CS571 Project Report

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1 Summary

All institutions and companies require a well-organized and systematic office solution. In any university, numerous administrative departments are responsible for the upkeep of college information and student databases. All of these departments keep a variety of student records. The majority of these records must keep track of information about the students. This information could include general information such as a student's name, ID, address, contact information, and marks. This kind of student database management system could allow the information to add, delete, and update the student's records. This GUI based software could also help to search the records from the database.

2 Introduction

Maintaining the data in an institute is a very crucial task. Maintaining the data is also a tedious task. In college administration, all of the modules are interconnected. They are manually maintained. As a result, they must be automated and centralized because other modules require data from one module. For example, when a student requests a course completion certificate, various details must be verified, including his name, registration number, year of study, tests were taken, and other information. As a result, it is necessary to contact all modules, including the office, department, examination, and student results. We need to find the record by some little information like address, age, surname etc. So for that, we need to make a search button to search the record with this bit of information. Sometimes we also want to hide some information from the other employee in the database. We also need to assign a data column to an employee who can update the information.

3 Solution

The GUI based Student Database Management System has designed and implemented significant process improvements. The project was created with Python and Tkinter. For the database, we have created the txt file. Using this student database management system, we can add, delete, update, view, and clear existing records from the database. We save the Student name, age, gender, address, and cellphone number using Student ID as the PRIMARY KEY. The main screen of the project is the figure 1. The working of the buttons are following:

1. **Add New:** The add new button add the information from the user input field to the software database.

- 2. **Display:** The display button show all the record from the student's database to the student details portal.
- 3. Clear: This button clear all the user input filed.
- 4. **Delete:** The delete button delete the selected record from the student's database.
- 5. **Search:** This button search the information provided in the user input field in the student's database.
- 6. **Update:** This button update the key information to the selected record in the student's database.
- 7. **Import:** Clicking on this button will open the file select window and select the file to upload into the database.
- 8. **Export:** Clicking on this button will open a file window to save the records in external files.
- 9. **Exit:** Click this button to close the software.

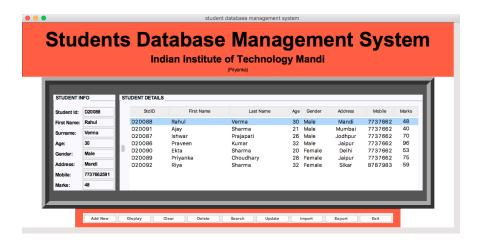


Figure 1: Main screen of student database management system

3.1 Assumptions

I did not made any assumptions for the solution

3.2 Algorithms used

For developing the software, I used the Python3 and Tkinter library for GUI. The database has been developed with the txt file, and to handle the

record an list has been used from the python. The configuration parser is also used to read the config file, and this config file has the setting to which information we want to show the user.

4 Results and analysis

The external file with the student records has been imported into the soft-ware from the import button. The result was automatically uploaded with the file selection box and permanently saved in the internal database. I have also deleted some of the records from the database and recorded some student information manually from the data input field. I have also tried to search the student records with some keywords, and the software was successfully searching the records, and if the records were not present in the database, it shows the appropriate message. I have also disabled some information to show in the software by setting the No option in the configuration file.

5 Conclusion

To maintain the student's record in the universities or institute, a student DBMS has been designed in the Python and Tkinter based library. The GUI based software has accessible functions to maintain the data, search the data, import the data, and export the data. The database has been created with the txt file handler function. The configuration file has also been utilized to configure the visibility of the software. In last the GUI based software is easy to use and handle the student's records.

6 Project Github page

Github page: https://github.com/priyanka8993sihag/DBMS

7 References