Project Report: Test Material Tracking System

Ayşe Serra Gümüştakım 2121251008

Entrance:

   Test Material Tracking System is designed to track and manage laboratory materials. The system provides users with an interface that allows users to add, remove and view materials. The project aimed to control the test material management processes through the application.

APPLICATION:

   Java programming language and Swing library were used while developing the application. MySQL database was used to store material information.

Functionality Overview:

1. Adding Material: The system allows users to select the material name, category and specify the quantity. Once submitted, the material is added to both the JList and the database.

2. Material Removal: By selecting a material from the JList, users can remove it and have the corresponding record deleted from the database. This function enables material management.

3. User Type Separation: The system includes two types of users: administrator and laboratory worker. When they click the "Back" button, the system redirects users to their respective homeframes depending on their user type.

What has been done:

1. Adding and Displaying Materials: Users can add new materials to the laboratory through the system and view the added materials in a list.

2. Material Deletion: Users can remove existing materials from the system and this will be reflected in the database. Deleted material is permanently removed from both the list and the database.

3. User Type Separation: The system divides users into two categories: administrators and laboratory workers. Users are directed to the relevant main frames depending on their type.

What Cannot Be Done and Limitations:

1. Material Update: It is not possible to update the information of an existing material in the system. The design predicts that the material information will remain constant after it is added. Therefore, the category of a material or when its name changes, a new material should be added and the old material should be deleted.

2. Material Search: There is no material search function in the current system. Users must review the list to view the materials.

3. User Authentication: There is no mechanism to verify and authorize users in the system. Therefore, anyone can add, view and delete materials.

Challenges Encountered:

1. Database Integration: Trying to connect Netbeans to MySQL database was the first challenge. Managing database connections and SQL queries, that is, establishing a successful connection with the database, was one of the challenges. Debugging and improving database interactions required significant effort.

2. Material Deletion: Implementing materials deletion required carefully managing data mapping between JList and the database. Ensuring data consistency and data removal required a complex balance.

Conclusion:

Test Material Tracking system provides an effective solution to improve test material tracking system. The graphical interface simplifies user interaction, while integration with the MySQL database ensures data persistence. The application successfully carries out test material tracking processes, despite difficulties encountered during implementation such as database connection and material deletion details.

As a result, the test material tracking project offers a functional and user-friendly solution to address the material tracking and management needs of laboratories.