

## Design Document

**DBMS :** MySQL Workbench

**Programming Language :** JAVA

**DB connection :** JDBC Connector

The flow of the project is as follows:

1. Tables are created in MySQL Workbench.
2. The schema contains 7 tables : Contact, Address, Phone, Date and AddressType, PhoneType, DateType.
3. The last 3 tables are created to keep track of the types of addresses, phone numbers and dates used the application and it is very useful for future modifications/augmentation.
4. Data is populated in the Tables using Data import option in the workbench for the tables Contact, Address and Date.
5. For Phone table I have written JAVA code to read a CSV file, split the number column into area code and number and then populate the Phone table in the DB (Refer : ImportData.java file).
6. ADD contact button will open a new form and asks the user to enter the person's details. I have implemented 'Null' validation for all the fields in this form. This will not allow user to add any new contact with null entries.
7. DELETE button will delete the selected row from the contacts list shown from the Contact table, cascaded with the tables which refers the primary key of the Contact table, such as Address table, Phone table and Date table.
8. MODIFY button will modify/update the contact selected from the table. This functionality is implemented in such a way that it first the user selects the contact to modify and then select the type of information that needs to be modified via a dropdown and then click modify button. This operation will only update the table selected from the dropdown.
9. SEARCH functionality is implemented such that the user types a single string value which can be a name, a number, or string and search result will give the contacts that matches that string.

10. Error handling has been performed especially while adding new contact into the Database. All the fields must be filled. Failure to do so, user will be prompted with a message box asking to enter those empty fields.
11. Once the data is inserted, deleted and updated successfully, the user is notified with a message box stating that the data has been saved, deleted or updated successfully or not.
12. The modify operation opens a different form for each type of update/modification. The data is pre-populated in the form (empty form for null data). User is allowed to enter/modify the data and update it.
13. Error handling has been performed at this level as well. User is prompted to fill all the fields.