Matthew Rojas   10/24/2025

Github link: https://github.com/Matt-R0jas/CIS-344-Academic-Project

Project Report

The Academic Research Collaboration Platform was created as a web-based tool to facilitate efficient researcher collaboration through user administration, project management, and safe document exchange. With PHP and MySQLi for backend processing and MySQL as the database engine, and HTML, CSS, and JavaScript for the front-end, this platform aimed to strike a compromise between functionality, security, and ease of use.

Project Objectives:

A simple yet useful platform that enables researchers to register, create projects with descriptive information, and upload and share relevant research materials was the goal of the project's conception. Secure user identification, defense against common web vulnerabilities like SQL injection, and the ability to facilitate document uploads with audit information (uploaded identity and timestamps) were among the core objectives.

The original scope concentrated on offering a simple and user-friendly interface for project creation and file management, as well as reliable and secure handling of data and sessions. The strategy was centered on modular PHP scripts that corresponded to the following essential features: document uploads, project management, dashboard, login, registration, and logout. Every module was made to have prepared statements to prevent injection attacks and a reliable, secure database connection with MySQLi.

Technical Details:

Procedural PHP scripts supplemented with MySQLi prepared statements for secure database interactions powered the platform's backend architecture. Selecting MySQLi over PDO to streamline the connection paradigm in a local XAMPP environment was one of the initial technical choices. The purpose of the db.php file was to consolidate the processing of connections.

A registration system that gathered comprehensive user profile data, including username, email, password hashes, and optional fields like first and last names, department, and institution, made user administration possible. Strong security was achieved by implementing password protection using bcrypt hashing methods. Session variables hold crucial profile data to customize the user experience on the dashboard, and user credentials are safely validated with prepared statements upon login. A

missing create_project.php file and problems with undefined connection variables made the initial stages of project creation difficult. The dashboard offers easy access to project details and the ability to create new projects, and it dynamically displays the projects that belong to the user who is currently logged in.

Uploading documents added even more difficulty. Errors pertaining to missing upload folders were triggered by the first challenges with file handling and directory management. By making sure the uploads folder was created inside the project root and confirming the proper permissions, this was fixed. In order to avoid upload failures, I added an upload folder to the directory.

The project detail page (project.php) encompasses multiple functions. It displays comprehensive project information, including the project name, description, and the creator's full name, enhancing transparency among collaborators. The page also supports document uploads directly tied to the project.

Database Design:

Users, projects, and documents are the three main tables that make up the database schema. In order to contextualize collaboration, the users' table has comprehensive profile information with fields that accommodate real-world academic identities, such as department and institution affiliations. Password hashes protect credentials without disclosing private information.

Each uploaded file's details are recorded in the documents table, which also links each uploaded file to its parent project and uploader. By elegantly encapsulating the links between users, their projects, and related documents, foreign key constraints uphold referential integrity.

Conclusion:

The project was successful in producing a safe, useful platform for academic collaboration that is specifically designed for document sharing and research project management. The database design facilitates expandable interactions between people, projects, and documents, and the modular PHP/MySQLi codebase applies fundamental security data handling best practices. The final product's resilience was strengthened by development challenges related to file management, connection handling, and security.