.	The virtual keyboard worked correctly.	Pass	Aniket, Aditya, Deepak, Sachin, Om
<b>TC-40</b>	Verify login attempt during a scheduled maintenance window.	A maintenance message is displayed instead of the login form.	The maintenance message was seen.	Pass	Aniket
<b>TC-41</b>	Verify login flow with Multi-Factor Authentication (MFA) or OTP.	An MFA/OTP prompt appears after submitting credentials.	The OTP prompt was shown and worked correctly.	Pass	Aniket, Aditya

<b>TC-42</b>	Verify submitting the form by pressing the 'Enter' key.	The form submits successfully.	The form was submitted successfully upon pressing Enter.	Pass	Aditya, Sachin
<b>TC-43</b>	Verify automatic session timeout after a period of inactivity.	The user is automatically logged out and redirected.	Auto logout occurred, and a session expired message was shown.	Pass	Aniket, Sachin, Deepak, Om
<b>TC-44</b>	Verify behavior when the browser's back button is used after logout.	The user is not taken back to the authenticated session.	The user was correctly redirected to the login page.	Pass	Aniket, Deepak, Om
<b>TC-45</b>	Verify handling of concurrent user sessions from different devices/browsers.	The system either allows both or terminates the older session.	Multiple sessions were allowed. One document reported the first session was logged out without warning.	Pass/Fail	Sarthak, Aniket, Deepak, Rachit, Om
<b>TC-46</b>	Verify behavior when attempting to log in with browser cookies disabled.	An error message prompts the user to enable cookies.	An error message was shown, preventing login.	Pass	Aniket, Deepak
<b>TC-47</b>	Verify the browser prompts to save the password after a successful login.	The browser's native 'Save Password' prompt appears.	The prompt was shown.	Pass	Aniket
<b>TC-48</b>	Verify the browser's auto-fill functionality works correctly.	Fields are populated correctly by the browser's saved credentials.	Autofill worked, and login was successful.	Pass	Aniket
<b>TC-4G</b>	Verify keyboard navigation using the 'Tab' key.	Focus moves in a logical order through all interactive elements.	Focus moved in the correct order.	Pass	Aniket, Aditya, Deepak



TC-50	Verify screen reader software correctly announces all labels and fields.	The screen reader provides accurate contexts for all elements.	The screen reader worked correctly.	Pass	Aniket, Aditya, Deepak
TC-51	Verify the functionality and clarity of the Audio CAPTCHA option.	The audio plays clearly and allows for successful entry.	The audio CAPTCHA worked as expected. One document reported a failure.	Pass/Fail	Aniket, Aditya, Sachin, Om
TC-52	Verify the 'skip to content' accessibility link works.	Focus jumps directly to the main login form area.	The skip link worked as expected.	Pass	Aniket

### **Summary:**

The final report contains **52 unique test cases** derived from multiple teams' individual Black Box Testing documents. These were consolidated after removing duplicates and redundant scenarios.

The verified test cases include:

- ❖ **Functional Tests** – Valid and invalid login attempts, CAPTCHA verification, Reset button, language switching.
- ❖ **Security Tests** – SQL Injection, XSS, HTTPS validation, account lockout, cookie management.
- ❖ **Usability & Accessibility Tests** – Mobile responsiveness, password masking, audio CAPTCHA, virtual keyboard.
- ❖ **Performance Tests** – Page load speed, session timeout behavior.
- ❖ **Accessibility Tests** – Tab navigation and screen reader functionality.

The testing strictly adhered to **Black Box Testing principles**, focusing solely on input-output validation and expected results.

This report reflects the combined effort of student teams and faculty to ensure a comprehensive quality assurance review of the SBI Login Module.



## Winners of the Black Box Testing Activity

### + First Place Team



### + Second Place Team



## **Third Place Team**



**Dr.S.K.Sonkar**  
Course I/C