

Testing Plan

Test Plan 1: User Authentication and Authorization

Objective:

Ensure that the login and sign-up functionalities work correctly and securely, including proper handling of user credentials and access control.

Scope:

Front-end: Login and sign-up forms

Back-end: User authentication, password hashing, and session management

Test Cases:

Login with Valid Credentials

Steps: Enter valid username and password.

Expected Result: User is successfully logged in and redirected to the dashboard.

Login with Invalid Credentials

Steps: Enter incorrect username or password.

Expected Result: Display error message indicating incorrect credentials.

Sign-Up with Valid Details

Steps: Enter valid details (e.g., username, email, password).

Expected Result: Account is successfully created, and user is logged in automatically or redirected to the login page.

Sign-Up with Existing Username/Email

Steps: Attempt to sign up with an already registered username or email.

Expected Result: Display error message indicating that the username or email is already in use.

Password Hashing

Steps: Sign up and verify password storage in the database.

Expected Result: Password should be securely hashed and not stored in plain text.

Session Management

Steps: Log in and attempt to access the dashboard after closing and reopening the browser.

Expected Result: User should remain logged in or be prompted to log in again, depending on session settings.

Test Plan 2: Admin Page Functionality

Objective:

Verify that the admin page functions correctly, displaying appropriate information and allowing necessary actions

Scope:

Front-end: dashboard layout and navigation between different sections

Back-end: edge-functions are correctly called and changes are correctly applied to database

Test Cases:

Sidebar Navigation:

Steps: Click on each sidebar link (account, courses, user, inbox, history).

Expected Result: Corresponding content is displayed in the main area for each section

Account details display:

Steps: navigate to the Account section

Expected Result: admin's account details are correctly displayed

Home default display:

Steps: Enter the admin page or refresh the page

Expected Result: By default, the timetable component is rendered. Timetable grid is displayed with correct days and time slots.

Campus Management:

Steps: Navigate to the Campuses section

Expected Result: list of courses is correctly displayed

Course Management:

Steps: Navigate to the Courses section

Expected Result: list of courses is correctly displayed

Unit Management:

Steps: Navigate to the Units section

Expected Result: list of units is correctly displayed

Classroom Management:

Steps: Navigate to the Classrooms section

Expected Result: list of classrooms is correctly displayed

Students Management:

Steps: Navigate to the Student section

Expected Result: list of students is displayed correctly

Staff Management:

Steps: Navigate to the Staff section

Expected Result: list of staff is correctly displayed

AI Assistant Page:

Steps: Navigate to the AI Assistant section

Expected Result: Chat box is correctly displayed

AI Assistant retrieve information:

Steps: Enter Prompt/Upload files to retrieve information from database

Expected Result: text messages/invalid query error messages are correctly returned

AI Assistant CRUD operation:

Steps: Enter Prompt/Upload files to request for suggestion on modifying database

Expected Result: text and JSON messages with approve and deny button/invalid query error messages are correctly returned

AI Assistant Approve Button:

Steps: Admin click on approve button

Expected Result: changes should be applied to database and system notification for successful changes should be returned

AI Assistant Reject Button:

Steps: Admin click on reject button

Expected Result: changes should not be applied and cache of changes should be deleted, system notification for changes dropped should be returned

Sign out:

Steps: Navigate to the Sign Out button

Expected Result: User is successfully logged out and redirected to the login page.

Test Plan 3: Cross-functionality

Objective:

Ensure that data is consistent across pages, and that smooth transitions take place

Test Cases:

Navigation Between Pages

Steps: Navigate between login, signup, timetable, and admin pages (if authorized).

Expected Result: Smooth transitions between pages with appropriate access controls.

Logout Functionality

Steps: Click logout button from any page when logged in.

Expected Result: User is logged out and redirected to the login page. Unable to access restricted pages without logging in again.

Responsive Design

Steps: Access admin page on various device sizes

Expected Result: Layout adjusts appropriately for different screen sizes (becomes scrollable)

Data Consistency

Steps: Make changes in the admin panel (e.g., update a course) and verify on the timetable page.

Expected Result: Changes made in the admin panel are reflected accurately on the timetable page.

Error Handling

Steps: Intentionally cause errors (e.g., disconnect internet during operation).

Expected Result: System displays user-friendly error messages.

Performance Under Load

Steps: Simulate multiple users accessing the system simultaneously

Expected Result: System remains responsive and functional under increased load