1. Test Case Design for Login page

| **Test Case ID** | **Test Scenario** | **Positive Test Case** | **Negative Test Case** | **Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TC\_Login\_01 | Successful Login | Check that a user can log in with valid username and password. | - | 1. Open the login page  2. Enter valid username and password  3. Click "Login" | Username: valid\_user  Password: valid\_pass | User logs in successfully and is redirected to the homepage. | User logged in as expected | Pass/Fail |
| TC\_Login\_02 | Incorrect Password | - | Check that login fails with an incorrect password. | 1. Open the login page  2. Enter valid username and incorrect password  3. Click "Login" | Username: valid\_user  Password: wrong\_pass | Error message: "Invalid username or password" appears. | Error message shown as expected | Pass/Fail |
| TC\_Login\_03 | Username Does Not Exist | - | Check that login fails when a non-existent username is entered. | 1. Open the login page  2. Enter non-existent username and any password  3. Click "Login" | Username: non\_user  Password: any\_pass | Error message: "Invalid username or password" appears. | Error message shown as expected | Pass/Fail |
| TC\_Login\_04 | Empty Fields | - | Check that login fails if both fields are empty. | 1. Open the login page  2. Leave both fields empty  3. Click "Login" | Username: (empty)  Password: (empty) | Error message: "Username and password cannot be empty" appears. | Error message shown as expected | Pass/Fail |
| TC\_Login\_05 | Empty Password Field | - | Check that login fails if only the password field is empty. | 1. Open the login page  2. Enter valid username and leave password field empty  3. Click "Login" | Username: valid\_user  Password: (empty) | Error message: "Password cannot be empty" appears. | Error message shown as expected | Pass/Fail |
| TC\_Login\_06 | Empty Username Field | - | Check that login fails if only the username field is empty. | 1. Open the login page  2. Leave username empty and enter password  3. Click "Login" | Username: (empty)  Password: valid\_pass | Error message: "Username cannot be empty" appears. | Error message shown as expected | Pass/Fail |
| TC\_Login\_07 | SQL Injection | - | Check that SQL injection does not allow unauthorized access. | 1. Open the login page  2. Enter SQL injection code in both fields  3. Click "Login" | Username: ' OR 1=1 --  Password: ' OR 1=1 -- | Error message: "Invalid username or password" appears. No unauthorized access allowed. | Error message shown as expected | Pass/Fail |
| TC\_Login\_08 | Special Characters in Username | Check that login works if username has allowed special characters (if allowed by policy). | Check that login fails with unsupported special characters. | 1. Open the login page  2. Enter special characters in username  3. Click "Login" | Username: user!@#  Password: valid\_pass | If allowed, user logs in. If unsupported, error message: "Invalid characters used in username" appears. | Unsupported character error shown | Pass/Fail |
| TC\_Login\_09 | Maximum Character Limit | Check that login works if username and password are at max character limit. | Check that login fails if username or password exceeds max allowed length. | 1. Open the login page  2. Enter max/over-limit characters in username and password  3. Click "Login" | Username: 50 chars  Password: 50 chars | If within limit, user logs in. If exceeded, error: "Input exceeds max length" appears. | Exceeded limit error shown | Pass/Fail |
| TC\_Login\_10 | Remember Me Functionality | Check that the "Remember Me" option works and keeps the user logged in after closing the app. | - | 1. Open the login page  2. Enter valid credentials  3. Check "Remember Me"  4. Click "Login"  5. Close and reopen app | Username: valid\_user  Password: valid\_pass | User remains logged in after reopening the app. | User remembered as expected | Pass/Fail |