

Design Document:

AIM:

This SQL programming project involves the creation of a database host application that interfaces with a backend SQL database implementing a Contact List application.

INTRODUCTION:

This is a web application. A Contact Address Book is a personalized webpage that has been interfaced with a MySQL database and is used to store the user's contact details. The user has the following options –

- Viewing Contacts and Searching for a contact.
- Adding a new Contact
- Edit an Existing Contact
- Deleting a Contact

These functionality has been carried out in each of the named .php files provided. The GUI is fairly simple and easy to navigate through. All the contacts have been displayed on a single web page. The edit, delete and add functionalities are on separate web pages which the user can navigate to easily at the click of a button.

Tools and Technologies used:

XAMPP is used as a webserver solution. The project server is localhost.

Microsoft Excel was used for preprocessing/cleaning of the data.

This project has been done using HTML/CSS and some Javascript for the GUI design and navigation in the front-end.

PHP, an open source general scripting language is used for manipulation of text pages, and in particular for manipulating dynamic HTML pages at the Web server computer. PHP has libraries of functions for accessing databases stored under various types of relational database systems such as MySQL, which is the backend for this project.

As stated earlier, MySQL database is used to store the contact list information.

PHPMyAdmin was used to import the data onto the created database and query the data at the backend before the GUI was implemented.

Database Design:

The structure of the database was given and the relations were constructed according to the diagram given.

There are 4 tables, Contact, Address, Phone, Date.

However, a csv file that had all the data combined (Contacts.csv) was provided.

The data preprocessing was required to be carried out.

Microsoft Excel was used for this purpose.

The data was split and saved onto 4 individual csv files.

It was stored in accordance with the created tables in MySQL.

The Contact.csv consisted of the contact id, first name, middle name and last name.

The Address.csv, Phone.csv and Date.csv required the creation of a new column which was automatically filled with the number of entries and each contact_id that was a part of the Contact.csv file had its contact_id associated with the the respective address_id, phone_id and date_id to identify each contact and its respective attribute.

The phone number was required to be split into “area_code” and “Number” as shown in the design diagram. CSV has the functionality to achieve that.

Cascade Update and Delete have been used for the purpose of update and deletion of the contact.

This is done so as to delete all the records of the contact from all the tables in the database.

Assumptions made:

Any NULL Rows that were created during the cleaning process, for example, the contacts who do not have a Home or work cell phone number, that entry was deleted from the database so as to avoid too many NULL values in the DB.

The contact can have only a selected number of options, such as Address Type can be only Home or Work, Phone Type can only be Home, Work or Cell.

This is done to maintain the consistency of the database. Too many options can lead to a lot of redundant data.

If a contact has multiple types of phone numbers, Addresses, they will be displayed multiple times as they all reference the contact_id and that is the foreign key to all the tables in the database.

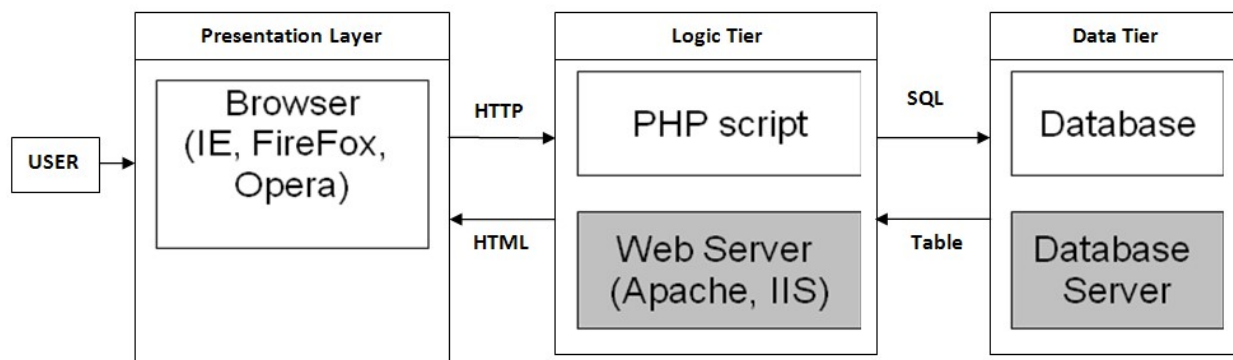
Therefore, when a join is performed, it takes all the combinations of the attributes of the contact.

Only 1 contact can be added at a time.

Only 1 contact can be edited at a time.

Design:

For most of the front end work, there is a large number of third parties that provide readymade .js and .css files that can be used for making the GUI more aesthetically pleasing with minimum amount of coding. One needs to only refer and link it in the page.



The GUI is fairly simple and easy to navigate.

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My Contacts

Search

Search

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Add Contacts

Contact Id	Name	Address Type	Address	City	State	Zip	Phone Type	Phone	Date	Date Type	Edit	Delete
1	Cindra Del Philipeaux	home				75018	Cell	7323927165	0000-00-00	Birthday	✏	🗑
1	Cindra Del Philipeaux	home				75018	Work	5757806421	0000-00-00	Birthday	✏	🗑
1	Cindra Del Philipeaux	work	90103 Glacier Hill Terrace	Plano	Texas	75003	Cell	7323927165	0000-00-00	Birthday	✏	🗑
1	Cindra Del Philipeaux	work	90103 Glacier Hill Terrace	Plano	Texas	75003	Work	5757806421	0000-00-00	Birthday	✏	🗑
2	Sherwood Spoerl	home	2287 Sutteridge Park	Dallas	Texas	75062	Home	4415572835	1986-06-07	Birthday	✏	🗑
2	Sherwood Spoerl	home	2287 Sutteridge Park	Dallas	Texas	75062	Cell	9079133698	1986-06-07	Birthday	✏	🗑
2	Sherwood Spoerl	home	2287 Sutteridge Park	Dallas	Texas	75062	Work	5266913663	1986-06-07	Birthday	✏	🗑
2	Sherwood Spoerl	work	37 Sommers Hill	Addison	Texas	75006	Home	4415572835	1986-06-07	Birthday	✏	🗑

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localhost/New/add.php

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Add Contact

First Name *

Middle Name

Last Name *

Home Phone

Area code:xxx

Number

Cell Phone

Area code:xxx

Number

Work Phone

Area code:xxx

Number

Home Address

1234 Main St

City

State

Zip

Work Address

1234 Main St

City

State

Zip

Date

Date type

Cancel

Add Contact

Edit Contact

First Name *		Middle Name		Last Name *	
<input type="text" value="Adina"/>		<input type="text"/>		<input type="text" value="Richardson"/>	
Home	Number	Cell	Number		
<input type="text" value="260"/>	<input type="text" value="264"/>	<input type="text" value="181"/>	<input type="text" value="7819784"/>		
Work	Number				
<input type="text" value="276"/>	<input type="text" value="281"/>				
Home Address					
<input type="text" value="1234 Main St"/>					
City		State		Zip	
<input type="text"/>		<input type="text" value="Select a State"/>		<input type="text" value="75031"/>	
Work Address					
<input type="text" value="1234 Main St"/>					
City		State		Zip	
<input type="text"/>		<input type="text" value="Select a State"/>		<input type="text"/>	
Date		Date type			
<input type="text" value="0000-00-00"/>		<input type="text" value="Birthday"/>			
<input type="text"/>					
<input type="button" value="Cancel"/> <input type="button" value="Update"/>					

localhost/New/delete.php?id=5

Delete Contact 5 ?

First Name	Middle Name	Last Name
<input type="text" value="Kenton"/>	<input type="text" value="Rog"/>	<input type="text" value="Sibbald"/>
<input type="button" value="DELETE CONTACT"/>		
<input type="button" value="Change your mind? Cancel"/>		

localhost/New/index.php

My Contacts

Contact id	Name	Address Type	Address	City	State	Zip	Phone Type	Phone	Date	Date Type	Edit	Delete
26	Clemmy Widdup	home	333 Scoville Hill	Allen	Texas	75091	Cell	8262974157	1994-02-25	Birthday		
26	Clemmy Widdup	work	6 Michigan Pass	Dallas	Texas	75004	Cell	8262974157	1994-02-25	Birthday		
215	Clementius Alfz Levinton	home				75015	Cell	1119278581	0000-00-00	Birthday		
215	Clementius Alfz Levinton	home				75015	Work	5858847792	0000-00-00	Birthday		
215	Clementius Alfz Levinton	work					Cell	1119278581	0000-00-00	Birthday		
215	Clementius Alfz Levinton	work					Work	5858847792	0000-00-00	Birthday		
241	Anestassia Glennie Calcraft	work	2975 Clemons Junction	Allen	Texas	75002	Cell	8836982435	0000-00-00	Birthday		
241	Anestassia Glennie Calcraft	work	2975 Clemons Junction	Allen	Texas	75002	Work	9436585773	0000-00-00	Birthday		
396	Rosette Tander	home	83453 Clemons Junction	Allen	Texas		Cell	8901657394	1988-05-07	Birthday		
489	Clemente Lillis Moughton	home	26 Riverside Drive	Plano	Texas	75065	Home	9776639183	1988-08-03	Birthday		
489	Clemente Lillis Moughton	home	26 Riverside Drive	Plano	Texas	75065	Cell	8828704125	1988-08-03	Birthday		
489	Clemente Lillis Moughton	work					Home	9776639183	1988-08-03	Birthday		
489	Clemente Lillis Moughton	work					Cell	8828704125	1988-08-03	Birthday		

Requirements:

Internet Connection (to load the third party .css and .js files)

Good amount of RAM.

Resources:

<https://www.w3schools.com/html/default.asp>

<https://www.w3schools.com/css/default.asp>

<https://www.w3schools.com/js/default.asp>

<https://www.w3schools.com/sql/default.asp>

<https://www.w3schools.com/php/default.asp>

<https://www.w3schools.com/bootstrap/default.asp>

<https://www.w3schools.com/howto/default.asp>

<https://www.w3schools.com/jquery/default.asp>

<https://www.udemy.com/the-complete-web-development-course-learn-by-building-apps/>

<https://code.jquery.com/jquery-3.3.1.min.js>

<https://ajax.googleapis.com/ajax/libs/jquery/2.1.3/jquery.min.js>

<https://cdnjs.cloudflare.com/ajax/libs/jquery.mask/1.14.15/jquery.mask.min.js>

<https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/css/bootstrap.min.css>