

Project for
CSE 311

Project name:
Donation and Fundraising



Submitted by:

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DB Planning

Database planning is the first stage of database application life cycle. In this stage we plan for collecting requirements, analysis, design, implementation and testing of a database. We may find many errors while making the database.

Reason behind doing this project: There are so many troubles we might face while collecting the donation and keeping the details of the donor in the memory of all the data and write them out. There are also chances of losing the data.

The plan we made which will remove the problem: The idea of our project is to collect and keep the data of what the donor donates and give them a receipt. We will collect all the details of volunteers, donations in a database as a record, and in which campaign is held.

In our system, a **campaign** will be arranged and there will be some **volunteers**. In that campaign, the **donor** will donate the money. All the information of the **donor** will be recorded. Then we will give some information to the **donor** with a **receipt**. All the information on **donor** and **receipt** will be stored at the **donation**.

Requirement Analysis

Requirement collection is the process of collection and analysis the requirements of the database by understanding the scope and boundaries of the database application and major user views. User views refers to the perspective of particular user usage and analysis involves finding what and how.

In this part, we need to go through three steps. i) conceptual design, ii) logical design, and iii) physical design. After determining conceptual design and logical design, we decided to implement it in MySQL.

Reason behind choosing MySQL: MySQL is multithreaded, multi user SQL database management System (DBMS). The basic program run as server providing multiuser access to a number of databases. The project's source code is available under terms of the GNU General Public License, as well as under a variety of property arguments. MySQL is a database. The data in a MySQL is stored in a Database objects called tables. A table is a collection of related data entries and it consists of columns and rows. The databases are useful when storing information categorically.

To make the project done, we need some software to implement it. Firstly, we need to install MySQL libraries with MySQL Workbench on our PC. Then, we use www.draw.io to make the ER diagram of our first design. Later, we need MySQL Workbench to make the schema, tables, write the all queries and implement it. At last we need to do Reverse Engineering to get the automated ER-Diagram.

Software specification

- MySQL Libraries
- MySQL Workbench 8.0 CE
- draw.io
- Operating system: Windows10





draw.io



Database Design

Database design process of creating a design for a database that will support the enterprise operations and objectives.

To design our database, we need to select the attribute first, then we will determine the relation between them.

Following the DB Planning part, we will have five attributes, i.e. i) campaign, ii) volunteer, iii) donor, iv) donation, v) receipt.

We talked about the process in the DB planning part. Now let's talk about the relationship between them. There are five Primary Key (PK) for the Attributes which are uniquely identified by the IDs. I.e. i) campaign_ID, ii) donor_ID, iii) volunteer_ID, iv) donation_ID, v) receipt_ID.

Many **volunteers** will be at one **campaign** so this is **many to one** relationship.

Many **donors** will be at **campaign** so this is **many to one** relationship as well.

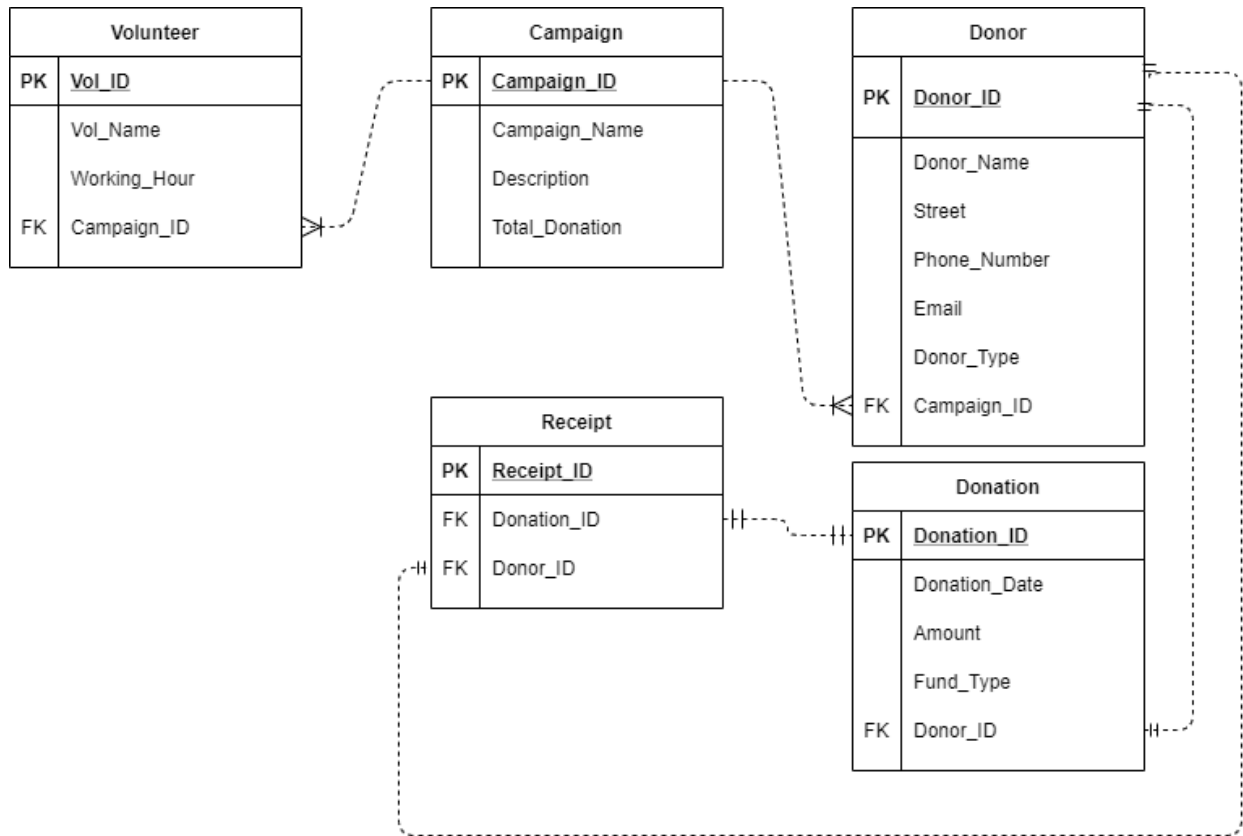
Each **donor** makes a **donation** so that's **one to one** relationship.

Each **donor** gets a **receipt**, so that again is **one to one** relationship.

There is a separate relation on **Donation** and **Receipt**, so that's **one to one** relationship.

There is a primary key called Campaign_ID which can be accessed as Foreign key in Donor and Volunteer tables. Donor_ID primary key can be accessed as Foreign key in the Donation and Receipt tables. The Donation_ID primary key can be accessed as Foreign key in Receipt table.

Entity Relationship Model



Database Implementation

******Kindly check the .txt file to see the queries

Tables are shown below-

The screenshot displays the MySQL Workbench interface. On the left, the 'SCHEMAS' pane shows the 'project' database selected, with its tables listed: campaign, donation, donor, receipt, and volunteer. The 'Table: volunteer' is highlighted, showing its columns: Vol_ID (PK, decimal(6,0)), Vol_Name (varchar(25)), Working_Hour (decimal(6,0)), and Campaign_ID (decimal(6,0)).

The main window shows a query editor with the following SQL query:

```
SELECT * FROM project.campaign;
```

The 'Result Grid' displays the results of the query, showing 10 rows of campaign data:

Campaign_Id	Campaign_Name	Description	Total_Donation
201	Coming together	Fund for flood victims	70000
202	Charity for literacy	For the education of underprivileged children	190000
203	Action for animals	Animal welfare	30000
204	Carnival of love	For treatment of the poor in hospitals	250000
205	Fight cancer	For cancer patients	500000
206	The care club	Fund for orphanages	40000
207	Find a fortune	Donation to slums	45000
208	All for love	Refugee camps	60000
209	Care to cure	Covid-19 treatment	125000
210	Clever donations	Supply of hygiene products to the needy	100000

The 'Output' pane at the bottom shows the execution of three queries:

#	Time	Action	Message	Duration / Fetch
17	20:45:29	SELECT * FROM project.donor LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
18	20:45:31	SELECT * FROM project.receipt LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
19	20:45:32	SELECT * FROM project.volunteer LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

Filter objects

database2
new_schema
project

Tables

campaign
donation
donor
receipt
volunteer

Views
Stored Procedures
Functions

Administration Schemas

Information

Table: **volunteer**

Columns:

Vol_ID decimal(6,0) PK
Vol_Name varchar(25)
Working_Hour decimal(6,0)
Campaign_ID decimal(6,0)

SQL File 7* SQL File 8* SQL File 4* receipt campaign donation donor receipt volunteer

1 • SELECT * FROM project.donation;

Result Grid

Donation_Id	Donation_Date	Amount	Fund_Type	Donor_Id
401	2020-01-01	50000	Flood Fund	101
402	2020-02-02	40000	Education Fund	102
403	2020-03-03	30000	Animal welfare Fund	103
404	2020-04-04	60000	Poor Fund	104
405	2020-05-05	70000	Cancer patient Fund	105
406	2020-06-06	80000	Orphanage Fund	106
407	2020-07-07	35000	Slums Fund	107
408	2020-08-08	58000	Rohinga camp Fund	108
409	2020-09-09	67000	Covid-19 Fund	109
410	2020-10-10	59000	Needy Fund	110

Output

Action Output

#	Time	Action	Message	Duration / Fetch
17	20:45:29	SELECT * FROM project.donor LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
18	20:45:31	SELECT * FROM project.receipt LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
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Object Info Session

MySQL Workbench

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Information

Table: **volunteer**

Columns:

Vol_ID decimal(6,0) PK
Vol_Name varchar(25)
Working_Hour decimal(6,0)
Campaign_ID decimal(6,0)

SQL File 7* SQL File 8* SQL File 4* receipt campaign donation donor receipt volunteer

1 • SELECT * FROM project.donor;

Result Grid

Donor_Id	Donor_Name	Street	Phone_Number	Email	Donor_Type	Campaign_Id
101	Sylvia Millat	Fuller	1936784657	smillat	Doctor	201
102	Shahriar Hossain	Dhakeswari	1735466578	shossain	Engineer	202
103	Sadman Haider	Hare	1645673298	sadmanh	Teacher	201
104	Sabrina Islam	DoctorGoli	1721893494	islams	Student	202
105	Afa Rahman		1698502640	arahman	Student	205
106	Humaira Khan	Lake Drive	1839403276	khan.h	Student	210
107	Ibrahim Mollah	Fuller		imollah	Student	207
108	Aryan Ahmed	Japan Street		aahmed	Student	209
109	Zeeshan Khan	Abdur Sadek	1633890956		Student	206
110	Ashfa Hasan			a.hasan	Student	

Output

Action Output

#	Time	Action	Message	Duration / Fetch
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18	20:45:31	SELECT * FROM project.receipt LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
19	20:45:32	SELECT * FROM project.volunteer LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

MySQL Workbench

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Navigator

SCHEMAS

Filter objects

database2

new_schema

project

Tables

campaign

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volunteer

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Administration Schemas

Information

Table: **volunteer**

Columns:

Vol_ID decimal(6,0) PK

Vol_Name varchar(25)

Working_Hour decimal(6,0)

Campaign_ID decimal(6,0)

SQL File 7* SQL File 8* SQL File 4* receipt campaign donation donor receipt **volunteer**

1 • SELECT * FROM project.volunteer;

Result Grid

Vol_ID	Vol_Name	Working_Hour	Campaign_ID
301	Lin	3	201
302	Lina	2	202
303	Bubble	4	203
304	Zoro	5	204
305	Mimi	2	205
306	Tintin	8	206
307	Deku	6	207
308	Bakiugo	9	208
309	Ash	7	209
310	NULL	NULL	NULL

Output

#	Time	Action	Message	Duration / Fetch
17	20:45:29	SELECT * FROM project.donor LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
18	20:45:31	SELECT * FROM project.receipt LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
19	20:45:32	SELECT * FROM project.volunteer LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

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Table: **volunteer**

Columns:

Vol_ID decimal(6,0) PK

Vol_Name varchar(25)

Working_Hour decimal(6,0)

Campaign_ID decimal(6,0)

SQL File 7* SQL File 8* SQL File 4* receipt campaign donation donor **receipt** volunteer

1 • SELECT * FROM project.receipt;

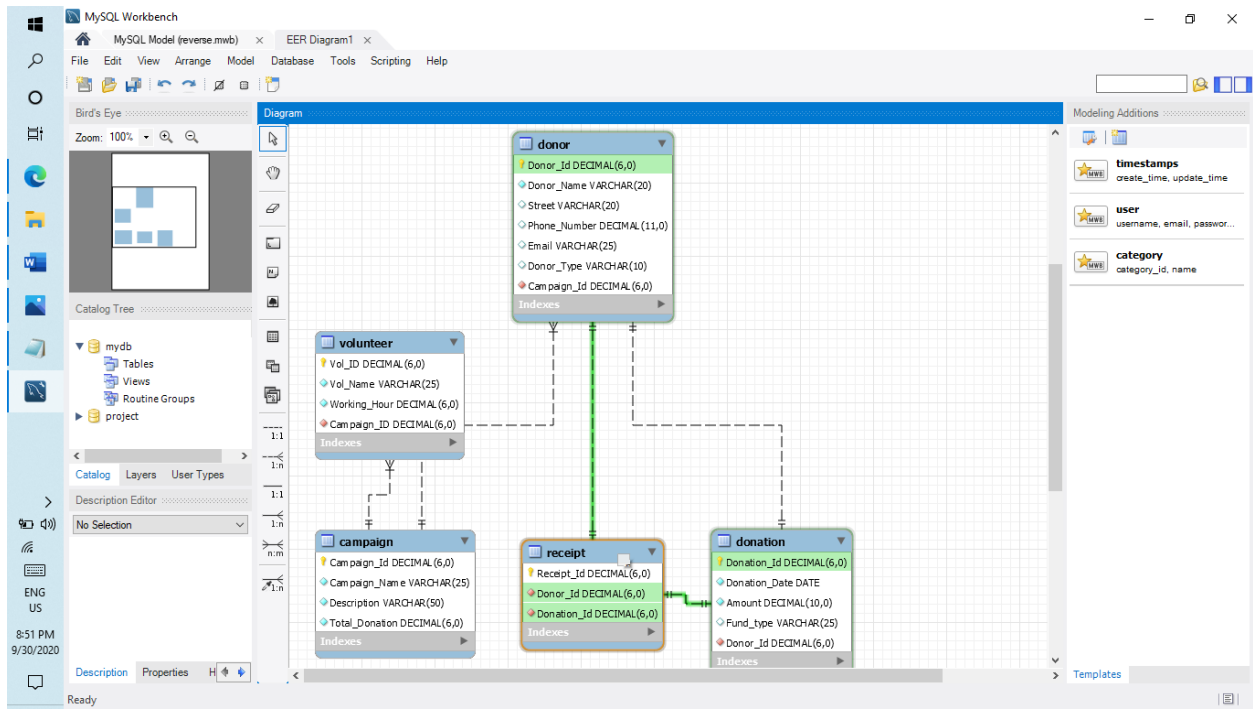
Result Grid

Receipt_Id	Donor_Id	Donation_Id
501	101	401
502	102	402
503	103	403
504	104	404
505	105	405
506	106	406
507	107	407
508	108	408
509	109	409
510	110	410

Output

#	Time	Action	Message	Duration / Fetch
17	20:45:29	SELECT * FROM project.donor LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
18	20:45:31	SELECT * FROM project.receipt LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
19	20:45:32	SELECT * FROM project.volunteer LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec

Reverse engineering part is shown below-



Testing

To test our database, we need to do three parts i.e.
i) INSERT, ii) UPDATE, and iii) DELETE

Insertion part:

The screenshot displays the MySQL Workbench interface. The central editor shows the following SQL query:

```
1 INSERT INTO Donor ('Donor_Id', 'Donor_Name', 'Street', 'Phone_Number', 'Email', 'Campaign_Id')
2 VALUES ('112', 'Roselyn', 'Hare', '01846308354', 'rosy', '206');
```

The left sidebar shows the 'SCHEMAS' panel with the 'project' database selected, containing tables 'campaign', 'donation', and 'donor'. The bottom 'Output' panel shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	21:07:12	SELECT * FROM project.donor LIMIT 0, 1000	11 row(s) returned	0.000 sec / 0.000 sec
2	21:08:15	INSERT INTO Donor ('Donor_Id', 'Donor_Name', 'Street', 'Phone_Number', 'Email', 'Campaign_Id') V...	1 row(s) affected	0.047 sec

MySQL Workbench

project x

File Edit View Query Database Server Tools Scripting Help

Navigator

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

- cse31117
- project
 - Tables
 - campaign
 - donation
 - donor

Query 1 donor

SELECT * FROM project.donor;

Result Grid

Donor_Id	Donor_Name	Street	Phone_Number	Email	Donor_Type	Campaign_Id
101	Sylvia Milat	Fuller	1936784657	smilat	INDUS	201
102	Shahriar Hossain	Dhakeswari	1735466578	shossain	INDUS	201
103	Sadman Haider	Hare	1645673298	sadmanh	INDUS	202
104	Sabrina Islam	DoctorGoli	1721895994	islams	INDUS	201
105	Alfa Rahman	Lake Drive	1698502640	arahman	INDUS	202
106	Humara Khan	Fuller	1839403276	khanih	INDUS	205
107	Ibrahim Mollah	Fuller	1633890956	imollah	INDUS	210
108	Aryan Ahmed	Japan Street	1633890956	aahmed	INDUS	207
109	Zeeshan Khan	Abdur Sadek	1633890956	z.khan	INDUS	209
110	Ashfia Hasan	Fuller	1997247905	a.hasan	INDUS	206
111	Christine	Fuller	1997247905	chris	INDUS	208
112	Roselyn	Hare	1846308357	rosy	INDUS	206

donor 1 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	21:07:12	SELECT * FROM project.donor LIMIT 0, 1000	11 row(s) returned	0.000 sec / 0.000 sec
2	21:08:15	INSERT INTO Donor (Donor_Id, Donor_Name, Street, Phone_Number, Email, Campaign_Id) V...	1 row(s) affected	0.047 sec
3	21:08:58	SELECT * FROM project.donor LIMIT 0, 1000	12 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

9:09 PM 9/30/2020

We see, it's successfully inserted.

Updating part:

This screenshot shows the MySQL Workbench interface with a query window open. The query being executed is:

```
1 UPDATE donor
2 SET Donor_Name = 'Max'
3 WHERE donor_id = 101;
```

The Output pane at the bottom displays the execution results:

#	Time	Action	Message	Duration / Fetch
71	19:44:15	UPDATE donor SET Donor_Name = 'Sylvia Milat' WHERE Donor_id = 101	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.329 sec
72	19:44:29	SELECT * FROM project.donor LIMIT 0, 1000	10 row(s) returned	0.172 sec / 0.000 sec
73	19:45:35	UPDATE donor SET Donor_Name = 'Max' WHERE donor_id = 101	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.250 sec

The left sidebar shows the Schemas pane with the 'project' database selected. The right pane shows a message: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

This screenshot shows the MySQL Workbench interface with a query window open. The query being executed is:

```
1 SELECT * FROM project.donor;
```

The Output pane at the bottom displays the execution results:

#	Time	Action	Message	Duration / Fetch
72	19:44:29	SELECT * FROM project.donor LIMIT 0, 1000	10 row(s) returned	0.172 sec / 0.000 sec
73	19:45:35	UPDATE donor SET Donor_Name = 'Max' WHERE donor_id = 101	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.250 sec
74	19:45:53	SELECT * FROM project.donor LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec

The Result Grid pane shows the data returned by the SELECT query:

Donor_Id	Donor_Name	Street	Phone_Number	Email	Donor_Type	Campaign_Id
101	Max	Fuller	1936784657	smilat	201	
102	Shahvir Hossain	Dhakeswari	1735466578	shossain	201	
103	Sadman Hader	Hare	1645673298	sadmanh	202	
104	Sabrina Islam	Doctor Goli	1721893494	islams	201	
105	Afia Rahman		1698502640	arahman	202	
106	Humaira Khan	Lake Drive	1839403276	khan.h	205	
107	Ibrahim Mollah	Fuller		imollah	210	
108	Aryian Ahmed	Japan Street		ahmed	207	
109	Zeeshan Khan	Abdur Sadek	1633899556		209	
110	Ashifa Hasan			a.hasan	206	

The left sidebar shows the Schemas pane with the 'project' database selected. The right pane shows a message: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

We see, it's successfully updated.

Deleting part:

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 DELETE FROM `receipt`  
2 WHERE `receipt_id` IN (501,503);
```

The left sidebar shows the Schemas tree with the 'project' database selected. The 'Tables' list includes 'campaign', 'donation', 'donor', 'receipt', and 'volunteer'. The 'Information' tab is active, showing 'No object selected'.

The 'Result Grid' displays the following data:

Receipt_Id	Donor_Id	Donation_Id
502	102	402
504	104	404
505	105	405
506	106	406
507	107	407
508	108	408
509	109	409
510	110	410

The 'Output' tab shows the execution results:

#	Time	Action	Message	Duration / Fetch
82	19:53:04	SELECT * FROM project.receipt LIMIT 0, 1000	10 row(s) returned	0.047 sec / 0.000 sec
83	19:57:28	DELETE FROM `receipt` WHERE `receipt_id` IN (501,503)	2 row(s) affected	0.797 sec
84	19:57:36	SELECT * FROM project.receipt LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec

We see, it's successfully deleted.