

### Test Plan: Login Page and MFA Testing

Test case ID	Test Scenario	Preconditions	Test Steps	Expected Result	Actual Result	Status	Bugs
TC001	Test login with valid credentials	The user has valid credentials	1.Navigate to the login page 2.Enter correct username and password 3.Click login	User redirected to the MFA entry page	User redirected to the MFA entry page	Passed	N/A
TC002	Test login with incorrect username and correct password	1. The user is already at the login page 2. The user has valid credentials	1.Enter incorrect username and correct password 2.Click login	An error message: "Invalid Credentials. Please try again." Is displayed	An error message: "Invalid Credentials. Please try again." Is displayed	Passed	N/A
TC003	Test login with correct username and incorrect password	1. The user is already at the login page 2. The user has valid credentials	1.Enter correct username and incorrect password 2.Click login	An error message: "Invalid Credentials. Please try again." Is displayed	An error message: "Invalid Credentials. Please try again." Is displayed	Passed	N/A
TC004	Test login with both username and	The user is already at the login page	1.Enter incorrect username and password 2.Click login	An error message: "Invalid Credentials. Please try	An error message: "Invalid Credentials. Please try	Passed	N/A

	password incorrect			again." Is displayed	again." Is displayed		
TC005	Test login with empty username and/or password	The user is already at the login page	Leave username and/or password fields empty	An error message: "Συμπληρώστε αυτό το πεδίο"Is displayed	An error message: "Συμπληρώστε αυτό το πεδίο"Is displayed	Passed	N/A
TC006	Test login with trailing spaces	The user is already at the login page	1.Enter trailing spaces on username field and correct password  2.Click login	An error message: "Invalid Credentials. Please try again." Is displayed	An error message: "Invalid Credentials. Please try again." Is displayed	Passed	N/A
TC007	Test login with SQL injection like input	The user is already at the login page	Enter an SQL injection string in username. For example "" OR 1=1—" or "admin'—"	An error message: "Invalid Credentials. Please try again." Is displayed	An error message: "Invalid Credentials. Please try again." Is displayed	Passed	N/A
TC008	Test MFA with valid code	The user is already at the MFA entry page	1.Enter the correct MFA code  2. Click Verify	User is successfully logged in and redirected to the dashboard page.	User is successfully logged in and redirected to the dashboard page.	Passed	N/A

				The text "Welcome to your dashboard!" is displayed	The text "Welcome to your dashboard!" is displayed		
TC009	Test MFA with invalid code	The user is already at the MFA entry page	1.Enter incorrect MFA code 2. Click Verify	An error message: "Invalid MFA Code. Please try again." is displayed.	An error message: "Invalid MFA Code. Please try again." is displayed.	Passed	N/A
TC010	Test MFA with empty field	The user is already at the MFA entry page	1.Leave the MFA field empty 2. Click Verify	An error message: "Συμπληρώστε αυτό το πεδίο" is displayed.	An error message: "Συμπληρώστε αυτό το πεδίο" is displayed.	Passed	N/A
TC011	Test MFA with special characters	The user is already at the MFA entry page	1.Enter special characters at the MFA field 2. Click Verify	An error message: "Invalid MFA Code. Please try again." is displayed.	An error message: "Invalid MFA Code. Please try again." is displayed.	Passed	N/A
TC012	Test access to authenticated page with valid session	1. The user is already at the MFA entry page 2. The user	1.Enter the correct MFA code 2. Click Verify 3. Verify you redirected to the '/dashboard' page	The user should be able to access the dashboard page	The user should be able to access the dashboard page	Passed	N/A

		has valid credentials					
TC013	Test access to authenticated page without a session	The user should not have logged in	1.Open incognito 2.Go directly to 'http://localhost:3000/dashboard' 3.Observe the response	An error message: "Unauthorized. Please log in." should be displayed.	An error message: "Unauthorized. Please log in." should be displayed.	Passed	N/A
TC014	Direct access to MFA page	The user should not have logged in	1.Open incognito 2.Go directly to 'http://localhost:3000/mfa' 3.Enter the correct mfa code 4.Click Verify 5.Check if you redirected to the '/dashboard' page or if the application shows an error message	The application should not allow direct access to the MFA page without completing the login step An error should be displayed indicating that the MFA page cannot be accessed	The user was able to access the MFA page directly without logging in, leading to a potential security vulnerability	Failed	Bug: Direct access MFA page without completing the login step allowed, which is a security flaw. Application should restrict access to the MFA page until the login step is completed.

**Bugs identified:**

**Name:** Direct access to MFA page allows bypassing login

**Description:** The application permits users to directly access the MFA page without completing the login process, which allows them to skip the login page entirely.

**Steps:**

1. Open an incognito browser window.
2. Go directly to the URL <http://localhost:3000/mfa>.
3. Enter a valid MFA code.
4. Click the verify button.

**Actual Result:** The user is successfully navigated to the dashboard page and the text "Welcome to your dashboard!" is displayed, bypassing the login page.

**Expected Result:** The application should not allow direct access to the MFA page without completing the login step. An error message should be displayed indicating that the MFA page cannot be accessed directly.