**Database Management using python GUI**

The primary objective of this project is to enable users to perform CRUD operations without the need to write any queries also for the filter operations as well. This project typically involves in creating, reading, updating, deleting data in a database and some other additional features as well.

**Team Members:**

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**GitHub url:** <https://github.com/PrudviMadhala/DataBaseManagement_5430>

**Goal:** Create a GUI application that allows users to interact with data stored in a database or file. Also, it allows users to interact with data stored in a database or file. The following are the objectives and features for this

**Objectives:**

* Provide a simple and intuitive way for users to add new data to the database or file.
* Create a form that allows users to input data and submit it to the database or file.

Validate user input to ensure data is correctly formatted and meets any required criteria. Display a confirmation message to the user when data is successfully added.

* Implement a search functionality that allows users to query the database or file for specific data.
* Display search results in a readable format. Allow users to filter search results based on certain criteria.
* Provide a way for users to select the data they want to update. Allow users to edit the selected data and save the changes to the database or file. Display a confirmation message to the user when the data is successfully updated.
* Provide a way for users to select the data they want to delete. Confirm with the user before deleting the data. Remove the data from the database or file when the user confirms the deletion.

The above goals and objectives for CRUD operations using Python GUI are designed to provide a feature-rich and user-friendly application that allows users to interact with data stored in a database or file. The following are the features and motivations behind each goal and objective:

*1. Create a GUI application that allows users to interact with data stored in a database or file.*

*Features:*

* User-friendly interface: The application should have a clear and easy-to-use interface that allows users to perform CRUD operations without difficulty.
* Database/File connectivity: The application should be able to connect to a database or file to retrieve and manipulate data.
* CRUD functionality: The application should allow users to create, read, update, and delete data.

*Motivation:* This goal is important because it sets the foundation for the entire application. It ensures that users have access to the data they need and that the application is capable of performing basic CRUD operations.

*2. Provide a simple and intuitive way for users to add new data to the database or file.*

*Features:*

* Input form: The application should provide a form that allows users to input data.
* Data validation: The application should validate user input to ensure that it is correctly formatted and meets any required criteria.
* Confirmation message: The application should display a confirmation message when data is successfully added.

*Motivation:* This goal is important because it allows users to easily add new data to the database or file. It also helps prevent errors and data corruption by validating user input.

*3 Enable users to view and search for existing data in the database or file.*

*Features:*

* Search functionality: The application should allow users to query the database or file for specific data.
* Search results display: The application should display search results in a readable format.
* Filter functionality: The application should allow users to filter search results based on certain criteria.

*Motivation:* This goal is important because it enables users to quickly and easily find the data they need. It also helps prevent user frustration by providing them with relevant and useful search results.

*4 Allow users to update existing data in the database or file.*

*Features:*

* Data selection: The application should provide a way for users to select the data they want to update.
* Data editing: The application should allow users to edit the selected data and save the changes to the database or file.
* Confirmation message: The application should display a confirmation message when the data is successfully updated.

*Motivation:* This goal is important because it allows users to update the data in the database or file when it is necessary. It also ensures that users can make changes confidently and without fear of data loss.

*5 Enable users to delete data from the database or file.*

*Features:*

* Data selection: The application should provide a way for users to select the data they want to delete.
* Confirmation prompt: The application should confirm with the user before deleting the data.
* Data removal: The application should remove the data from the database or file when the user confirms the deletion.

*Motivation:* This goal is important because it allows users to remove data that is no longer needed or is incorrect. It also helps prevent accidental data deletion by confirming with the user before removing the data.

*6 Enable users to add data from the excel*

*Features*

* In this feature, the application will the user to fill the form in which the user needs to select the database in which he wants to create the table and insert the excel data.
* Once he filled out the form and uploaded the excel file the application will create a table in the selected database.

*Motivation:* This goal is important because it allows the user to create and insert the records using the existing excel data which will help the user to perform other database operations which excel cannot.

*7 Query editor*

*Features*

* In this feature, we will create a query editor incase the user want to run any queries over the data or the table he created.

**Roles and Responsibilities:**

*Sai Chandana kadala:* I will handle the half of the crud operations like create tables and updating records.

*Singham Shetty jithesh:* I will handle the other half of the crud operations like inserting records and deleting the records.

*Prudhvi Madala*: I will handle the conversion of excel data into the table.

*Shiva:* I will handle the excel data conversion as well as the search operations in the table

*Krishna:* I will work on the query editor which will make the user to enter the queries on the gui application.

**References:**

[Database CRUD Operation in Python (tutorialsteacher.com)](https://www.tutorialsteacher.com/python/database-crud-operation-in-python) This tutorial provides basic crud operations using python

[Creating A CRUD Desktop Application Using Python3 And MySQL Database Server (c-sharpcorner.com)](https://www.c-sharpcorner.com/article/creating-a-crudcreate-retrieveupdate-and-delete-desktop-application-using-pyt2/) This is another tutorial of how can we implement basic crud operations using python and a gui module tkinter.