

DB Design Document

System Architecture

I have implemented the 3-tier architecture design for my individual DB Design project

Front-end: **Tkinter**

Middle layer: **Python**

Backend: **MySQL**

Design Decisions

Overall design: After the application is started, a window named Contact Application is displayed. It contains the title, Search entry bar, search button, textboxes to display information and Add/Update/Delete Contact buttons.

Buttons:

Display All Contacts: This button will display all the contacts' first, middle and last name in the text box below the button.

Add New Contact: This button will display a new window which will have a form for the user to add a new contact.

Update This Contact: This button will update the current contact with the changes made by the user.

Delete This Contact: This button will entirely delete the contact and its contents from all the tables.

Search: The search button allows the user to search any contact through the text box. If the text input is present anywhere inside the database, the corresponding contact information will be displayed on the contact textbox.

Add New: Add New Address, Add New Phone and Add New Date refreshes the text boxes and allows the user to enter new values accordingly.

Add This: Add This Address, Add This Phone, Add This Date adds the entered data by the user to the respective contact.

Textboxes:

These are used to display the contact details such as names, addresses, phone numbers and dates.

Add Details Window:

This window pops up when 'Add New Contact' is clicked. This has a form for the user to fill with such as User Details, Add Address, Add Phone, Add Date. It also has a submit button and an exit button to close the window.

My Database Schema

For the backend, I decided to stick with the original schema provided by the professor.

My tables are:

contact(Contact_id , first_name, middle_name, last_name)

address(Address_id,Contact_id, address_type,address,city,state,zip)

Phone(Phone_id,Contact_id,Phone_type,Area_code,Number)

Date(Date_id,Contact_id,Date_type,Date)

Contact_id,Address_id,Phone_id and Date_id are auto_incremented primary keys and are unique for each entry in the respective tables. The Contact_id in address, Phone and Date is a foreign key which references to the Contact_id in the contact table.

Assumptions:

1. The user must enter the first name during contact insertion.
2. The zip code is assumed to be true and in integer form.
3. The phone number should be added in the format xxx-xxx-xxxx.
4. The data from the contacts.csv file is already loaded onto the database.
5. To modify a contact, the type cannot be changed. It has to be added as new.