**Database design**

* **Database :**

A Database is collection of related data, which can be of any size and complexity. By using the concept of Database, we can easily store and retrieve the data. The major purpose of a database is to provide the information, which utilizes it with the information’s that the system needs according to its own requirements.

* **Database Design :**

Database design is done before building it to meet needs of end-users within a given information-system that the database is intended to support. The database design defines the needed data and data structures that such a database comprises

The database is physically implemented using MySQL.

1. **Purpose of Database:**

The project Fashion Mart stores following records in the database:

* Mainly the table will store the customer profile details.
* It is used to store the Administrators Details.
* It is used to store the Product and item Details.
* It is used to store product categories.
* It is used to store promo code details.
* It is used to store sales and billing record.

1. **Required information:**

Following information required to start working in the database:

* Category details
* Administrator or user details.
* Item or Product details

1. **Database tables:**

Following tables created for homeopathy clinic portal project

* administrator
* category
* customer
* products
* purchase
* billing
* promocode

1. **Table columns:**

Following columns required in the each table:

* administrator : adminname, loginid, password
* category : categoryname
* customer : customername, loginid, password, emailid, contactno
* products : product\_name, cost
* purchase : bill\_id, product\_id, cost, qty, totalcost
* billing : bill\_id, total\_cost, purchase\_date
* promocode: promocode, expiry\_date

1. **Primary keys:**

Each and every table has primary key. The primary keys of the table are:

* The primary key of the products table is prod\_id
* The primary key of the category table is cat\_id
* The primary key of the purchase table is purch\_id
* The primary key of the customer table is custid
* The primary key of the billing table is bill\_id
* The primary key of the administrator table is admin\_id
* The primary key of the promo\_code table is promo\_id

1. **Table relationships:**

* Products table is connected with cat\_id, subcat\_id, supp\_id
* purchase table is conneced with bill\_id, prod\_id
* billing table is connected with cust\_id
* promo\_code table is connected with promo\_code\_id

1. **Database colums:**

**(Attach database columns here)**

**ER Diagrams**

Entity relationship diagram is used in modern database software engineering to illustrate logical structure of database. It is a relational schema database modelling method used to model a system and approach. This approach is commonly used in database design. The diagram created using this method is called as E-R diagram.

An entity-relationship (ER) diagram is a specialized graphic that illustrates the [relationships between entities in a database](http://databases.about.com/od/specificproducts/a/Database-Relationships-An-Introduction-To-Foreign-Keys-Joins-And-E-R-Diagrams.htm). ER diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities. Diamonds are normally used to represent relationships and ovals are used to represent attributes.

**Entity**:

Entity is represented by a box within the ER Diagram. Entities are abstract concepts, each representing one or more instances of the concept in question. An entity might be considered a container that holds all of the instances of a particular thing in a system. Entities are equivalent to database tables in a relational database, with each row of the table representing an instance of that entity.

**Relationship**:

Relationships are represented by Diamonds. A relationship is a named collection or association between entities or used to relate to two or more entities with some common attributes or meaningful interaction between the objects.

**Attributes**:

Attributes are represented by Oval. An attribute is a single data item related to a database object. The database schema associates one or more attributes with each database entity.

The Symbols are shown in below table:

|  |  |
| --- | --- |
| **Name** | **Symbol** |
| Entity |  |
| Relationship |  |
| Attributes |  |
| Key Attribute |  |

(Attach ER Diagram here)

# GENERAL INFORMATION

## 1.1 Purpose

This database requirement specification describes the function and performance requirements of the homeopathy database. This database which stores customers record, category details, product details and purchase details, etc.

## 1.2 Scope

The scope of this database is :

* All record stores in single database
* The system stores all the records instantly without any delay.
* The database server has unique username and password to access the database.

## 1.3 System Overview

1. Responsible organization : Fashion Mart
2. System name or title : Fashion Mart
3. System code : Ver. 01 beta
4. System category : Web portal
5. Operational status : This system is under beta version. The system development process is under waterfall model.

## 1.4 Project References

Database System Concepts by Abraham Silberschatz, ‎Henry F. Korth, ‎S. Sudarshan

## 1.5 Acronyms and Abbreviations

## ER diagram - Entity–relationship model diagram

* 1NF - First Normal Form
* 2NF - Second normal form
* 3NF – Third normal form
* PK – Primary key
* FK – Foreign key

## 1.6 Points of Contact

### 1.6.1 Information

**Contact details:**

**Contact Name:  
Telephone No.  
Email ID:**

**Contact Name:  
Telephone No.  
Email ID:**

### 1.6.2 Coordination

* The project we install under linux hosting server.
* The database system is hosted under mysql in the same hosting panel.

### 1.6.3 Additional Points of Contact

**Contact Name:  
Telephone No.  
Email ID:**

### 1.6.4 Data Owners

* The project source code and domain names are under the rights of developer.
* The database record is under the rights of clinic.

**2.0 DATABASE IDENTIFICATION AND DESCRIPTION**

## 2.1 Naming Conventions

|  |  |
| --- | --- |
| **Table Name** | **Naming convention** |
| Prodname | Product name |
| P\_warranty | Product warranty |
| Deliveredin | Number of days required to product delivery |
| Product\_specif | Product description in detail |
| Qty | Quantity |
| Compname | Company name |
| Purch\_date | Purchase date |
| Deliv\_date | Delivery date |
| Custname | Customer name |
| C\_password | Customer password |

## 2.2 Database Identification

* Database table name and column names defined without leaving space.
* Lower case used to create database tables and columns.
* Primary key and foreign key defined with same name.

## 2.3 Systems Using the Database

The project Fashion Mart connected to homeopathy database using php mysqli\_connect() function.

## 2.4 Relationship to Other Databases

All the record stores in single database. This project does not connected with any other database.

## 2.5 Schema Information

A schema is the structure behind data organization. It is a visual representation of how different table relationships enable the schema’s underlying mission business rules for which the database is created.

In a schema diagram, all database tables are designated with unique columns and special features, e.g., primary/foreign keys or not null, etc. Formats and symbols for expression are universally understood, eliminating the possibility of confusion. The table relationships also are expressed via a parent table’s primary key lines when joined with the child table’s corresponding foreign keys.  
  
Schema diagrams have an important function because they force database developers to transpose ideas to paper. This provides an overview of the entire database, while facilitating future database administrator work.

### (attach Schema diagram here)

### 2.5.1 Description

The above schema diagram displays the relationship betwee PK and FK.

* Products table refers to cat\_id, subcat\_id, supp\_id
* purchase table refers to bill\_id, prod\_id
* billing table refers to cust\_id
* promo\_code table refers to promo\_code\_id

### 2.5.2 Physical Design

The following diagram represents physical design of the database.



### 2.5.3 Physical Structure

The following diagram represents physical structure of the database. Here user can delete and modify the records from table. Browse option will display the records from table. Structure will display the table column and its data type. In the search option user can search the records. Insert option is to insert new records in the database. Empty option will clear all the data from database table. Drop option allows user to delete the database tables.

## (Physical diagram here)

## 2.7 Data Dictionary

|  |  |  |
| --- | --- | --- |
| **Table Name** | **Primary key** | **Foreign key** |
| Appointment | **Appointment\_id** | **Patient\_id, branch\_id** |
| Billing | **Billing\_id** | **Patient\_id** |
| Branch | **Branch\_id** | **-** |
| Company | **Company\_id** | **-** |
| Dealer | **Dealer\_id** | **-** |
| expense | **Expense\_id** | **User\_id** |
| invoice | **Invoice\_id** | **Dealer\_id, branch\_id** |
| medicine | **Medicine\_id** | **-** |
| patient | **Patient\_id** | **Branch\_id** |
| prescription | **Prescription\_id** | **Medicine\_id, patient\_id** |
| purchase | **Purchase\_id** | **Invoice\_id** |
| sales | **Sales\_id** | **Billing\_id, medicine\_id** |
| treatment | **Treatment\_id** | **Patient\_id** |
| users | **User\_id** | **Branch\_id** |

## 2.8 Special Instructions

Following rules and instructions we followed while creating database:

1. First create a note of all tables and necessary fields required under the table.
2. One of the solutions would be to move the data into a different master table altogether and refer them via foreign keys.
3. We should follow the rule of 1N , 2N , 3N normalization.
4. Identify any specialized criteria for entering data into the database.

# 3.0 DATABASE ADMINISTRATIVE INFORMATION

## 3.1 Responsibility

* Designing the logical and physical schemas, as well as widely-used portions of the external schema.
* Security and authorization.
* Data availability and recovery from failures.
* Database tuning: The DBA is responsible for evolving the database, in particular the conceptual and physical schemas, to ensure adequate performance as user requirements change.

## 3.2 System Information

* Server: 127.0.0.1 via TCP/IP
* Server type: MySQL
* Server version: 5.5.32 - MySQL Community Server (GPL)
* Protocol version: 10
* User: root@localhost
* Server charset: UTF-8 Unicode (utf8)

|  |  |  |
| --- | --- | --- |
| **Directive** | **Local Value** | **Master Value** |
| **mysqli.allow\_local\_infile** | On | On |
| **mysqli.allow\_persistent** | On | On |
| **mysqli.default\_host** | *no value* | *no value* |
| **mysqli.default\_port** | 3306 | 3306 |
| **mysqli.default\_pw** | *no value* | *no value* |
| **mysqli.default\_socket** | MySQL | MySQL |
| **mysqli.default\_user** | *no value* | *no value* |
| **mysqli.max\_links** | Unlimited | Unlimited |
| **mysqli.max\_persistent** | Unlimited | Unlimited |
| **mysqli.reconnect** | Off | Off |

### 3.2.1 Database Management System (DBMS) Configuration

Version: MySQL 5.5.16

Protocol version:10

Supported Operating System : Windows 2000, XP, [XP Professional x64](http://en.wikipedia.org/wiki/Windows_XP_Professional_x64_Edition), Linux

MySQL client version :mysqlnd 5.0.8-dev-20102224-$

Revision:310735$

### 3.2.2 Hardware Configuration

* Processor type: Pentium III-compatible processor or higher
* Processor speed: Minimum: 600 MHz  
  Recommended: 1 GHz or higher
* Memory (RAM): Minimum: 512 MB   
  Recommended: 1 GB or more
* Operating system: Minimum Windows XP,Windows7,Linux

### 3.2.3 Database Software Utilities

List and reference the documentation of any DBMS utility software available to support the use or maintenance of the database.

XAMPP Version: 1.8.1

MySQL version : 5.4

### 3.2.4 Support Software Available for Maintaining Database

The system installs Mysql server while installing Xampp software. All the backup content stores in mysql data folder.

### 3.2.5 Security

## A valid login name and password is required to connect to MySQL Server instance.

## 3.3 Storage Requirements

## The storage engine represents the heart of a MySQL Server.

The storage engine has a number of duties including:

• Recovering the database from system failure

• Management of files and database pages used to store data

• Manage data buffers and system IO to the physical data pages

• Manage locking and concurrency issues

## 3.4 Recovery

MySQL Server database recovery models gives backup-and-restore flexibility. The model used will determine how much time and space your backups will take and how great your risk of data loss will be when a breakdown occurs.