TITLE

Student Registration Management System

SEMESTER PROJECT REPORT

DBMS - CS-232-B

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INSTRUCTOR

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1) Overview:

This code is a simple Student Registration System implemented using Python's Tkinter for the GUI and PyMySQL for database interaction with MySQL.

=>**Import Statements:** The code begins with importing necessary modules such as pymysql for MySQL database interaction and tkinter for GUI development.

=>**Database Connection:** The connection () function establishes a connection to the MySQL database using the provided credentials.

=>**Table Refreshing:** The refreshTable() function clears the existing data in the GUI table (my_tree) and repopulates it with the data fetched from the database.

=>**GUI Setup:** The code sets up the Tkinter window (root) with a title, geometry, and a large label indicating the purpose of the application.

=>**Entry Widgets and Labels:** Entry widgets are created for user input (Student ID, First Name, Last Name, Address, Phone) along with corresponding labels.

=>**Button Functions:** Functions are defined for various buttons such as adding data (add()), updating data (update()), deleting data (delete()), searching data (search()), resetting the database (reset()), and selecting a row (select()).

=>**Treeview Setup:** A Treeview widget (my_tree) is set up to display the database records in tabular format with headings.

=>**Styling:** The styling of the Treeview headings is configured.

=>**Main Loop:** The main event loop (root.mainloop()) is started to run the Tkinter application.

Overall, this code creates a simple GUI application for managing student registration data in a MySQL database. It allows users to add, update, delete, search, and view student records through a user-friendly interface.

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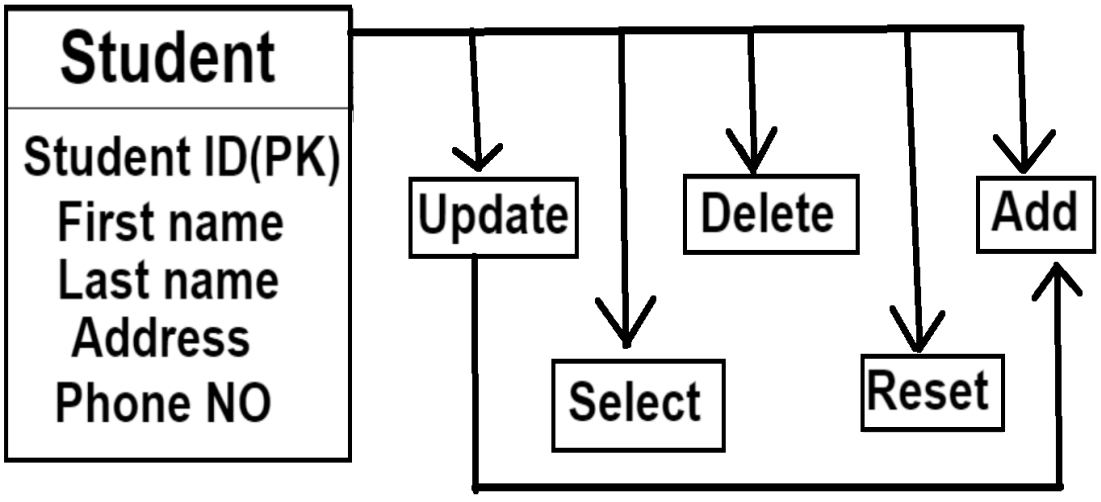
2) Milestones:

(1): A student registration management system like the one described in the code serves several purposes and can offer numerous benefits in various business scenarios, particularly in educational institutions or organizations that deal with student data. Here are some reasons why such a system is valuable:

=>**Efficient Data Management:** It provides a centralized platform for managing student information, including personal details, academic records, and contact information. This ensures data integrity, accuracy, and consistency.
=>**Streamlined Processes:** The system automates tasks related to student registration, such as adding, updating, and deleting records. This streamlines administrative processes and reduces manual effort, leading to improved efficiency and productivity.
=>**Enhanced Communication:** Having access to up-to-date student contact details facilitates effective communication between administrators, teachers, students, and parents. This can include sending notifications, announcements, and reminders about important events or deadlines.
=>**Compliance and Reporting:** The system can help ensure compliance with regulatory requirements and institutional policies related to student data management, privacy, and security. It also simplifies the process of generating reports for accreditation, audits, and performance evaluations.
In a business scenario, such a system could be implemented by educational institutions such as schools, colleges, universities, or training centers. Additionally, organizations offering online courses, certification programs, or professional development workshops could benefit from a similar system to manage student enrollment and progress tracking. Moreover, tutoring centers, language schools, and educational consulting firms could utilize such a system to streamline their operations and provide better services to their clients.

(2) => <u>Relational Schema/ER Diagram:</u>



(3): This is the process of organizing the attributes and tables of a relational database to minimize redundancy and dependency. In this code, normalization should ideally be applied to the database schema to ensure data integrity and reduce redundancy. Tkinter is the standard GUI toolkit for Python. It provides a set of Python interfaces to the Tk GUI toolkit, which is the de facto standard GUI toolkit for Python. PyMySQL is a pure-Python MySQL client library. It allows Python programs to connect to a MySQL database to perform database operations.

(4): Following Queries are used in the provided code:

=>**SELECT Query:** Retrieves all records from the students table.

=>**INSERT Query:** Adds a new student record to the students table.

=>**DELETE Query:** Removes all records from the students table.

=>**DELETE with WHERE Clause Query:** Deletes a specific student record based on the provided STUDID.

=>**UPDATE Query:** Updates an existing student record based on the provided STUDID.

=>**SELECT with WHERE Clause Query:** Retrieves records from the students table based on specified conditions.