PROJECT DELIVERABLE 04

Group 13

Individual Contribution			
CWID	**Name**	**Contribution (Description)**	**Percent Contribution**
A20593079	Akshada Ranalkar	Worked on the programming part, prepared the video demo.	33.3%
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Project Title:

ACADEMIC PUBLICATION DATABASE SYSTEM

(REFERENCE WEBSITE: IEEE Website

https://ieeexplore.ieee.org/abstract/document/344065)

1.1 Objectives of Deliverable # 04

1. Develop a CRUD Application: Create an application using Python, Java, or C/C++ that performs Create, Read, Update, and Delete (CRUD) operations on a database.
2. Application Type: Build the application as a web-based, desktop, or command-line tool, ensuring it is user-friendly for CRUD tasks.
3. Use Suitable Libraries: Utilize appropriate libraries or frameworks (e.g., Streamlit for Python, JDBC for Java) for database interaction.
4. Data Integrity and Validation: Ensure reliable CRUD operations with accurate data validation to maintain data integrity.
5. Video Demonstration: Record a Loom video demonstrating each CRUD function, explaining the application's features and testing with different scenarios.
6. Error Handling: Implement robust error handling with clear error messages and account for edge cases to make the application reliable.
7. Code Quality and Documentation: Write clean, well-organized code with comments, and provide a README file explaining how to set up and use the application.

1.2 Application Overview

- Programming Language: Python
- Database: MySQL
- Application Type: Web-based application using Streamlit for the frontend.
- CRUD Operations: Implementation includes adding, reading, updating, and deleting records across tables in an IEEE database (e.g., Publications, Authors).
- Libraries Used: Streamlit for frontend, MySQL Connector for database interaction, and Pandas for data handling.

1.3 CRUD Operations

We have made sure to perform all the CRUD operations for every table present in the database. The video demonstration of these operations has been submitted along with this report.

1.4 Features Details

1. User Interface: The application includes a navigation guide and a table-based layout, allowing users to switch between tables easily.
2. Data Validation: Each form includes input validation for fields such as numeric IDs, dates, and required fields.
3. Error Handling: The program gracefully manages connection errors, input errors, and invalid CRUD operations with descriptive error messages to guide the user.
4. Data Security: Credentials are securely managed within the database connection function, and sensitive information is kept minimal in application files.