

PHP & Databases

Task 3 – Evaluation and Testing

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Virtual server set up

I set up a virtual server on my device by installing XAMPP, which includes Apache, PHP, and MySQL. I ran XAMPP as Administrator to avoid permission problems, then started Apache and MySQL from the Control Panel. This created a local server that functions similarly to a live server: Apache loads the website into the browser, PHP executes the backend code, and MySQL stores and retrieves data. By placing my project folder inside the htdocs directory, I could open the website using `http://localhost/...` and test features such as forms, login, and database updates before publishing the site online.

Database set up

- I created a new database in MySQL (phpMyAdmin) for the project.
- I created the required tables using SQL scripts.
- The table fields and structure were based directly on the ERDs to match the planned design.
- I set primary keys for each table to ensure every record has a unique ID.
- I added foreign keys to link tables together and reflect the relationships shown in the ERD.
- I applied constraints and rules (e.g., NOT NULL, data types, default values) to keep data valid and consistent.

Build a dynamic BeConnectEd website

- PHP code: Pages are generated based on user actions and stored data (e.g., welcome banner, enrolment and grades content changes per student).
- Sessions & authentication: The `session_start()` keeps users logged in and allows personalised pages (student name, units, profile photo).
- Role-based access: Different roles (student/admin/teacher) see different menus and pages, and access is restricted for security.
- Database content: MySQL data is used to display real information (units, assignments, grades, enrolment) instead of hard-coded text.
- Reusable layout (includes): Common components like `nav.php` and menus are included across pages for consistency and easier maintenance.
- Forms, validation, and feedback: Forms submit data to PHP, which validates input and shows success/error messages to guide the user.

Techniques used

BeConnectEd manipulates database data using SQL queries executed from PHP:

- **CRUD** operations (Create, Read, Update, Delete)
 - Create: example registering users, creating submissions, courses and units.
 - Read: example loading enrolled units, grades and feedback

- Update: updating profile details such as profile picture, courses and assigned units.
 - Delete (Soft Delete): records are not removed; they are marked inactive (e.g., `is_active = 0`) so they no longer appear in the system but remain stored for history and data integrity, such as ex-students.
- Data manipulation when users submit forms:
- PHP reads user input using `$_POST` and `$_GET`
 - the data is validated (required fields and correct formats)
 - Then a database query runs to insert, update or delete data
- In BeConnectEd, I use `mysqli` statements to run database queries securely when the query includes user input (such as email, password and IDs).

Key points

- `?` = placeholder for user input
 - `prepare()` = creates the SQL template
 - `bind_param()` = safely attaches user values (e.g., string or integer)
 - `execute()` = runs the query securely
- Relationships using IDs, including Primary and foreign keys (e.g., `user_id`, `unit_id`) connect data correctly (between students, units, assignments).

Test Cases of the Login

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Load website	local server running	Website loads successfully	Website is loaded	✓	
Choose your path (Login with institute and Login as independent)	Website is loaded	The login option screen is displayed for the selected path	The correct screen is displayed (Logging with Institute and Login as independent user buttons)	✓	
Log in as an independent user	The Choose Your Path screen is loaded	The Independent's login/sign-up page is displayed	The Independent's login/sign-up page is displayed	✓	
Valid login (Independent)	login_independent will be loaded, and you should already have an account as independent user	User will be redirected to the Home page of the specific role (session created)	User will be redirected to the Home page of the specific role (session created)	✓	
Invalid login as an independent (wrong password)	User exists in DB	An error message will be shown ("Incorrect password"), and the user remains on the login_independent page	An error message is shown ("Incorrect password"), and the user remains on the login_independent page	✓	
Invalid login as an independent (wrong e-mail)	The e-mail doesn't exist in DB	Error message will be shown ("This email is not registered, please create a new account"), and the	Error message is shown ("This email is not registered, please create a new account"), and the	✓	

		user remains on the login_independent page	user remains on the login_independent page		
Invalid login as an independent (empty fields)	User exists in DB	Error message will be shown ("You have some empty fields"), and the user remains on the login_independent page	Error message is shown ("You have some empty fields"), and the user remains on the login_independent page	✓	
Invalid login as an independent (first-time login)	Email is Registered but never logged in	Error message will be shown ("This is your first login. Please set your password"), and the user remains on the login_independent page	Error message is shown ("This is your first login. Please set your password"), and the user remains on the login_independent page	✓	
You have to be a new user, from the login_independent page create a new account	login_independent will be loaded	The Create an account form will be shown	The Create an account form is shown	✓	
Fill in the form with valid data	Create_account page is loaded	The account will be created and saved in the DB, and takes you back to the login_independent page	The account is created and saved in DB, and takes you back to the login_independent page	✓	
Fill in the form with incorrect e-mail format	Create_account page is loaded	An error message will show ("Email format invalid."), and the user remains on the create_account page	An error message is shown ("Email format invalid."), and the user remains on the create_account page	✓	
Fill in the form with an existing email in DB	Create_account page is loaded	An error message will show ("Email already exists."),	An Error message shown ("Email already exists."),	✓	

		and the user remains on the create_account page	and the user remains on the create_account page		
Fill in the form with some empty fields	Create_account page is loaded	An error message will show ("You have some empty fields."), and the user remains on the create_account page	An error message is shown ("You have some empty fields."), and the user remains on the create_account page	✓	
Fill in the form with an invalid first name	Create_account page is loaded	An error message will show ("First name format invalid."), and the user remains on the create_account page	An error message is shown ("First name format invalid."), and the user remains on the create_account page	✓	
Fill in the form with an invalid last name	Create_account page is loaded	An error message will show ("Last name format invalid."), and the user remains on the create_account page	An error message is shown ("Last name format invalid."), and the user remains on the create_account page	✓	
Fill in the form with an invalid date of birth	Create_account page is loaded	An error message will show ("Date of Birth format invalid."), and the user remains on the create_account page	An error message is shown ("Date of Birth format invalid."), and the user remains on the create_account page	✓	
Log in with the Institute	The Choose Your Path screen is loaded	The institution's login page should be displayed	The login institute page is displayed	✓	
Valid login (Institute)	The login_institute page is on screen and fill the form with a user who exists in DB +	User will be redirected to the Home page of the specific role (session created)	User is redirected to the Home page of the specific role (session created)	✓	Please note that if you log in as a parent, the pages are not developed yet

	correct password + not first-time logging				
Valid login (Institute)	The login_institute page is on screen and fill the form with a user who exists in DB + correct password + first-time logging	User will be redirected to the reset_password page of the specific role (session created)	User is redirected to the reset_password page of the specific role (session created)	✓	
Invalid login with the institute (wrong password)	User exists in DB	Error message shown ("Incorrect password"), and the user remains on the login page	Error message is shown ("Incorrect password"), and the user remains on the login page	✓	
Invalid login with the institute (wrong e-mail)	The e-mail doesn't exist in DB	Error message shown ("This email is not registered"), and the user remains on the login page	Error message shown ("This email is not registered"), and the user remains on the login page	✓	
Invalid login with the institute (empty fields)	User exists in DB	Error message shown ("You have some empty fields"), and the user remains on the login page	Error message shown ("You have some empty fields"), and the user remains on the login page	✓	
Invalid login with the institute (invalid role)	User exists in DB	Error message shown ("Your account role is invalid. Please contact support"), and the user remains on the login page	Error message shown ("Your account role is invalid. Please contact support"), and the user remains on the login page	✓	

Invalid login with the institute (user is not active)	User exists in DB but is inactive	Error message shown ("Your account is inactive. Please contact the administrator"), and the user remains on the login page	Error message shown ("Your account is inactive. Please contact the administrator"), and the user remains on the login page	✓	
Invalid login with the institute (first-time login)	Email is Registered but never logged in	Error message shown ("This is your first login. Please set your password"), and the user remains on the login page	Error message shown ("This is your first login. Please set your password"), and the user remains on the login page	✓	
Click on the link "Click here to set your password"	The login_institute page is on screen	The reset_password page will be opened	The reset_password page is opened	✓	
Reset your password	Fill the form with the user that exists in DB + matching password +is active e-mail	The set password button will take you to the login_institute page	The set password button opens login_institute page	✓	At a later stage, the user should be able to receive an email with a verification code.
Invalid Reset password with the institute (empty fields)	User exists in DB	An error message will be shown ("You have some empty fields"), and the user remains on the reset_password page	Error message is shown ("You have some empty fields"), and the user remains on the reset_password page	✓	
Invalid Reset password with the institute (user is not active)	User exists in DB but is inactive	Error message will be shown ("Your account is not active. Please contact the administrator"), and	Error message is shown ("Your account is not active. Please contact the administrator"), and the	✓	

		the user remains on the reset_password page	user remains on the reset_password page		
Invalid Reset password with the institute (password does not match)	User exists in DB	Error message will be shown ("Password does not match"), and the user remains on the reset_password page	Error message is shown ("Password does not match"), and the user remains on the reset_password page	✓	

Test Cases of the Master Layout

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Dark/Light mode	The website is open on any page	Theme switches immediately	The theme switched immediately	✓	
Click on the Logo	Website open	The home page of your particular role loads successfully	The home page of your particular role is loaded successfully	✓	
Open Profile popup	User is logged in	The Profile popup shows profile image, name & surname & role + upload, Delete and Sign Out icons and buttons	Profile popup is shown with profile image, name & surname & role + upload, Delete and Sign Out icons and buttons	✓	
Upload a Profile image. (valid ex jpg, png or jpeg)	Logged in + on Profile page	File validates and previews; it shows a preview	The file is validated and previewed; the profile image will be seen as a preview	✓	
Upload a Profile image. (NOT valid ex pdf)	Logged in + on Profile page	Only JPG, PNG, JPEG or WebP will be allowed	Only JPG, PNG, JPEG or WebP is allowed	✓	

Click Upload → select large image	Logged in + on Profile page	An error message will be shown: "File too large. Please choose an image under 5MB."	An error message is shown: "File too large. Please choose an image under 5MB."	✓	
Save the profile picture	Logged in + on Profile page	Saves the profile picture in database	The profile picture is saved and the database is updated	✓	
Delete Profile Image	Logged in + on Profile page	The profile picture will be deleted from the database and will be replaced with a default image	The profile picture is deleted from the database and is replaced with a default image	✓	
Sign Out	Logged in	Session ends, and the user is redirected to the Login page	Session ended, and the user was redirected to the Login page	✓	

Test Cases of the Side Menu for Students (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Home link	Logged in as a student	Loads the Home page	The Home page is shown	✓	
Click on the Plan & schedule link	Logged in as a student	Loads the Plan & Schedule page	The Plan & Schedule page is shown	✓	
Click on the Enrolment link	Logged in as a student	Loads the Enrolment page	The Enrolment page is shown, and if you are enrolled in a course, you see your enrolment including: Course title,	✓	

			Course code, Unit names, Unit code, and lecturers		
Click on the My Units link	Logged in as a student	Loads the My Units page	The My Units page is shown	✓	
Click on the Grades link	Logged in as a student	Loads the Grades page	The Grades page is shown	✓	
Click on the Notifications link	Logged in as a student	Loads the Notifications page	The Notifications page is shown	✓	
Click on the Chats link	Logged in as a student	Loads the Chats page	The Chats Page is shown	✓	

Test Cases of the Home page for Students (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Plan & schedule button and card	Logged in as a student	Loads the Plan & Schedule page	The Plan & Schedule page is shown	✓	
Click on the Enrolment button and card	Logged in as a student	Loads the Enrolment page	The Enrolment page is shown, and if you are enrolled in a course, you see your enrolment including: Course title, Course code, Unit names, Unit code, and lecturers	✓	

Click on the My Units button and card	Logged in as a student	Loads the My Units page	The My Units page is shown	✓	
Click on the Grades button and card	Logged in as a student	Loads the Grades page	The Grades page is shown	✓	
Click on the Notifications button and card	Logged in as a student	Loads the Notifications page	The Notifications page is shown	✓	
Click on the Chats link	Logged in as a student	Loads the Chats page	The Chats Page is shown	✓	

Test Cases of the Side Menu for Teachers (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Home link	Logged in as a teacher	Loads the Home page	The Home page is shown	✓	
Click on the Plan & schedule link	Logged in as a teacher	Loads the Plan & Schedule page	The Plan & Schedule page is shown	✓	
Click on the Enrolment link	Logged in as a teacher	Loads the Enrolment page	The Enrolment page is shown	✓	
Click on the Teaching Units	Logged in as a teacher	Loads the Teaching Units page	The Teaching Units page is shown	✓	
Click on the Notifications link	Logged in as a teacher	Loads the Notifications page	The Notifications page is shown	✓	
Click on the Chats link	Logged in as a teacher	Loads the Chats page	The Chats Page is shown	✓	

Test Cases of the Home page for Teachers (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Plan & schedule button and card	Logged in as a teacher	Loads the Plan & Schedule page	The Plan & Schedule page is shown	✓	
Click on the Enrolment button and card	Logged in as a teacher	Loads the Enrolment page	The Enrolment page is shown	✓	
Click on the Teaching Units button and card	Logged in as a teacher	Loads the Teaching Units page	The Teaching Units page is shown	✓	
Click on the Notifications button and card	Logged in as a student	Loads the Notifications page	The Notifications page is shown	✓	
Click on the Chats link	Logged in as a student	Loads the Chats page	The Chats Page is shown	✓	

Test Cases of the Side Menu for Administrators (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Home link	Logged in as an administrator	Loads the Home page	The Home page is shown	✓	
Click on the Plan & schedule link	Logged in as an administrator	Loads the Plan & Schedule page	The Plan & Schedule page is shown	✓	
Click on the Enrolment link	Logged in as an administrator	Loads the Enrolment page	The Enrolment page is shown	✓	
Click on the Registration link	Logged in as an administrator	Loads the Registration page	The Registration page is shown	✓	
Click on the Courses link	Logged in as an administrator	Loads the Courses page	The Courses page is shown	✓	
Click on the Assign teachers link	Logged in as an administrator	Loads the Assign teachers page	The Assign teachers page is shown	✓	
Click on the Classes link	Logged in as an administrator	Loads the Classes page	The Classes page is shown	✓	
Click on the Notifications link	Logged in as an administrator	Loads the Notifications page	The Notifications page is shown	✓	
Click on the Chats link	Logged in as an administrator	Loads the Chats page	The Chats Page is shown	✓	

Test Cases of the Home page for Administrators (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Plan & schedule button and card	Logged in as an administrator	Loads the Plan & Schedule page	The Plan & Schedule page is shown	✓	
Click on the Enrolment button and card	Logged in as an administrator	Loads the Enrolment page	The Enrolment page is shown	✓	
Click on the Registration button and card	Logged in as an administrator	Loads the Registration page	The Registration page is shown	✓	
Click on the Courses button and card	Logged in as an administrator	Loads the Courses page	The Courses page is shown	✓	
Click on the Assign teachers' button and card	Logged in as an administrator	Loads the Assign teachers page	The Assign teachers page is shown	✓	
Click on the Classes button and card	Logged in as an administrator	Loads the Classes page	The Classes page is shown	✓	
Click on the Notifications button and card	Logged in as an administrator	Loads the Notifications page	The Notifications page is shown	✓	
Click on the Chats button and card	Logged in as an administrator	Loads the Chats page	The Chats Page is shown	✓	

Test Cases of the Registration pages for Administrators (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Registration link	Logged in as administrator, and there should be some registered users	The table will be shown with the users' data	The table is shown with the users' data	✓	
Click on Register/Deregister	Logged in as administrator, and there should be some registered users	A modal will be shown to confirm the action	A modal is shown to confirm the action	✓	
Cancel the action	Logged in as administrator, and there should be some registered users	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	
Confirm the action	Logged in as administrator, and there should be some registered users	The modal closes, and the action will take place	The modal closed, and the action took place	✓	
Close the modal	Logged in as administrator, and there should be some registered users	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	
Click on the View/Edit button	Logged in as administrator, and there should be	The edit_registration.php page will load, displaying the registration form pre-filled	The edit_registration.php page is loaded, displaying the registration form pre-filled	✓	

	some registered users	with the user's details, ready to be edited	with the user's details, ready to be edited		
Close the page	Logged in as administrator, and there should be some registered users	The edit_registration.php page will close and redirect back to the registration_admin.php page	The edit_registration.php page is closed and redirects back to the registration_admin.php page	✓	
Edit some of the data from the fields and update	Logged in as administrator, and there should be some registered users	The fields are editable, and when the update is clicked, changes will be saved in the DB	The fields are editable, and when the update is clicked, changes are saved in the DB	✓	I did the validations, but they are not working as they should. If empty fields or incorrect e-mail format are working. But if you use an existing e-mail, a fatal error occurs instead of showing the message ("Email already exists")
Edit some data and cancel	Logged in as administrator, and there should be some registered users	The fields are editable, and when the cancel is clicked, no updates will be saved in the DB	The fields are editable, and when the cancel is clicked, no updates are saved in the DB	✓	
search bar				✗	To be done at a later stage

Click on the New Registration button	Logged in as administrator	The new_registration_admin.php page will show	The new_registration_admin.php page is shown	✓	
Close the page	Logged in as administrator	The new_registration_admin.php page will close and redirect back to the registration_admin.php page	The new_registration_admin.php page is closed and redirects back to the registration_admin.php page	✓	
Fill in the Register New Users form with valid data and register	Logged in as administrator	A new user will be registered in the DB and the table will be updated	A new user is registered in the DB, and the table is updated	✓	
Fill in the Register New Users form with invalid first name format and register	Logged in as administrator	An error message will show ("First name format invalid."), and the user remains on the new_registration_admin.php page	An error message is shown ("First name format invalid."), and the user remains on the new_registration_admin.php page	✓	
Fill in the Register New Users form with an invalid last name format and register	Logged in as administrator	An error message will show ("Last name format invalid."), and the user remains on the new_registration_admin.php page	An error message is shown ("Last name format invalid."), and the user remains on the new_registration_admin.php page	✓	
Fill in the Register New Users form with an invalid e-mail format and register	Logged in as administrator	An error message will show ("E-mail format invalid."), and the user remains on the new_registration_admin.php page	An error message is shown ("E-mail format invalid."), and the user remains on the new_registration_admin.php page	✓	
Fill in the Register New Users form	Logged in as administrator	An error message will show ("Email already exists."), and the user remains on the	An error message is shown ("Email already exist."), and the user remains on the	✓	

with invalid e-mail account and register		new_registration_admin.php page	new_registration_admin.php page		
Fill in the Register New Users form with invalid Date of Birth and register	Logged in as administrator	An error message will show ("Date of Birth format invalid."), and the user remains on the new_registration_admin.php page	An error message is shown ("Date of Birth format invalid."), and the user remains on the new_registration_admin.php page	✓	
Fill in the Register New Users form with empty fields and register	Logged in as administrator	An error message will show ("You have some empty fields."), and the user remains on the new_registration_admin.php page	An error message is shown ("You have some empty fields."), and the user remains on the new_registration_admin.php page	✓	
Click on the Cancel button	Logged in as administrator	All data in the form will be cleared	All data in the form is cleared	✓	

Test Cases of the Enrolment page for Administrators (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Enrolment link/card/button	Logged in as administrator, and there should be some registered courses	The enrolment_admin.php page will be loaded showing the Enrol Students to Classes form	The enrolment_admin.php page is loaded, showing the Enrol Students to Classes form	✓	
Choose a course from the dropdown	Logged in as administrator, and there should be some registered courses	A course list will be displayed, and let you select one	A course list is displayed, and it lets you choose one	✓	
Choose a class from the dropdown	Logged in as administrator, and there should be some classes assigned to courses	A class list will be displayed, and let you select one	A class list is displayed, and it lets you choose one	✓	
Choose a student by name from the dropdown	Logged in as administrator, and there should be some registered students	A student list will be displayed, and let you select one	The student list is displayed, and it lets you choose one	✓	
Click on the Add button	Logged in as administrator, and there should be a chosen student	The student will be enrolled in a course, the table and the DB will be updated	The student is enrolled in a course, the table and the DB is updated	✓	If you choose a student that is already enrolled, the DB will not let you have a duplicate student

Click on the Remove button	Logged in as administrator, and there should be enrolled students	The student will be removed from the course, the table and the DB will be updated	The student is removed from the course, the table and the DB is updated	✓	I would like to add a modal to confirm removal
Click on the Cancel button	Logged in as administrator, and there should be some selections	All data in the form will be cleared	All data in the form is cleared	✓	

Test Cases of the Courses pages for Administrators (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Courses link/card/button	Logged in as administrator	The courses_admin.php page will be loaded showing the tables of Courses and Units, buttons to forms	The courses_admin.php page will be loaded showing the tables of Courses and Units, buttons to forms	✓	
search bar				✗	To be done at a later stage
Courses					
Click on Register/Deregister from the Courses table	Logged in as administrator, and there should be some registered courses	A modal will be shown to confirm the action	A modal is shown to confirm the action	✓	
Cancel the action	Logged in as administrator, and there should be	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	

	some registered courses				
Confirm the action	Logged in as administrator, and there should be some registered courses	The modal closes, and the action will take place	The modal closed, and the action took place	✓	
Close the modal	Logged in as administrator, and there should be some registered courses	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	
Click on the View/Edit button from the Courses table	Logged in as administrator, and there should be some registered courses	The edit_course.php page will load, displaying the registration form pre-filled with the course's details, ready to be edited and a list of Units (if any) that are assigned to the course	The edit_course.php page is loaded, displaying the registration form pre-filled with the course's details, ready to be edited and a list of Units (if any) that are assigned to the course	✓	
Close the page	Logged in as administrator, and there should be some registered courses	The edit_course.php page will close and redirect back to the courses_admin.php page	The edit_course.php page is closed and redirects back to the courses_admin.php page	✓	
Edit some of the data from the fields and update	Logged in as administrator, and there should be some registered courses	The fields are editable, and when the update is clicked, changes will be saved in the DB	The fields are editable, and when the update is clicked, changes are saved in the DB	✓	I would like to add some validations. Please note that the Assigned Units list is view-only from here

Edit some data and cancel	Logged in as administrator, and there should be some registered courses	The fields are editable, and when the cancel is clicked, no updates will be saved in the DB	The fields are editable, and when the cancel is clicked, no updates are saved in the DB	✓	
Click on the Add a Course button	Logged in as administrator	The add_course.php page will load, showing a form for adding a course	The add_course.php page is loaded, showing a form for adding a course	✓	
Fill in the Add a Course form with valid data and save	Logged in as administrator	A new course will be added in the DB and the table will be updated	A new course is added in the DB, and the table is updated	✓	
Fill in the Add a Course form with an invalid course name format and save	Logged in as administrator	An error message will show ("Course name format invalid."), and the user remains on the add_course.php page	An error message is shown ("Course name format invalid."), and the user remains on the add_course.php page	✓	
Fill in the Add a Course form with an invalid course code format and save	Logged in as administrator	An error message will show ("Course code format invalid."), and the user remains on the add_course.php page	An error message is shown ("Course code format invalid."), and the user remains on the add_course.php page	✓	
Fill in the Add a Course form with an invalid MQF level format and save	Logged in as administrator	An error message will show ("MQF level format invalid."), and the user remains on the add_course.php page	An error message is shown ("MQF level format invalid."), and the user remains on the add_course.php page	✓	
Fill in the Add a Course form with	Logged in as administrator	An error message will show ("Credits format invalid."),	An error message is shown ("Credits format invalid."),	✓	

invalid credits and save		and the user remains on the add_course.php page	and the user remains on the add_course.php page		
Fill in the Add a Course form with invalid Duration and save	Logged in as administrator	An error message will show ("Duration format invalid."), and the user remains on the add_course.php page	An error message is shown ("Duration format invalid."), and the user remains on the add_course.php page	✓	
Fill in the Add a Course form with empty fields and save	Logged in as administrator	An error message will show ("You have some empty fields."), and the user remains on the add_course.php page	An error message is shown ("You have some empty fields."), and the user remains on the add_course.php page	✓	
Click on the Cancel button	Logged in as administrator	All data in the form will be cleared	All data in the form is cleared	✓	
Close the page	Logged in as administrator	The add_course.php page will close and redirect back to the courses_admin.php page	The add_course.php page is closed and redirects back to the courses_admin.php page	✓	
Units					
Click on Register/Deregister from the Units table	Logged in as administrator, and there should be some registered units	A modal will be shown to confirm the action	A modal is shown to confirm the action	✓	
Cancel the action	Logged in as administrator, and there should be some registered units	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	
Confirm the action	Logged in as administrator, and there should be	The modal closes, and the action will take place	The modal closed, and the action took place	✓	

	some registered units				
Close the modal	Logged in as administrator, and there should be some registered units	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	
Click on the View/Edit button from the Units table	Logged in as administrator, and there should be some registered units	The edit_unit.php page will load, displaying the Edit or View Unit data form pre-filled with the unit details, ready to be edited	The edit_unit.php page is loaded, displaying the Edit or View Unit data form pre-filled with the course's details, ready to be edited	✓	
Close the page	Logged in as administrator, and there should be some registered units	The edit_unit.php page will close and redirect back to the courses_admin.php page	The edit_unit.php page is closed and redirects back to the courses_admin.php page	✓	
Edit some of the data from the fields and update	Logged in as administrator, and there should be some registered units	The fields are editable, and when the update is clicked, changes will be saved in the DB	The fields are editable, and when the update is clicked, changes are saved in the DB	✓	I would like to add some validations.
Edit some data and cancel	Logged in as administrator, and there should be some registered units	The fields are editable, and when the cancel is clicked, no updates will be saved in the DB	The fields are editable, and when the cancel is clicked, no updates are saved in the DB	✓	

Click on the Add a Unit button	Logged in as administrator	The add_unit.php page will load, showing a form for adding a unit	The add_unit.php page is loaded, showing a form for adding a unit	✓	
Fill in the Add a Unit form with valid data and save	Logged in as administrator	A new unit will be added in the DB, and the table will be updated	A new unit is added in the DB, and the table is updated	✓	
Fill in the Add a Unit form with an invalid Unit name format and save	Logged in as administrator	An error message will show ("Unit name format invalid."), and the user remains on the add_unit.php page	An error message is shown ("Unit name format invalid."), and the user remains on the add_unit.php page	✓	
Fill in the Add a Unit form with an invalid unit code format and save	Logged in as administrator	An error message will show ("Unit code format invalid."), and the user remains on the add_unit.php page	An error message is shown ("Unit code format invalid."), and the user remains on the add_unit.php page	✓	
Fill in the Add a Unit form with an invalid ECTS Credits format and save	Logged in as administrator	An error message will show ("ECTS Credits format invalid."), and the user remains on the add_unit.php page	An error message is shown ("ECTS Credits format invalid."), and the user remains on the add_unit.php page	✓	
Fill in the Add a Unit form with invalid Unit Duration and save	Logged in as administrator	An error message will show ("Unit Duration format invalid."), and the user remains on the add_unit.php page	An error message is shown ("Unit Duration format invalid."), and the user remains on the add_unit.php page	✓	
Fill in the Add a Unit form with empty fields and save	Logged in as administrator	An error message will show ("You have some empty fields."), and the user remains on the add_unit.php page	An error message is shown ("You have some empty fields."), and the user remains on the add_unit.php page	✓	
Click on the Cancel button	Logged in as administrator	All data in the form will be cleared	All data in the form is cleared	✓	

Close the page	Logged in as administrator	The add_unit.php page will close and redirect back to the courses_admin.php page	The add_unit.php page is closed and redirects back to the courses_admin.php page	✓	
Assign Units to Course					
Click on Assign Units to Course button	Logged in as administrator, and there should be some registered courses and units	A modal will open showing the Assign Units to Course form	A modal is open, showing the Assign Units to Course form	✓	
Choose a course from the dropdown	Logged in as administrator, and there should be some registered courses	A course list will be displayed, and let you select one	A course list is displayed, and it lets you choose one	✓	
Choose a unit from the dropdown	Logged in as administrator, and there should be some registered units	A unit list will be displayed, and let you select one	A class list is displayed, and it lets you choose one	✓	
Click on the Add Another Unit button	Logged in as administrator, and there should be some registered units	A new Choose Unit drop-down field will be shown, where a unit list will be displayed, and you will be able to select one	A new Choose Unit drop-down field is shown, where a unit list will be displayed, and you will be able to select one	✓	
Click on the Remove button	Logged in as administrator, and there should be some registered units	The unit will be removed from the course, the table and the DB will be updated	The unit is removed from the course, the table and the DB is updated	✓	I would like to add a modal to confirm removal

Click on the Assign Units button with a course and units selected	Logged in as administrator, and there should be some assigned units to courses	New units will be assigned to the course and saved in the DB	New units are assigned to the course and saved in the DB	✓	
Click on the Assign Units button with one of the courses or units' fields empty	Logged in as administrator, and there should be some assigned units to courses	An error message will show ("You have some empty fields."), and the user remains on the same modal	An error message is shown ("You have some empty fields."), and the user remains on the same modal	✓	
Click on the Cancel button	Logged in as administrator	All data in the form will be cleared	All data in the form is cleared	✓	
Close the modal	Logged in as administrator	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	

Test Cases of the Assign Teachers pages for Administrators (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Assign Teachers link/card/button	Logged in as administrator	The assign_teachers_admin.php page will be loaded, showing a table of teachers assigned to classes and units	The assign_teachers_admin.php page is loaded, showing a table of teachers assigned to classes and units	✓	
search bar				✗	To be done at a later stage
Click on the View/Edit button	Logged in as administrator, and there should be some teachers	The edit_assign_teachers_admin.php page will load, displaying the Edit Assigned Teachers form pre-	The edit_assign_teachers_admin.php page is loaded, displaying the Edit Assigned Teachers form pre-	✓	

	assigned to units and classes	filled with the assigned details, ready to be edited	filled with the assigned details, ready to be edited		
Close the page	Logged in as administrator, and there should be some teachers assigned to units and classes	The edit_assign_teachers_admin.php page will close and redirect back to the assign_teachers_admin.php page	The edit_assign_teachers_admin.php page is closed and redirects back to the assign_teachers_admin.php page	✓	
Choose a different class from the dropdown and click update	Logged in as administrator, and there should be some teachers assigned to units and classes	The change will be saved in the DB, the table will be updated, and a "Saved successfully" message will be shown	The change is saved in the DB, the table is updated, and a "Saved successfully" message is shown	✓	
Tick different units and click update	Logged in as administrator, and there should be some teachers assigned to units and classes	The change will be saved in the DB, the table will be updated, and a "Saved successfully" message will be shown	The change is saved in the DB, the table is updated, and a "Saved successfully" message is shown	✓	
Untick all the units and click update	Logged in as administrator, and there should be some teachers assigned to units and classes	An error will be shown: "Please, check one or more units."	An error is shown: "Please, check one or more units."	✓	

Click on the Assign New Teacher to Unit and Class button	Logged in as administrator, and there should be some registered teachers, classes and units	A modal will open showing the Assign New Teacher to Unit and Class form	A modal is open, showing the Assign New Teacher to Unit and Class form	✓	
Close the modal	Logged in as administrator	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	
Choose a unit from the dropdown	Logged in as administrator, and there should be some registered units	A unit list will be displayed, and let you select one	A unit list is displayed, and it lets you choose one	✓	
Choose a class from the dropdown	Logged in as administrator, and there should be some registered classes	A class list will be displayed, and let you select one	A class list is displayed, and it lets you choose one	✓	
Choose a teacher from the dropdown	Logged in as administrator, and there should be some registered teachers	A teacher list will be displayed, and let you select one	A teacher list is displayed, and it lets you choose one	✓	
When all fields are filled, click on the Save button	Logged in as administrator, and there should be some registered teachers	The teacher will be assigned to a unit and class, saved in the DB, and the table will be updated	The teacher is assigned to a unit and class, saved in the DB, and the table is updated	✓	

Click on the Save button with one of the fields empty	Logged in as administrator, and there should be some registered teachers, units and classes	An error message will show ("Please select an item in the list."), and the user remains on the same modal	An error message is shown ("Please select an item in the list."), and the user remains on the same modal	✓	
Edit some data and cancel	Logged in as administrator, and there should be some registered teachers, units and classes	The fields are editable, and when the cancel is clicked, no updates will be saved in the DB, and it clears the fields	The fields are editable, and when the cancel is clicked, no updates are saved in the DB, and it clears the fields	✓	

Test Cases of the Classes pages for Administrators (Institute)

Test	Pre-condition	Expected Output	Actual Output	Passed or failed	Comments
Click on the Classes link/card/button	Logged in as administrator	The edit_class.php page will be loaded, showing a table of class names, course and assigned units	The edit_class.php page is loaded, showing a table of class names, course and assigned units	✓	
search bar				✗	To be done at a later stage
Click on the View/Edit button	Logged in as administrator, and there should be some registered classes, units and courses	The edit_class.php page will load, displaying the Edit or View Class data form pre-filled with the class details, ready to be edited	The edit_class.php page is loaded, displaying the Edit or View Class data form pre-filled with the class details, ready to be edited	✓	

Close the page	Logged in as administrator	The page will close, and nothing will change in DB, and the user will be redirected to the classes_admin.php page	The page is closed, and nothing has changed in DB, and the user will be redirected to the classes_admin.php page	✓	
Edit the class name and click the Update button	Logged in as administrator, and there should be some registered classes	The new class name will be saved in the DB, and the table will be updated, and user will be redirected to the classes_admin.php page	The new class name is saved in the DB, and the table is updated, and the user is redirected to the classes_admin.php page	✓	
Edit the course choice and click the Update button	Logged in as administrator, and there should be some registered courses	The course will be saved in the DB, and the table will be updated	The course is saved in the DB, and the table is updated	✓	
Edit some data and cancel	Logged in as administrator, and there should be some registered classes and courses	The fields are editable, and when the cancel is clicked, no updates will be saved in the DB	The fields are editable, and when the cancel is clicked, no updates are saved in the DB	✓	
Click on the Update button with one of the fields empty	Logged in as administrator, and there should be some registered classes and courses	An error message will show ("Please fill in this field."), and the user remains on the same page	An error message is shown ("Please fill in this field."), and the user remains on the same page	✓	
Click on the New Class button	Logged in as administrator, and there should be	A modal will open showing the New Class form	A modal is open, showing the New Class form	✓	

	some registered courses				
Close the modal	Logged in as administrator, and there should be some registered courses	The modal closes, and nothing will change	The modal closes, and nothing has changed	✓	
Edit some data and cancel	Logged in as administrator, and there should be some registered courses	The fields are editable, and when the cancel is clicked, no updates will be saved in the DB	The fields are editable, and when the cancel is clicked, no updates are saved in the DB	✓	
Type in a Class name, choose a course and click on the Save button	Logged in as administrator, and there should be some registered courses	The new class will be saved in the DB and assigned to a course. The table will be updated	The new class is saved in the DB and assigned to a course. The table is updated	✓	
Click on the Update button with one of the fields empty	Logged in as administrator, and there should be some registered courses	An error message will show ("Please fill in this field."), and the user remains on the same page	An error message is shown ("Please fill in this field."), and the user remains on the same page	✓	