

STUDENT DATABASE MANAGEMENT SYSTEM

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Abstract:

An organized and systematic office solution is essential for all universities and organizations. There are many departments of administration for the maintenance of college information and student databases in any institution. All these departments provide various records regarding students. Most of these track records need to maintain information about the students. This information could be the general details like student name, address, performance, attendance etc or specific information related to departments like collection of data.

All the modules in college administration are interdependent. They are maintained manually. So, they need to be automated and centralized as, Information from one module will be needed by other modules. For example, when a student needs his course completion certificate it needs to check many details about the student like his name, reg number, year of study, exams he attended and many other details. So, it needs to contact all the modules that are department and examination and result of students.

In general, this project aims to enhance efficiency and at the same time maintain information accurateness. Our work is useful for easy user interface. We are planning to utilize the powerful database management, data retrieval and data manipulation. We will provide more ease for managing the data than manually maintaining in the documents. Our work is useful for saving valuable time and reduces the huge paper work.

Introduction:

Database refers to a collection of electronic records that could be processed to produce useful information. The data can be accessed, modified, managed, controlled and organized to perform various data-processing operations.

Database Management System (DBMS) refers to the technology solution used to optimize and manage the storage and retrieval of data from databases. DBMS offers a systematic approach to manage databases via an

interface for users as well as workloads accessing the databases via apps. The management responsibilities for DBMS encompass the information within databases; the processes applied to databases such as access and modification; as well as the logical structure of the database. DBMS also facilitates additional administrative operations such as change management, disaster recovery, compliance and performance monitoring, among others.

Coding Languages :

Coding languages used here are Python and MySQL

Advantages:

1. Improved data sharing

An advantage of the student database management approach is, the DBMS helps to create an environment in which end users have better access to more and better-managed data.

2. Improved data security

The more users access the data, the greater the risks of data security breaches. A DBMS provides a framework for better enforcement of data privacy and security policies.

3. Better data integration

Wider access to well-managed data promotes an integrated view of the organization's operations and a clearer view of the big picture.

4. Minimized data inconsistency

Data inconsistency exists when different versions of the same data appear in different places. The probability of data inconsistency is greatly reduced in a properly designed database.

Steps to use:

STEP 1: Open the program.

STEP 2: For inserting the data for a new student enter the details in the in the respective entry boxes and click on add new button.

- STEP 3: For viewing the details of all the entries present in the database click on the display button.
- STEP 4: For clearing the entry boxes click clear button. This will clear everything present in the entry boxes and not from the database.
- STEP 5: For deleting an entry from the database mention the roll no in the entry box next to roll no field and then click the delete button. This will erase the data for the particular student.
- STEP 6: For searching the details of a student mention the roll no in its respective entry box and then click on the search button.
- STEP 7: For updating the details of a particular student click on the update button and mention the changes to be done in the fields in their respective boxes. The changes can be viewed by clicking on the display button.
- STEP 8: For exiting the program click on exit button.

GUI:

The screenshot shows a Java Swing window titled "Student Database Management system". The window has a light blue background. At the top, there is a white rectangular box containing the text "Student Database Management System" in bold black font. Below this, the window is divided into two main sections. On the left, there is a section titled "Student Info" which contains a list of labels (Student ID, First Name, Surname, DOB, Gender, Age, Address, Mobile) each followed by a text input field. On the right, there is a section titled "Student Details" which contains a large, empty text area with a vertical scrollbar. At the bottom of the window, there is a horizontal bar containing seven buttons: "add new", "Display", "Clear", "Delete", "Search", "Update", and "Exit".

Reference:

YouTube <https://www.youtube.com/watch?v=dLRXp4YSuG4&t=2675s>