Black-Box Test Cases - Port Scanner Application

1. User Registration & Authentication

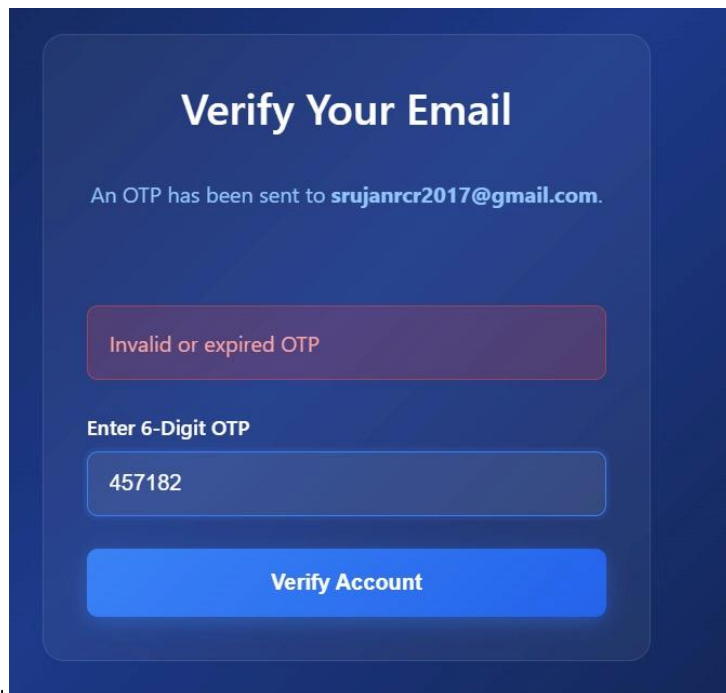| Test ID	Test Objective	Test Data / Input	Steps	Expected Result
BB-REG-001	Register with valid credentials	Email: testuser001@example.com, Password: Test@123456	Fill registration form and submit	Success message shown, OTP sent, redirect to verification
BB-REG-002	Register with existing email	existing@example.com	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

2. User Login

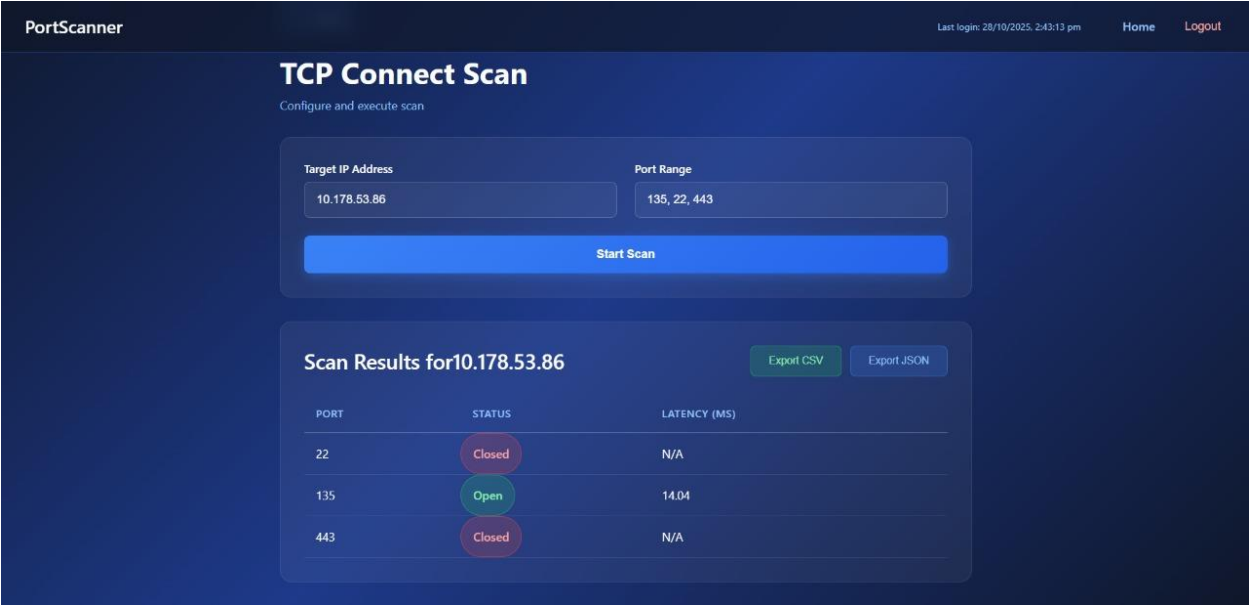| Test ID	Test Objective	Test Data / Input	Steps	Expected Result
BB-LOGIN-001	Login with valid credentials	verified@example.com / Correct@Pass123	Enter credentials → Login	Redirected to dashboard
BB-LOGIN-002	Wrong password	verified@example.com / WrongPass	Enter credentials → Login	Error: "Invalid credentials"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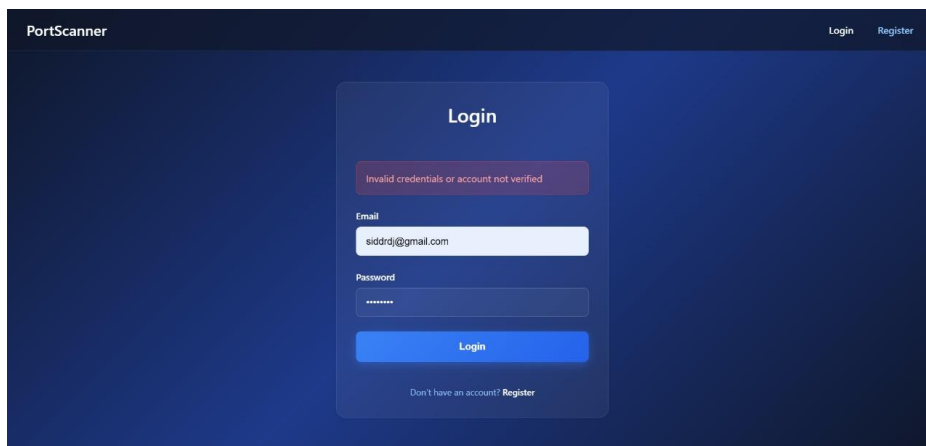
3. OTP Verification

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"

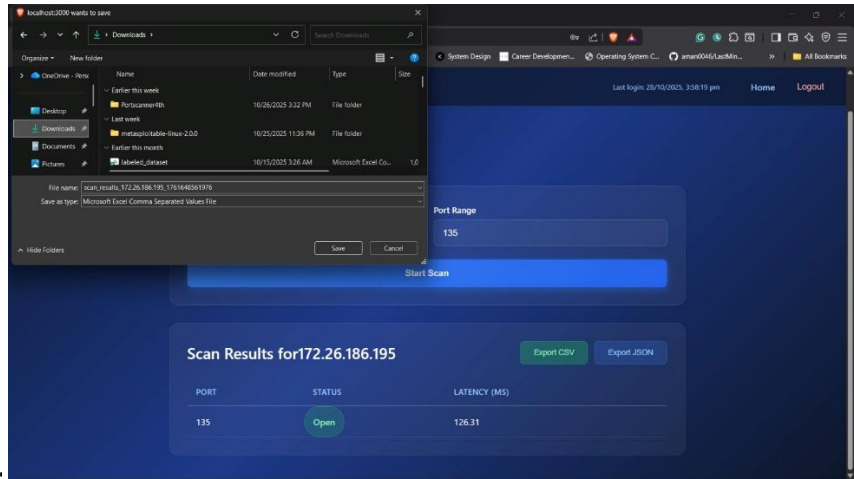| Test ID	Test Objective	Test Data / Input	Steps	Expected Result
BB-OTP-003	Expired OTP	OTP older than 10 mins	Enter OTP → Verify	Error: "Invalid or expired OTP"
BB-OTP-004	Empty OTP field	None	Submit empty field	Error: "Please fill out the field"

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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"

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"

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/tablet	Layout adjusts properly
BB-NAV-005	Protected routes	Access scan page without login	Try direct URL	Redirected to login page