

Black-Box Test Cases - Port Scanner Application

1. User Registration & Authentication

| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|------------|---------------------------------|---|-----------------------------------|---|
| BB-REG-001 | Register with valid credentials | Email: testuser001@example.com, Password: Test@123456 | Fill registration form and submit | Success message shown, OTP sent, redirect to verification |
| BB-REG-002 | Register with existing email | existing@example.com | Submit registration form | Error: "Email already registered" |
| BB-REG-003 | Invalid email format | invalidemail, user@, user@.com | Enter invalid email → Register | Error: "Invalid email format" |
| BB-REG-005 | Password mismatch | Password: Test@123, Confirm: Test@321 | Submit form | Error: "Passwords do not match" |
| BB-REG-006 | Empty fields | Leave any field blank | Submit registration form | Field validation errors shown |

Create Account

User registered, but failed to send OTP email.

Email
carzycoder0407@gmail.com

Password
.....

Confirm Password
.....

Register

Already have an account? [Login](#)

2. User Login

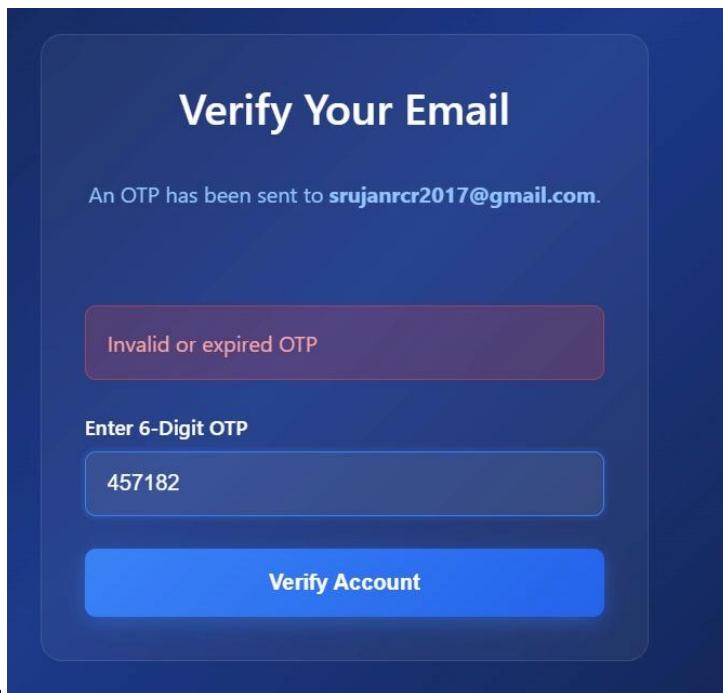
| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|-------------|------------------------------|--|---------------------------|------------------------------|
| BB-LGIN-001 | Login with valid credentials | verified@example.com / Correct@Pass123 | Enter credentials → Login | Redirected to dashboard |
| BB-LGIN-002 | Wrong password | verified@example.com / WrongPass | Enter credentials → Login | Error: “Invalid credentials” |
| BB-LGIN-003 | Nonexistent email | nonexistent@example.com / AnyPass | Enter credentials → Login | Error: “Invalid credentials” |
| BB-LGIN-004 | Unverified account | unverified@example.com / Correct@Pass123 | Attempt login | Error: “Email not verified” |
| BB-LGIN-005 | Empty fields | Blank inputs | Submit login form | Validation error shown |

The screenshot shows the PortScanner login interface. At the top, there are 'Login' and 'Register' buttons. Below them is a 'Login' form with a title 'Login'. Inside the form, a red error message box displays 'Invalid credentials or account not verified'. The form contains two input fields: 'Email' with the value 'siddrd@gmail.com' and 'Password' with several dots. At the bottom of the form is a blue 'Login' button. Below the form, a small link says 'Don't have an account? Register'.

3. OTP Verification

| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|------------|--------------------|-------------------|--------------------|------------------------------------|
| BB-OTP-001 | Verify correct OTP | OTP: 123456 | Enter OTP → Verify | Success message, redirect to login |
| BB-OTP-002 | Verify wrong OTP | OTP: 000000 | Enter OTP → Verify | Error: “Invalid or expired OTP” |

| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|----------------|-----------------------|--------------------------|--------------------|------------------------------------|
| BB-OTP-003 | Expired OTP | OTP older than 10 mins | Enter OTP → Verify | Error: “Invalid or expired OTP” |
| BB-OTP-004 | Empty OTP field | None | Submit empty field | Error: “Please fill out the field” |



4. Port Scanning Functionality

| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|----------------|--------------------------------|-----------------------------------|--------------|------------------------------------|
| BB-SCAN-001 | TCP Connect Scan (Single Port) | Target: scanme.nmap.org, Port: 80 | Start scan | Displays port status (open/closed) |
| BB-SCAN-002 | Multiple Ports | Ports: 22,80,443 | Start scan | All ports scanned, results shown |
| BB-SCAN-003 | Invalid IP | 256.1.1.1 | Start scan | Error: “Invalid IP address” |
| BB-SCAN-004 | Empty Target | No IP entered | Start scan | Error: “Target required” |

The screenshot shows the PortScanner application interface. At the top, it says "PortScanner" and "Last login: 28/10/2025, 2:43:13 pm". On the right, there are "Home" and "Logout" links. Below this, the title "TCP Connect Scan" is displayed, followed by the sub-instruction "Configure and execute scan".

The main configuration area has two input fields: "Target IP Address" containing "10.178.53.86" and "Port Range" containing "135, 22, 443". A large blue "Start Scan" button is centered below these fields.

Below the configuration is a section titled "Scan Results for 10.178.53.86". It contains a table with three rows of scan results:

| PORT | STATUS | LATENCY (MS) |
|------|--------|--------------|
| 22 | Closed | N/A |
| 135 | Open | 14.04 |
| 443 | Closed | N/A |

At the bottom of this section are "Export CSV" and "Export JSON" buttons.

5. Scan Results & Export

| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|---------------|------------------------|-------------------|------------------|-----------------------------------|
| BB-RESULT-001 | View scan results | Completed scan | View results | Results table displayed correctly |
| BB-RESULT-002 | Export to CSV | Results available | Click Export CSV | CSV downloaded with correct data |
| BB-RESULT-003 | Export with no results | No scan data | Click Export | Error: "No data to export" |

This screenshot shows the PortScanner application running on a Windows system, indicated by the taskbar icons at the top. The configuration and results sections are identical to the previous screenshot, showing a scan for IP 172.26.186.195 with port range 135.

An overlay dialog from "localHost3000 wants to save" is visible in the foreground. It shows a file save path to "Downloads" and a file name "Scan results 172.26.186.195_1751648561926.csv". The "Save as type" dropdown is set to "Microsoft Excel Comma Separated Values File". At the bottom of the dialog are "Save" and "Cancel" buttons.

6. Security & Error Handling

| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|--------------|----------------|-------------------|---------------|---------------------------------------|
| BB-ERROR-002 | Server Down | Stop backend | Attempt login | “Unable to connect to server” message |

7. Navigation & UI

| Test ID | Test Objective | Test Data / Input | Steps | Expected Result |
|------------|--------------------------|--------------------------------|--|------------------------------------|
| BB-NAV-001 | Navigation between pages | Click navigation links | Move between Register, Login, Scan pages | Correct pages open, no data loss |
| BB-NAV-002 | Logout flow | Logged-in user | Click Logout | Redirect to Login, session cleared |
| BB-NAV-003 | Back button after logout | Login → Scan → Logout → Back | Press browser back button | Redirects to login, no access |
| BB-NAV-004 | Responsive UI | Mobile devices | Open app on phone/tab/let | Layout adjusts properly |
| BB-NAV-005 | Protected routes | Access scan page without login | Try direct URL | Redirected to login page |